Grizzly Industrial, Inc.®

HEAVY-DUTY MILL/DRILL

MODEL G1006/G1007

INSTRUCTION MANUAL

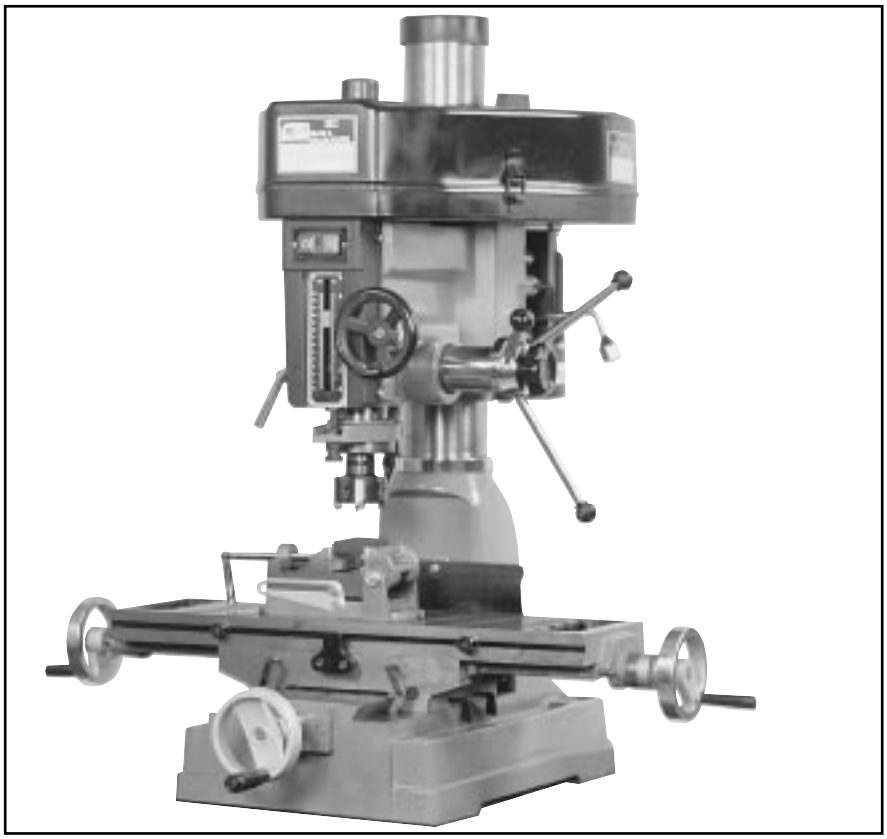

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Table Of Contents

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

	LENGTH		
AMP RATING	**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, fixtures or vise to hold work. Never use hands to hold workpiece for any operation.

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 arbors, 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 Mill / Drills

1. **DO NOT** use until unit is completely assembled and installed according to instructions.
2. **DO NOT** use the Mill/Drill until all controls and adjustments are understood.
3. **BE SURE** drill bit or cutter is securely locked in the chuck or holder.
4. **USE** recommended speeds and feed rate for cutter or drill accessory and workpiece material.
5. **ADJUST** table or depth stop to prevent drilling into table work surface.
6. **KEEP FLOOR AREA** around the Mill/Drill 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. **DO NOT WEAR GLOVES,** neckties, or loose fitting clothing. Roll up long sleeves. Tie back long hair. Do not use a rag around a rotating cutter. These could get pulled into the cutter and cause severe 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/Drill if any part is damaged or broken until it is properly repaired or replaced.
11. **NEVER** place your fingers in a position where drill or cutter could contact them if a part shifts unexpectedly. Serious personal injury could result.
12. **NEVER** perform layout, assembly, or setup work on the mill while a bit or cutter is rotating.
13. **SHUT OFF POWER**, remove drill or cutting tool, and clean tool before leaving machine.

⚠WARNING

Like all power tools, there is danger associated with the Model G1006 and G1007 Milling/Drilling Machines. 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.

⚠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 person injury, damage to equipment or poor work results.

SECTION 2: CIRCUIT REQUIREMENTS

110V Operation

The Model G1006/G1007 is wired for 110V, single phase operation. The 2 HP motor will draw 22 amps at 110V at maximum load. If you operate this Mill/Drill on any circuit that is already close to its capacity, it may blow a fuse or trip a circuit breaker. However, if an unusual load does not exist and a power failure still occurs, contact a qualified electrician or our service department.

Circuit Load/Reset

The Model G1006/G1007 can be fused at 20 amps. If the circuit breakers trip frequently, and you have determined you are on a dedicated circuit with no other loads, it may be necessary to upgrade to a 25 amp circuit. Contact a qualified electrician to specifically determine the needs for your shop.

You will find that the motor supplied with the Mill/Drill is equipped with a reset button. If during operation the reset button disengages power from the motor, allow it to cool for five minutes. Depress the button. It should stay down and the motor should start by pressing the start switch. If the reset button continues to deactivate the motor or if it will not reset, call the Service Department.

Extension Cords

If you find it necessary to use an extension cord with the Model G1006/G1007, make sure the cord is rated Hard Service (grade S) or better. Refer to the chart in **Section 1: 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 or damaged.

Grounding

In the event of an electrical short, grounding reduces the risk of electric shock by providing a path of least resistance to disperse electric current. This tool is equipped with a power cord having an equipment-grounding conductor. **See Figure 1.** The outlet must be properly installed and grounded in accordance with all local codes and ordinances.

⚠WARNING

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 injury may occur.

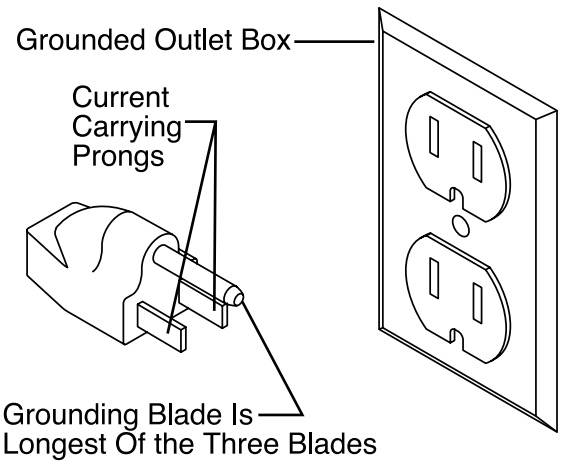

Figure 1. Grounded plug configuration.

220V Operation

The Model G1006/G1007 can be wired for 220V single phase operation (see Wiring Diagram, page 23). The motor will safely draw about 11 amps at 220V under load. If you operate the Mill/Drill on any circuit that is already close to its capacity, it might blow a fuse or trip a circuit breaker. However, if an unusual load does not exist, and power failure still occurs, have the circuit inspected by a qualified electrician.

Circuit Load/Reset

The Model G1006/G1007 should be fused at 15 amps. Fusing at amperage ratings higher than 15 amps will not adequately protect the circuit. You will find that the motor supplied with the Mill/Drill is equipped with a reset button. If during operation the reset button disengages power from the motor allow it to cool for five minutes. Depress the button. It should stay down and the motor should start by pressing the start switch. If the reset button continues to deactivate the motor or if it will not reset call the Service Department.

In preparing to connect the Model G1006/G1007 to your existing or new circuit, it will be necessary to connect a plug that matches your 220V receptacle. If you will be installing a new receptacle and plug, we recommend either of the styles shown in **Figure 2**. Note that you have the choice between simple plug-in and twist-lock plug styles. Whichever style you choose, be sure that both the plug and outlet are rated at 15 amps or better.

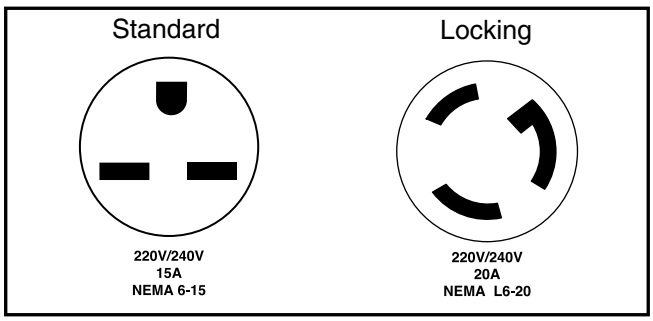

Figure 2. Two typical outlet/plug configurations.

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 is 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

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 wire be left unconnected when installing the 220V plug. Serious injury may occur.

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. Refer to the chart in **Section 1: 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 or damaged.

⚠CAUTION

The electrical requirements presented here are 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

We are proud to offer the Grizzly Models G1006/G1007 Milling/Drilling Machine. These machines are part of a growing Grizzly family of fine metalworking machinery. When used according to the guidelines set forth in this manual, you can expect years of trouble-free, enjoyable operation, proof of Grizzly's commitment to customer satisfaction.

The Model G1006/G1007 is a combination milling and drilling machine that is capable of a numerous machining operations. The spindle is fitted to use R-8 arbors and holders allowing the use of a wide variety of industry standard tooling. The table has T-slots which fit the G1076 ½" clamping kit. The G1006/G1007 comes complete with motor and electrical package. The G1007 is supplied with a power feed for longitudinal motion.

A number of accessories for the Model G1006/G1007 are available through the Grizzly catalog.

We are also pleased to provide this manual with the Models G1006/G1007. 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.
c/o Technical Documentation
P.O. Box 2069
Bellingham, WA 98227-2069

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
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The specifications, drawings, and photographs illustrated in this manual represent the Models G1006/G1007 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 G1006/G1007 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/Drilling 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 G1006/G1007 is a heavy machine (670 lbs. shipping weight). DO NOT over-exert yourself while unpacking or moving your machine – get assistance. In the event that your machine must be moved up or down a flight of stairs, be sure that the stairs are capable of supporting the combined weight of people and the machine. Serious personal injury may occur.

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

Piece Inventory

Most of the G1006/G1007 has been pre-assembled at the factory. Therefore, there are very few loose parts.

You will find the following parts accompanying the G1006/G1007:

- Drilling Angle Vise
- Feed Levers with Knobs (3)
- Handwheels w/Handles (3)
- Lug Wrench
- Drill Chuck w/Key
- Drill Chuck Arbor (installed)
- Fly Cutter
- R-8 Arbor
- Cap Screw w/Washer
- Head Crank w/Handle

In addition to the parts listed above, the G1007 comes with the power feed and its attachment accessories.

If anything is missing, call or write to the service department listed in the previous Section.

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 at the end of the manual.

Clean Up

The unpainted surfaces are coated with a waxy oil to protect it 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 they may contact. Always follow the usage instructions on the product you choose for clean up.

⚠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.

⚠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.

NOTICE

Make sure that all of the protective coating is removed from the dovetail ways and column before operating the table or lifting/lowering the head.

Site Considerations

FLOOR LOAD

Your G1006/G1007 Milling/Drilling Machine represents a large weight load in a small footprint. If you question the strength of your workbench, you can opt to reinforce it, or consider placing the Mill/Drill on a freestanding bench like Grizzly's G5944 Stand for Mill/Drills.

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

Most of your G1006/G1007 has been assembled at the factory, but some parts must be assembled or installed after delivery. We have organized the assembly process into steps. Please follow along in the order presented here.

TOOLS REQUIRED: You will need a 10mm, 12mm, 14mm and 19mm open end wrenches, and a 2.5mm, 3mm, 4mm and 5mm Allen® wrench.

⚠WARNING

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.

Mounting

It is recommended that you cut a hole in your stand top to allow access to the under side of the base on the Mill/Drill. This will be necessary for adjusting the Y-plane leadscrew.

Before attempting to use your Mill/Drill, mount it securely to your benchtop or stand. Use the largest bolts possible to secure it to the benchtop.

⚠WARNING

With the head fully raised, this unit is very top heavy and will tip over if not bolted down. Tipping can cause a pinch or crushing type injury. Secure the base firmly.

Drilling Angle Vise

The drilling angle vise provided with your Mill/Drill attaches to the table with a table clamping kit.

Table clamping kits are available through the Grizzly Catalog and must be purchased separately. This table will accept 1/2" bolt clamping kits (G1076).

You can mount the drilling angle vise almost anywhere on the table, and it provides a myriad of uses when drilling.

⚠WARNING

Do not use the angle vise for milling. It is made strictly for holding materials to be drilled. This vise will not adequately clamp an object safely for a milling operation. There is not enough clamping pressure available and objects may be pulled out or upset in the vise jaws causing cutting tools to break and/or parts to be thrown. Any attempt to perform a milling operation using this vise may result in personal injury.

⚠WARNING

DO NOT make adjustments while the Mill/Drill is running. Ensure that the switch is off, power is disconnected and moving parts have stopped before making adjustments.

Power feed

The Model G1007 features a 110V auto-feed mechanism which allows hands-free, side-to-side passes while milling. Variable-speed feed control makes flat surface milling more consistent.

To install the power feed:

1. Attach the 2¼" diameter drive gear to the left end of the longitudinal table leadscrew. The setscrew for securing the drive gear requires a 2.5mm Allen® wrench. The gear couplers on the drive gear and table leadscrew will lock together.

2. Set the clamping bracket assembly on the left end of the table. Mark the points on the table's trough where the mounting bolts contact the table. Remove the clamping bracket assembly and spot drill to give the mounting bolts a small lip to "bite" without slipping on the rough cast surface. Set the clamping bracket assembly back on the end of the table and tighten down the mounting bolts.

3. Use a 5mm Allen® wrench to attach the power feed body to the clamping bracket assembly. Cap screws are provided. Before tightening completely, position the power feed body so the gears mesh perfectly. Tighten the cap screws when the gears are in mesh.

NOTICE

Use care when aligning the table leadscrew gears with the gearing on the power feed. The fit is correct when you can just slightly wiggle one gear without engaging the other. If there is too much space between the gears, teeth can be stripped under heavy loads. If the teeth mesh too tightly, the supporting bearings in the power feeder will wear out quickly.

4. Plug the rapid switch cord into the receptacle provided on the bottom of the power feed body.

5. Screw the knob onto the direction handle.

6. Place the clear plastic gear cover to the bottom of the power feed to protect the gears.

7. Insert the stops into the slot on the front edge of the table. Tighten them with a 5mm Allen® wrench.

NOTICE

Before using the G1007, place the power feeder cord and the control cord for the microswitch clear of any movements which could pinch or crush them. Before using the power feed, mark the maximum distance the table can move before the power feed comes in contact with the machine's base. Use that mark as a reference each time you re-adjust your table stops. This is the best way to avoid damaging the power feed and/or causing an unsafe condition.

8. Remove the center travel stop at the front of the table. Save the mounting bolts.

9. Secure the switch bracket to the front of the Mill/Drill. Use the mounting bolts saved in step 8.

10. Mount the switch to the switch bracket using the cap screws provided. Tighten them with a 6mm Allen® wrench. When the switch is depressed, the power feed automatically turns off and table movement stops.

Handwheels/Crank

There are three handwheels provided with the machine which control table movement. They are secured with setscrews and mounted as follows. Height adjustment is made using the crank provided.

Each handwheel has a setscrew which tightens with a 3mm Allen® wrench. The handwheel handles screw into the threaded holes on each handwheel. Turn the nut on the handwheel handles until almost tight against the plastic handle. Screw into the handwheel and tighten the nut against the wheel while maintaining the screw's position with a screwdriver. This nut acts as a locknut and a spacer.

The first two handwheels mount on the ends of the table and move the table left and right. With the power feed installed on the G1007, there is only one side handwheel installation location. Save the extra handwheel in case the power feed cannot be used.

The third handwheel mounts in front of the base and moves the table toward and away from the front of the machine.

The head crank secures to the left side of the machine. Screw its handle into the threaded hole at the end of the crank. This handle is similar to those in the handwheels. Use a 5mm Allen® wrench to tighten the setscrew that secures the hand crank to its shaft.

Screw a black knob onto an end of each of the three chrome feed levers. These are the levers that control the up and down movement of the spindle. Screw the levers with knobs into the threaded holes on the hub, located on the right side of the machine.

Collet/Arbor

The Models G1006/G1007 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 cover and open it.

2. Insert the collet or cutting tool's arbor up into the spindle housing. Rotate the collet or arbor to line up the keyway with the matching pin in the spindle opening.

3. 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.

4. 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 V-Belt that goes around the front pulley. Pull gently while tightening.***

To remove a collet or an arbor:

1. Loosen the hex head at the top of the drawbar (2 or 3 turns).

2. ***Hold the cutter with a shop towel to prevent it from dropping completely out of the machine.*** Tap on the top of the drawbar with a rubber mallet to loosen the collet from the spindle.

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.***

Drill Chuck/Arbor

Your Mill/Drill has been pre-fitted with a drill chuck arbor that has an R-8 shank and a Jacob's Taper. It is ready to accept the standard drill chuck provided with this machine.

To install the drill chuck:

1. Clean the grease off the drill chuck. Pay particular attention to the bore in the drill chuck: ***it must be free from all grease, oil and debris.***

2. Clean any grease, oil or debris off the Jacob's Taper already installed in your Mill/Drill.

3. Retract the drill chuck jaws fully by turning the body of the drill chuck clockwise.

4. Press the drill chuck onto the Jacob's Taper. Tap lightly with a rubber mallet to get a good fit. ***Note:*** *While it may not seem like there is anything keeping the drill chuck in place, the Jacob's Taper fitting provides a strong bond and will hold the drill chuck tightly.*

5. This drill chuck installation is permanent. ***Do not try to remove the drill chuck from the Jacob's Taper.***

⚠CAUTION

All types of milling cutters and drill bits are sharp. It is recommended that these not be handled directly. Use paper towels to hold sharp tooling to avoid cuts to your hands. Be careful while handling them and store them in a child safe location.

Fly Cutter/Arbor

Your Mill/Drill comes equipped with a fly cutter that fits on the 1" stub end of the R-8 arbor.

To install the fly cutter:

1. Clean all grease, oil and debris off the R-8 arbor.

2. Clean all grease, oil and debris off the fly cutter.

3. Fit the fly cutter onto the stub end of the arbor so the keys on the arbor and the key-ways on the fly cutter come together.

4. Secure the fly cutter to the arbor with the cap screw and washer provided. Tighten with an 8mm Allen® wrench.

5. Install the arbor with fly cutter into the Mill/Drill as described in the section titled **COLLET/ARBOR.**

SECTION 5: 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 thumbscrew 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 while holding the handwheel. 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 three levers are located on the right, forward portion of the head. The micro adjustment handwheel is on the front right hand side of the head.

To operate the feed lever:

There are 3 levers with knobs located on the right side of the headstock. Pull the lever nearest 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 locking knob located on the center of the hub for the down-feed levers.

2. Locking out the levered downfeed will transfer control to the handwheel. The handwheel will not function if the locking knob is loose.

3. Loosen the setscrew on the rim 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 lever on the forward, left hand portion of the head.

Depth Stop

The depth stop is used to control the range of downward movement by the drill bit or cutter. Maximum depth is 5".

To calibrate the depth stop:

1. Make sure the spindle is drawn all the way up into the head. Place a piece of paper on the workpiece. Loosen the headstock bolts and lower the head until the drill bit or cutter just contacts the paper. Tighten the headstock bolts.

2. Turn the depth stop leadscrew until the top of the indicator plate is level with your desired depth as listed on the scale to the left or right. *The depth stop leadscrew is controlled by the knurled knob under the front of the headstock.*

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* ***Graduated Dials*** above*.*

Speed Changes

The G1006/G1007 is capable of twelve different speed settings. Different types of cuts and types of materials require varying speeds. Consult outside sources for information about appropriate speeds for different applications.

To change speeds:

1. Loosen the motor locking lever. It is located on the right side of the machine, near the back. Pull the motor inward to move the rear pulley toward the spindle.

2. Loosen the two bolts that hold the center pulley system in place, so the pulley will float.

3. With the center and rear pulleys loose, move the V-Belts to the position on the pulleys corresponding to the desired speed (**See chart below**).

4. Push the motor back to tighten the rear V-Belt and tighten the motor locking lever.

5. Tighten the bolts holding the center pulley in place.

Head Height

The head height on this Mill/Drill can be adjusted for various applications.

To adjust the head height:

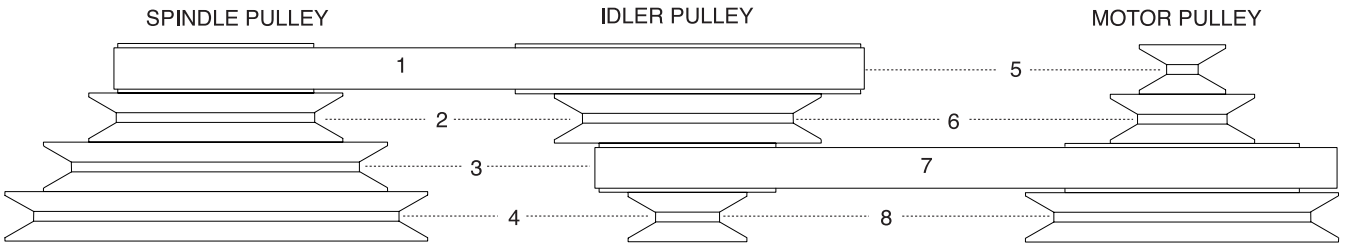
1. Loosen the two head locking nuts located on the right side of the head near the back. *Use the lug wrench provided.*

2. Use the head crank to move the head up or down according to your needs.

3. Tighten the two head locking nuts.

RPM	Belt pos.	RPM	Belt pos.
150	4-5	810	1-6
240	3-5	1070	2-7
250	4-6	1235	3-8
350	2-5	1485	1-7
400	3-6	1790	2-8
465	4-7	2500	1-8

The belt arrangement shown below would result in a speed of 1485 RPM.



SECTION 6: OPERATIONS

Power feed

The power feed will move the table in the X-plane only.

To operate the power feed:

1. Loosen the table locking levers located just below the front edge of the table.

2. Adjust the table stops to the right and left to the desired distance you wish the table to travel. When they hit the switch the power feed will be deactivated.

⚠CAUTION

Before running your power feed be sure there is enough running clearance between the table, spindle, vise, clamps and/or parts. Be aware that all of these can become pinch points.

3. Use the switch located to the left of the power feed lever to turn on the power feed.

4. Push the lever to the right to move the table to the right.

5. Push the lever to the left to move the table to the left.

6. Turn the dial at the base of the lever to increase or decrease the speed of table movement.

NOTICE

The table stops supplied with the machine will not stop the powerfeed until the switch buttons are totally depressed. To set up for accurate stops make a few "dry runs" without running the Mill/Drill. Reset the stops until the table motion ends in a satisfactory location.

7. Press the "rapid switch" with the lever pushed in the direction of desired movement to move the table at maximum velocity.

8. If there is a powerfeed motor overload (i.e. trying to move too fast through a heavy cut), the built in circuit breaker will trip, and the powerfeed will stop. If this occurs, proceed with these steps:
   - **a.** Stop the milling operation.
   - **b.** Turn the powerfeed switch to the "off" position.
   - **c.** Press the circuit breaker reset button located in the upper left front corner of the power feed unit.
   - **d.** Troubleshoot and remedy the cause of the electrical overload and start again.

Table Movement

Movement:

The Mill/Drill table can be moved in the X-Y plane only. The handwheel(s) on the side(s) of the table move the table either left or right. The handwheel in the front of the table will move the table back and forth.

One complete revolution of either handwheel moves the table 0.100".

Locking:

The table can be locked in either direction. Y-plane movement is stopped by locking the two lever-screws located just below the front middle of the table. The X-plane movement is stopped by locking the two butterfly screws located under the table on the right side of the base.

Test Run

⚠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).

Once assembly is complete and adjustments are done to your satisfaction, you are ready to test run the machine.

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/Drill 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.

⚠WARNING

DO NOT make adjustments while the Mill/Drill is running. Ensure that the switch is off, power is disconnected and moving parts have stopped before making adjustments.

If you cannot easily locate the source of an unusual noise or vibration, contact our Service Department for help. (See Introduction)

Notes

SECTION 7: MAINTENANCE

General

Your Model G1006/G1007 Mill/Drill 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. It is best of course, to do this after each use.

Sharp cutters are essential for top performance. If you find that the machine cuts less efficiently than usual, inspect the cutters and sharpen or replace them as necessary.

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

⚠WARNING

DO NOT make adjustments while the Mill/Drill is running. Ensure that the switch is off, power is disconnected and moving parts have stopped before making adjustments.

Gibs

The gibs are pre-adjusted at the factory and will not need further adjustment by you until after extended use. If movement seems too tight at first, make sure that all rust preventative is removed from the ways, lubricate them with oil, and work the table back and forth several times to loosen it up.

The gibs are adjusted by turning the large slotted screwheads in the front and right side of the table base until you feel a slight drag when you turn the handwheels. The screw at the front of the machine affects movement from front to back. The screw under the right side of the table affects longitudinal movement. You can loosen the screws if your table movement seems excessively stiff.

Lubrication

⚠WARNING

DO NOT make adjustments while the Mill/Drill is running. Ensure that the switch is off, power is disconnected and moving parts have stopped before making adjustments.

Points requiring periodic lubrication are:

1. *The main column*. A light film of oil will smooth action and prevent rust and corrosion.

2. *The quill.* A light coating of oil will ensure smooth movement.

3. *The quill return spring.* Oil annually with a light lubricant (SAE 20). Apply with a brush or squirt can.

4. *The quill pinion.* Lubricate every 90 days with non-hardening grease.

5. *The table leadscrews.* Lubricate once each week with several drops of SAE 20.

6. *The table leadscrew bearings.* Lubricate the bearings located at the ends of the table and just in front of the Y axis hand crank on a daily basis. You will find oil ports with a ball. Apply a small amount of SAE 20 using the oil can's tip to push in the ball.

7. *The table and apron slides.* Lubricate the table slides daily. An oil port with a ball is located on the operators side of the table edge. The apron slide can be oiled directly. *Make sure to carefully clean chips and dirt off of this slide before oiling.*

Quill

The internal quill pin is a setscrew and has been pre-adjusted at the factory. It should not need adjustment under normal circumstances.

The slotted setscrew on the left side of the head is used for limiting the amount of rotational play in the quill body. Loosening the check-nut and tightening the setscrew will work to eliminate this play in the quill.

If you are worried that you might have excessive quill play, spindle looseness or if an accident has occurred that requires this setscrew's readjustment, contact the Service Department for advice.

V-Belts

Inspect regularly for tension and wear. Replace when necessary with a size B-42 belt for the spindle pulley to the idler pulley belt and a size B-34 belt from the idler pulley to the motor pulley belt. Check pulleys to ensure that they are properly aligned.

Return Spring Tension

⚠CAUTION

The spring's tail is located on the perimeter of the spring housing. This part may be sharp! Use leather gloves or a heavy shop towel to cover the tail while loading or unloading return spring pressure. Failure to use such precautions will results in personal injury.

The spring tension for automatic quill recoil has been pre-set at the factory. It should not need adjustment under most normal circumstances. If it does need adjustment, the spring housing is located on the left side of the head.

To adjust the spring tension:

1. Loosen black thumb knob, located in the center of the spring housing, by only two or three turns.

⚠WARNING

Do not completely remove the cover! If you remove the spring cover, the spring will uncoil rapidly, probably cause injury, and be nearly impossible to put back together.

2. Pull the spring cover out a little bit so the notches just clear the roll pin. ***Hold the spring cover tightly or the force of the spring will make it spin out of control.***

3. Rotate the cover to adjust the tension. Push the cover back in to engage the roll pin in one of the notches.

4. Tighten the black thumb knob.

Table Leadscrews

When you turn the handwheels to adjust the position of the table, you will notice slight play in the handwheel before the table begins to move. If this play exceeds 0.010" (measured with the dial at the base of each handwheel), then you will need to adjust the leadscrews.

To adjust the Y-plane leadscrew:

1. Access the underside of the base through the hole in the bench under the base.

2. Locate the adjuster midway along the leadscrew, inside the base.

3. Tighten the Allen® head setscrew on the adjuster.

4. Test the adjustment by turning the front handwheel. You should detect less than 0.010" of play.

To adjust the X-plane leadscrew:

1. Locate the longitudinal leadscrew adjuster under the middle of the table. The Allen® head on the adjustment screw faces to the right.

2. Tighten the adjustment screw with a long Allen® wrench.

3. Test the adjustment by turning one of the side handwheels. You should detect less than 0.010" of play.

These adjusters may require you to fabricate extensions for your hex wrenches. Make adjustments in small increments. Over-tightening can add unnecessary wear to both the leadscrews and the adjusters.

SECTION 8: CLOSURE

The following pages contain general machine data, parts diagrams/lists and Warranty/Return information for your Model G1006/G1007 Milling/Drilling Machine.

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 G1006/G1007 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

DO NOT make adjustments while the Mill/Drill is running. Ensure that the switch is off, power is disconnected and moving parts have stopped before making adjustments.

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 Service Department listed in the introduction.

Additional information sources are necessary to realize the full potential of this machine. Trade journals, metalworking magazines, and your local library are good places to start.

⚠WARNING

The Model G1006/1007 Mill/Drill is a powerful, professional-quality machine, designed and built to provide outstanding results when used cautiously and with respect. Like any machine of its type, the Models G1006/G1007 have some inherent dangers, which, when used with a lack of care, can result in serious injury or fatality. Please do not attempt to use these machines without familiarizing yourself with the instructions for assembly, adjustment, and safe operation.

The Model G1006/G1007 was specifically designed for milling and drilling metal. DO NOT MODIFY AND/OR USE THIS MILL/DRILL 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.

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.