



VERTICAL MILLING MACHINE

MODEL G1004/G1008

INSTRUCTION MANUAL



COPYRIGHT © 1999 BY GRIZZLY INDUSTRIAL, INC.
**WARNING: NO PORTION OF THIS MANUAL MAY BE REPRODUCED IN ANY SHAPE
OR FORM WITHOUT THE WRITTEN APPROVAL OF GRIZZLY INDUSTRIAL, INC.**
REVISED OCTOBER, 1999. PRINTED IN U.S.A.

Table Of Contents

PAGE

1. SAFETY

SAFETY RULES FOR POWER TOOLS	3-4
ADDITIONAL SAFETY FOR MILLING MACHINES	5

2. CIRCUIT REQUIREMENTS

110 VOLT OPERATION	6
EXTENSION CORDS	6
GROUNDING	6
220 VOLT OPERATION	7
EXTENSION CORDS	7
GROUNDING	7

3. INTRODUCTION

COMMENTARY	8
UNPACKING	9
PIECE INVENTORY	9
CLEAN UP	10
SITE CONSIDERATIONS	10

4. ASSEMBLY

BEGINNING ASSEMBLY	11
LEVELING	11
MOUNTING HANDLES	11
COLLET OR ARBOR INSTALLATION	11-12
FLY CUTTER	12
KNEE CRANK HANDLE	12

5. OPERATIONS

SPEED CHANGES	13
TEST RUN	13

6. ADJUSTMENTS

GRADUATED DIALS	14
SPINDLE HEIGHT	14
DEPTH STOP	14

7. MAINTENANCE

GENERAL	15
BEARINGS	15
LUBRICATION	15
GIBS	15

8. CLOSURE

COMMENTARY	16
------------------	----

WARRANTY AND RETURNS	17
----------------------------	----

SECTION 1: SAFETY

WARNING

For Your Own Safety Read Instruction Manual Before Operating This Equipment

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words which are 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.

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

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

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

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

WARNING

Safety Instructions For Power Tools

1. **KEEP GUARDS IN PLACE** and in working order.
2. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning on.
3. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
4. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or where any flammable or noxious fumes may exist. Keep work area well lighted.
5. **KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance from work area.
6. **MAKE WORK SHOP CHILD PROOF** with padlocks, master switches, or by removing starter keys.
7. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
8. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.

WARNING

Safety Instructions For Power Tools

- 9. USE PROPER EXTENSION CORD.** Make sure your extension cord is in good condition. Conductor size should be in accordance with the chart below. The amperage rating should be listed on the motor or tool nameplate. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Your extension cord must also contain a ground wire and plug pin. Always repair or replace extension cords if they become damaged.

Minimum Gauge for Extension Cords

AMP RATING	LENGTH		
	25ft	50ft	100ft
0-6	18	16	16
7-10	18	16	14
11-12	16	16	14
13-16	14	12	12
17-20	12	12	10
21-30	10	10	No

- 10. WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
- 11. ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
- 12. SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.

- 13. DON'T OVERREACH.** Keep proper footing and balance at all times.
- 14. MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
- 15. DISCONNECT TOOLS** before servicing and changing accessories, such as blades, bits, cutters, and the like.
- 16. REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in off position before plugging in.
- 17. USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury.
- 18. CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
- 19. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.

WARNING

Additional Safety Instructions For The Vertical Milling Machine

1. **DO NOT** use until unit is completely assembled and installed according to instructions.
2. **DO NOT** use the mill until all controls and adjustments are understood.
3. **BE SURE** drill bit or cutter is securely locked in the chuck, collet or holder.
4. **ALWAYS USE THE RECOMMENDED SPEEDS** and feeds with milling cutters and drill bits.
5. **ADJUST TABLE OR DEPTH STOP** to prevent drilling into table work surface.
6. **KEEP FLOOR AREA** around the mill free from oil, tools, and chips.
7. **NEVER USE YOUR HANDS TO HOLD WORKPIECE** during milling or drilling. Clamp it to work surface or use a vise to secure workpiece and prevent rotation.
8. **NEVER HANDLE SHARP CUTTERS** with bare hands. Paper towels or shop rags wrapped around them will help to avoid injury.
9. **ALWAYS** use a brush to remove chips after the cutter has stopped. Never use a rag to remove chips.
10. **NEVER** operate mill if any part is damaged or broken until it is properly repaired or replaced.
11. **BE SURE** cutter, workpiece and machine parts have proper working clearance throughout the range of motion you intend to use.
12. **NEVER** place your fingers in a position where drill or cutter could contact them if a part shifts unexpectedly. Serious personal injury could result.
13. **NEVER** perform layout, assembly, or setup work on the mill while a bit or cutter is rotating.
14. **SHUT OFF POWER**, remove drill or cutting tool, and clean tool before leaving machine.

WARNING

Operating this equipment has the potential to propel debris into the air which can cause eye injury. Always wear safety glasses or goggles when operating equipment. Everyday glasses or reading glasses only have impact resistant lenses, they are not safety glasses. Be certain the safety glasses you wear meet the appropriate standards of the American National Standards Institute (ANSI).

WARNING

Like all power tools, there is danger associated with the Model G1004/G1008 Milling Machine. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this tool with respect and caution to lessen the possibility of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

SECTION 2: CIRCUIT REQUIREMENTS

110V Operation

The motor supplied with the G1004/G1008 is a dual-voltage 110/120V or 220/240V motor. (For information on operating at 220V, see the section following entitled 220V Operation.) Under normal use, the motor draws approximately 16 amps @ 110V, therefore it should be connected to a circuit that is protected by a 20 amp fuse or circuit breaker. This should be satisfactory for normal use, while providing enough protection against motor damage caused by power surges. Grizzly recommends that the circuit you use should be dedicated, (i.e., the G1004 or G1008 should provide the only draw from that circuit). If frequent circuit failures occur when using the milling machine, contact our service department or your local electrical contractor. You are cautioned that equipment returned to us for service that shows evidence of being over-fused will be repaired or replaced totally at the customer's expense, regardless of the present warranty status.

It is also necessary to connect a cord and plug to the machine. Be sure that both the plug and cord are rated at 20 amps and must include a ground-wire. **See Figure 1.**



Extension Cords

If you find it necessary to use an extension cord with the Model G1004/G1008, make sure the cord is rated Hard Service (grade S) or better. Refer to the chart in the standard safety instructions to determine the minimum gauge for the extension cord.

The extension cord must also contain a ground wire and plug pin. Always repair or replace extension cords when they become worn.



Grounding

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool must be equipped with an electric cord having an equipment-grounding conductor which must be properly connected to a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

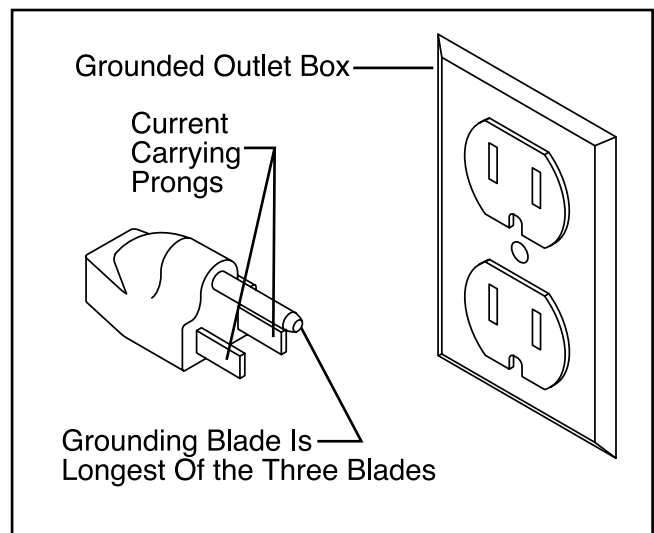


Figure 1. Grounded plug configuration.



WARNING

Potential for electrical shock hazard, this equipment must be grounded. Verify that any existing electrical outlet and circuit you intend to plug into is actually grounded. If it is not, it will be necessary to run a separate 12 A.W.G. copper grounding wire from the outlet to a known ground. Under no circumstances should the grounding pin from any three-pronged plug be removed. **Serious personal injury may occur.**

220V Operation

The Model G1004/G1008 has a motor which can be operated on a 220V single phase circuit. In order to operate at 220V it is necessary to rewire the motor connections (refer to the wiring diagrams at the back of this manual) and to add a 220V capable cord and plug. The style of plug you require will depend upon the type of service you currently have or plan to install. **Figure 2** shows recommended plug styles.

The motor will safely draw about 8 amps at 220V under load, therefore it should be connected to a circuit that is protected by a 15 amp fuse or circuit breaker. This should be satisfactory for normal use, while providing enough protection against motor damage caused by power surges. Grizzly recommends that the circuit you use should be dedicated, (i.e., the G1004 or G1008 should provide the only draw from that circuit). If frequent circuit failures occur when using the milling machine, contact our service department or your local electrical contractor. You are cautioned that equipment returned to us for service that shows evidence of being over-fused will be repaired or replaced totally at the customer's expense, regardless of the present warranty status.

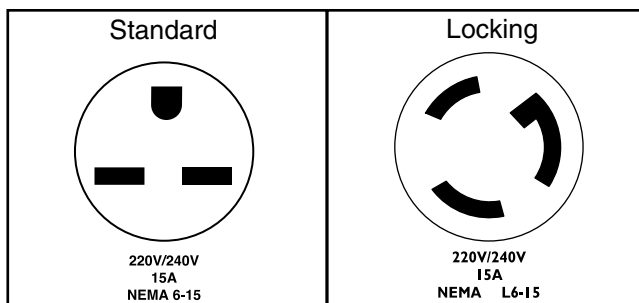


Figure 2. Two typical outlet/plug configurations.



Extension Cords

We do not recommend the use of extension cords on 220V equipment. It is much better to arrange the placement of your equipment and the installed wiring to eliminate the need for extension cords. Should it be necessary to use an extension make sure the cord is rated Hard Service (grade S) or better.



Grounding

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool must be equipped with an electric cord having an equipment-grounding conductor which must be properly connected to a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.



WARNING

Potential for electrical shock hazard, this equipment must be grounded. Verify that any existing electrical outlet and circuit you intend to plug into is actually grounded. Under no circumstances should the grounding pin from any three-pronged plug be removed. **Serious personal injury may occur.**

CAUTION

We have covered some basic electrical requirements for the safe operation of your Milling Machine. These requirements are not necessarily comprehensive. You must be sure that your particular electrical configuration complies with local and state codes. Ensure compliance by checking with your local municipality or a licensed electrician.

SECTION 3: INTRODUCTION

Commentary

Grizzly Industrial, Inc. is proud to offer the Model G1004/G1008 Milling Machine. These Milling Machines are a part of Grizzly's growing family of fine metalworking machinery. When used according to the guidelines stated in this manual, you can expect years of trouble-free, enjoyable operation.

The Model G1004/G1008 is intended for home and medium-duty professional use. This mill features a 1,720 R.P.M., 1½ HP capacitor-start motor and push button ON/OFF switch.

We are also pleased to provide this manual with the Model G1004/G1008. It was written to guide you through assembly, review safety considerations, and cover general operating procedures. It represents our effort to produce the best documentation possible. If you have any comments regarding this manual, please write to us at the address below:

Grizzly Industrial, Inc.
% Technical Documentation
P.O. Box 2069
Bellingham, WA 98227-2069

WARNING

Like any complex milling machine, the Models G1004/1008 is an extremely powerful tool and there are some inherent dangers which could result in serious personal injury. We strongly recommend that you DO NOT attempt to operate this machine without first reading this manual. We also highly recommend that you learn as much from books, magazines, classes and other sources of milling knowledge before you use this machine. Always consider safety first when using this or any other metalworking machinery.

Most importantly, we stand behind our machines. If you have any service questions or parts requests, please call or write us at the location listed below.

Grizzly Industrial, Inc.
2406 Reach Road
Williamsport, PA 17701
Phone: (570) 326-3806
Fax: (800) 438-5901
E-Mail: techsupport@grizzly.com
Web Site: <http://www.grizzly.com>

The specifications, drawings, and photographs illustrated in this manual represent the Model G1004/G1008 as supplied when the manual was prepared. However, owing to Grizzly's policy of continuous improvement, changes may be made at any time with no obligation on the part of Grizzly. Whenever possible, though, we send manual updates to all owners of a particular tool or machine. Should you receive one, we urge you to insert the new information with the old and keep it for reference.

CAUTION

To operate this, or any power tool, safely and efficiently, it is essential to become as familiar with its characteristics as possible. The time you invest before you begin to use your Model G1004/G1008 will be time well spent. DO NOT operate this machine until you are completely familiar with the contents of this manual. Make sure you read and understand all of the safety procedures. If you do not understand something, DO NOT operate the machine.



Unpacking

This Milling Machine is shipped from the manufacturer in a carefully packed crate. If you discover the machine is damaged after you've signed for delivery, and the truck and driver are gone, you will need to file a freight claim with the carrier. Save the containers and all packing materials for possible inspection by the carrier or its agent. Without the packing materials, filing a freight claim can be difficult. *If you need assistance determining whether you need to file a freight claim, or with the procedure to file one, please contact our Customer Service.*

WARNING

The G1004/G1008 is a heavy machine, 1,010 lbs. shipping weight. DO NOT over-exert yourself while unpacking or moving your machine – you will need assistance. Serious personal injury may occur if safe moving methods are not followed. When moving, always insure that you have enough clearance in the path way you intend to take and that floor and stair structures are capable of supporting the combined weight of the machine and the people moving it.

When you are completely satisfied with the condition of your shipment, you should inventory its parts.



Piece Inventory

After all the parts have been removed from the crate, you should have:

- Milling Machine
- Tool Box
 - Fly Cutter 1
 - Oil Bottle 1
 - Screwdriver 1
 - Wheel Handles 3
 - Open End Wrench 1

Other featured items will be already mounted to the machine. They include:

- Flood Coolant Pump
- Draw Bar
- Fly Cutter Arbor
- Powerfeed (G1008 only)
- Light Fixture

In the event that any non-proprietary parts are missing (e.g. a nut or a washer), we would be glad to replace them, or, for the sake of expediency, replacements can be obtained at your local hardware store.

NOTICE

A full parts list and breakdown can be found toward the end of this manual. For easier assembly, or to identify missing parts, please refer to the detailed illustrations.



Clean Up

The unpainted surfaces are coated with a waxy oil to protect them from corrosion during shipment. Remove this protective coating with a solvent cleaner or citrus-based degreaser. Avoid chlorine-based solvents as they may damage painted surfaces should they come in contact. Always follow the usage instructions on the product you choose for clean up.

WARNING

Do not use gasoline or other petroleum-based solvents to remove this protective coating. These products generally have low flash points which makes them extremely flammable. A risk of explosion and burning exists if these products are used. Serious personal injury may occur.

CAUTION

Many of the solvents commonly used to clean machinery can be highly flammable, and toxic when inhaled or ingested. Always work in well-ventilated areas far from potential ignition sources when dealing with solvents. Use care when disposing of waste rags and towels to be sure they do not create fire or environmental hazards. Keep children and animals safely away when cleaning and assembling this machine.

CAUTION

All die-cut metal parts have a sharp edge (called “flashing”) on them after they are formed. This is generally removed at the factory. Sometimes a bit of flashing might escape inspection, and the sharp edge may cause cuts or lacerations when handled. Please examine the edges of all die-cut metal parts and file or sand the edge to remove the flashing before handling.



Site Considerations

FLOOR LOAD

Your G1004/G1008 Milling Machine represents a large weight load in a 28" x 20" footprint. Most commercial or garage shop floors should be sufficient to carry the weight. **Before** moving this milling machine onto a residential floor inspect it carefully to determine that it will be sufficient to carry the load. If you question the strength of your floor, you should consider having it inspected for possible reinforcement.

WORKING CLEARANCES

Working clearances can be thought of as the distances between machines and obstacles that allow safe operation of every machine without limitation. Consider existing and anticipated machine needs, size of material to be processed through each machine, and space for auxiliary stands and/or work tables. Also consider the relative position of each machine to one another for efficient material handling. Be sure to allow yourself sufficient room to safely run your machines in any foreseeable operation.

LIGHTING AND OUTLETS

Lighting should be bright enough to eliminate shadow and prevent eye strain. Electrical circuits should be dedicated or large enough to handle combined motor amp loads. Outlets should be located near each machine so power or extension cords are not obstructing high-traffic areas. Be sure to observe local electrical codes for proper installation of new lighting, outlets, or circuits.

CAUTION

Make your shop “child safe”. Ensure that your workplace is inaccessible to youngsters by closing and locking all entrances when you are away. Never allow visitors in your shop when assembling, adjusting or operating equipment.



SECTION 4: ASSEMBLY

Beginning Assembly

Assembly of the G1004/G1008 is straightforward. We have organized the assembly process into steps. Please follow them in sequence.

ORDER OF ASSEMBLY

- A. Leveling
- B. Mounting Handles
- C. Install Collet or Arbor
- D. Fly Cutter
- E. Knee Hand Crank

Tools Required: A complete set of metric Allen® wrenches will be necessary for most of the assembly and adjustments. A rubber mallet and a set of open ended, metric wrenches will also be needed.



Leveling

Before attempting to use your mill, make sure that it is sitting firmly in place and that the work table is level. Should you find that the machine rocks or is not level, use mild steel shim stock or leveling pads, such as those sold by Grizzly Industrial (G7159).



Mounting Handles

Three handles are supplied with the G1004/G1008. They are black and have a slotted head screw through them. On the threaded portion is a nut. Tighten the nut so that the black handle does not spin. Screw the handles into the handwheels until they are tight. Loosen them one full turn. While maintaining the orientation of the slotted screw, turn the nut so that it now tightens against the handwheel.



Collet or Arbor Installation

WARNING

Disconnect the power before changing collets or arbors on the G1004/G1008. Serious personal injury may occur.

The Models G1004/08 feature an R-8 spindle which accepts many industrial collets and arbors.

To install a collet or an arbor:

1. Release the latches on the head lid and open it.
2. Determine the location of the pin inside the spindle.
3. Align the keyway of the collet to the side where you found the pin and insert the collet or cutting tool's arbor up into the spindle housing. Rotate the collet slightly to line up the keyway with the pin in the spindle bore.

4. Turn the hex head at the top of the drawbar (located on the top, front of the head) clockwise until the threads at the bottom of the drawbar mesh with the female threads in the top of the collet or arbor.
5. When using a collet: Insert the cutter in the hole at the bottom of the collet and continue to tighten the drawbar until both the collet and cutter are tightly in place. ***Do not over-tighten the collet. Grasp the rim of the front pulley. Hold it tight while tightening the draw bar.***

To remove a collet or an arbor:

1. Loosen the hex head at the top of the drawbar (2 or 3 turns).
2. Tap on the top of the drawbar with a soft faced mallet to loosen the collet from the spindle. ***Hold the collet/cutter with a shop towel from the bottom to prevent it from dropping completely out of the machine.***
3. Continue to turn the drawbar counterclockwise until it is free from the collet. Once loose, remove and replace with your desired collet. ***Remove cutting tools from spindle when not in use.***



Fly Cutter

Your mill comes equipped with a fly cutter that fits on the 1" stub end of the R-8 arbor (this comes installed in the spindle).

To install the fly cutter:

1. Clean any accumulated grease, oil, or debris off of the R-8 arbor.
2. Fit the fly cutter onto the stub end of the arbor so the keys on the arbor and the keyways on the fly cutter come together.
3. Secure the fly cutter to the arbor with the cap screw and washer provided. Tighten with an 8mm Allen® wrench.
4. Install the arbor with fly cutter into the mill as described under the heading "Collet or Arbor Installation."



Knee Crank Handle

The Knee hand crank is located to the left of the Y-axis. It is shipped from the factory with the handle installed on the knee gear shaft backwards. To install properly begin by removing the external retaining ring on the end of the shaft. Slide the handle off of the shaft and re-install so that the handle faces outward.



SECTION 5: OPERATIONS

⚠ WARNING

DO NOT attempt to investigate or adjust the machine while it is running. Wait until the machine is turned off, unplugged and all working parts have come to a rest before you do anything! Serious personal injury could occur.

Speed Changes

The motor is mounted on a plate hinged to the column. The motor assembly can be released by turning the handle at the side of the motor. Once the motor tension is released, the belts can be easily re-positioned to change speeds. See the speed chart below for belt settings. A speed chart is also located inside the pulley cover.

Test Run

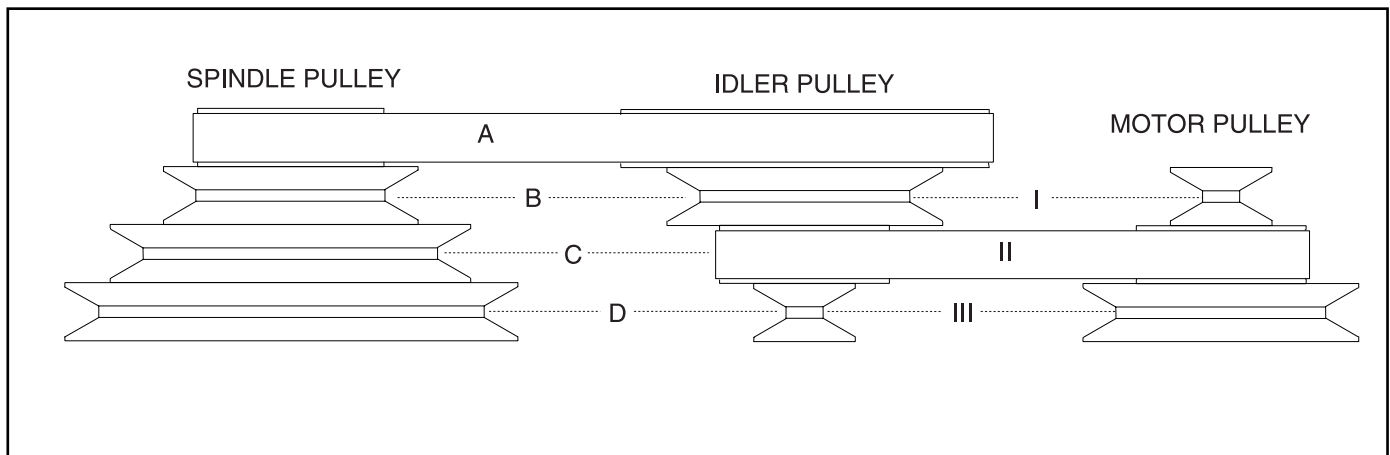
Turn on the power supply at the main panel. Press the START button. **Make sure that your finger is poised on the STOP button, just in case there's a problem.** The mill should run smoothly, with little or no vibration or rubbing noises. Strange or unnatural noises should be investigated and corrected before operating the machine further.

If noises occur that can not be found by visual inspection, feel free to contact our service department for help.

BELT POSITIONING CHART

	A	B	C	D
I	950		420	270
II	1720	1110		490
III	3200	2060	1420	

This diagram shows belts positioned at A and II. As the chart shows, these positions will yield 1720 RPM.



SECTION 6: ADJUSTMENTS

Graduated Dials

The graduated dials on the handwheels for the table and fine feed can be indexed or “zeroed” to help make accurate and convenient movements. Each dial can be reset or locked with the setscrew or thumb screw provided.

Example:

Suppose you want to drill a series of holes in a workpiece at 0.625" centers. After locating the first hole's placement and drilling, you can set the dial of the appropriate axis to zero and move the table 0.625". Drill the next hole and proceed as above.



Spindle Height

You have two options for spindle height adjustment: a drill press style, levered downfeed and a micro adjustment handwheel. The lever is located on the right, forward portion of the head. The micro adjustment handwheel is to the left.

To operate the feed lever:

Pull the lever toward you. The spindle will go down until you stop pulling or until it hits the depth stop.

To operate the micro-adjustment handwheel:

1. Tighten the knurled locking knob located on the left side of the headstock and just behind the fine downfeed handwheel.
2. Locking out the levered downfeed will transfer control to the handwheel. The handwheel will not function if the knurled locking knob is loose.

3. Loosen the setscrew on the knurled surface of the handwheel dial. Turn the dial until the “0” lines up with the index line. Tighten the setscrew.
4. Turn the handwheel according to the distance you want to move downward. Each complete revolution equals 0.100".

Locking:

For milling operations, the spindle height can be locked in by tightening the black lever on the forward, right hand portion of the head.



Depth Stop

To calibrate the depth stop:

1. Roll the quill down using the lever handle until you reach the desired depth shown on the scale. Lock the quill with the lever lock handle. Turn the depth stop nut until it meets the bottom of the depth stop block. Tighten the jam nut against the bottom of the stop nut.
2. Roll the spindle up into the head. Place a piece of paper on the workpiece. Loosen the knee lock handle and raise the knee until the drill bit or cutter just touches the paper. Tighten the knee lock.
3. Begin drilling or milling. *Note for precision depth: set the depth stop shallow of the desired depth by 1/16". Drill the hole and measure. Finish to depth using the fine downfeed handwheel with its graduated dial and use the procedure laid out in the section above titled: Graduated Dials.*



SECTION 7: MAINTENANCE

General

Your Model G1004/G1008 milling machine requires very little maintenance. A thorough cleaning, now and again, will increase the machine's durability and efficiency by removing chips and grime that can gum up moving parts.

An occasional application of a protective spray coating will keep the table and other bare metal parts from rusting and pitting.

REMEMBER: When performing maintenance or repairs on shop equipment, always disconnect the machine from its power supply.



Bearings

Most of the bearings are factory-sealed. A sealed bearing requires no lubrication during its lifetime. Should a bearing fail, your mill will probably develop a noticeable rumble, which will increase when the machine is put under load. If allowed to get worse, overheating of the journal containing the bad bearing could occur. If the bad bearing is not replaced, it will eventually seize – possibly doing damage to other parts of the machine. Bearings are standard sizes and can be replaced through Grizzly.

Quill bearings are under a lot of pressure (pre-loading). If not maintained properly, they will wear out prematurely. You will need to partially dismantle the machine once a year to repack the bearings. Please call the service department for instructions about repacking your quill bearings.



Lubrication

Spindle: Add oil to the oil cup after every 4 hours of use. The cup is located on the right portion of the milling head just under the belt guard. SAE 20 oil is recommended.

One Shot Lubricator: Located on the left side of the knee. Check periodically and fill oil reservoir as necessary with SAE 20. This lubricator will supply oil to the knee, apron and table slides. By pulling the lever you will apply enough oil for a 4 hour period of use.

Flood Coolant System: For best results it is recommended that a water soluble oil be used. Replace coolant when it becomes noticeably contaminated or rancid. Take the time to clean the sludge from the bottom of the tank annually. Access to the tank may be made from the right or left panels on the stand/base.

Table and Apron Lead Screws: Lubricate every day with SAE 20 oil. A few drops applied on each side of each nut.

Lead Screw Bearings: Lubricate the bearings located at the ends of the table and just in front of the Y axis hand crank. You will find oil ports with a ball stopper. Lubricate daily. Apply small amount of SAE 20 using an oil can with a pointed nozzle to help push in the ball.



Gibs

The G1004/1008 milling machine table features tapered gibs in the dovetail ways. To tighten the table, loosen the screw at the small end of the tapered gib and tighten the screw at the large end. Use the same procedure for the saddle and knee gib adjustments.



SECTION 8: CLOSURE

Commentary

The following pages contain parts diagram, parts list and Warranty/Return information for your Model G1004/1008 mill.

If you need parts or help in assembling your machine, or if you need operational information, we encourage you to call our Service Department. Our trained service technicians will be glad to help you.

If you have comments dealing specifically with this manual, please write to our Bellingham, Washington location using the address in Section 3 Introduction. The specifications, drawings, and photographs illustrated in this manual represent the Model G1004/G1008 as supplied when the manual was prepared. However, due to Grizzly's policy of continuous improvement, changes may be made at any time with no obligation on the part of Grizzly. Whenever possible, though, we send manual updates to all owners of a particular tool or machine. Should you receive one, add the new information to this manual and keep it for reference.

We have included some important safety measures that are essential to this machine's operation. While most safety measures are generally universal, Grizzly reminds you that each workshop is different and safety rules should be considered *as they apply to your specific situation*.

WARNING

Operating this equipment has the potential for flying debris to cause eye injury. Always wear safety glasses or goggles when operating equipment. Everyday glasses or reading glasses only have impact resistant lenses, they are not safety glasses. Be certain the safety glasses you wear meet the appropriate standards of the American National Standards Institute (ANSI).

We recommend you keep a copy of our current catalog for complete information regarding Grizzly's warranty and return policy. If you need additional technical information relating to this machine, or if you need general assistance or replacement parts, please contact the appropriate regional Service Department listed in the introduction.

Additional information sources are necessary to realize the full potential of this machine. Trade journals, metalworking magazines, and the shelves of your local library are good places to start. Knowledge and caution are vital components of successful milling machine operation.

WARNING

The Model G1004/G1008 was specifically designed for metal machining. **DO NOT MODIFY AND/OR USE THIS MACHINE FOR ANY OTHER PURPOSE.** Modifications or improper use of this tool will void the warranty. If you are confused about any aspect of this machine, **DO NOT** use it until you have answered all your questions. **Serious personal injury may occur.**

WARNING

As with all powerful industrial machinery, there is the potential for danger when using the Model G1004/1008 Vertical Milling Machine. Use this tool with respect and caution to lessen the possibility of operator injury or mechanical damage. If normal safety precautions are overlooked or ignored, serious injury to the operator or others in the area is possible.



WARRANTY AND RETURNS

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

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

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

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

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

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