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.

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

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

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

Manual Accuracy

We are proud to 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.

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
Identification

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

Figure 1. Model G0727 identification.
MODEL G0727 MINI HORIZONTAL/VERTICAL MILL

Product Dimensions:
- Weight: Not Available lbs.
- Width (side-to-side) x Depth (front-to-back) x Height: 23-7/16 x 29-1/8 x 23-1/2 in.
- Footprint (Length x Width): 23-7/16 x 29-1/8 in.
- Space Required for Full Range of Movement (Width x Depth): 31 x 36 in.

Shipping Dimensions:
- Type: Wood Crate
- Content: Machine
- Weight: 268 lbs.
- Length x Width x Height: 28 x 35 x 30 in.

Electrical:
- Power Requirement: 110V, Single-Phase, 60 Hz
- Prewired Voltage: 110V
- Full-Load Current Rating: 4.5A
- Minimum Circuit Size: 15A
- Connection Type: Cord & Plug
- Power Cord Included: Yes
- Power Cord Length: 6 ft.
- Power Cord Gauge: 18 AWG
- Plug Included: Yes
- Included Plug Type: 5-15
- Switch Type: ON/OFF Push Button Switch w/Safety Cover

Motors:
- Main
  - Type: Universal
  - Horsepower: 1/2 HP
  - Phase: Single-Phase
  - Amps: 4.5A
  - Speed: 0 – 5300 RPM
  - Power Transfer: Gear Drive
  - Bearings: Shielded & Permanently Lubricated

Main Specifications:

Operation Info
- Max Distance Spindle to Column: 12-7/8 in.
- Max Distance Spindle to Table: 6-1/2 in.
- Maximum Distance Horizontal Spindle Center to Table: 5 in.
- Longitudinal Table Travel (X-Axis): 11-7/8 in.
- Cross Table Travel (Y-Axis): 3-11/16 in.
- Head Tilt (Left/Right): 45 deg.
- Drilling Capacity for Cast Iron: 1/2 in.
- End Milling Capacity: 21/32 in.
- Face Milling Capacity: 1-5/32 in.
Table Info

- Table Length: 18-1/8 in.
- Table Width: 4-3/4 in.
- Table Thickness: 1-5/8 in.
- Number of T-Slots: 3
- T-Slot Size: 7/16 in.
- T-Slots Centers: 1-1/3 in.
- X/Y-Axis Travel per Handwheel Revolution: 0.0625 in.
- Z-Axis Travel per Handwheel Revolution: 0.03125 in.

Spindle Info

- Spindle Taper: R-8
- Number of Vertical Spindle Speeds: Variable
- Range of Vertical Spindle Speeds: 200 – 2000 RPM
- Quill Diameter: 2-5/8 in.
- Drawbar Thread Size: 7/16-20
- Drawbar Length: 7-13/32 in.
- Horizontal Spindle Sizes: 5/8 in.

Construction

- Spindle Housing/Quill: Chrome-Plated & Precision-Ground Steel
- Table: Ground Cast Iron
- Column/Base: Cast Iron
- Base: Cast Iron
- Paint Type/Finish: Enamel

Other Specifications:

- Country of Origin: China
- Warranty: 1 Year
- Approximate Assembly & Setup Time: 30 Minutes
- Serial Number Location: ID Label on Center of the Stand
- ISO 9001 Factory: Yes
- Certified by a Nationally Recognized Testing Laboratory (NRTL): No

Features:

- Quick conversion from vertical milling to horizontal milling set up

Accessories Recommended:

- H8177 Angle Work Table for Small Mills
- H6195 3" Rotary Table w/ Clamps
- T26485 58 pc. Clamping Kit for 7/16" T-Slots
- H5685 4" Rotary Table w/ Clamps
- T10253 2" Mini Self Centering Vise with Swivel Base
- H7661 Quick Vise
- G9511 T-Slot Nuts, pk. of 4, 7/16" Slot, 3/8" - 16
- G1646 12 pc. Precision R-8 Collet Set
- G5649 5-C Spin Index
- H5621 R-8 Slitting Saw Arbor
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.

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

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

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

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

**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.
WEARING PROPER APPAREL. Do not wear clothing, apparel or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to reduce risk of slipping and losing control or accidentally contacting cutting tool or moving parts.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

UNDERSTANDING CONTROLS. The mill is a complex machine. To reduce the risk of injury, make sure you understand the use and operation of all controls before you begin milling.

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

STOPPING SPINDLE. Always allow the spindle to stop on its own. To reduce the risk of lacerations, entanglement, or breakage debris, DO NOT attempt to stop the spindle with your hand or a tool.

SAFETY ACCESSORIES. Flying chips or debris from the cutting operation can cause eye injury or blindness. To reduce this risk, always use a face shield in addition to your safety glasses when milling.

WORK HOLDING. Attempting to mill a workpiece that is not properly secured could cause breakage debris to fly at the operator. Before starting the machine, be certain the workpiece has been properly clamped to the table or secured in a vise. NEVER hold the workpiece by hand during operation.

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

MACHINE CARE & MAINTENANCE. Operating the mill with excessively worn or damaged parts increases the risk of accidents that could cause serious injuries. A mill that is maintained poorly will produce poor results. To reduce this risk, maintain the mill in proper working condition by ALWAYS promptly performing routine inspections and maintenance.

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

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

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

---

### 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.**

---

### 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/120V
- **Cycle** .......................................................... 60 Hz
- **Phase** ........................................... Single-Phase
- **Power Supply Circuit** .................... 15 Amps

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.
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

Needed for Setup

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

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Glasses</td>
<td>1</td>
</tr>
<tr>
<td>Cleaner/Degreaser</td>
<td>As Needed</td>
</tr>
<tr>
<td>Disposable Shop Rags</td>
<td>As Needed</td>
</tr>
<tr>
<td>Additional People for Lifting</td>
<td>2</td>
</tr>
</tbody>
</table>

Unpacking

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

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

WARNING

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

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

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

Small Item Inventory: (Figures 3–4)   Qty
A. Horizontal Arbor Support Assembly ....... 1
B. Arbor Support Gib ........................................ 1
C. Horizontal Arbor w/Spacers ..................... 1
D. Chuck Arbor R8-JT33 .............................. 1
E. Drill Chuck JT33 1–13mm ......................... 1
F. Chuck Key ........................................ 1
G. Spindle Rod ......................................... 1
H. T-Nuts M10-1.5 ........................................ 2
I. Adjustable Foot Assemblies .................... 4
J. Combo Wrench 21/24mm ......................... 1
K. Combo Wrench 14/17mm ......................... 1
L. Combo Wrench 12/10mm ........................ 1
M. Combo Wrench 5.5/7mm ........................ 1
N. Hex Wrench Set 3, 4, 5, 6mm .......... 1 Each
O. Spanner Wrench 22/26mm ..................... 1

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

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

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

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.

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

Figure 5. Minimum working clearances.
Mounting

The base of this mill has four \(\frac{3}{8}"\)-16 threaded mounting holes that accept the included adjustable feet or can be used with other fasteners to secure the machine to a workbench.

We recommend permanently securing the mill to a workbench or other suitable mounting surface to prevent unexpected shifting during operation, which could result in severe injury or machine damage. Two permanent mounting options are presented below.

The strongest mounting option is a "Through Mount" (see example in Figure 6) where holes are drilled all the way through the workbench—and hex bolts, washers, and hex nuts are used to secure the machine in place.

Another option is a "Direct Mount" (see example in Figure 7) where the machine is secured directly to the workbench with lag screws and washers.

Power Connection

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

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

Connecting Power

1. To prevent an unexpected startup, press the STOP button on the side of the control box (see Figure 8) to ensure the master power switch is OFF.
2. Insert the power cord plug into a matching power supply receptacle. The machine is now connected to the power source.

![Figure 9. Connecting power.](image)

**Test Run**

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

If, during the test run, you cannot easily locate the source of an unusual noise or vibration, stop using the machine immediately, then review the Troubleshooting on Page 29.

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

To test run the machine:

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

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

3. Rotate the spindle speed dial (see Figure 11) all the way counterclockwise to set it at the minimum speed for initial startup.

![Figure 11. Control box components.](image)

**Disconnecting Power**

1. Press the STOP button on the side of the control box to turn the master power switch **OFF**.

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

![Figure 10. Disconnecting power.](image)
4. Turn the machine **ON** by pressing the tab on the side of the STOP button, then lifting the master power switch cover and pressing the **ON** button (see **Figure 12**). The power lamp should illuminate.

![Figure 12. Master power switch components.](image)

5. Slowly rotate the spindle speed dial clockwise to increase the spindle speed.

6. Listen to and watch for abnormal noises or actions. The machine should run smoothly with little or no vibration or rubbing noises.

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

7. Turn the mill **OFF** by pressing the STOP button, then turn the spindle speed dial all the way counterclockwise to leave the spindle at minimum speed for the next use.

Congratulations! The **Test Run** is complete! Continue with the following **Spindle Break-In** and **Lubrication & Gib Adjustments** subsections before putting your mill into full operation.

---

**Spindle Break-In**

Before subjecting the mill to full loads, you must break it in. This will allow the bearings and the drive belt to fully seat and find their normal wear pattern.

**NOTICE**

To help ensure long life and smooth operation, complete the spindle break-in before placing the mill into full operation.

To perform the spindle break-in procedure:

1. Successfully perform all the steps in the **Test Run** section beginning on **Page 16**.

2. Turn the spindle speed dial all the way counterclockwise to the minimum speed, then push the **ON** button to start the mill.

3. Turn the spindle speed dial clockwise halfway (to a medium speed) and let the mill run for approximately 20 minutes.

4. Turn the mill **OFF**—the spindle break-in is now complete.

---

**Lubrication & Gib Adjustments**

Before putting the mill into full operation, ensure the table moves smoothly by performing the lubrication procedures beginning on **Page 27**, and inspecting the gib adjustments, as directed on **Page 32**.

Besides ensuring smooth movement, these procedures will also prevent excessive wear of the ways and leadscrews, and will protect against rust or corrosion on the unpainted surfaces.
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.

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

1. Examines the workpiece to make sure it is safe and suitable for the operation.
2. Installs the motor-spindle assembly in either the vertical or horizontal position.
3. Installs the correct cutting tool for the operation.
4. Places the workpiece on the table, positions the workpiece as necessary for the operation, and secures it to the table with clamps or a vise.
5. Puts on personal protective equipment and makes sure the table and workpiece are clear of tools, cords, and other items.
6. Turns the mill ON, brings spindle rotation to the correct speed, then performs the operation.
7. Turns the mill OFF after the operation is complete and before removing the workpiece.

⚠️ WARNING
To reduce the risk of serious injury when using this machine, read and understand this entire manual before operating.

⚠️ WARNING
Serious eye and face injuries could result from using this machine without proper protective gear. Always wear safety glasses and a face shield when operating this machine.

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

Use Figure 13 and the descriptions below it to better understand the functions of the control box components.

A. Master Power Switch Cover. Lifts to expose the ON and OFF buttons and enables the use of the STOP button.

B. STOP Button. When pressed, pushes the OFF button underneath the cover to turn the mill OFF.

C. STOP Button Tab. When pressed, allows the master power switch cover to be raised to expose the ON and OFF buttons.

D. Master Power Switch ON/OFF Buttons. Enables/disables power to the spindle motor.

E. Overload Lamp. Illuminates if the spindle motor is overloaded. When overloaded, the motor stops. To re-start the motor, turn the spindle speed dial counterclockwise to set a minimum speed, adjust the operation to reduce the load, then press the ON button.

F. Machine Fuse. Prevents thermal overload damage.

G. Power Lamp. Illuminates when power is enabled to the spindle motor with the master power switch.

H. Spindle Speed Dial. Controls the speed of spindle rotation between 200–2000 RPM.

Table Movement

Table movement is controlled by handwheels and moves in the three directions shown in Figure 14.

![Figure 14. Table movement.](image-url)
Locks
The table is equipped with X- and Y-axis lock levers (see Figure 15) to prevent unexpected movement along either axis when movement is not required. This helps ensure close tolerances and accurate milling results.

Vertical Head Movement

When using the mill in the vertical configuration, the head can be tilted 50° left or right. By moving the ram, the spindle can be positioned a maximum of 12 7/8" from the column (spindle centerline to column).

Tool Needed
Hex Wrench 5mm ............................................. 1

Tilting Vertical Head
1. DISCONNECT MILL FROM POWER!

2. Loosen the tilt locking cap screw shown in Figure 18.

3. Manually adjust the head tilt to the correct angle for the operation, then re-tighten the locking cap screw.

Note: Use the scale shown in Figure 18 to gauge the angle. For more accurate results, use a precision protractor between the spindle and the table.

Graduated Dials
Each handwheel has a graduated dial for gauging table movement along the related axis.

The X- and Y-axis graduated dials (see Figure 16) are in increments of 0.001"—with one full rotation equal to 0.0625".

The Z-axis graduated dial is in increments of 0.0005"—with one full rotation equal to 0.03125" (see Figure 17).

To use the Z-axis graduated dial, multiply the increment amount shown by the number on the dial. For example, if the 50 increment mark is aligned with the indicator mark, then multiply 0.0005" by 50, which equals 0.025".

Figure 15. X- and Y-axis locks.

Figure 16. X- and Y-axis graduated dials.

Figure 17. Z-axis graduated dial.

Figure 18. Vertical head tilt controls.
Moving Ram
The vertical spindle can be moved closer or farther away from the column by repositioning the ram.

To reposition the ram:

1. DISCONNECT MILL FROM POWER!

2. Loosen the lock lever on the right side of the upper column (see Figure 19).

3. Carefully re-position the ram so that the spindle is in the correct position over the table and workpiece, then re-tighten the lock lever.

---

**WARNING**

Keep Column Dovetails Fully Engaged with Ram Dovetails

The headstock can fall off the column if moved too far forward or backward. To reduce this risk, always keep the column dovetails fully engaged with the ram dovetails.

---

Vertical/Horizontal Conversion

The Model G0727 can be setup for vertical or horizontal milling by changing the mounting position of the motor-spindle assembly.

**Tool Needed**

<table>
<thead>
<tr>
<th>Qty</th>
<th>Hex Wrench 5mm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>............................... 1</td>
</tr>
</tbody>
</table>

To convert the machine for vertical/horizontal milling:

1. DISCONNECT MILL FROM POWER!

2. Loosen the cap screw on the spindle lock collar (see Figure 20).

**Note:** The vertical and horizontal spindle lock collars operate in the same manner.
3. Remove the motor-spindle assembly from the mill with a twisting motion.

4. Wipe the outside of the quill with a lightly-oiled rag to remove any grime or debris (see Figure 21).

5. Carefully insert the quill into the vertical bracket or the horizontal hole in the column until the assembly is fully seated.

6. Tighten the spindle collar cap screw to hold the motor-spindle assembly in place. See Figures 22–23 for examples of each conversion.

---

**R8 Tooling**

The Model G0727 spindle accepts R8 tooling that is held in place with a drawbar that has \( \frac{7}{16} \text{-} 20 \) threads. R8 tooling has a slot that aligns with a set screw inside the spindle to keep it from turning in the spindle (see Figure 24).
Installing Vertical Tooling

For vertical milling, mount the motor-spindle assembly in the vertical position, as shown in Figure 22 on the previous page.

Tool Needed          Qty
Hex Wrench 10mm                      1

To install vertical tooling:

1. DISCONNECT MILL FROM POWER!
2. Use a clean shop rag and mineral spirits to clean the mating surfaces of the tooling and spindle, then allow them to dry.

   Note: Any lint, oil, or debris left on the mating surfaces of the tooling or spindle could interfere with proper mating and increase runout.

3. Align the slot in the tooling with the set screw inside the spindle and fully seat the tool, then hold it in place and thread the drawbar into it from the top (see Figure 25).

   Note: Only tighten the drawbar until it is snug. Overtightening it could make removing the tool difficult.

   Figure 25. Installing tool vertically.

Installing Horizontal Tooling

For horizontal milling, mount the motor-spindle assembly in the horizontal position, as shown in Figure 23 on the previous page.

Tool Needed          Qty
Hex Wrench 10mm                      1

To install horizontal tooling:

1. DISCONNECT MILL FROM POWER!
2. Use a clean shop rag and mineral spirits to clean the mating surfaces of the tooling and spindle, then allow them to dry.

   Note: Any lint, oil, or debris left on the mating surfaces of the tooling or spindle could interfere with proper mating and increase runout.

3. Unthread the hex nut from the end of the horizontal arbor, correctly position the cutting tool and spacers on the arbor for the operation, then secure them with the hex nut (see Figure 26 for an example).

   Note: The horizontal arbor only accepts tools with a 5⁄8" bore.

   Figure 26. Example photo of a slitting saw installed on the horizontal arbor.
Removing Tooling

Note: In the next steps, you may have to move the ram forward to allow room for inserting the arbor or arbor support.

4. Align the slot in the tooling with the set screw inside the spindle and fully seat the tool, then hold it in place and thread the drawbar into it from the back.

Note: Only tighten the drawbar until it is snug. Overtightening it could make removing the arbor difficult.

5. Slide the horizontal arbor support onto the ram dovetail way, insert the support gib, then slide the support onto the end of the arbor (see Figure 27).

6. Tighten both the arbor support lock lever and the ram lock lever to secure the arbor and tool in place.

---

**NOTICE**

When installing tooling, keep in mind that the spindle rotates clockwise, as viewed from the end where the drawbar is inserted.

---

**Tool Needed**

<table>
<thead>
<tr>
<th>Hex Wrench 10mm</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

To remove tooling:

1. DISCONNECT MILL FROM POWER!

2. If the tooling is mounted horizontally, remove the horizontal arbor support.

3. Loosen the drawbar 2–3 revolutions, then tap the hex wrench with a mallet to release the tool taper from the spindle.

4. Hold the tool with a shop rag or gloved hand while you fully unthread the drawbar, then remove the tool.

5. Clean the tool, arbor, and arbor accessories with mineral spirits and clean shop rags. When dry, wipe them with a lightly-oiled rag to prevent rust and corrosion.

---

**NOTICE**

Generally, when the included chuck and arbor are properly mounted together, the union is considered semi-permanent and attempting to disconnect them could be extremely difficult without resulting in damage. If another chuck is required, we recommend using a different arbor.

---

**Figure 27.** Horizontal arbor support installed.
SECTION 5: ACCESSORIES

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

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

Solid Carbide End Mills
H0943—\(\frac{3}{16}\)" x 2\(\frac{1}{2}\)", 2 Flutes
H0947—\(\frac{3}{8}\)" x 2\(\frac{1}{2}\)", 4 Flutes
H0944—\(\frac{1}{2}\)" x 3", 2 Flutes
H0948—\(\frac{1}{2}\)" x 3", 4 Flutes
For finish and durability, solid carbide can't be beat. With micro-grain structure and precision grinding, these end mill will breeze through the toughest machining jobs.

Call 1-800-523-4777 To Order

T20501—Face Shield Crown Protector 4"
T20502—Face Shield Crown Protector 7"
T20503—Face Shield Window
T20452—"Kirova" Anti-Reflective S. Glasses
T20451—"Kirova" Clear Safety Glasses
H0736—Shop Fox® Safety Glasses
H7194—Bifocal Safety Glasses 1.5
H7195—Bifocal Safety Glasses 2.0
H7196—Bifocal Safety Glasses 2.5

Figure 28. Eye protection assortment.

Figure 29. Solid carbide end mill.

T10253—2" Mini Self-Centering Vise w/Swivel Base
Ideal for holding small parts. Features self-centering jaws, 360° swivel, adjustable gib on a dovetail way, 2\(\frac{1}{16}\)" jaw opening, and 2" jaw width.

Figure 30. T10253 2" Self-Centering Vise.
H5685—4" Rotary Table w/Clamps
This is the perfect rotary table for all model makers and those doing smaller, precision work. It features a whole degree scale on the dial, worm gear drive, lash adjustment screw, reference lines and ball bearing rotary support. Comes supplied with 2 each: 6mm clamping studs (2¾" long), T-nuts, clamping straps and steps.

Figure 31. H5685 4" Rotary Table w/Clamps

G1646—12 Piece Set, Precision R8 Collets
Made from the highest grade steel available for a collet manufacturer, these R8 collets are precision-ground to very close tolerances.

Figure 32. G1646 12-Pc. R8 Collet Set.

G5649—5-C Spin Index
Fitted with a traveling spindle and collar, the 5-C Spin Index is unmatched for forming, grinding, and inspecting end mills and other fluted cutting tools. This spin index accepts 5-C collets up to 1¼" capacity and features a 36 hole indexing plate with 10 vernier holes for indexing to 1°. Locking spindle is hardened and ground and has 2¼" of travel.

Figure 33. G5649 5-C Spin Index.

H8257—Primrose Armor Plate with Moly-D Machine and Way Oil 1 Quart
This superior machine and way lubricant prevents stick slip and chatter due to anti-friction capabilities resulting in greater precision machining capabilities. Provides the thinnest oil film possible while effectively providing needed lubrication and rust/corrosion protection. Adhesive/cohesive components are added for vertical surfaces. Resists squeeze out, running, dripping and non-gumming.

“This is good stuff! I use it on my lathes at home.”
S. Balolia – President

Figure 34. Primrose Armor Plate Lubricant.

Call 1-800-523-4777 To Order
SECTION 6: MAINTENANCE

Schedule

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

Ongoing:
• Loose mounting fasteners.
• Damaged arbors or tooling.
• Worn or damaged wires.
• Any other unsafe condition.

Before Operation:
• Lubricate the mill.

After Operation:
• Clean and protect the mill.

Cleaning & Protecting

The easiest way to clean swarf from the ways and table is to use a wet/dry shop vacuum that is dedicated for this purpose. The small chips left over after vacuuming can be wiped up with a lightly-oiled rag. Avoid using compressed air to blow off chips, as it may drive them deeper into moving surfaces and could cause sharp chips to fly into your face or hands.

All unpainted and machined surfaces should be wiped down daily with a good quality way oil, such as shown in Figure 34 on the previous page, to keep them rust-free and in top condition.

Lubrication

The Model G0727 has numerous moving metal-to-metal surfaces that must be properly lubricated to help ensure efficient and long-lasting mill operation.

Ways
Oil Type ...... Grizzly H8257 or Quality Equivalent
Oil Amount.........................................As Needed
Lubrication Frequency...............Before Operation

Move the sliding components to gain access to the full length of the ways and make sure they are free from chips and grime. Use a shop rag to apply a thin coat of way oil to the entire way surface, then move the sliding component a few times through its full length of travel to evenly distribute the oil.
Each table axis uses a leadscrew for movement (see Figures 35–37). Before lubricating the leadscrews, clean them with mineral spirits and a stiff brush. To lubricate the leadscrews, use another stiff brush to apply oil along their exposed length, then move each table axis through its full length of travel to evenly distribute the oil.

The two ball oilers shown in Figure 38 are for the X- and Z-axis leadscrew bushing and bearing. Proper lubrication of ball oilers is done with a pump-type oil gun that has a plastic or rubberized cone tip. We do not recommend using metal needle or lance tips that can push the ball too far into the oiler, break the spring seat, and lodge the ball into the oil galley.

When lubricating the ball oilers, first clean the outside surface to remove any grime or debris. Push the rubber or plastic tip of the oil can nozzle against the ball oiler to create a hydraulic seal, then pump the oil can once or twice. When finished, wipe away any excess oil.
**SECTION 7: SERVICE**

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

**Troubleshooting**

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Cause</th>
<th>Possible Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Machine does not start or a breaker trips.</strong></td>
<td>1. OFF button is engaged/faulty.</td>
<td>1. Test/replace it.</td>
</tr>
<tr>
<td></td>
<td>2. Plug/receptacle is at fault or wired incorrectly.</td>
<td>2. Test for good contacts; correct the wiring.</td>
</tr>
<tr>
<td></td>
<td>3. Motor was overloaded and the overload lamp is illuminated.</td>
<td>3. Adjust the operation to reduce motor overload, rotate spindle speed dial counterclockwise to a minimum speed, then press the ON button to re-enable power to the motor.</td>
</tr>
<tr>
<td></td>
<td>4. Control box fuse is blown.</td>
<td>4. Correct the cause of the blown fuse, then replace it.</td>
</tr>
<tr>
<td></td>
<td>5. Motor connection wired incorrectly.</td>
<td>5. Correct motor wiring connections (see Page 35).</td>
</tr>
<tr>
<td></td>
<td>6. Wall fuse/circuit breaker is blown/tripped.</td>
<td>6. Test for power on all legs and contactor operation. Replace unit if faulty.</td>
</tr>
<tr>
<td></td>
<td>7. Power supply switched OFF or is at fault.</td>
<td>7. Ensure power supply is switched ON; ensure power supply has the correct voltage.</td>
</tr>
<tr>
<td></td>
<td>8. Wiring is open/has high resistance.</td>
<td>8. Check for broken wires or disconnected/corroded connections, and repair/replace as necessary.</td>
</tr>
<tr>
<td></td>
<td>9. ON button/spindle speed dial is at fault.</td>
<td>9. Test/replace.</td>
</tr>
<tr>
<td></td>
<td>10. Circuit board is at fault.</td>
<td>10. Replace.</td>
</tr>
<tr>
<td></td>
<td>11. Motor is at fault.</td>
<td>11. Test/repair/replace.</td>
</tr>
<tr>
<td><strong>Machine stalls or is overloaded.</strong></td>
<td>1. Feed rate/cutting speed too fast for task.</td>
<td>1. Decrease feed rate/cutting speed.</td>
</tr>
<tr>
<td></td>
<td>2. Machine is undersized for the task.</td>
<td>2. Use smaller sharp cutters/drill bits; reduce the feed rate; reduce the spindle speed; use cutting fluid if possible.</td>
</tr>
<tr>
<td></td>
<td>3. Wrong workpiece material.</td>
<td>3. Use metal with correct properties for your type of machining.</td>
</tr>
<tr>
<td></td>
<td>4. Motor has overheated.</td>
<td>4. Clean off motor, run motor with no load to let it cool, and reduce workload.</td>
</tr>
<tr>
<td></td>
<td>5. Motor connection is wired incorrectly.</td>
<td>5. Correct motor wiring connections (see Page 35).</td>
</tr>
<tr>
<td></td>
<td>6. Plug/receptacle is at fault.</td>
<td>6. Test for good contacts; correct the wiring.</td>
</tr>
<tr>
<td></td>
<td>7. Drive belt is at fault.</td>
<td>7. Re-tension/replace drive belt (see Page 31).</td>
</tr>
<tr>
<td></td>
<td>9. Motor bearings are at fault.</td>
<td>9. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.</td>
</tr>
<tr>
<td></td>
<td>10. Spindle speed dial is at fault.</td>
<td>10. Replace.</td>
</tr>
<tr>
<td></td>
<td>11. Motor is at fault.</td>
<td>11. Test/repair/replace motor.</td>
</tr>
<tr>
<td>Symptom</td>
<td>Possible Cause</td>
<td>Possible Solution</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Machine has vibration or noisy operation.</td>
<td>1. Motor or component is loose.</td>
<td>1. Inspect/replace stripped or damaged bolts/nuts, and re-tighten with thread locking fluid.</td>
</tr>
<tr>
<td></td>
<td>2. Motor-spindle assembly is loose.</td>
<td>2. Tighten spindle lock collar cap screw (see Page 21).</td>
</tr>
<tr>
<td></td>
<td>3. Arbor/tool is loose.</td>
<td>3. Fully seat arbor/tool by tightening drawbar (see Page 23).</td>
</tr>
<tr>
<td></td>
<td>4. Belt pulley is loose.</td>
<td>4. Replace shaft, pulley, setscrew, and key as required.</td>
</tr>
<tr>
<td></td>
<td>5. Motor mount loose/broken.</td>
<td>5. Tighten/replace.</td>
</tr>
<tr>
<td></td>
<td>6. Machine is incorrectly mounted or sits unevenly.</td>
<td>6. Tighten/replace mounting fasteners; relocate/shim machine.</td>
</tr>
<tr>
<td></td>
<td>7. Workpiece is loose.</td>
<td>7. Use the correct holding fixture and re-clamp workpiece.</td>
</tr>
<tr>
<td></td>
<td>8. Cutter is at fault.</td>
<td>8. Replace out-of-round cutter; replace/resharpen cutter; use appropriate feed rate and cutting speed.</td>
</tr>
<tr>
<td></td>
<td>9. Bit is chattering.</td>
<td>9. Replace/sharpen bit; index bit to workpiece; use appropriate feed rate and spindle speed.</td>
</tr>
<tr>
<td></td>
<td>10. Motor bearings are at fault.</td>
<td>10. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.</td>
</tr>
<tr>
<td>Tool slips in collet.</td>
<td>1. Collet is not fully drawn up into spindle taper.</td>
<td>1. Fully seat collet by tightening drawbar (see Page 23).</td>
</tr>
<tr>
<td></td>
<td>2. Wrong size collet.</td>
<td>2. Measure tool shank diameter and match with appropriate diameter collet.</td>
</tr>
<tr>
<td></td>
<td>3. Debris in collet or in spindle taper.</td>
<td>3. Remove oil or debris from collet and spindle taper.</td>
</tr>
<tr>
<td></td>
<td>4. Taking too big of a cut.</td>
<td>4. Lessen depth of cut and allow chips to clear.</td>
</tr>
<tr>
<td>Breaking tools or cutters.</td>
<td>1. Spindle speed or feed rate is too fast.</td>
<td>1. Set correct spindle speed and feed rates.</td>
</tr>
<tr>
<td></td>
<td>2. Cutting tool getting too hot.</td>
<td>2. Use coolant fluid; reduce feed rate or spindle speed.</td>
</tr>
<tr>
<td></td>
<td>3. Taking too big of a cut.</td>
<td>3. Lessen depth of cut and allow chips to clear.</td>
</tr>
<tr>
<td>Machine is loud when cutting.</td>
<td>1. Excessive depth of cut.</td>
<td>1. Decrease depth of cut.</td>
</tr>
<tr>
<td>Overheats or bogs down in the cut.</td>
<td>2. Dull cutting tools.</td>
<td>2. Use sharp cutting tools.</td>
</tr>
<tr>
<td>Workpiece vibrates or chatters during</td>
<td>1. Table locks not tight.</td>
<td>1. Tighten down table locks.</td>
</tr>
<tr>
<td>operation.</td>
<td>2. Workpiece not securely clamped to table or into mill vice.</td>
<td>2. Check that clamping is tight and sufficient for the job. Make sure mill vice is tight to the table.</td>
</tr>
<tr>
<td></td>
<td>3. Spindle speed and feed rate too high.</td>
<td>3. Use appropriate spindle speed and feed rate for the job.</td>
</tr>
<tr>
<td>Table hard to move.</td>
<td>1. Table locks are tightened down.</td>
<td>1. Make sure table locks are fully released.</td>
</tr>
<tr>
<td></td>
<td>2. Chips have loaded up on ways.</td>
<td>2. Frequently clean away chips that load up during milling operations.</td>
</tr>
<tr>
<td></td>
<td>3. Ways are dry and in need of lubrication.</td>
<td>3. Lubricate ways.</td>
</tr>
<tr>
<td></td>
<td>4. Gibs are too tight.</td>
<td>4. Adjust gib (see Page 32).</td>
</tr>
<tr>
<td>Bad surface finish.</td>
<td>1. Wrong spindle speed or feed rate.</td>
<td>1. Adjust for appropriate spindle speed and feed rate.</td>
</tr>
<tr>
<td></td>
<td>2. Dull cutting tool or poor cutting tool selection.</td>
<td>2. Sharpen cutting tool or select a better cutting tool for the intended operation.</td>
</tr>
<tr>
<td></td>
<td>3. Cutting tool installed incorrectly.</td>
<td>3. Properly install cutting tool for spindle direction.</td>
</tr>
</tbody>
</table>
Drive Belt

The ribbed drive belt will stretch and wear with use, so check it at least on a monthly basis to ensure optimal power transmission. If the belt shows evidence of excessive wear or damage, replace it.

**Tools Needed**

- Phillips Screwdriver #2 .................................. 1
- Wrench 10mm ............................................. 1

**To tension/replace the drive belt:**

1. **DISCONNECT MILLED FROM POWER!**

2. Remove the motor-spindle assembly from the machine and place it on its side.

3. Remove the spindle pulley cover (see **Figure 39**).

4. Remove the motor pulley cover (see **Figure 40**).

5. Check the condition of the drive belt.
   - If the drive belt shows excessive wear or damage, proceed to **Step 6** and replace it and properly tension the new belt.

   - If the drive belt is good condition but needs re-tensioning, proceed to **Step 6** and properly adjust the tension.

   - If the drive belt is in good condition and is properly tensioned, replace the covers. No further action is necessary.

   **Note:** There is the correct amount of belt tension when the belt deflects approximately 1/8” when moderate pressure is applied midway between the pulleys (see **Figure 41**).

6. Loosen the four quill bracket hex bolts, then slide the bracket to either properly tension the belt or to release the tension for replacement.

7. When the belt is properly tensioned, re-tighten the bracket hex bolts and replace both covers.

**Figure 39.** Spindle pulley cover removed.

**Figure 40.** Motor pulley cover removed.

**Figure 41.** Checking belt tension.
Adjusting Gibs

The Model G0727 uses plate gibbs that allow for adjustment of the play or accuracy of the sliding components.

The goal of adjusting the gibbs is to remove sloppiness in the sliding surfaces without over-adjusting them to the point where movement becomes stiff and difficult.

In general, loose gibbs cause poor finishes and tool chatter. However, over-tightened gibbs cause premature wear on the sliding surfaces, leadscrew and nut, and cause hesitation in movement when using the handwheels.

The gib adjustment process usually requires some trial-and-error. Test the feel of the component by moving it back and forth, then, if necessary, adjust the screws that hold the gib in place to make the movement tighter or looser. Repeat the adjustment process as necessary until you find the best balance between loose and stiff movement.

Most machinists find that the ideal gib adjustment is one where a small amount of drag or resistance is present yet the handwheels are still easy to move.

Before you begin adjusting the gibbs, make sure the locks are loose, the ways are free of chips and grime, and the sliding surfaces are well lubricated so they can move smoothly.
**Tools Needed**

<table>
<thead>
<tr>
<th>Tools</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hex Wrench 3mm</td>
<td>1</td>
</tr>
<tr>
<td>Wrench 10mm</td>
<td>1</td>
</tr>
</tbody>
</table>

**To adjust the gibbs:**

1. **DISCONNECT MILL FROM POWER!**

2. Make sure the table locks are loose, and the ways are free from chips and lubricated so that they can move smoothly.

3. Loosen the hex nuts on the gib set screws, then unthread the set screws 1–2 full revolutions.

4. Move the sliding component back and forth a couple of inches to make sure the gib is loose.

5. Re-tighten each set screw until resistance is felt as it meets the gib.

6. Move the sliding component back and forth to test the movement.
   
   —If the movement is too loose, tighten each set screw the same amount.
   
   —If the movement is too tight, loosen each set screw the same amount.

7. When you are satisfied with the movement of the sliding component, re-tighten the hex nuts without moving the set screws.
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  (B)  BLUE  (B)  YELLOW  (Y)
WHITE  (W)  BROWN  (B)  GREEN  (G)
GREEN  (G)  GRAY  (G)  PURPLE  (P)
RED  (R)  ORANGE  (O)  PINK  (P)

LIGHT BLUE  (LB)  BLUE  (B)  WHITE  (W)
YELLOW  (Y)  GREEN  (G)  TURQUOISE  (Tu)  WHITE  (W)
Electrical Components

Figure 46. Circuit board wiring.

Figure 47. Control box wiring.
SECTION 9: PARTS

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<tr>
<td>164</td>
<td>P0727164</td>
<td>T-NUT M10-1.5</td>
</tr>
</tbody>
</table>
# Machine Labels

## Machine Labels

<table>
<thead>
<tr>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>P0727201</td>
<td>CONTROL PANEL LABEL</td>
</tr>
<tr>
<td>202</td>
<td>P0727202</td>
<td>ELECTRICITY LABEL</td>
</tr>
<tr>
<td>203</td>
<td>P0727203</td>
<td>READ MANUAL LABEL</td>
</tr>
<tr>
<td>204</td>
<td>P0727204</td>
<td>DISCONNECT POWER LABEL</td>
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<tr>
<td>205</td>
<td>P0727205</td>
<td>EYE INJURY HAZARD LABEL</td>
</tr>
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<td>206</td>
<td>P0727206</td>
<td>ENTANGLEMENT HAZARD LABEL</td>
</tr>
<tr>
<td>207</td>
<td>P0727207</td>
<td>MACHINE ID LABEL</td>
</tr>
<tr>
<td>208</td>
<td>P0727208</td>
<td>BLACK TOUCH-UP PAINT</td>
</tr>
<tr>
<td>209</td>
<td>P0727209</td>
<td>GRIZZLY GREEN TOUCH-UP PAINT</td>
</tr>
</tbody>
</table>

**WARNING!**

Read and understand instruction manual to avoid serious injury. If a manual is not available, DO NOT use machine. Go to www.grizzly.com or call (800) 523-4777.

**WARNING!**

Discontinue power before adjustments, maintenance, or service.

**WARNING!**

EYE INJURY HAZARD!
Always wear safety glasses when using this machine.

**WARNING!**

Entanglement Hazard! Tie back long hair, roll up long sleeves, and remove loose clothing, jewelry, or gloves to prevent getting caught in moving parts.

**WARNING!**

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

1. How did you learn about us?
   _____ Advertisement  _____ Friend  _____ Catalog
   _____ Card Deck  _____ Website  _____ Other: __________________________

2. Which of the following magazines do you subscribe to?
   _____ Cabinetmaker & FDM  _____ Popular Science  _____ Wooden Boat
   _____ Family Handyman  _____ Popular Woodworking  _____ Woodshop News
   _____ Hand Loader  _____ Precision Shooter  _____ Woodsmith
   _____ Handy  _____ Projects in Metal  _____ Woodwork
   _____ Home Shop Machinist  _____ RC Modeler  _____ Woodworker West
   _____ Journal of Light Cont.  _____ Rifle  _____ Woodworker’s Journal
   _____ Live Steam  _____ Shop Notes  _____ Other:
   _____ Model Airplane News  _____ Shotgun News
   _____ Old House Journal  _____ Today’s Homeowner
   _____ Popular Mechanics  _____ Wood

3. What is your annual household income?
   _____ $20,000-$29,000  _____ $30,000-$39,000  _____ $40,000-$49,000
   _____ $50,000-$59,000  _____ $60,000-$69,000  _____ $70,000+

4. What is your age group?
   _____ 20-29  _____ 30-39  _____ 40-49
   _____ 50-59  _____ 60-69  _____ 70+

5. How long have you been a woodworker/metalworker?
   _____ 0-2 Years  _____ 2-8 Years  _____ 8-20 Years  _____ 20+ Years

6. How many of your machines or tools are Grizzly?
   _____ 0-2  _____ 3-5  _____ 6-9  _____ 10+

7. Do you think your machine represents a good value?  _____ Yes  _____ No

8. Would you recommend Grizzly Industrial to a friend?  _____ Yes  _____ No

9. Would you allow us to use your name as a reference for Grizzly customers in your area?
   Note: We never use names more than 3 times.  _____ Yes  _____ No

10. Comments: ____________________________
    _______________________________________
    _______________________________________
Send a Grizzly Catalog to a friend:

Name__________________________________________
Street_________________________________________
City________________________ State_______Zip_____

TAPE ALONG EDGES--PLEASE DO NOT STAPLE
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.

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

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

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

Thank you again for your business and continued support. We hope to serve you again soon.
Buy Direct and Save with Grizzly® – Trusted, Proven and a Great Value!
~Since 1983~

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