Grizzly Industrial, Inc.®

MODEL G0971
51" ELECTRIC SLIP ROLL
OWNER'S MANUAL
(For models manufactured since 11/23)

#KS22912 PRINTED IN CHINA V1.12.23

******Keep for Future Reference******

⚠ 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.

Table of Contents

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

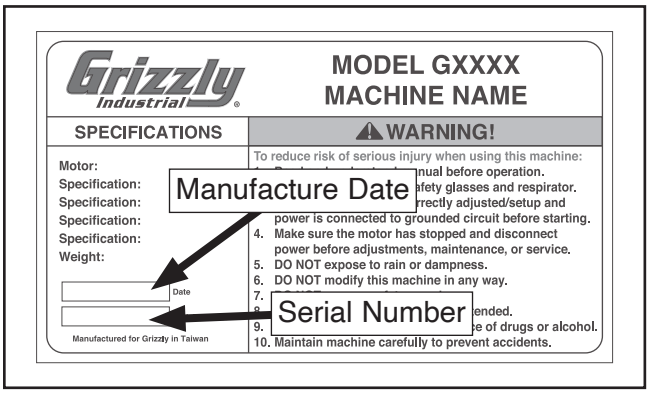
Manual Accuracy

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**.

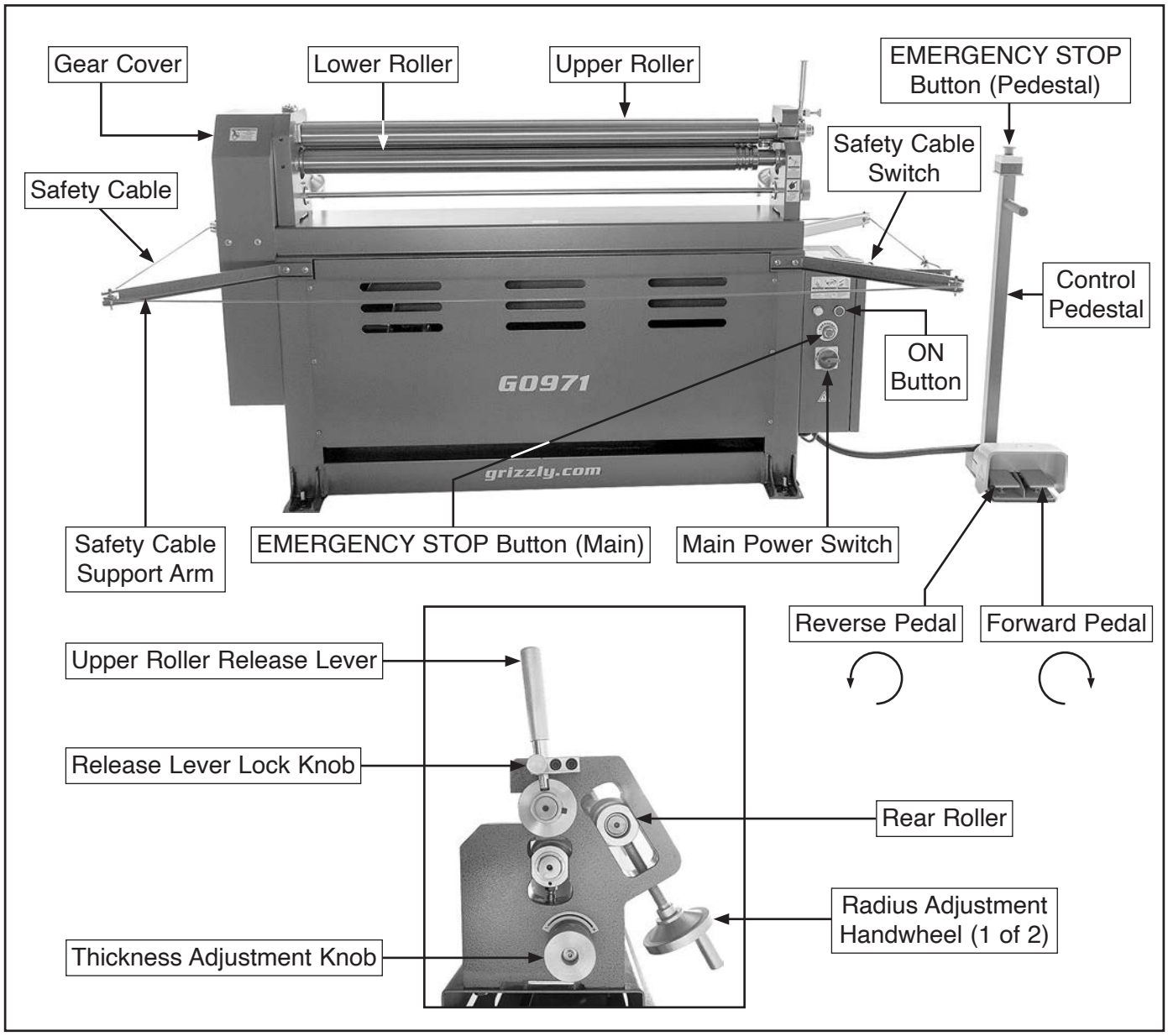
If you find this to be the case, and the difference between the manual and machine leaves you confused or unsure about something, check our website for an updated version. We post current manuals and manual updates for free on our website at **www.grizzly.com**.

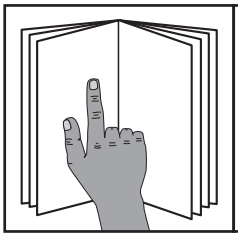
Alternatively, you can call our Technical Support for help. Before calling, make sure you write down the **manufacture date** and **serial number** from the machine ID label (see below). This information is required for us to provide proper tech support, and it helps us determine if updated documentation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



Identification

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

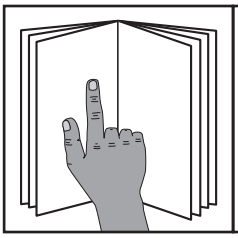




⚠WARNING

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

Controls & Components



⚠WARNING

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

Refer to the following figures and 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 minimize your risk of injury when operating this machine.

Power Controls

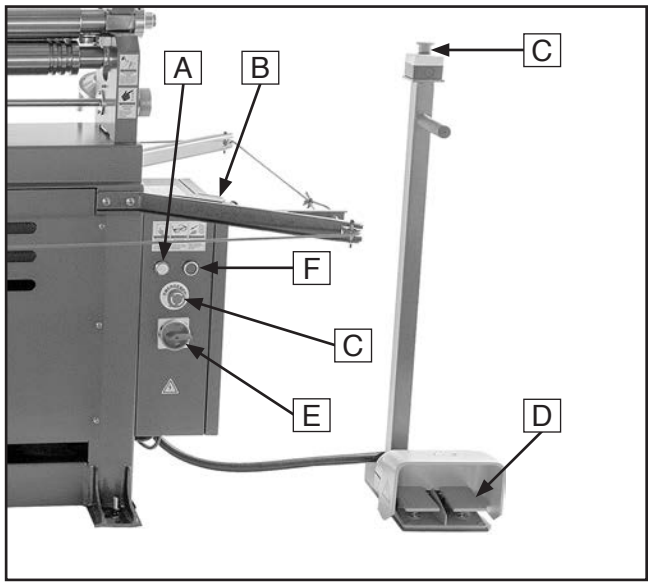


Figure 1. Power controls.

A. Power Light: Illuminates when motor is turned ***ON***.

B. Safety Cable Switch: Disables power to machine when activated. To reset, pull reset button on safety cable switch until it pops out (see **Figure 20** on **Page 18**).

C. EMERGENCY STOP Buttons: Each button disables power to machine when pressed. To reset, twist button clockwise until it pops out.

D. Foot Pedals: When pressed, turn motor ***ON*** and drive rollers to feed workpiece forward or reverse. When released, rollers stop.

E. Main Power Switch: Turns incoming power ***ON*** or ***OFF***.

F. ON Button: Turns machine ***ON***.

Main Components

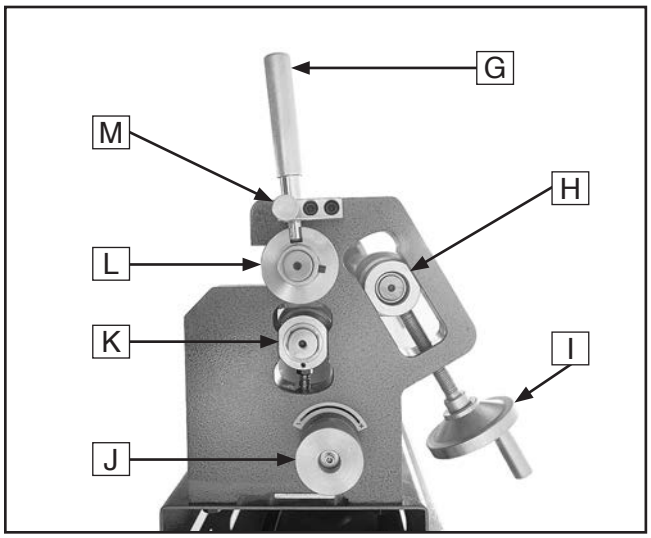


Figure 2. Main components.

G. Upper Roller Release Lever: Releases upper roller from frame for workpiece removal.

H. Rear Roller: Controls bend radius.

I. Radius Adjustment Handwheel (1 of 2): Adjusts rear roller up and down for different sized radius bends.

J. Thickness Adjustment Knob: Adjusts lower roller up and down for different workpiece thicknesses.

K. Lower Roller: Feeds workpiece through machine.

L. Upper Roller: Secures and presses workpiece against lower roller.

M. Release Lever Lock Knob: Secures upper roller release lever.

MACHINE DATA SHEET

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

MODEL G0971 51" ELECTRIC SLIP ROLL

Product Dimensions:

Weight..... 805 lbs.
Width (side-to-side) x Depth (front-to-back) x Height..... 86-1/2 x 37 x 48 in.
Footprint (Length x Width)..... 58-1/2 x 20-1/2 in.

Shipping Dimensions:

Type..... Wood Crate
Content..... Machine
Weight..... 920 lbs.
Length x Width x Height..... 74 x 27 x 51 in.
Must Ship Upright..... Yes

Electrical:

Power Requirement..... 110V or 220V, Single-Phase, 60 Hz
Prewired Voltage..... 110V
Full-Load Current Rating..... 14A at 110V, 7A at 220V
Minimum Circuit Size..... 15A
Connection Type..... Cord & Plug
Power Cord Included..... Yes
Power Cord Length..... 60 in.
Power Cord Gauge..... 14 AWG
Plug Included..... Yes
Included Plug Type..... NEMA 5-15 for 110V
Recommended Plug Type..... NEMA 6-15 for 220V
Switch Type..... ON/OFF Push Button w/Foot Pedal Controls

Motors:

Main

Horsepower..... 1 HP
Phase..... Single-Phase
Amps..... 7A
Speed..... 1350 RPM
Type..... TEFC Capacitor-Start Induction
Power Transfer ..... Chain
Bearings..... Sealed & Permanently Lubricated

Main Specifications:

Capacities

Maximum Width..... 51 in.
Maximum Thickness Mild Steel..... 16 Gauge
Slip Roll Minimum Cylinder Diameter..... 3 in.
Slip Roll Roller Diameter..... 3 in.
Slip Roll Wire Sizes..... 5/16, 3/8, 1/2 in.

Construction

Frame..... Steel
Head and Tail Supports..... Steel
Rollers..... Hardened Steel

SECTION 1: SAFETY

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

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

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

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

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

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

Safety Instructions for Machinery

⚠WARNING

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

TRAINED OPERATORS ONLY. Untrained operators have a higher risk of being hurt or killed. Only allow trained/supervised people to use this machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make your workshop kid proof!

DANGEROUS ENVIRONMENTS. Do not use machinery in areas that are wet, cluttered, or have poor lighting. Operating machinery in these areas greatly increases the risk of accidents and injury.

MENTAL ALERTNESS REQUIRED. Full mental alertness is required for safe operation of machinery. Never operate under the influence of drugs or alcohol, when tired, or when distracted.

ELECTRICAL EQUIPMENT INJURY RISKS. You can be shocked, burned, or killed by touching live electrical components or improperly grounded machinery. To reduce this risk, only allow qualified service personnel to do electrical installation or repair work, and always disconnect power before accessing or exposing electrical equipment.

DISCONNECT POWER FIRST. Always disconnect machine from power supply BEFORE making adjustments, changing tooling, or servicing machine. This prevents an injury risk from unintended startup or contact with live electrical components.

EYE PROTECTION. Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Everyday eyeglasses are NOT approved safety glasses.

⚠WARNING

WEARING PROPER APPAREL. Do not wear loose clothing, gloves, neckties, 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 Electric Slip Rolls

⚠WARNING

Serious injury can occur from fingers or hands getting crushed/pinched in rotating parts. Sharp metal edges can easily cut skin. An unsecured machine can tip during operation and cause crushing injuries. To minimize risk of injury, anyone operating this machine MUST completely heed hazards and warnings below.

CRUSHING & PINCHING INJURIES. Slip rolls can quickly crush or pinch fingers or hands. Never place fingers or hands between or near rollers during operation.

METAL EDGES. Sharp edges on sheet metal can result in severe cuts. Always wear leather gloves and buttoned long-sleeves when preparing sheet metal for operations. Always chamfer and deburr metal edges.

BACK INJURIES. Handling large sheet metal workpieces is potentially harmful if proper lifting techniques are not used. To avoid back injuries, keep back vertical and never over-exert yourself or prepare sheet metal in awkward positions.

TOOL USAGE. Do not attempt to process any material outside capacities of this machine (e.g., glass, ceramic, plastic, etc.) that could result in material or tool breakage.

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

WEAR EYE PROTECTION. Always wear safety glasses. This provides protection for your eyes from metal debris or fractured workpieces.

SECURING SLIP ROLL. Before using, secure slip roll to floor so it can withstand dynamic forces involved with forming sheet metal. Otherwise, it may move or tip during operation, causing serious injury or property damage.

WORK AREA. Keep work area clear and free of obstructions that may potentially cause a trip hazard. Always keep area surrounding machine dry to prevent slipping and help maintain proper balance during operations.

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. DO NOT use hands to force workpiece through rollers.

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.

CAPACITY. Exceeding capacity of machine may result in sudden breakage that ejects dangerous metal debris at the operator or bystanders, or causes machine damage. Only use sheet metal that is within the rated capacity of machine (refer to the **Machine Data Sheet**).

⚠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.

⚠WARNING

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

Full-Load Current Rating

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

Full-Load Current Rating at 110V ..... 14 Amps

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

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

⚠WARNING

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

110V Circuit Requirements

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

Nominal Voltage 110V, 115V, 120V
Cycle ..... 60 Hz
Phase ..... Single-Phase
Power Supply Circuit ..... 15 Amps
Plug/Receptacle ..... NEMA 5-15

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.)

⚠CAUTION

For your own safety and protection of property, consult an electrician if you are unsure about wiring practices or electrical codes in your area.

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

Grounding & Plug Requirements

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

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

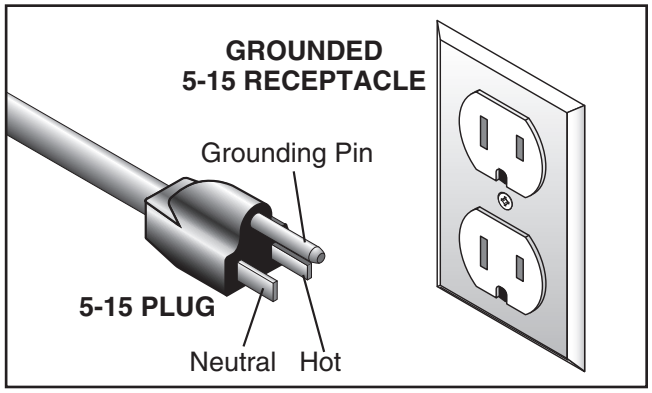
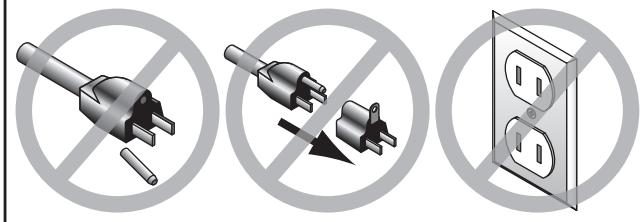


Figure 3. Typical 5-15 plug and receptacle.

⚠CAUTION



SHOCK HAZARD!

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

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

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

Extension Cords

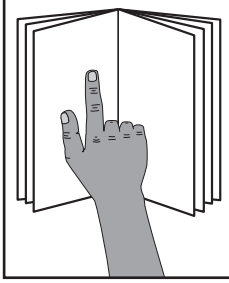
We do not recommend using an extension cord with this machine. If you must use an extension cord, only use it if absolutely necessary and only on a temporary basis.

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

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

Minimum Gauge Size.....16 AWG
Maximum Length (Shorter is Better).....50 ft.

SECTION 3: SETUP

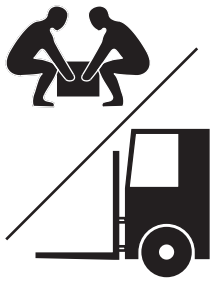


⚠WARNING

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

Description	Qty
• Forklift	1
• Lifting Straps (rated for 1150 lbs.)	2
• Additional Person	1
• Safety Glasses (for each person)	1
• Adjustable Wrench	1
• Cleaner/Degreaser (**Page 13**)	As Needed
• Disposable Shop Rags	As Needed
• Mounting Hardware (**Page 16**)	As Needed

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.*

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.

Wood Crate Inventory (Figure 4)	**Qty**
A. Electric Slip Roll	1

Cardboard Box Inventory (Figure 5)	**Qty**
B. Control Pedestal	1
C. Eye Bolt M8-1.25 x 72	1
D. Hex Nuts M8-1.25	2
E. Flat Washers 8mm	2
F. Support Arm w/Safety Cable	1
G. Safety Cable Support Arms	3

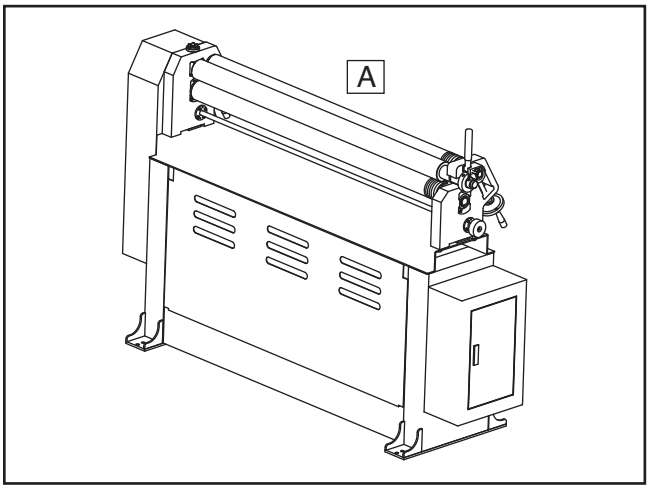


Figure 4. Wood crate inventory.

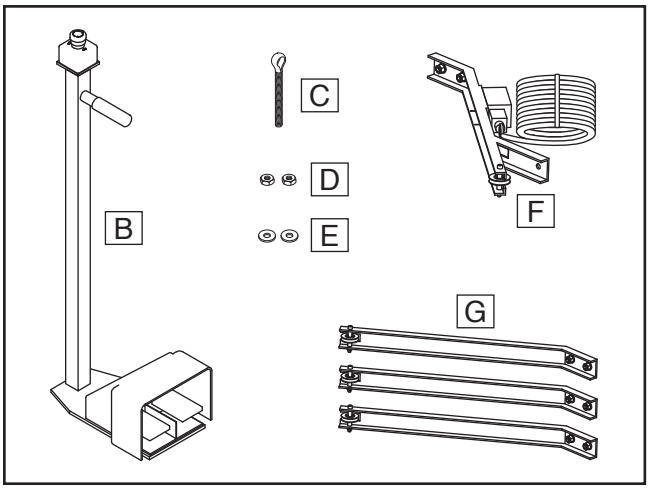


Figure 5. Cardboard box inventory.

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.

⚠WARNING

Gasoline and petroleum products have low flash points and can explode or cause fire if used to clean machinery. Avoid using these products to clean machinery.

⚠CAUTION

Many cleaning solvents are toxic if inhaled. Only work in a well-ventilated area.

NOTICE

Avoid harsh solvents like acetone or brake parts cleaner that may damage painted surfaces. Always test on a small, inconspicuous location first.

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 6. T23692 Orange Power Degreaser.

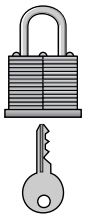
Site Considerations

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.**



⚠CAUTION

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

Physical Environment

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

Electrical Installation

Place this machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure to leave 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.

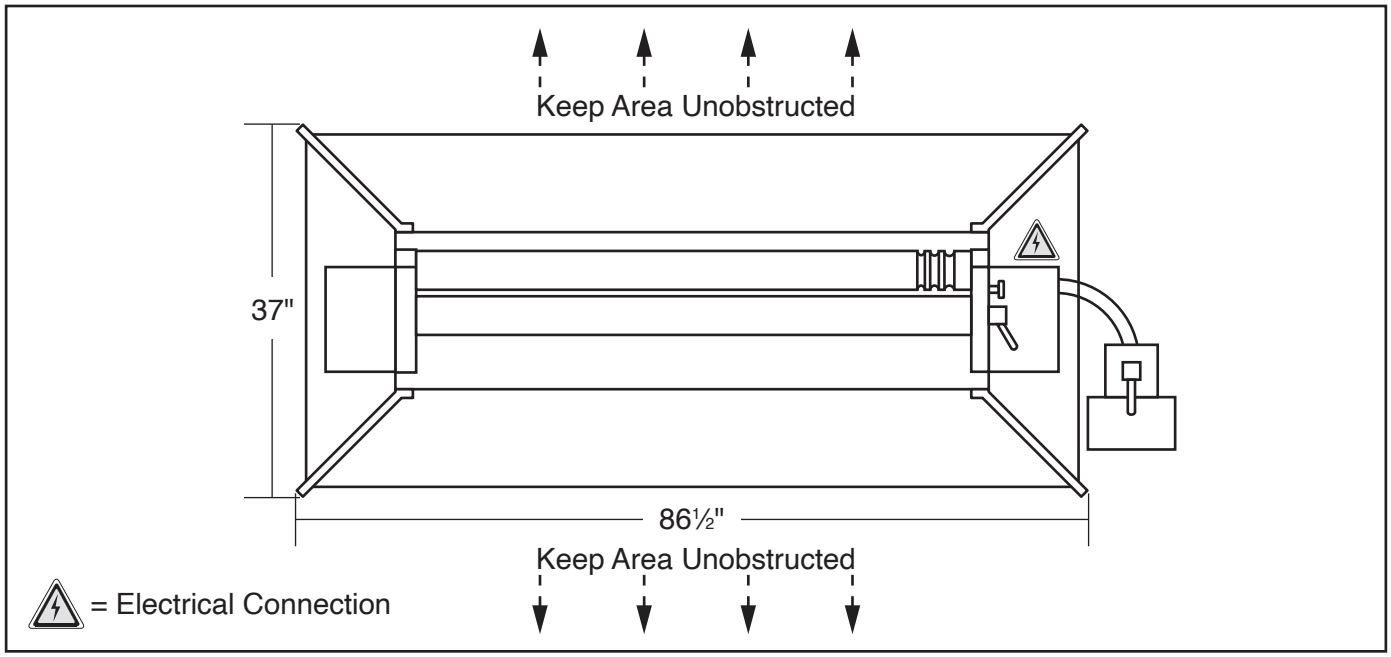
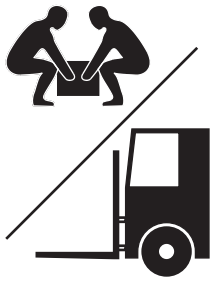


Figure 7. Working clearances.

Lifting & Placing



⚠WARNING

HEAVY LIFT!

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

The Model G0971 requires the use of lifting equipment such as a forklift, engine hoist, or boom crane. DO NOT attempt to lift or move machine without necessary assistance from other people. Each piece of lifting equipment must be rated for **at least 1150 lbs.** to support dynamic loads that may be applied while lifting.

Review **Power Supply** section on **Page 9**, then prepare a permanent location for the slip roll.

To lift and place slip roll:

1. Move crate to desired location.

2. Remove crate top and sides, any blocks around machine base, then unbolt machine from shipping pallet.

3. Remove (12) cap screws and flat washers on front and rear access panels, then remove panels and items from machine interior, as shown in **Figure 8**.

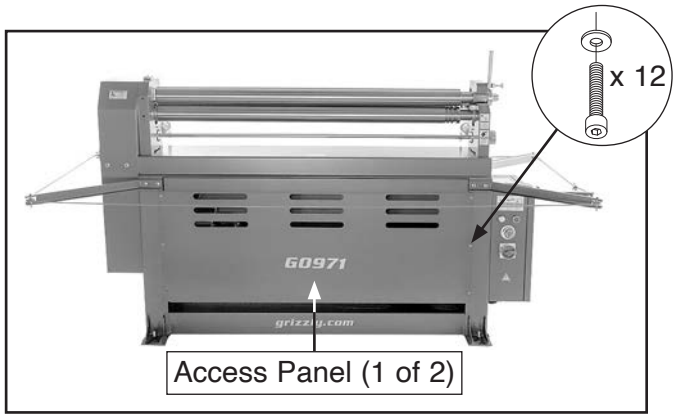


Figure 8. Removing access panels.

NOTICE

Position lifting straps/forklift forks towards motor side of slip roll. Motor side of slip roll is heavier than opposite side and may tip machine over if not fully supported.

4. Place lifting straps or forks of forklift under machine where it attaches to stand, as shown in **Figure 9** or **Figure 10**.

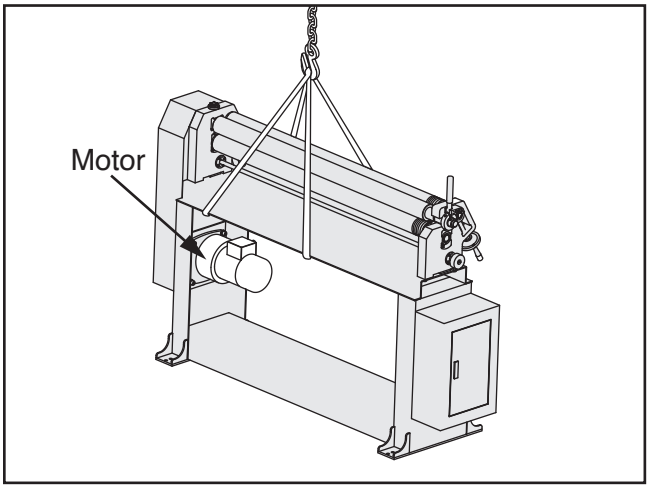


Figure 9. Lifting machine with lifting straps.

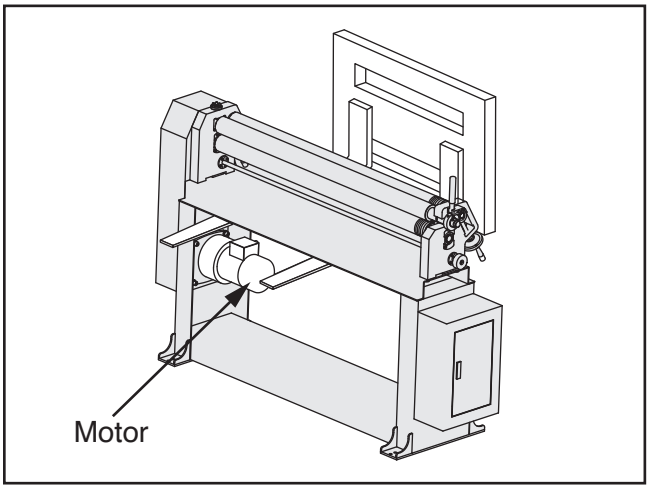


Figure 10. Lifting machine with forklift forks.

5. With help from another person, use forklift to raise machine just enough to clear shipping pallet, then remove pallet.

6. Lower machine into place, then mount it to floor as recommended in **Anchoring to Floor** on next page.

   Note: *Do not install access panels until instructed to in* ***Assembly***.

Anchoring to Floor

Number of Mounting Holes 4
Diameter of Mounting Hardware..... ½"

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.

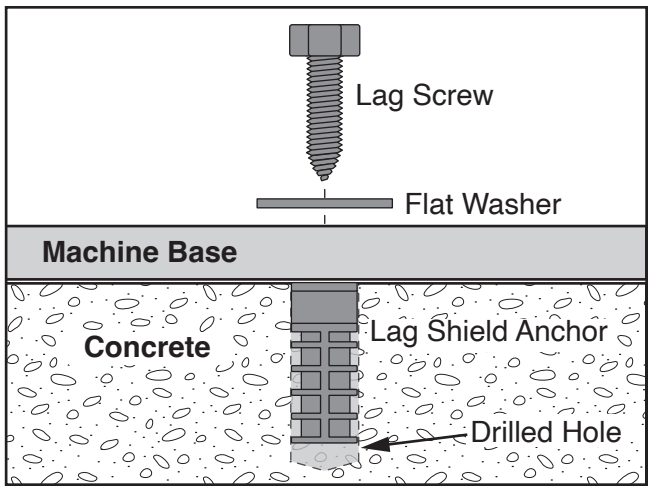


Figure 11. Popular method for anchoring machinery to a concrete floor.

Assembly

The machine must be fully assembled before it can be operated. Before beginning the assembly process, refer to **Needed for Setup** and gather all listed items. To ensure the assembly process goes smoothly, first clean any parts that are covered or coated in heavy-duty rust preventative (if applicable).

To assemble machine:

1. Remove (8) cap screws, (16) flat washers, and (8) hex nuts pre-installed on each corner of machine (see **Figure 12**).

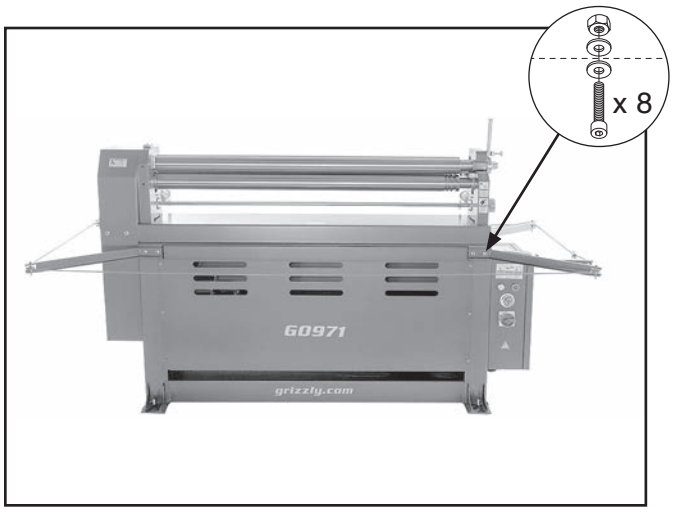


Figure 12. Location of pre-installed fasteners (safety cable shown installed for reference).

2. Install support arm with safety cable switch on front right mounting location using (2) cap screws, (4) flat washers, and (2) hex nuts removed in **Step 1** (see **Figure 13**).

Note: *Safety cable will be routed and installed in a later step.*

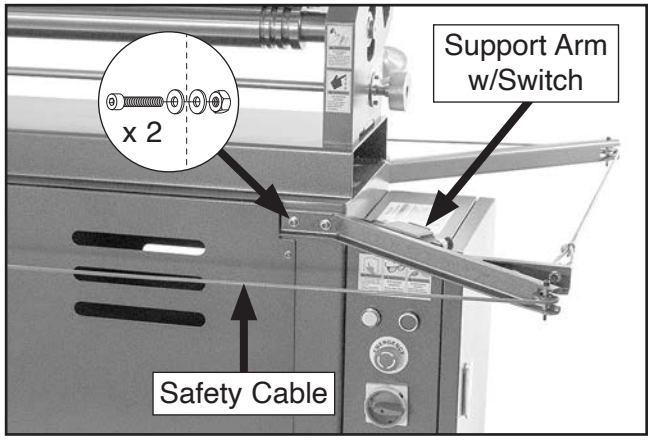


Figure 13. Support arm with safety cable installed.

3. Install (3) remaining support arms using (6) cap screws, (12) flat washers, and (6) hex nuts removed in **Step 1** (see **Figure 14**).

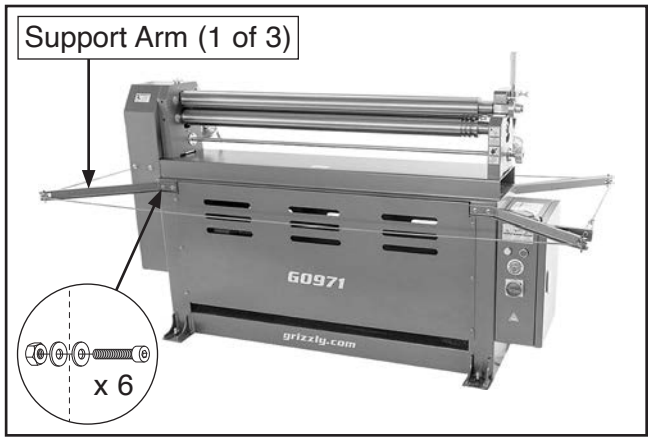


Figure 14. Remaining support arms installed.

4. Install (1) eye bolt, (2) flat washers, and (2) hex nuts in support arm installed in **Step 2** (see **Figure 15**).

Note: *Leave eye bolt extended for adjustment later in these instructions.*

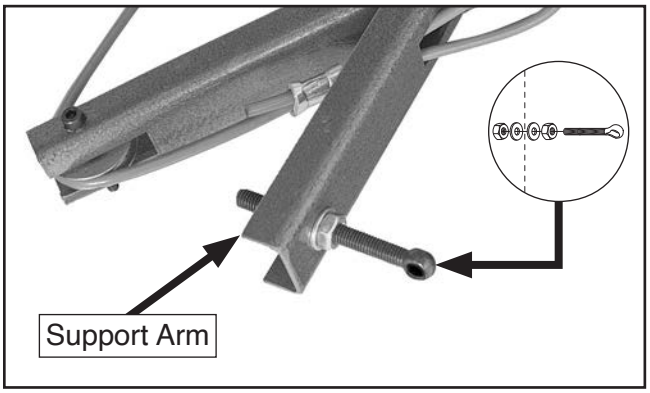


Figure 15. Eye bolt installed.

5. Route safety cable through each support arm pulley and thread through eye of eye bolt (see **Figure 16**).

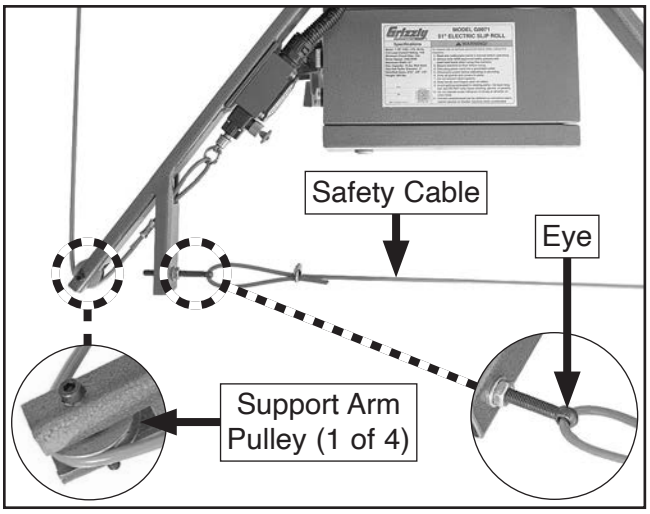


Figure 16. Safety cable threaded through eye.

6. Secure safety cable end with rope clamp pre-installed on safety cable (see **Figure 17**).

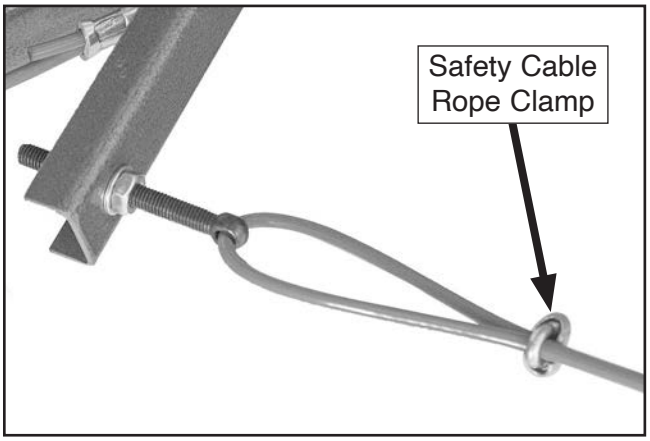


Figure 17. Safety cable secured.

7. Adjust hex nuts on eye bolt to extend or retract eye bolt until safety cable is tensioned and slack is removed (see **Figure 18**).

IMPORTANT: Safety cable must be taut for safety cable switch to function correctly.

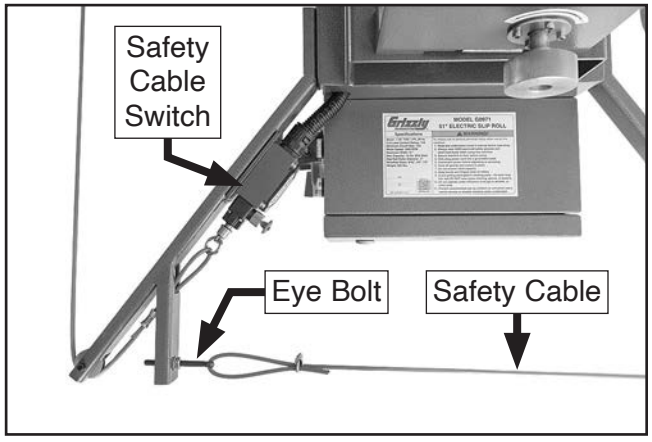


Figure 18. Tensioning safety cable.

8. Verify safety cable switch can be activated by pushing or pulling safety cable. Safety cable reset button should audibly "click" when safety cable is pushed/pulled (see **Figure 19**).

Note: *Safety cable switch is active when reset button is flush against switch. Pull reset button out to deactivate safety cable switch (see **Figure 20**).*

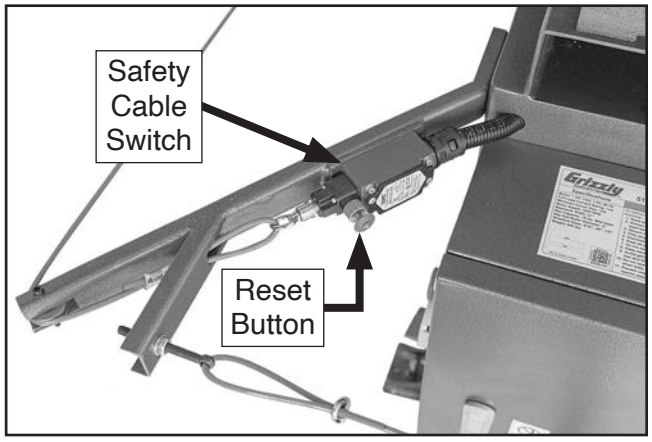


Figure 19. Safety cable switch reset button.

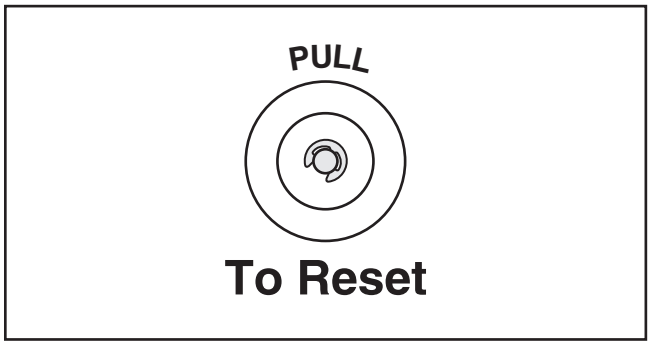


Figure 20. Resetting safety cable switch reset button.

— If safety cable switch *does* activate, proceed to **Step 9**.

— If safety cable switch *does not* activate, increase tension on safety cable and repeat **Step 8**.

9. Remove any protective shipping material on control pedestal, then place pedestal on a flat, level surface near machine, as shown in **Figure 21**.

10. Re-install front and rear access panels using (12) cap screws and flat washers removed in **Step 3** of **Lifting & Placing** on **Page 15** (see **Figure 21**).

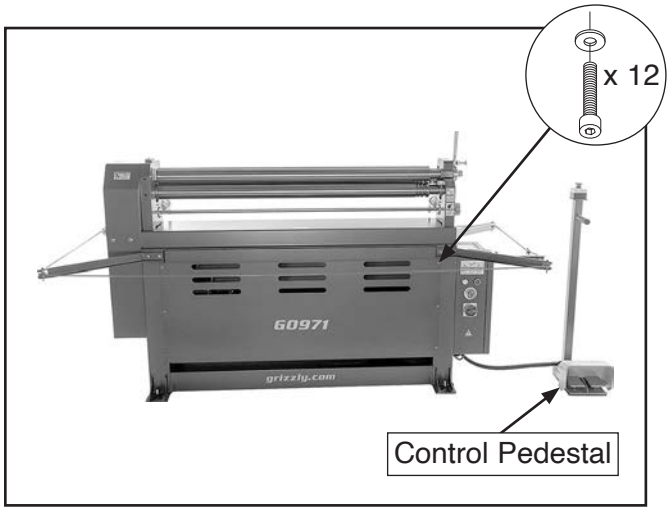


Figure 21. Model G0971 assembled.

Test Run

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

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

The Test Run consists of verifying the following: 1) The motor powers up and runs correctly, 2) the Emergency Stop buttons work correctly, and 3) the safety cable switch works correctly.

⚠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. Press (2) EMERGENCY STOP buttons in, and verify safety cable switch is deactivated.

3. Connect machine to power by inserting power cord plug into a matching receptacle, then turn main power switch ***ON***.

4. Twist (2) EMERGENCY STOP buttons clockwise until they spring out (see **Figure 22**). This resets buttons so motor can start.

5. Press ON button to turn machine ***ON***.

Figure 22. Resetting EMERGENCY STOP.

6. Press left foot pedal, then press right pedal. Verify motor starts up and runs smoothly without any unusual problems or noises.

7. Press control pedestal EMERGENCY STOP button to turn motor ***OFF***.

8. WITHOUT resetting EMERGENCY STOP button, try to start motor by pressing left/right foot pedals. The motor should not turn ***ON***.

   — If motor *does not* turn ***ON***, safety feature of EMERGENCY STOP button is working correctly.

   — If motor *does* turn ***ON***, immediately release foot pedal and disconnect power. Safety feature of EMERGENCY STOP button is NOT working properly and must be replaced before further using machine.

9. Reset control pedestal EMERGENCY STOP button, repeat **Steps 5–8** using main EMERGENCY STOP button, then proceed to **Step 10**.

10. Reset all EMERGENCY STOP buttons and press ON button to turn machine ***ON***.

11. Press left or right foot pedal to turn motor ***ON***, then push or pull safety cable to activate safety cable switch.

    — If motor *does* turn ***OFF***, safety feature of safety cable switch is working correctly. Congratulations! Test Run is complete.

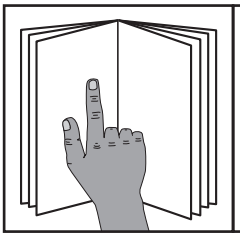
    — If motor *does not* turn ***OFF***, immediately turn machine ***OFF*** and disconnect power. Safety feature of safety cable switch is NOT working properly and must be replaced before further using machine.

SECTION 4: OPERATIONS

Operation Overview

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

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



⚠WARNING

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

⚠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.

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.

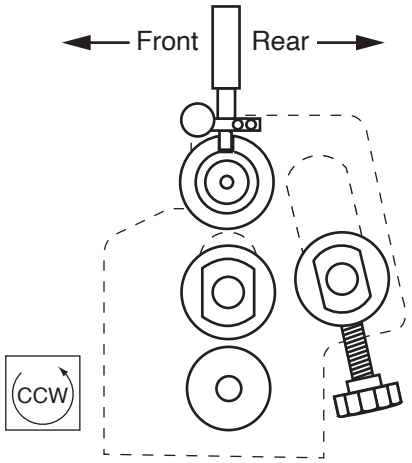
NOTICE

This machine is designed for cold rolling only. Using a torch or other means for hot rolling will permanently damage and deform the rollers and frame of this machine.

Sample Illustration

Throughout this manual, diagrams are used to illustrate how the components of the machine are used during the various steps of operation.

Familiarize yourself with the following illustration, its relationship to the machine, and the symbols used in it before proceeding through this manual.



Bold, solid lines indicate that this component is used in this step.

Light, dashed lines indicate that this component is not used in this step.

Arrows indicate the direction of movement of a component.

Rotational arrows indicate the direction a component must be turned.
CW=Clockwise
CCW=Counterclockwise

Footprints indicate which foot switch pedal must be pressed.
R=Reverse
F=Forward

Preparation

Before every use, follow these procedures to set up the slip roll for safe, accurate, and efficient use.

To prepare slip roll for use:

1. Turn thickness adjustment knob to adjust lower roller to approximately 1/4" below upper roller (see **Figure 23**).

2. Lower rear roller to lowest position (see **Figure 23**).

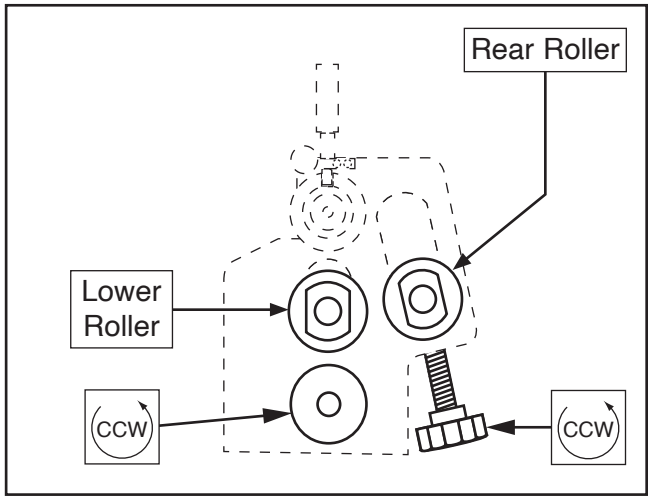


Figure 23. Slip roll preparation.

3. Connect machine to power by inserting power cord plug into a matching receptacle, then turn main power switch ***ON***.

4. Press ON button to turn machine ***ON***.

Bending Wire/Rods

This slip roll can be used to shape wires, rods, and small-diameter tubing. The wire grooves can also be used when rolling sheet metal that has a wire bead at one end.

To bend wire/rods:

1. Place workpiece into smallest possible groove on wheel. The three sizes are 5/16", 3/8", and 1/2" (see **Figure 24**).

   Example: Suppose you want to bend a piece of 1/4" rod. Though it would fit in any of the three grooves, you would use the 5/16" groove since it is the smallest possible groove that the rod will fit into.

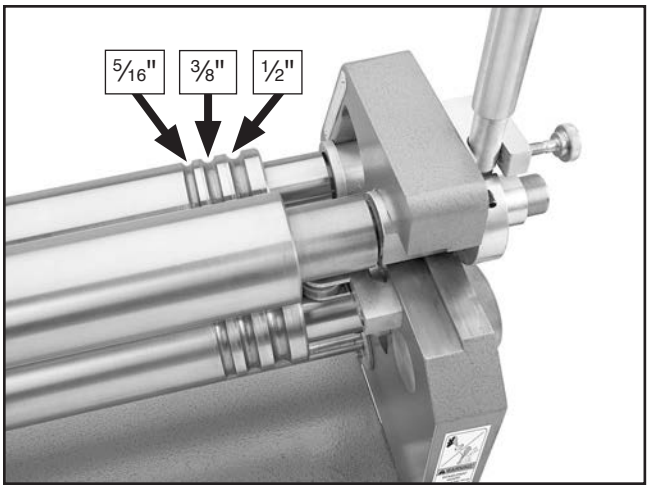


Figure 24. Roller grooves location.

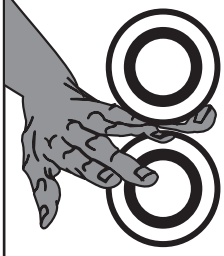
2. Process material through machine as described in **Creating Bends** on **Page 23**.

   — If you want to make a loop of wire, follow instructions in **Creating Cylinders** on **Page 24**.

Flat Rolling

This slip roll can be used to flat roll sheet metal up to 16 gauge. This can be done to straighten sheet metal that is slightly out of form.

Note: *Plastic deformation is permanent. Once a workpiece has been sharply creased or bent, it cannot be straightened using this slip roll.*



⚠WARNING

The main rollers of this machine present a crushing hazard. Make sure no body part or clothing is near the area between the rollers. Failure to follow this warning may result in fingers, hair, or clothing being pulled into the machine, causing personal injury.

To flat roll a workpiece:

1. Place workpiece between upper and lower rollers, as shown in **Figure 25**. Turn thickness adjustment knob to lift lower roller until workpiece is held snug between upper and lower rollers.

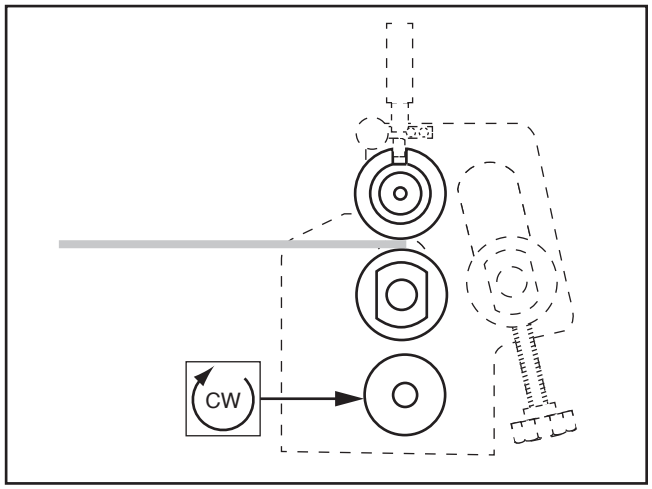


Figure 25. Raising lower roller for flat rolling.

2. Remove workpiece from between rollers, then raise lower roller slightly by rotating thickness adjustment knob approximately ¼ turn. Also, make sure rear roller is lowered completely (see **Figure 26**).

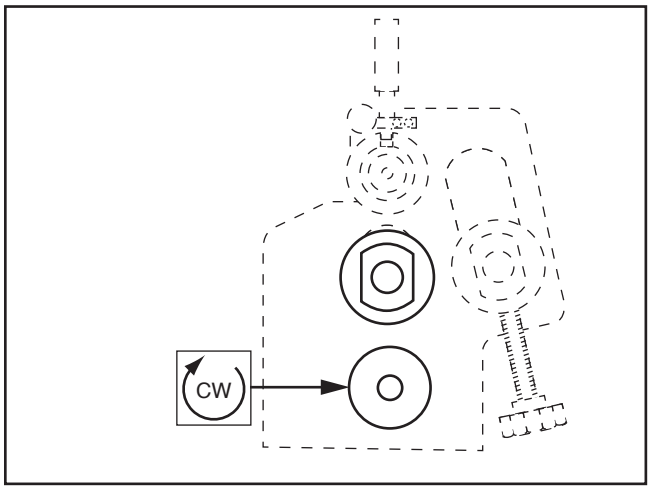


Figure 26. Raising lower roller ¼ turn.

3. With help of an assistant, feed workpiece into rollers (see **Figure 27**).

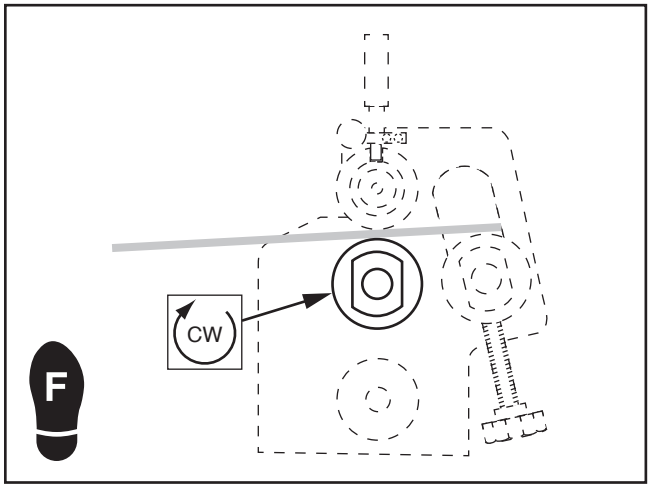
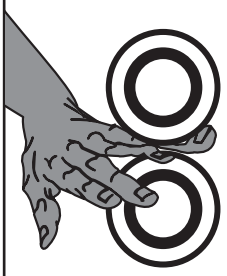


Figure 27. Flat rolling workpiece.

Creating Bends

This slip roll can create constant-radius bends in sheet metal up to 16 gauge.

Note: *The method for creating a specific radius is a trial-and-error process. Due to the many variations among metal workpieces, no single positioning will create the same curve on all materials. We recommend using scrap pieces the same dimensions and material as the final workpiece until the desired curve is achieved.*



⚠WARNING

The main rollers of this machine present a crushing hazard. Make sure no body part or clothing is near the area between the rollers. Failure to follow this warning may result in fingers, hair, or clothing being pulled into the machine, causing personal injury.

To create a bend in a workpiece:

1. Place workpiece between upper and lower rollers, as shown in **Figure 28**. Turn thickness adjustment knob to raise lower roller until workpiece is held snug between upper and lower rollers.

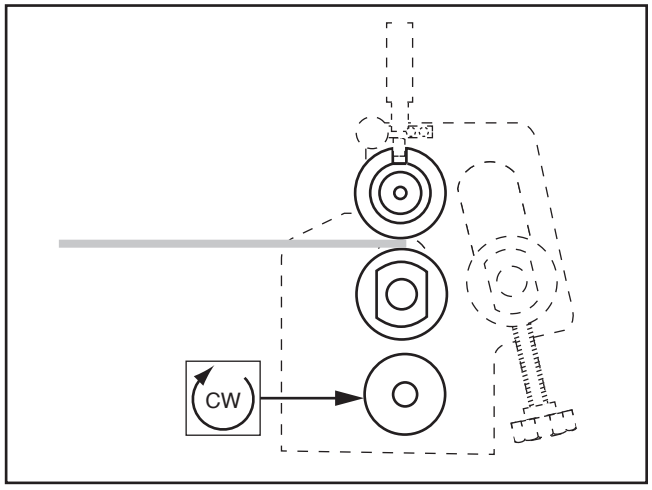


Figure 28. Raising lower roller.

2. Feed workpiece until leading edge is directly above rear roller, as shown in **Figure 29.**

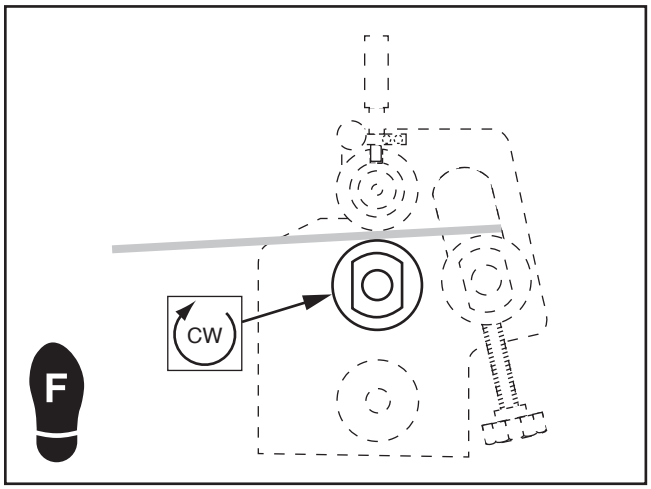


Figure 29. Feeding workpiece.

3. Turn radius adjustment handwheels to lift rear roller until desired radius bend is reached (see **Figure 30**). Make sure to turn handwheels equal amounts so rear roller is always parallel with other rollers. Failure to do so will create a larger radius on one end than the other, resulting in a cone or spiral shape.

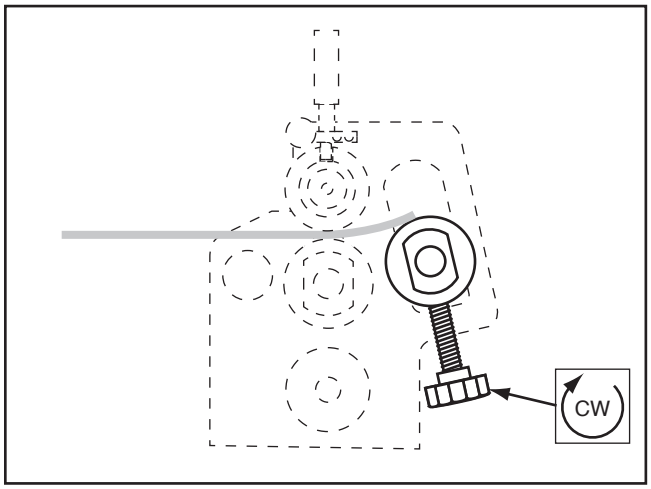
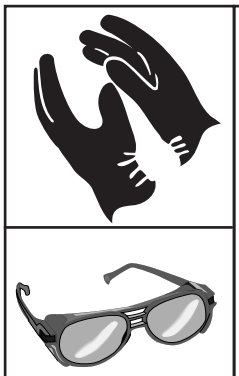


Figure 30. Setting radius.



⚠WARNING

This machine poses a cutting hazard if workpieces are not properly handled. If necessary, get assistance to support workpiece. Make sure all helpers are wearing leather gloves and safety glasses when preparing sheet metal.

⚠CAUTION

Depending on size and shape of workpiece, you may need assistance to support workpiece as it exits machine. Failure to adequately support workpiece may result in workpiece falling, causing injuries.

4. Press forward pedal to process material through slip roll. Continue until workpiece is completely through upper and lower rollers (see **Figure 31**).

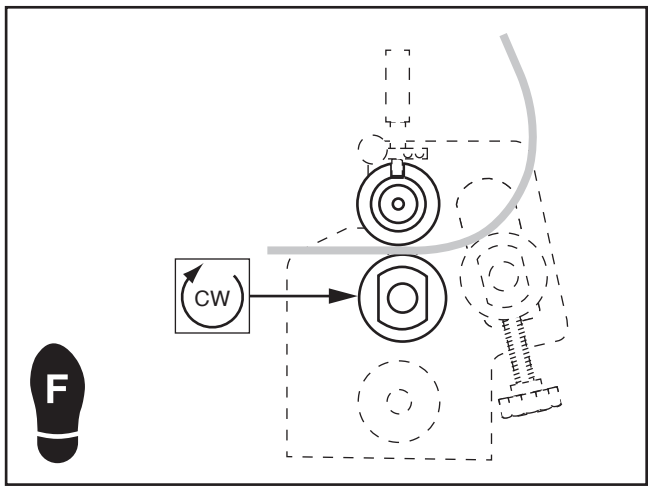


Figure 31. Processing workpiece.

Creating Cylinders

This slip roll can be used to easily and accurately create cylinders.

If you know the diameter of the cylinder you want to create, use the formula below to calculate the length of material needed.

$$C=\pi D$$

C=Circumference
(Length of Material Needed)

π=Pi (Approximately 3.14)

D=Diameter

Example: Suppose you want to create a 6" diameter cylinder. You would use the above formula as follows:

C=πD
C=3.14 x 6"
C=18⅞"

The result of 18⅞" indicates that you need to start with a piece of sheet metal that is approximately 18⅞" in length to create a 6" diameter cylinder.

You can use the slip roll to create a bend with the correct radius so that the two ends meet, forming a 6" diameter cylinder (see **Figure 32**).

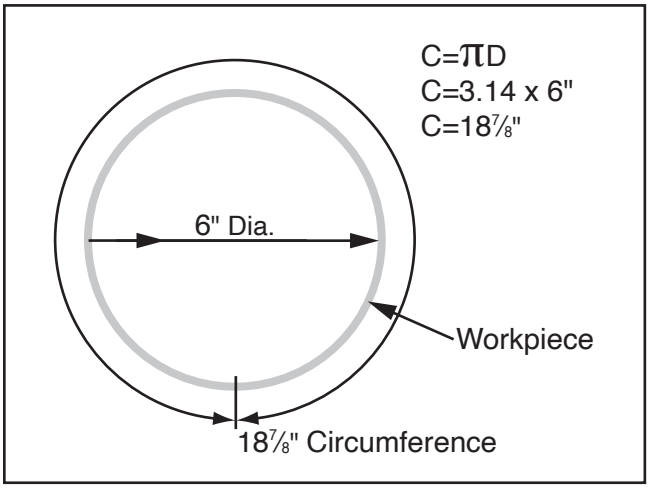


Figure 32. Calculating circumference example.

Once you have the necessary length workpiece, follow the steps below to create the cylinder.

Note: *The method for creating a specific radius is a trial-and-error process. Due to the many variations among metal workpieces, no single positioning will create the same curve on all materials.*

To create a cylinder:

1. Place workpiece between upper and lower rollers, as shown in **Figure 33.** Turn thickness adjustment knob to lift lower roller until workpiece is held snug between upper and lower rollers.

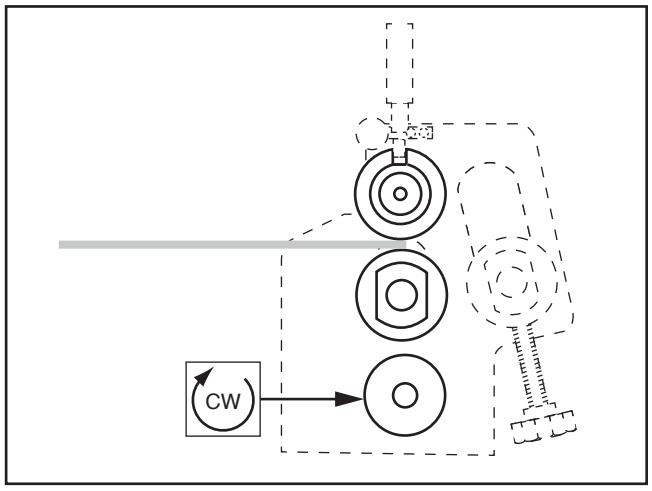


Figure 33. Raising lower roller.

2. Press forward pedal to feed workpiece until it is approximately halfway through rollers.

3. Turn radius adjustment handwheels to lift rear roller until desired radius bend is reached (see **Figure 34**). Make sure to turn handwheels equal amounts so rear roller is always parallel with other rollers. Failure to do so will create a larger radius on one end than the other, resulting in a cone shape.

   Note: *Always err on the side of making the radius too large rather than too small. It is easy to decrease the radius but very difficult to increase the radius later.*

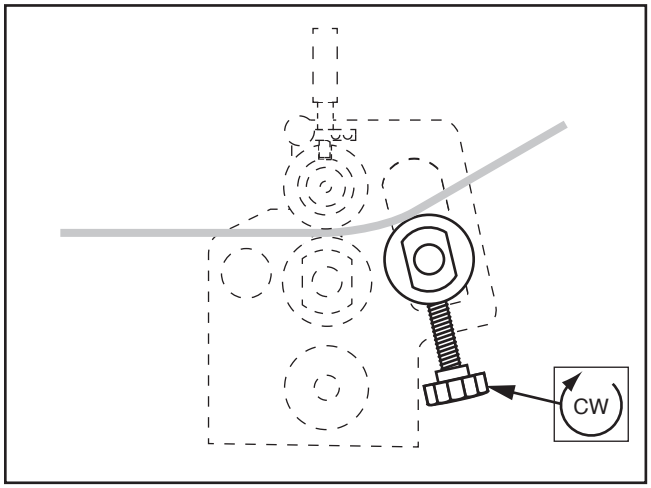


Figure 34. Setting radius.

4. Press forward pedal to process material through slip roll. Continue until workpiece is completely through upper and lower rollers (see **Figure 35**).

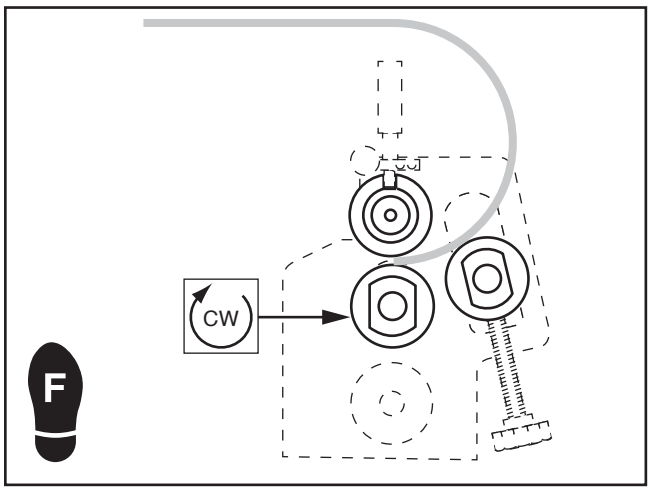


Figure 35. Processing workpiece.

5. Rotate workpiece 180˚, insert curved end into slip roll, then process workpiece through machine, as shown in **Figures 36–37.**

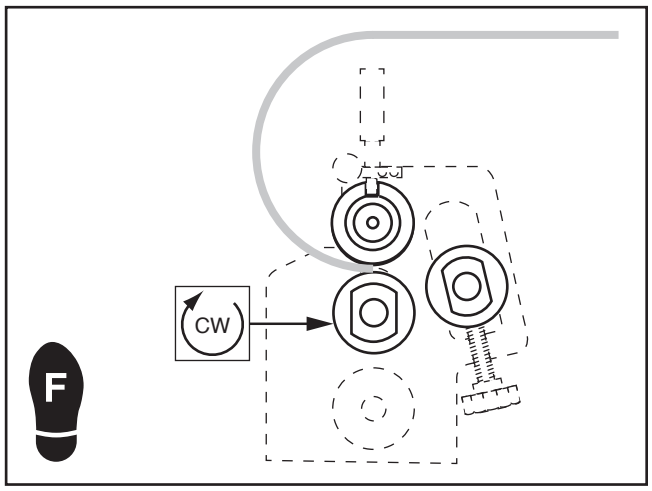


Figure 36. Re-inserting workpiece.

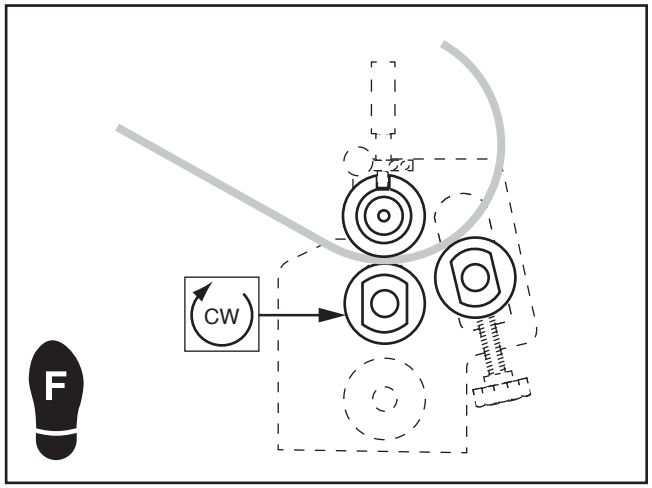


Figure 37. Creating cylinder.

6. Continue to process workpiece until cylinder is formed, as shown in **Figure 38**.

   — If ends of cylinder *do not* meet, lift rear roller equally at both ends, then process entire cylinder through slip roll again. Repeat as necessary.

   — If ends of cylinder overlap, remove cylinder as described in **Removing Workpiece** on **Page 35**. Then, either attempt to increase radius by manually bending it, or scrap workpiece and start over at **Step 1** with a new workpiece.

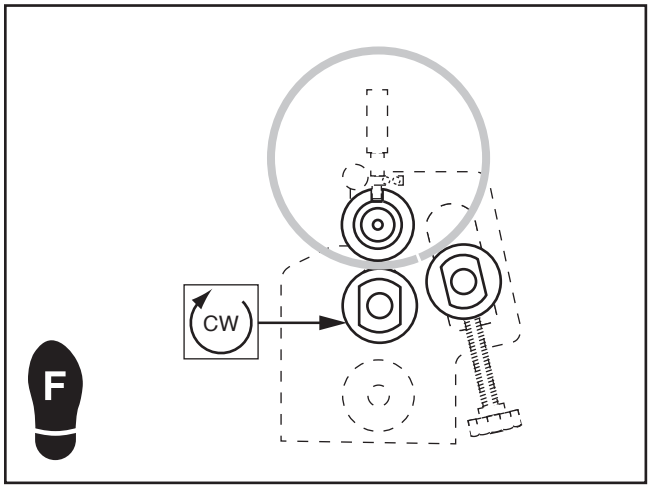


Figure 38. Finishing cylinder.

7. Remove cylinder as described in **Removing Workpiece** on **Page 35**.

Creating Cones

Bending cones requires more advanced equations and techniques than cylinders. The following section explains the basic principles for bending a truncated, concentric cone. If you require information for bending more complicated cones, please consult outside training, books, and other research.

Similar to the process for bending cylinders, if you know the two diameters and the height of the cone you want to create (see **Figure 39**), you can use those values to determine the dimensions of the initial, flat workpiece before bending.

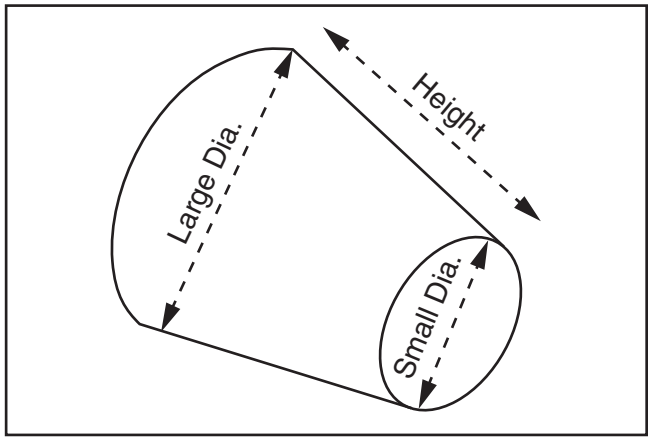


Figure 39. Example of known cone dimensions.

The Model G0971 can bend cylinder and cone diameters as small as 3". Since a "true" cone requires one of the diameters to equal 0", figures and steps in this section refer to a "truncated cone", or a cone lacking an apex whose top is parallel to the base (see **Figure 40**).

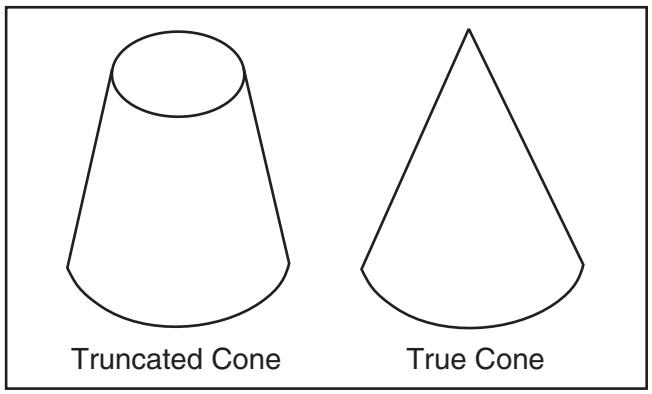


Figure 40. Example of a truncated and true cone.

There are 5 values you will need to calculate in order to cut a flat workpiece that will bend into a functional cone: LargeC, SmallC, RadiusH, TConeH, and TConeRadiusH.

LargeC and SmallC

Use the following formulas to calculate the circumference of both cone openings.

LargeC=πLargeD,
SmallC=πSmallD

LargeC=Large Circumference
(Arc Length of Material Needed at Larger End)

SmallC=Small Circumference
(Arc Length of Material Needed at Smaller End)

π=Pi (Approximately 3.14)

LargeD=Large Diameter

SmallD=Small Diameter

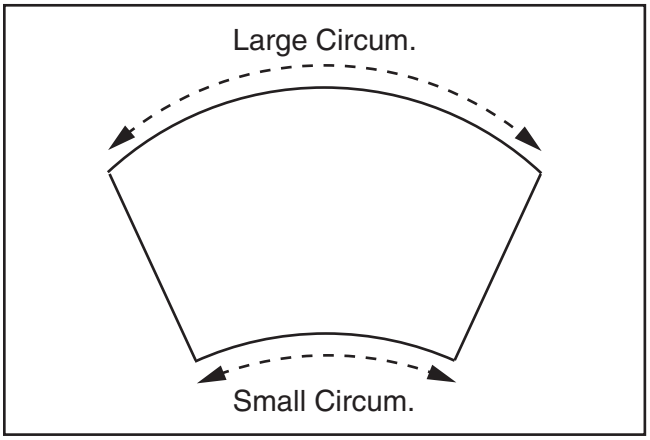


Figure 41. Location of small and large circumference of flat workpiece.

Example: Suppose you want to create a cone with a 5" diameter at one end and a 3" diameter at the other end. You would use the circumference formulas as follows:

LargeC=πLargeD
LargeC=3.14 x 5"
LargeC=$15\frac{11}{16}$"

SmallC=πSmallD
SmallC=3.14 x 3"
SmallC=$9\frac{7}{16}$"

The results indicate that a piece of sheet metal needs an arc on one side of approximately 15 11/16" and an arc of 9 7/16" on the other side, as shown in **Figure 42**.

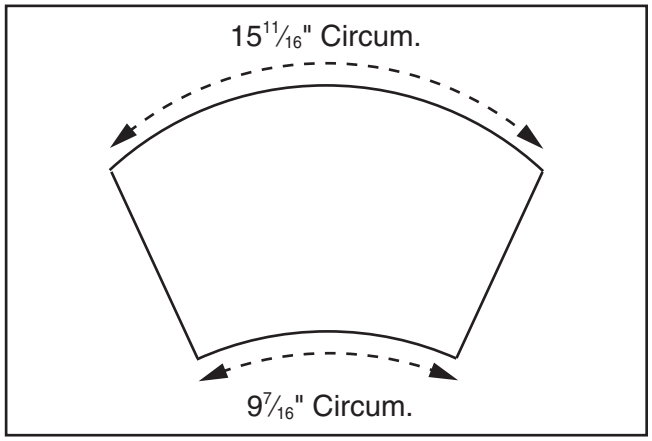


Figure 42. Example of calculated arc circumferences from known diameters.

RadiusH

Next we need to figure out the radius height.

RadiusH=$\sqrt{(\text{ConeH})^2 + (\text{LargeD}/2 - \text{SmallD}/2)^2}$

RadiusH=Flat Workpiece Height
(Width of Material Needed between Two Arcs)

LargeD=Large Diameter

SmallD=Small Diameter

ConeH=Finished Cone Height

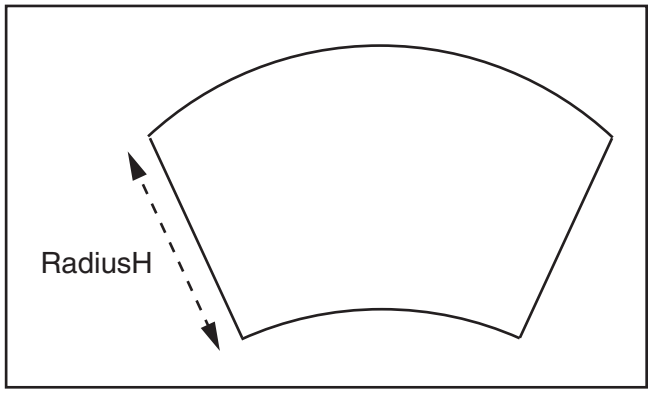


Figure 43. Radius height of flat workpiece.

Radius height differs from the actual cone height because, as you can see from **Figure 44**, the radius height is not 90° in relation to table or floor.

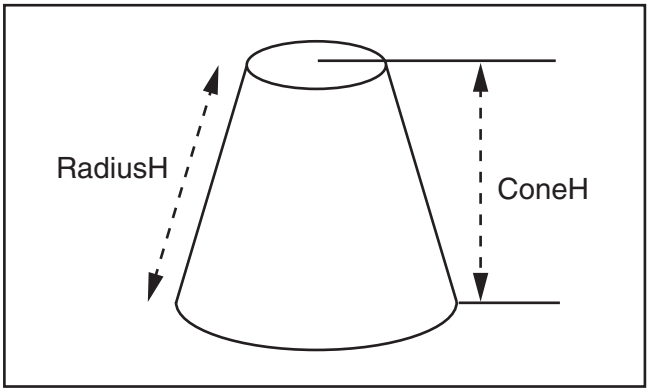


Figure 44. Difference between radius height and overall cone height.

Suppose the cone in the previous example has a height of 6". To find the radius height of the cone, you would use the radius height formula as follows:

RadiusH=$\sqrt{(\text{ConeH})^2 + (\text{LargeD}/2 - \text{SmallD}/2)^2}$
RadiusH=$\sqrt{6^2 + (5/2 - 3/2)^2}$
RadiusH=$\sqrt{6^2 + (2.5 - 1.5)^2}$
RadiusH=$\sqrt{6^2 + 1^2}$
RadiusH=$\sqrt{37}$
RadiusH=6.083
RadiusH=6 5/64"

The results indicate that the piece of sheet metal needs a radius height on either side of approximately 6 5/64" (see **Figure 45**).

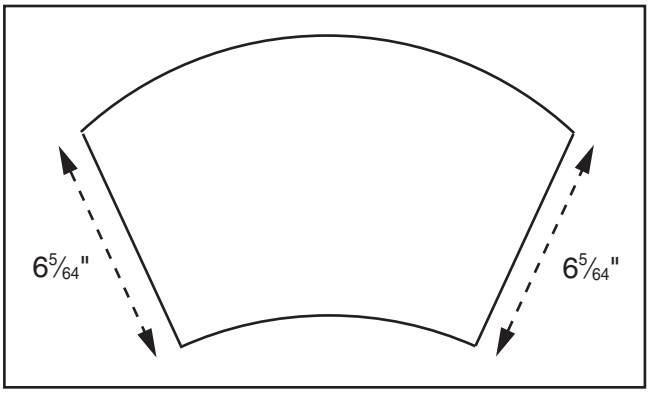


Figure 45. Example of calculated radius height from known diameters and overall cone height.

TConeH

Next, we need to calculate the finished height of the cone if it were a "true" cone:

$$\textbf{TConeH=}\text{ConeH} \times \frac{\text{LargeD}}{(\text{LargeD} - \text{SmallD})}$$

TConeH=Finished True Cone Height

ConeH=Finished Truncated Cone Height

LargeD=Large Diameter

SmallD=Small Diameter

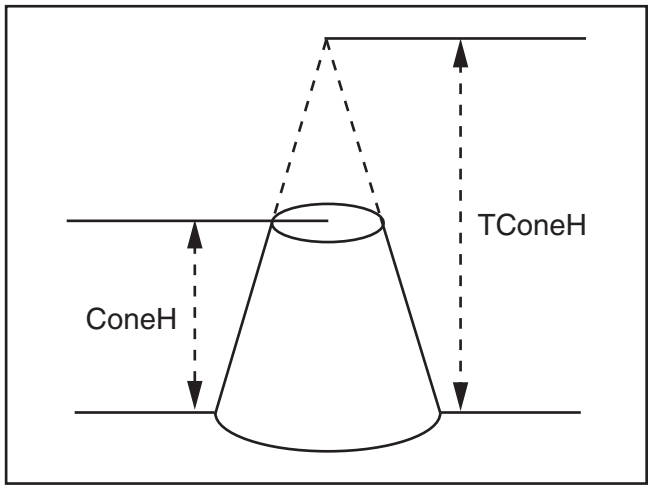


Figure 46. Finished true cone and truncated cone heights measurements.

Following along our previous example, we can plug in the values we know:

$$\textbf{TConeH=}\text{ConeH} \times \frac{\text{LargeD}}{\text{LargeD} - \text{SmallD}}$$

$$\textbf{TConeH=}6 \times \frac{5}{5 - 3}$$

$$\textbf{TConeH=}6 \times \frac{5}{2}$$

$$\textbf{TConeH=}6 \times 2.5$$

$$\textbf{TConeH=}15$$

The results indicate that our truncated cone with a finished height of 6, a small diameter of 3, and a large diameter of 5 would have a height of 15 if the edges continued on to meet at an apex to form a true cone (see **Figure 47**).

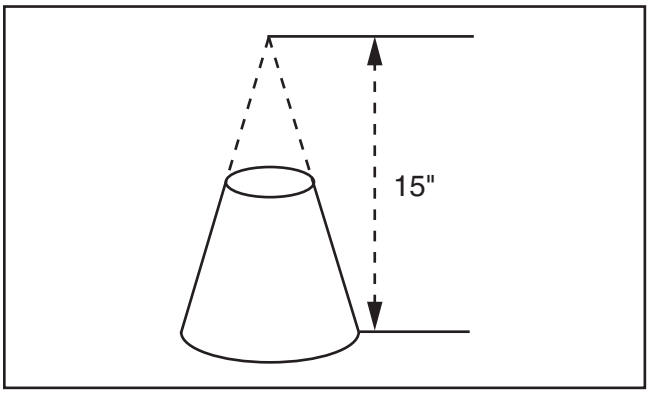


Figure 47. Example of calculated finished true cone height.

TConeRadiusH

The last value we need is the radius height of our cone if it were a true cone. Similar to calculating the radius height for the truncated cone as we did in **RadiusH**, you will use the TConeH value found in the previous section to find the radius height of the true cone.

$$\textbf{TConeRadiusH=}\sqrt{(\text{TConeH})^2 + (\text{LargeD}/2)^2}$$

TConeRadiusH=True Cone Flat Workpiece Height

TConeH=Finished True Cone Height

LargeD=Large Diameter

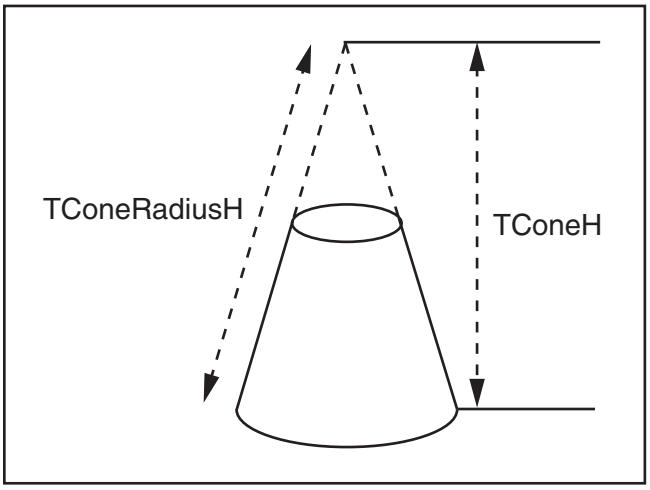


Figure 48. Location of finished and radius true cone heights.

Our example looks like this:

TConeRadiusH=$\sqrt{(TConeH)^2 + (LargeD/2)^2}$
TConeRadiusH=$\sqrt{(15)^2 + (5/2)^2}$
TConeRadiusH=$\sqrt{15^2 + 2.5^2}$
TConeRadiusH=$\sqrt{225 + 6.25}$
TConeRadiusH=$\sqrt{231.25}$
TConeRadiusH=15.207
TConeRadiusH=$15\frac{13}{64}$"

The results indicate that, if our cone extended to become a true cone, the true cone would have a radius height of approximately $15\frac{13}{64}$".

When all the previous values have been calculated, you can use them to prepare and bend your workpiece as described in **Creating a Cone**.

Creating a Cone

Once all the necessary values have been calculated, you can prepare and bend the workpiece.

Items Needed	**Qty**
Marker/Pencil	1
String or Cord	As Needed
Scissors	1 Pr.
Measuring Tape	1
Ruler/Straightedge	1
Metal Shear (or other metal-cutting tool)	1

To create a cone:

1. Locate or cut a round or square workpiece that has a length and width at least twice as large as calculated **TConeRadiusH** (see **Figure 49**).

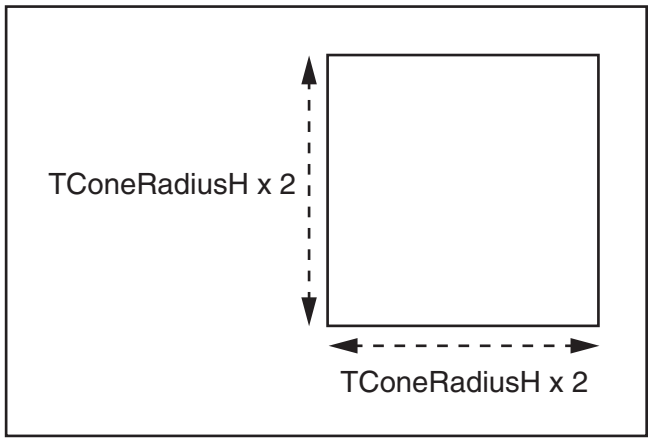


Figure 49. Workpiece with required length and width.

2. Find and mark center point on workpiece (see **Figure 50**).

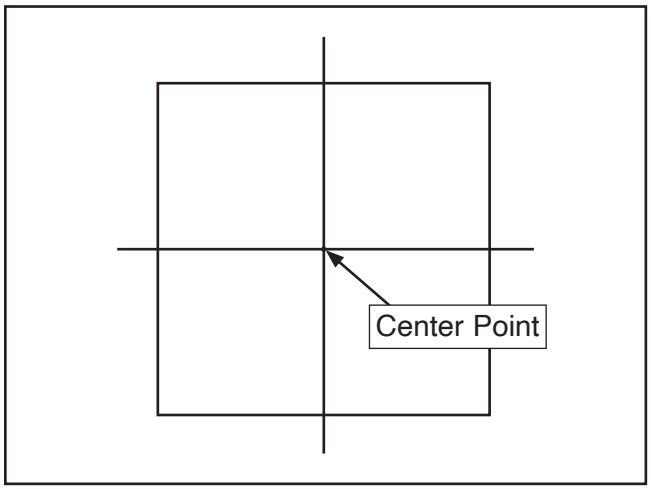


Figure 50. Center point marked on workpiece.

3. Measure and cut string or cord to length of **TConeRadiusH**.

4. Press one end of string to center point marked in **Step 2**, then use other end to draw outer circumference of cone on workpiece (see **Figure 51**).

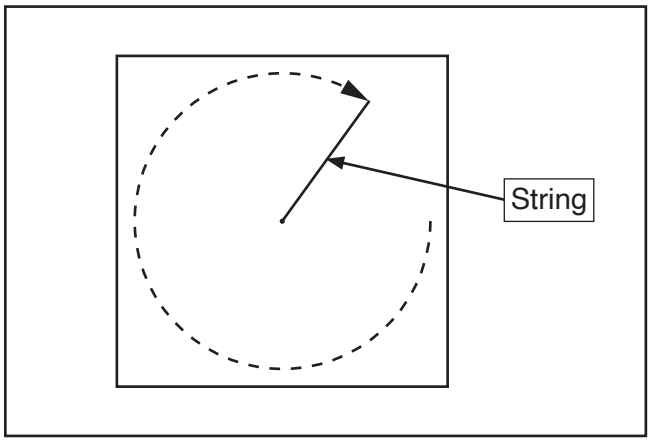


Figure 51. Using string to draw outer circumference circle.

5. Cut length of **RadiusH** off of string to repeat **Step 4** for inner circumference, as shown in **Figure 52**.

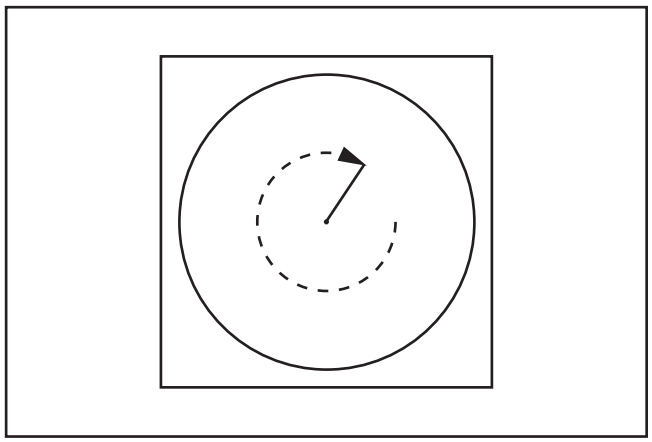


Figure 52. Using string to draw inner circumference circle.

6. Mark straight line from center point mark to outer circle (see **Figure 53**). Location of this line does not matter.

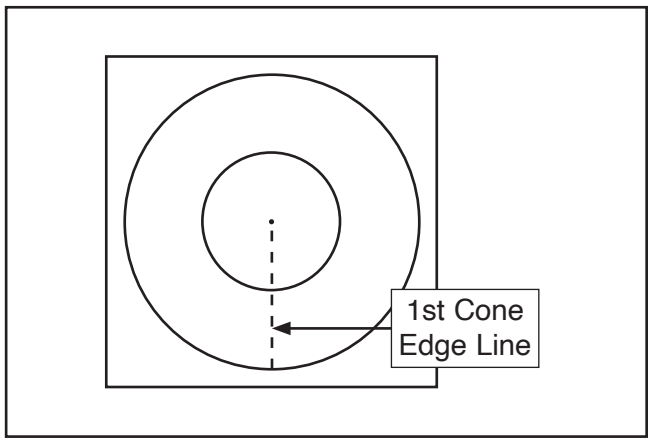


Figure 53. Straight line from center to outer circle.

7. Measure and cut fresh piece of string or cord to length of **LargeC**.

8. Lay **LargeC** string over outer circle line, beginning at line marked in **Step 6**, and mark outer circle at end of string (see **Figure 54**).

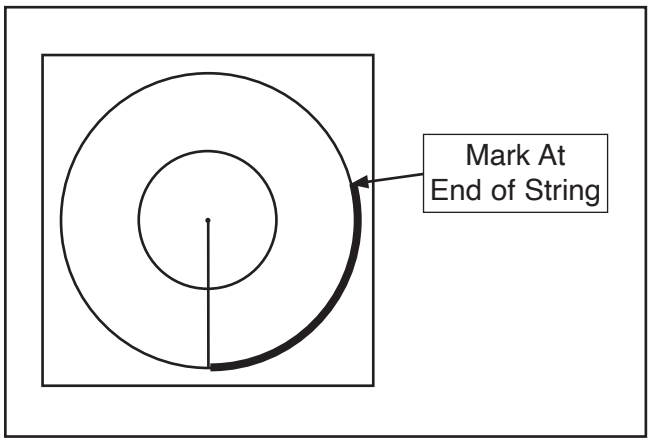


Figure 54. Using string to mark large circumference value.

9. Mark straight line from center point mark to outer circle mark from **Step 8**, as shown in **Figure 55**.

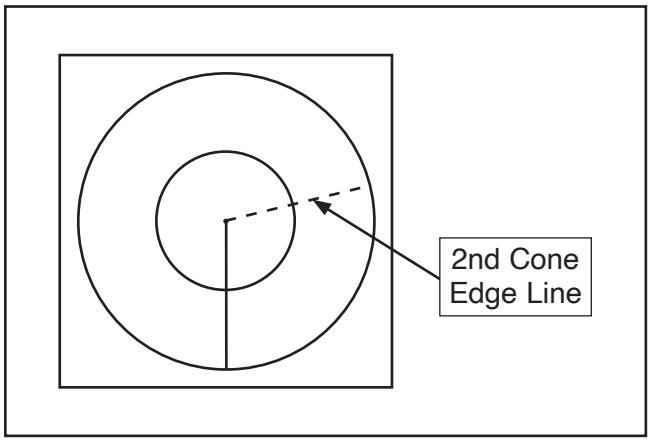


Figure 55. Straight line from center to large circumference mark.

10. Measure values shown in **Figure 56** and compare to values calculated in previous sections.

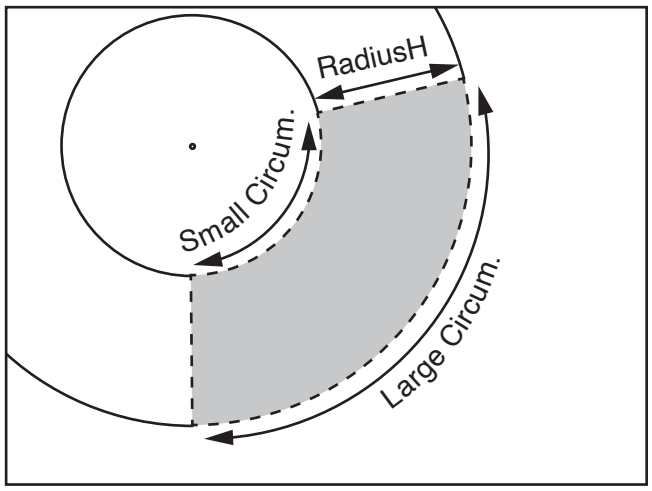


Figure 56. Dimensions to measure for accuracy.

— If values *do not* match, a calculation or measurement is incorrect. Correct calculation or measurements before proceeding.

— If values *do* match, calculations and measurements are correct. Proceed to **Step 11**.

11. Cut workpiece to measurements in previous steps to prepare for bending operation.

Note: *The method for creating specific radii is a trial-and-error process. Due to the many variations among metal workpieces, no single positioning will create the same curve on all materials. We suggest practicing on scrap material of a similar size and thickness before attempting the operation on a desired workpiece.*

12. Turn thickness adjustment knob to adjust lower roller to approximately 1/4" below top roller (see **Figure 57**).

13. Lower rear roller to lowest position (see **Figure 57**).

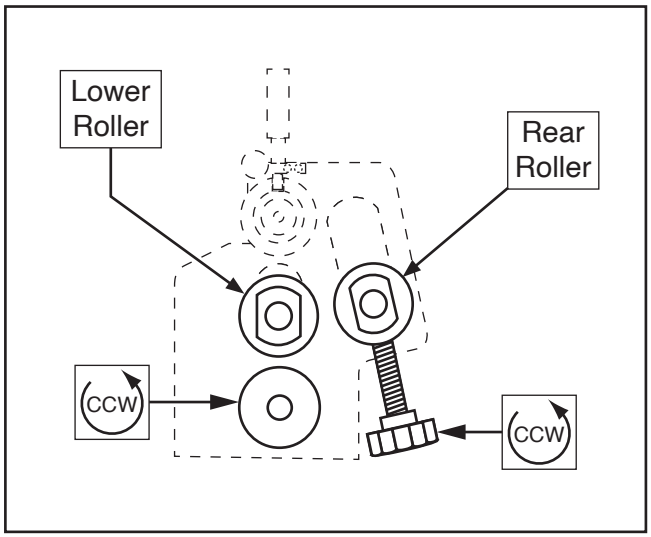


Figure 57. Slip roll preparation.

14. Place workpiece between upper and lower rollers, as shown in **Figure 58.** Turn thickness adjustment knob to raise lower roller until workpiece is held snugly between upper and lower rollers.

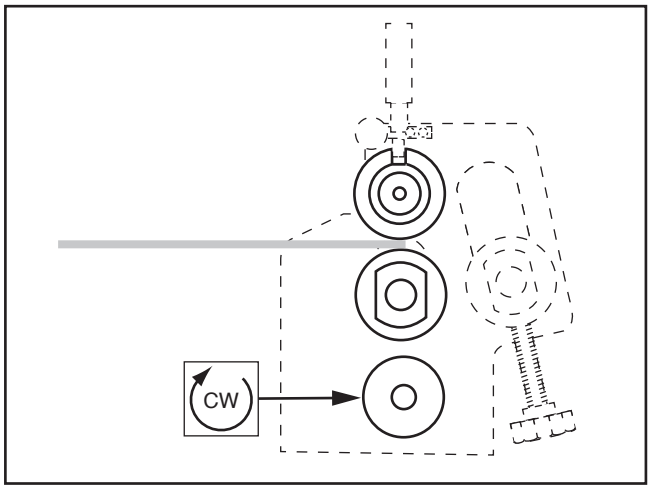


Figure 58. Raising lower roller.

Note: *Front edge of workpiece should be parallel with front rollers, and large circumference side should be on the right, as shown in* ***Figure 59****.*

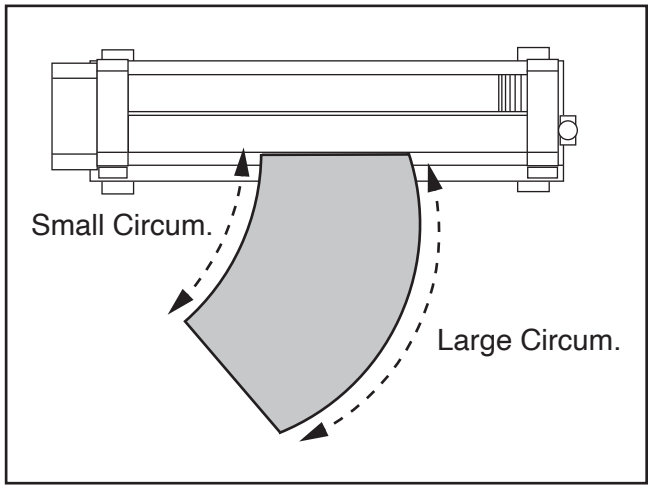


Figure 59. Inserting workpiece for cone-bending operation.

15. Press forward pedal to feed workpiece until front edge of workpiece is directly over rear roller (see **Figure 60**).

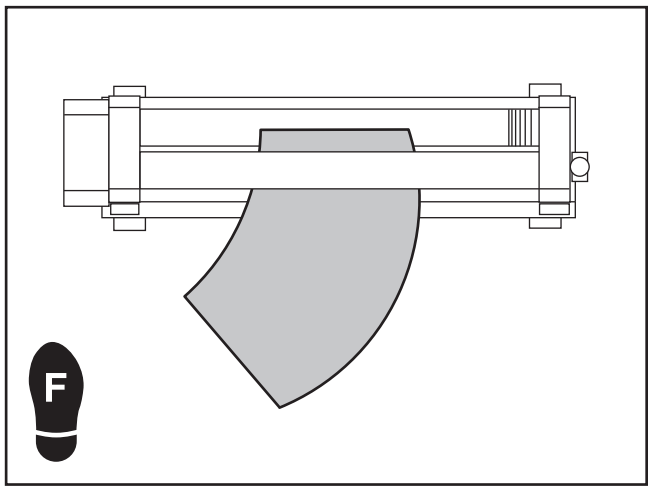


Figure 60. Workpiece fed so edge is over rear roller.

16. Turn radius adjustment handwheels to raise rear roller until larger desired radius bend is reached (see **Figure 61**). For this step, turn handwheels equal amounts so rear roller is parallel with other rollers.

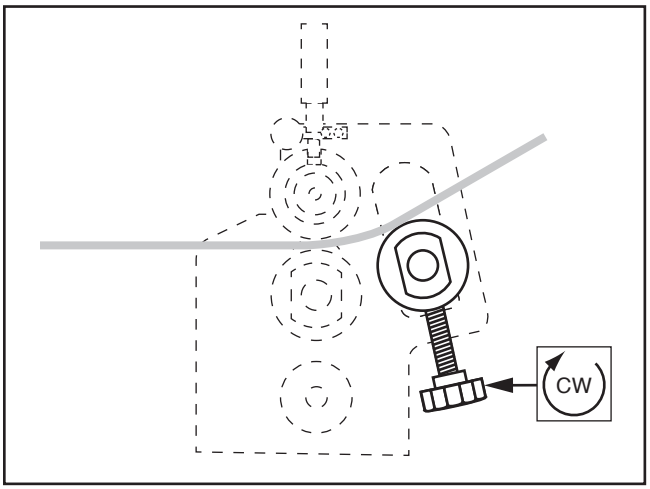


Figure 61. Setting larger bending radius.

17. Adjust left radius adjustment handwheel further until smaller desired radius bend is reached (see **Figure 62**). This will create a smaller radius on left side than right side.

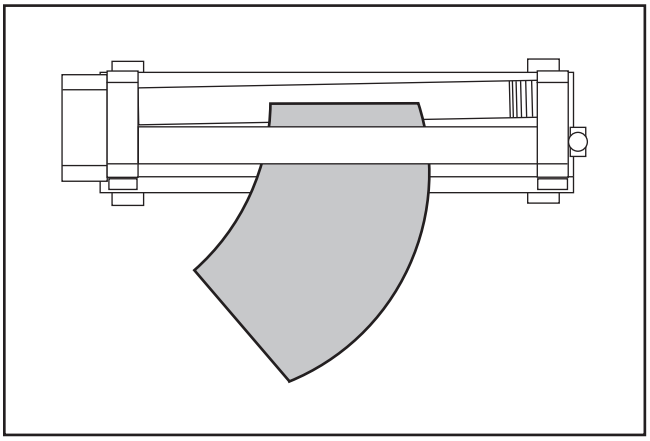


Figure 62. Example of unequal bending radii for bending a cone.

Note: *Always err on the side of making radius too large rather than too small. It is easy to decrease radius but very difficult to increase radius later.*

18. Press forward pedal to feed workpiece through machine. Continue feeding until workpiece is completely through upper and lower rollers.

— If ends of cone *do not* meet, one or both of bending radii is too large. Adjust rear roller up on side (or sides) that need adjustment, then feed entire cylinder through machine again. Repeat as necessary.

Note: *This process can take many minor adjustments to obtain the results you want.*

19. Rotate release lever lock knob counterclockwise until upper roller release lever can be pulled down, and flat edges of upper roller bracket are parallel with slots in frame (see **Figure 63**).

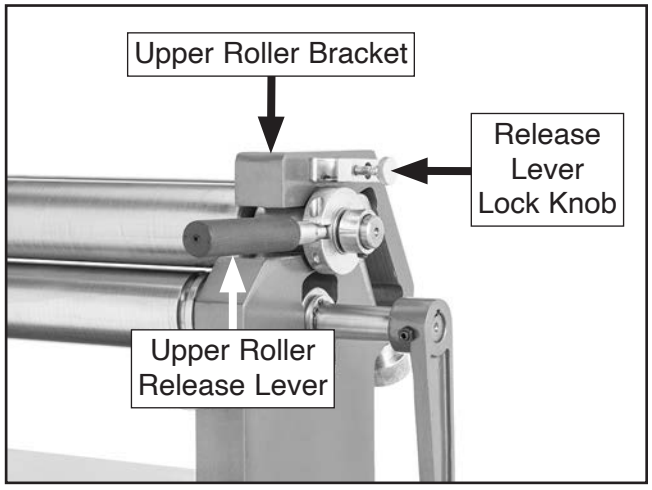


Figure 63. Example of upper roller release lever pulled down.

20. Slide upper roller out from upper roller bracket (see **Figure 64**), remove workpiece from upper roller, then slide upper roller back into bracket.

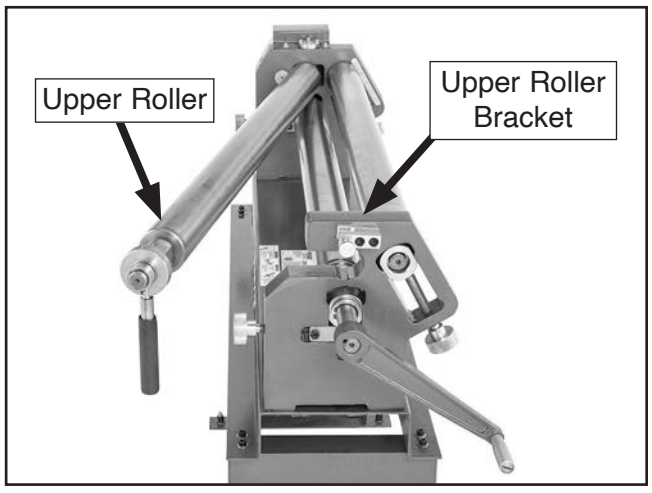


Figure 64. Example of upper roller released (workpiece removed for clarity).

21. Rotate upper roller release lever upward to its vertical position, and tighten release lever lock knob to secure upper roller, as shown in **Figure 65**.

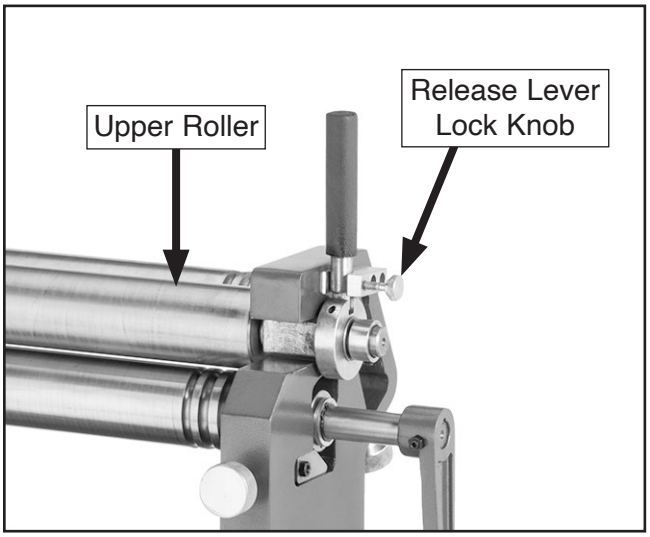


Figure 65. Example of upper roller secured.

— If ends of cone overlap, either attempt to increase radius (or radii) by manually bending, or scrap workpiece and start at **Step 1** with new workpiece.

Removing Workpiece

The workpiece can be removed by releasing the upper roller, or by pressing the reverse pedal on the control pedestal.

Releasing Upper Roller

1. DISCONNECT MACHINE FROM POWER!

2. Rotate release lever lock knob counterclockwise until upper roller release lever can be pulled down, and flat edges of upper roller bracket are parallel with slots in frame, as shown in **Figure 66**.

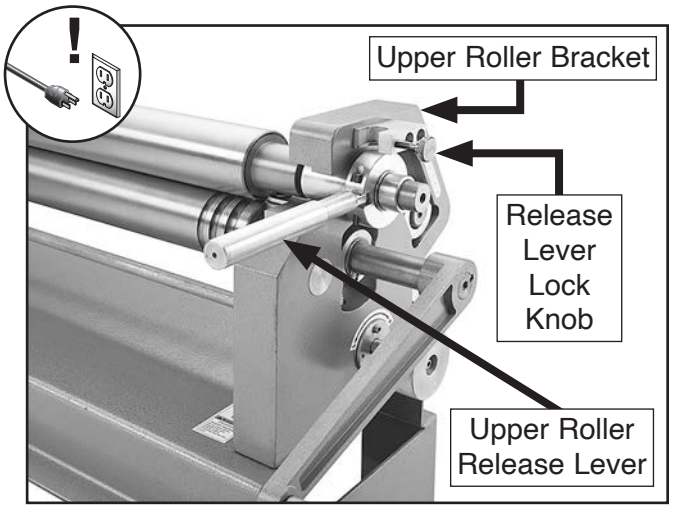


Figure 66. Example of lock knob loosened and release lever pulled down.

3. Slide upper roller out from frame, remove workpiece from upper roller, then slide top roller back into frame (see **Figure 67**).

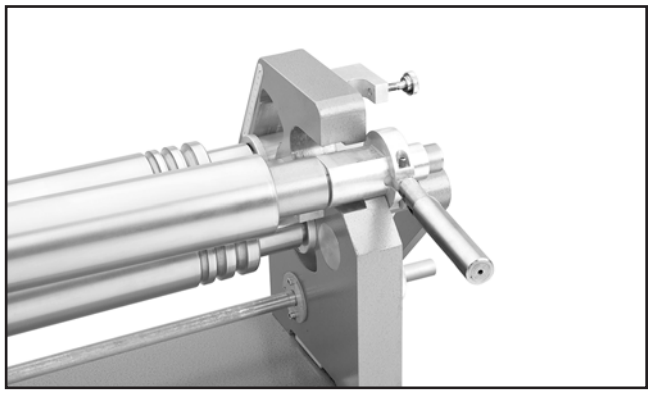


Figure 67. Example of upper roller released (workpiece removed for clarity).

4. Rotate lever upward to its vertical position and tighten lock knob to secure upper roller (see **Figure 68**).

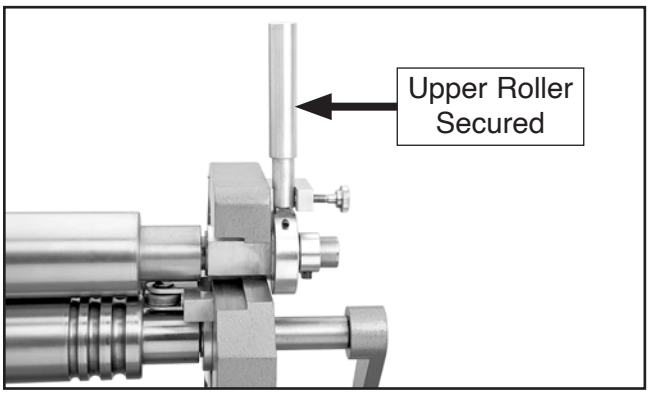


Figure 68. Example of upper roller secured.

Pressing Reverse Pedal

1. Press reverse pedal on control pedestal to reverse feed direction of workpiece, as shown in **Figure 69**.

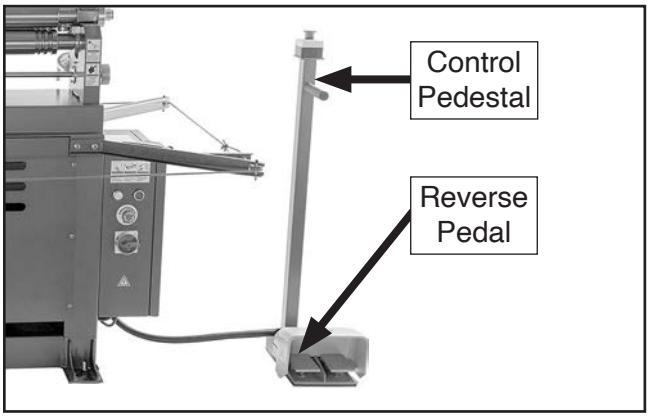


Figure 69. Reverse pedal on control pedestal.

2. With a firm grasp on workpiece, press reverse pedal until workpiece is released from rollers (see **Figure 70**).

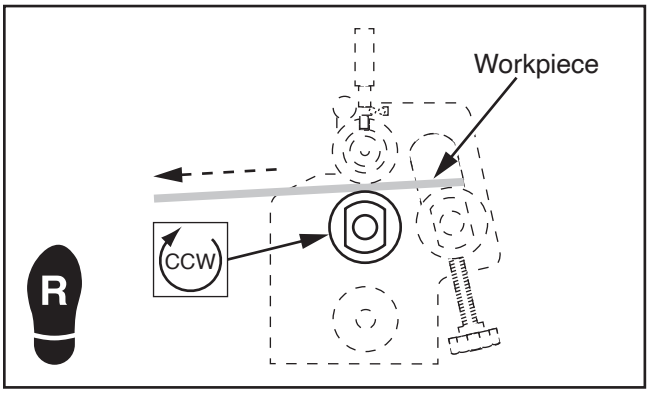


Figure 70. Workpiece reversing through rollers.

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.

G5618—Deburring Tool with Two Blades
The quickest tool for smoothing freshly sheared metal edges. Comes with two blades, one for steel and aluminum and one for brass and cast iron.

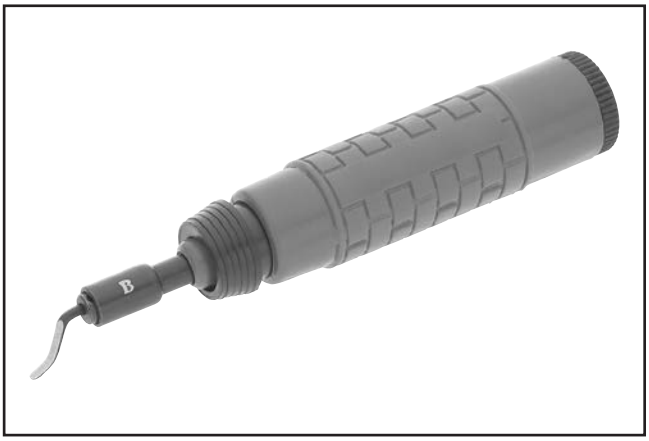


Figure 71. G5618 Deburring Tool.

H5503—Electric Sheet Metal Shear
This electric sheet metal shear features a ½ HP, 110V, 2500 RPM, 3.8 amp motor with a 360 degree adjustable swivel head and variable speed range from 0 to 2500 SPM. Cuts up to 14 gauge in mild steel and 18 gauge in stainless, at up to 150 inches per minute.

Figure 72. H5503 Electric Sheet Metal Shear.

T30673—Heavy-Duty Roller Stand
This stand comes with 2" steel ball bearing rollers that assist with infeed and outfeed support. With the heavy-duty cast-iron base, this stout roller stand helps support lumber, piping, and more up to 2000 pounds! With three holes on the base, it can even be bolted to the floor for increased stability. Height can be easily adjusted from 24" to 38", and the stand measures 14" wide.

Figure 73. T30673 Heavy-Duty Roller Stand.

D4132—4 Head Suction Cup
Handle plate glass, glass mirrors, and sheet metal with safety and security. Simple lever action provides tremendous gripping power on any flat, smooth material. Weight Capacity: 260 lbs.

Figure 74. D4132 4 Head Suction Cup.

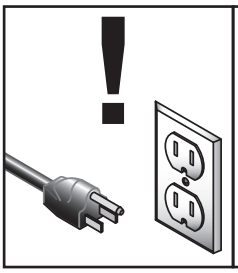
G0878—40A Plasma Cutter
The G0878 40 Amp Plasma Cutter is a compact 25-pound unit with the cutting power to quickly cut through steel up to ½" thick. Just attach the unit to your air compressor with the easy-to-attach ¼" NPT fitting, plug the cutter into your standard 120V household power, and you're ready to go.

Figure 75. G0878 40A Plasma Cutter.

T10718—50" Deluxe Pan and Box Brake
This deluxe pan and box brake is used to make straight bends, boxes, pans, and trays in sheet metal that is 16-gauge or thinner.

Figure 76. T10718 50" Deluxe Pan and Box Brake.

SECTION 6: MAINTENANCE



⚠WARNING
To reduce risk of shock or accidental startup, always disconnect machine from power before adjustments, maintenance, or service.

Schedule

For optimum performance from this machine, this maintenance schedule must be strictly followed.

Ongoing
To minimize your risk of injury and maintain proper machine operation, shut down the machine immediately if you ever observe any of the items below, and fix the problem before continuing operations:

- Loose mounting bolts.
- Damaged rollers.
- Worn or damaged wires.
- Any other unsafe condition.

Weekly Maintenance
- Clean and wipe down machine.
- Lubricate gears.
- Lubricate roller bushings.

Monthly Check
- Clean/vacuum dust buildup from inside cabinet and off motor.

Cleaning & Protecting

Cleaning the Model G0971 is relatively easy. Periodically wipe down the rollers to remove dust and debris—this ensures rust-promoting material does not remain on the bare metal surfaces.

Protect the unpainted metal surfaces with regular applications of products like SLIPIT® (see **Figure 77** below for examples).

Recommended Metal Protectants
G5562—SLIPIT® 1 Qt. Gel
G5563—SLIPIT® 11 Oz. Spray

Figure 77. Recommended products for protecting unpainted cast iron/steel parts on machinery.

Lubrication

When lubricating this machine, first clean the components before lubricating them. This step is critical because grime and dust build up on lubricated components, which makes them hard to move. Simply adding more lubricant will not result in smooth moving parts.

T26685—Moly-D ISO 32 Multi-Function Oil
T26419—Syn-O-Gen Synthetic Grease

Figure 78. Recommended lubrication products.

Gears

Remove gear cover and apply a dab of NLGI#2 or equivalent grease to roller gears (see **Figure 79**). Rotate rollers several times in both directions to distribute grease, then wipe away any excess and re-attach cover.

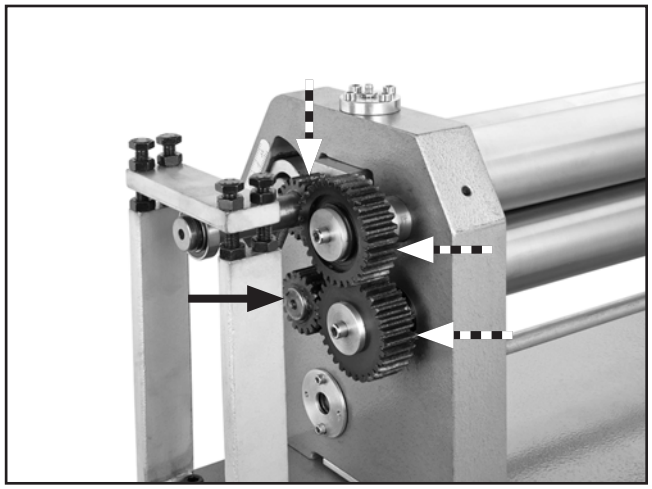


Figure 79. Example of slip roll gears.

Roller Bushings

Use an oil can to apply a few drops of ISO 32 or equivalent oil to the brass bushings of the three rollers on the right side and into the ball oiler on the top left side (see **Figures 80**–**81**). Rotate rollers several times in both directions to distribute the oil, then wipe away any excess.

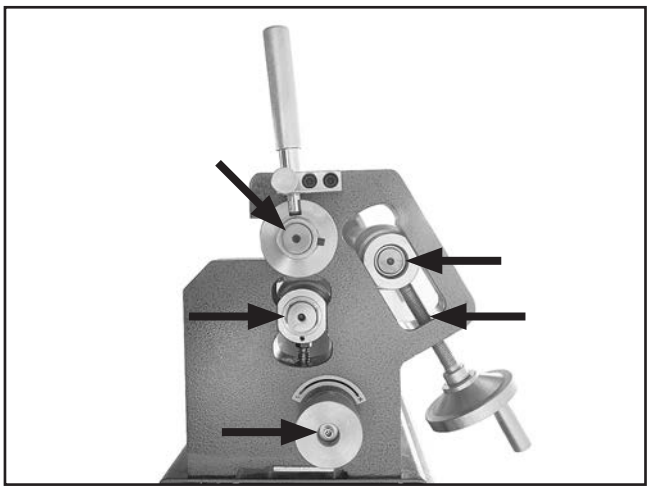


Figure 80. Roller bushings and adjustment knobs/handwheels.

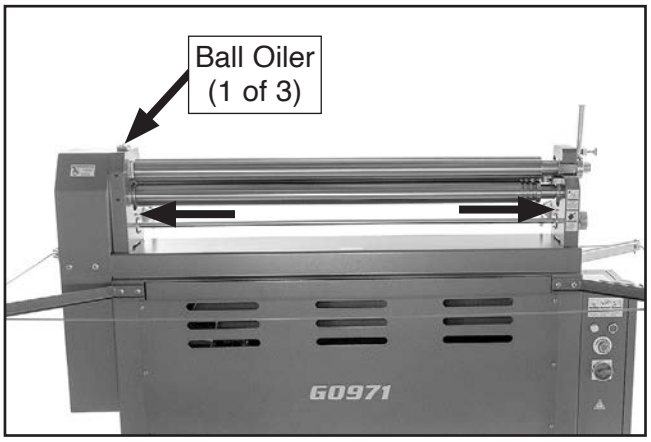
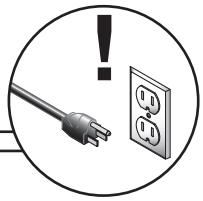


Figure 81. Ball oiler locations.

SECTION 7: SERVICE

Review the troubleshooting procedures in this section if a problem develops with your machine. If you need replacement parts or additional help with a procedure, call our Technical Support. **Note:** *Please gather the serial number and manufacture date of your machine before calling.*

Troubleshooting



Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does not start, or power supply breaker immediately trips after startup.	1. Master power switch in OFF position. 2. EMERGENCY STOP button depressed/at fault. 3. Safety cable switch engaged/at fault. 4. Machine circuit breaker(s) tripped or at fault. 5. Incorrect power supply voltage or circuit size. 6. Power supply circuit breaker tripped or fuse blown. 7. Motor wires connected incorrectly. 8. Thermal overload relay has tripped/at fault. 9. Start capacitor at fault. 10. Contactor not energized/at fault. 11. Wiring broken, disconnected, or corroded. 12. ON button or foot pedal switch at fault. 13. Transformer at fault. 14. Electronic starting switch at fault. 15. Motor or motor bearings at fault.	1. Turn master power switch to ON position. 2. Rotate EMERGENCY STOP button head to reset (**Page 19**). Replace if at fault. 3. Reset safety cable switch (**Page 18**)/replace switch. 4. Reset circuit breaker(s). 5. Ensure correct power supply voltage and circuit size (**Page 9**). 6. Ensure circuit is free of shorts. Reset circuit breaker or replace fuse. 7. Correct motor wiring connections. 8. Reset. Adjust or replace if at fault. 9. Test/replace if at fault. 10. Test all legs for power; replace if necessary. 11. Fix broken wires or disconnected/corroded connections. 12. Replace button/switch. 13. Inspect transformer; replace if at fault. 14. Inspect switch; replace if at fault. 15. Replace motor.
Machine stalls or is underpowered.	1. Wrong workpiece material. 2. Motor wires connected incorrectly. 3. Sprocket(s) slipping on shaft. 4. Motor overheated, tripping machine circuit breaker. 5. Run capacitor at fault. 6. Extension cord too long. 7. Contactor not energized/at fault. 8. Motor or motor bearings at fault.	1. Use correct type/size of metal (**Page 5**). 2. Correct motor wiring connections. 3. Tighten/replace loose sprocket shaft(s). 4. Clean motor, let cool, and reduce workload. Reset breaker. 5. Test/repair/replace. 6. Move machine closer to power supply; use shorter extension cord (**Page 10**). 7. Test all legs for power; repair/replace if at fault. 8. Replace motor.
Machine has vibration or noisy operation.	1. Motor or component loose. 2. Motor fan rubbing on fan cover. 3. Motor bearings at fault. 4. Sprocket(s)/gear reducer at fault.	1. Replace damaged or missing bolts/nuts or tighten if loose. 2. Fix/replace fan cover; replace loose/damaged fan. 3. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement. 4. Replace sprocket(s)/rebuild gear reducer for bad gear(s)/bearing(s).

Operations

Symptom	Possible Cause	Possible Solution
Machine creates cones when trying to create cylinders.	1. Rollers are not parallel.	1. Adjust rear roller as necessary to be sure rear roller is parallel with upper/lower rollers (**Page 25**).
A noticeable crease is formed in the workpiece.	1. Excessive pressure applied in one spot.	1. Reduce radius and perform bend in several passes.
Control pedestal does not turn lower roller.	1. EMERGENCY STOP button depressed/at fault. 2. Safety cable switch engaged/at fault. 3. Gear(s)/sprocket(s)/chain slipping/damaged. 4. Control pedestal at fault.	1. Rotate EMERGENCY STOP button head to reset (**Page 19**). Replace if at fault. 2. Reset safety cable switch (**Page 18**)/replace switch. 3. Check/replace gear(s)/sprocket(s)/chain. 4. Replace control pedestal.
Machine does not bend material.	1. Machine capacities are exceeded. 2. Rear roller not engaged.	1. Use materials within capacity of slip roll (**Page 5**). 2. Check/adjust rear roller (**Page 25**).
Edges of cylinder are not straight.	1. Workpiece is not straight when inserted in machine. 2. Lower roller is not parallel to upper roller.	1. Verify workpiece is straight when inserted in machine. 2. Adjust thickness adjustment knob as necessary to align lower roller with upper roller (**Page 25**).
Ends of cone do not meet.	1. Both bending radii too large.	1. Tighten radius adjustment handwheel(s) and repeat operation until cone ends meet (**Page 27**).
Ends of cone do not meet on one side.	1. One bending radii too large.	1. Tighten radius adjustment handwheel(s) and repeat operation until cone ends meet (**Page 27**).
Workpiece does not feed evenly through machine.	1. Lower roller is not parallel to upper roller.	1. Adjust thickness adjustment knob as necessary to align lower roller with upper roller.

SECTION 8: WIRING

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

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

⚠WARNING
Wiring Safety Instructions

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

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

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

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

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

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

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

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

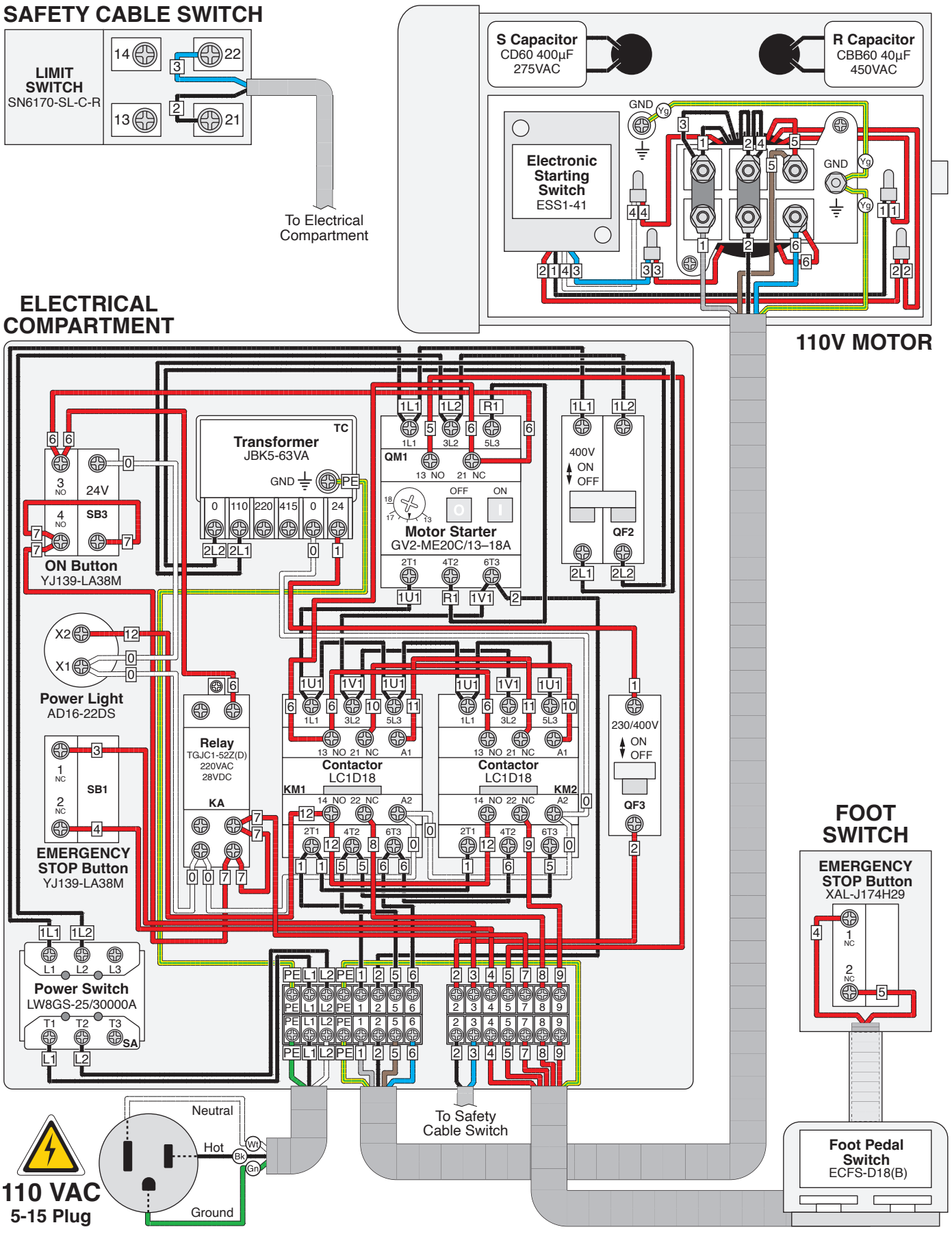
NOTICE

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

COLOR KEY

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

Wiring Diagram



Electrical Components

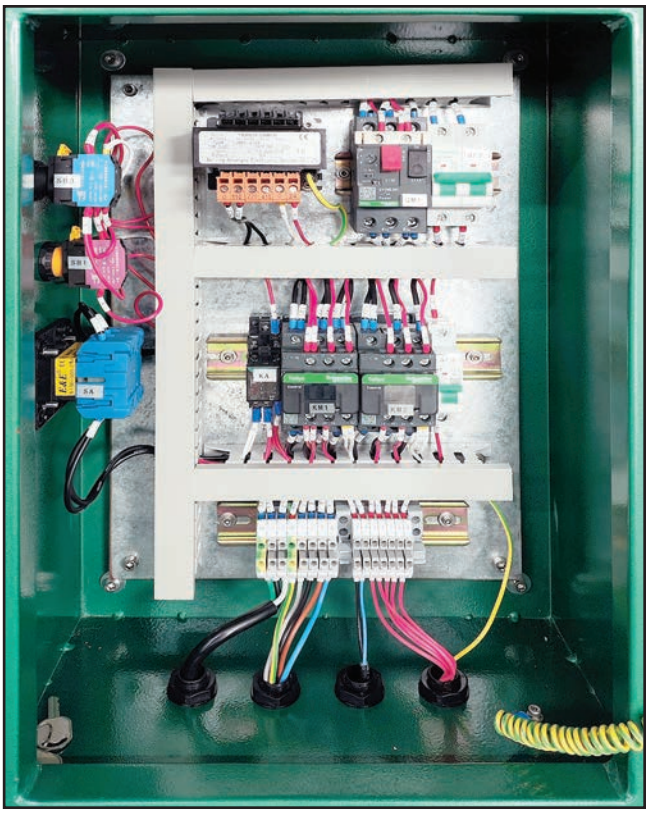


Figure 82. Electrical compartment.

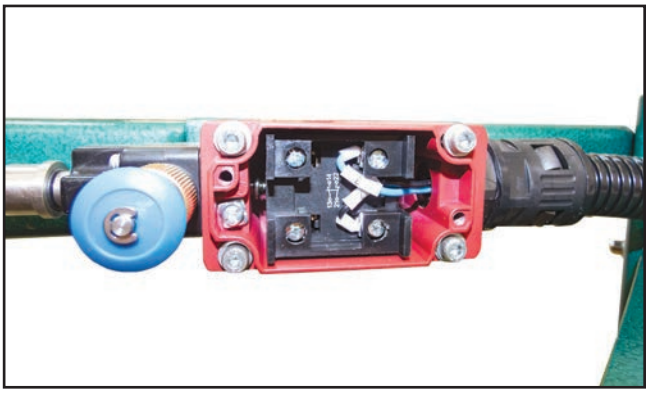


Figure 83. Safety cable switch.

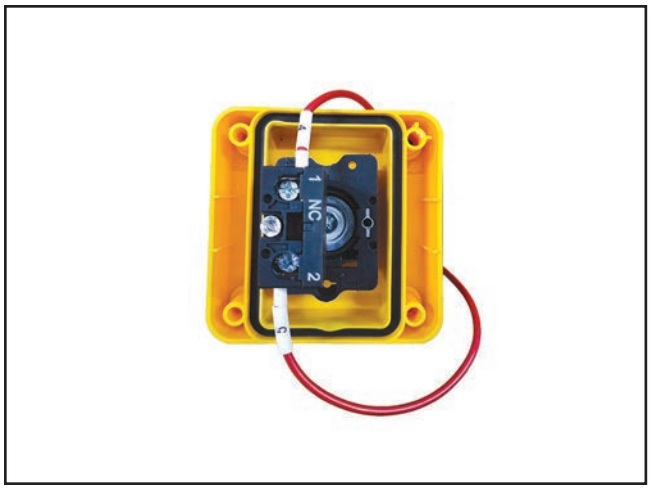


Figure 84. Foot switch EMERGENCY STOP button.

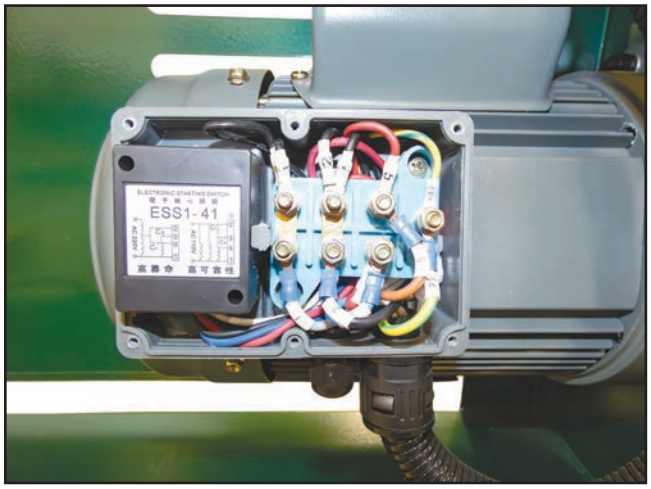


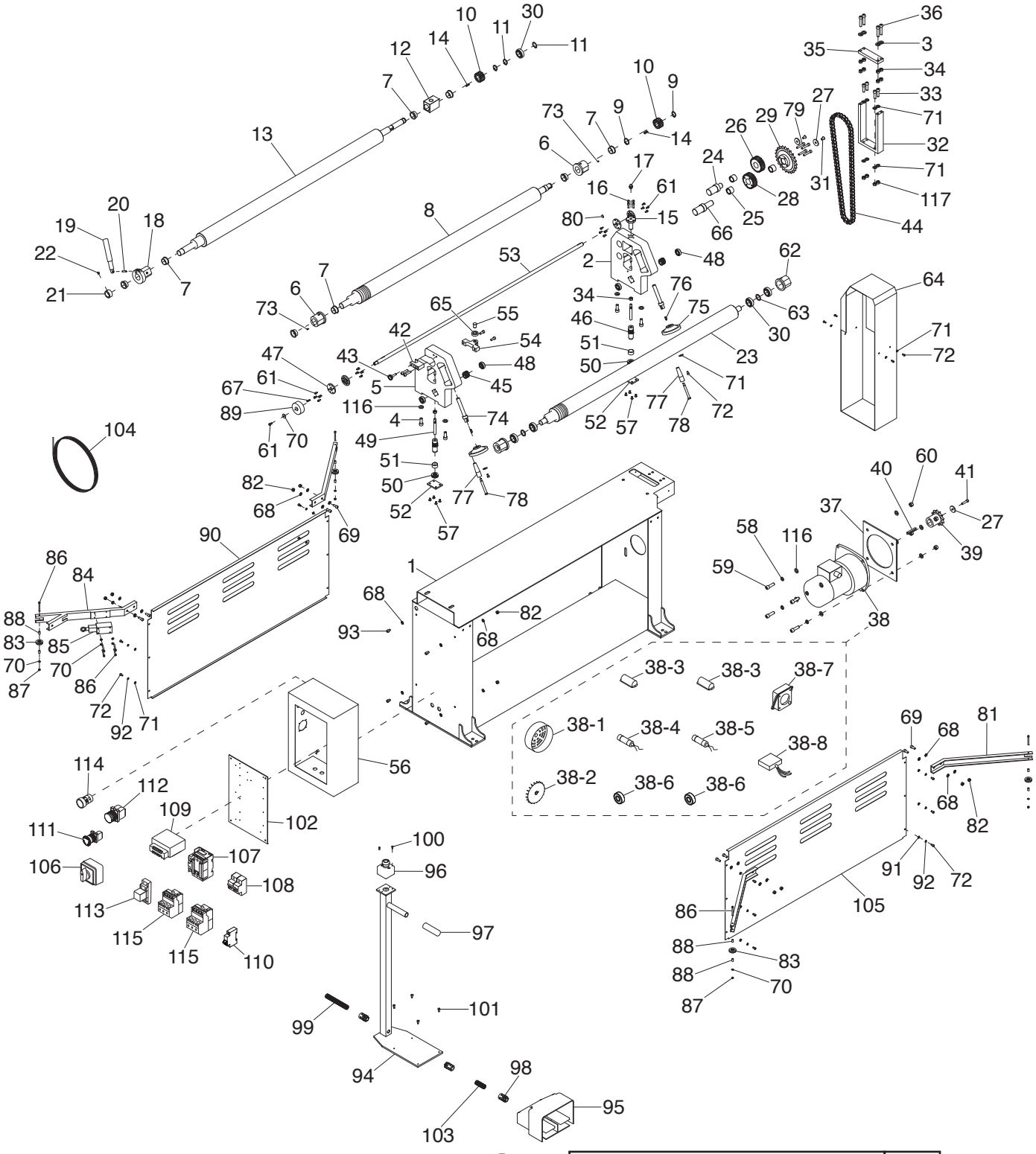
Figure 85. Motor junction box.

STOP *READ ELECTRICAL SAFETY ON PAGE 42!*

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

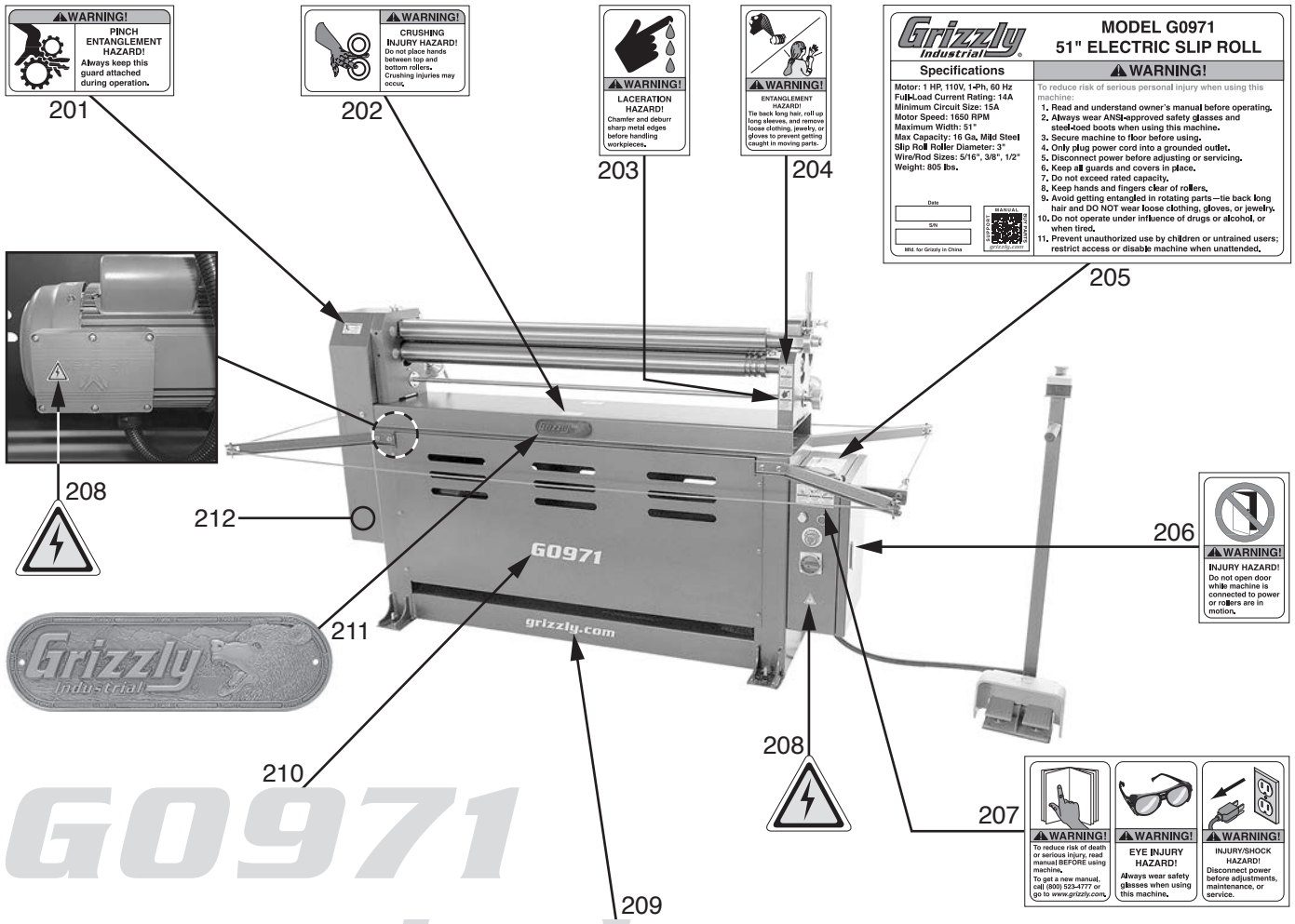


Main Parts List

REF	PART #	DESCRIPTION
1	P0971001	MACHINE BASE
2	P0971002	LEFT ROLLER SUPPORT
3	P0971003	FLAT WASHER 10MM
4	P0971004	CAP SCREW M12-1.75 X 30
5	P0971005	RIGHT ROLLER SUPPORT
6	P0971006	LOWER ROLLER BUSHING
7	P0971007	ROLLER BUSHING, COPPER
8	P0971008	LOWER ROLLER
9	P0971009	EXT RETAINING RING 30MM
10	P0971010	GEAR 18T
11	P0971011	EXT RETAINING RING 25MM
12	P0971012	UPPER ROLLER BLOCK
13	P0971013	UPPER ROLLER
14	P0971014	KEY 6 X 6 X 22
15	P0971015	LOWER ROLLER HEIGHT SHAFT
16	P0971016	CAP SCREW M6-1 X 20
17	P0971017	GREASE FITTING 10MM STRAIGHT
18	P0971018	UPPER ROLLER QUILL
19	P0971019	UPPER ROLLER RELEASE LEVER
20	P0971020	ROLL PIN 6 X 30
21	P0971021	LOCK COLLAR
22	P0971022	SET SCREW M8-1.25 X 10
23	P0971023	REAR ROLLER
24	P0971024	IDLER SHAFT
25	P0971025	NEEDLE BEARING 7943/25
26	P0971026	DRIVE GEAR 30T
27	P0971027	FENDER WASHER 8MM
28	P0971028	GEAR 30T
29	P0971029	SPROCKET 23-12B
30	P0971030	BALL BEARING 6005ZZ
31	P0971031	HEX BOLT M8-1.25 X 20
32	P0971032	SUPPORT BRACKET
33	P0971033	CAP SCREW M6-1 X 60
34	P0971034	HEX NUT M10-1.5
35	P0971035	TOP PLATE BRACKET
36	P0971036	CAP SCREW M10-1.5 X 50
37	P0971037	MOTOR MOUNT
38	P0971038	MOTOR 1HP 110V 1-PH
38-1	P0971038-1	FAN COVER
38-2	P0971038-2	FAN
38-3	P0971038-3	CAPACITOR COVER
38-4	P0971038-4	R CAPACITOR 40M 450V 2 X 3-3/4
38-5	P0971038-5	S CAPACITOR 400M 275V 2 X 4
38-6	P0971038-6	BALL BEARING 6304ZZ
38-7	P0971038-7	MOTOR JUNCTION BOX
38-8	P0971038-8	ELECTRONIC START SWITCH ESS1-41
39	P0971039	SPROCKET 12-12B
40	P0971040	KEY 10 X 10 X 63
41	P0971041	CAP SCREW M8-1.25 X 35
42	P0971042	MOUNTING BLOCK
43	P0971043	KNOB BOLT M8-1.25 X 30, D24, RND KD
44	P0971044	ROLLER CHAIN 12B
45	P0971045	WORM DRIVE
46	P0971046	WORM GEAR
47	P0971047	TENSION PLATE
48	P0971048	BALL BEARING 6003ZZ
49	P0971049	WORM SHAFT
50	P0971050	THRUST BEARING 8104
51	P0971051	SPACER
52	P0971052	WORM GEAR PLATE
53	P0971053	CONNECTING SHAFT
54	P0971054	TAPER BRACKET
55	P0971055	TAPER BRACKET PIN

REF	PART #	DESCRIPTION
56	P0971056	ELECTRICAL COMPARTMENT
57	P0971057	FLAT HD CAP SCR M6-1 X 12
58	P0971058	LOCK WASHER 12MM
59	P0971059	CAP SCREW M12-1.75 X 50
60	P0971060	HEX NUT M12-1.75
61	P0971061	CAP SCREW M5-.8 X 10
62	P0971062	REAR ROLLER BUSHING
63	P0971063	FLAT WASHER 25MM
64	P0971064	GEAR COVER
65	P0971065	TAPER ROLLER
66	P0971066	DRIVE SHAFT
67	P0971067	KEY 4 X 4 X 20
68	P0971068	FLAT WASHER 8MM
69	P0971069	CAP SCREW M8-1.25 X 20
70	P0971070	FLAT WASHER 5MM
71	P0971071	FLAT WASHER 6MM
72	P0971072	CAP SCREW M6-1 X 10
73	P0971073	SET SCREW M5-.8 X 8
74	P0971074	REAR ADJUSTMENT SCREW
75	P0971075	HANDWHEEL TYPE-8 100D X 19B-K X M8-1.25
76	P0971076	FENDER WASHER 6MM
77	P0971077	HOLLOW HANDLE 21 X 75, 10
78	P0971078	SHOULDER SCREW M8-1.25 X 15, 10 X 64
79	P0971079	CAP SCREW M8-1.25 X 45
80	P0971080	SET SCREW M8-1.25 X 12
81	P0971081	SUPPORT ARM
82	P0971082	HEX NUT M8-1.25
83	P0971083	CABLE PULLEY
84	P0971084	MAIN SUPPORT ARM
85	P0971085	LIMIT SWITCH SUNS SN6170-SL-C-R
86	P0971086	CAP SCREW M5-.8 X 50
87	P0971087	HEX NUT M5-.8
88	P0971088	BUSHING
89	P0971089	KNOB D63, ROUND KD
90	P0971090	FRONT ACCESS PANEL
91	P0971091	FLAT WASHER 6MM
92	P0971092	LOCK WASHER 6MM
93	P0971093	CAP SCREW M8-1.25 X 25
94	P0971094	PEDESTAL
95	P0971095	FOOT PEDAL SWITCH ANSSIN ECFS-D18(B)
96	P0971096	E-STOP BUTTON SCHNEIDER XAL-J174H29
97	P0971097	HANDLE SLEEVE
98	P0971098	STRAIN RELIEF M20-1.5 TYPE-5
99	P0971099	CONDUIT 1500MM
100	P0971100	CAP SCREW M4-.7 X 10
101	P0971101	HEX BOLT M6-1 X 12
102	P0971102	ELECTRICAL MOUNTING BOARD
103	P0971103	CONDUIT 85MM
104	P0971104	SAFETY CABLE
105	P0971105	REAR ACCESS PANEL
106	P0971106	POWER SWITCH LW8GS-25/30000A
107	P0971107	MANUAL MOTOR STARTER GV2-ME20C
108	P0971108	CIRCUIT BREAKER TENGEN TGB1N-63-2P-D2
109	P0971109	TRANSFORMER BAED JBK5-63VA
110	P0971110	CIRCUIT BREAKER TENGEN TGB1N-63-1P-C3
111	P0971111	E-STOP BUTTON YIJIA YJ139-LA38M-11ZS
112	P0971112	START BUTTON YIJIA YJ139-LA38M-10DN
113	P0971113	RELAY TENGEN TGJC1-52Z(D)
114	P0971114	POWER LIGHT DAIER AD16-22DS
115	P0971115	CONTACTOR SCHNEIDER LC1D18B7C
116	P0971116	FLAT WASHER 12MM
117	P0971117	HEX NUT M6-1

Labels & Cosmetics



REF	PART #	DESCRIPTION
201	P0971201	PINCH/ENTANGLEMENT WARNING LABEL
202	P0971202	SLIP ROLL WARNING LABEL
203	P0971203	LACERATION HAZARD LABEL
204	P0971204	ENTANGLEMENT HAZARD LABEL
205	P0971205	MACHINE ID LABEL
206	P0971206	DO NOT OPEN WARNING LABEL

REF	PART #	DESCRIPTION
207	P0971207	COMBO WARNING LABEL
208	P0971208	ELECTRICITY LABEL
209	P0971209	GRIZZLY.COM LABEL
210	P0971210	MODEL NUMBER LABEL
211	P0971211	GRIZZLY OBLONG NAMEPLATE, SMALL
212	P0971212	TOUCH-UP PAINT, GRIZZLY GREEN

⚠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 & RETURNS

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

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

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.

In the event you need to use 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.

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.

To take advantage of this warranty, you must register it at **https://www.grizzly.com/forms/warranty**, or you can scan the QR code below to be automatically directed to our warranty registration page. Enter all applicable information for the product.

WARRANTY

grizzly.com