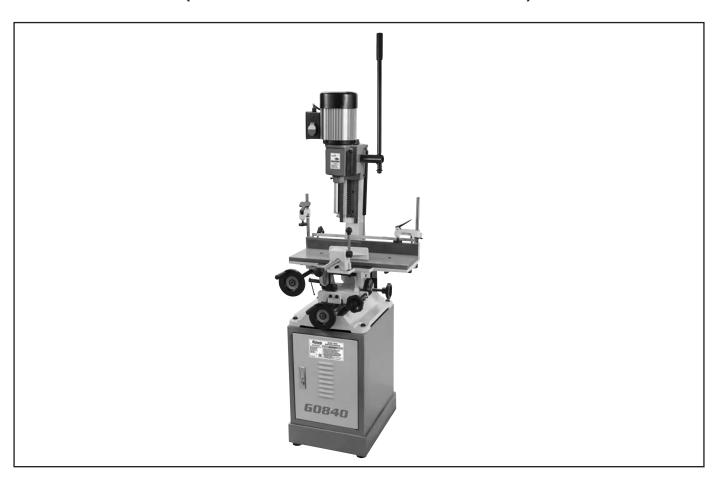


MODEL G0840 MORTISING MACHINE OWNER'S MANUAL

(For models manufactured since 12/17)



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WARNING: NO PORTION OF THIS MANUAL MAY BE REPRODUCED IN ANY SHAPE
OR FORM WITHOUT THE WRITTEN APPROVAL OF GRIZZLY INDUSTRIAL, INC.

#19238JHAB PRINTED IN CHINA



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

Contact Info

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

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

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

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

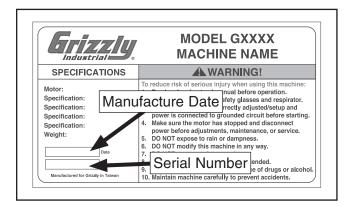
Manual Accuracy

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

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

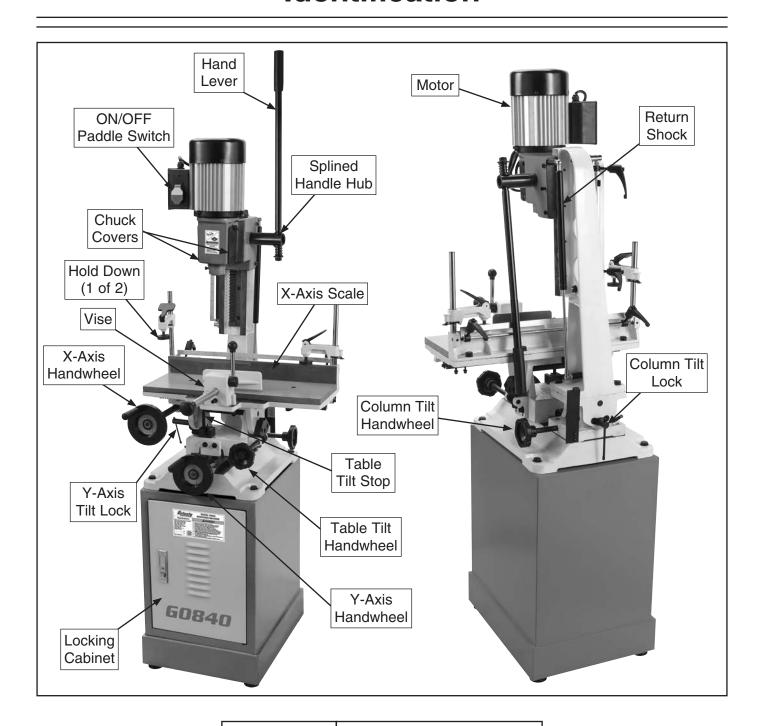
If you find this to be the case, and the difference between the manual and machine leaves you confused or unsure about something, check our website for an updated version. We post current manuals and manual updates for free on our website at www.grizzly.com.

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





Identification



WARNING

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

Controls & Components

Refer to the following figures and descriptions to become familiar with the basic controls and components of this machine. Understanding these items and how they work will help you understand the rest of the manual and minimize your risk of injury when operating this machine.

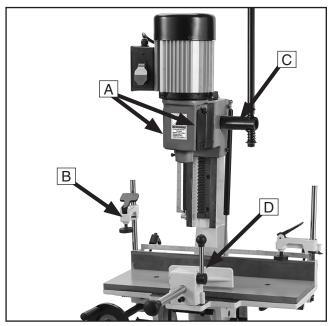


Figure 1. Table and column controls (upper).

- **A.** Chuck Covers: Provide access to chuck head to remove or install mortising chisel.
- **B.** Hold Downs: Provide downward pressure on workpiece during operation. Hold downs adjust up or down and feature a locking tab to engage hold-down pad.
- C. Splined Handle Hub: Positions handle in splined hub for maximum leverage during operation. Pull handle outward to allow handle to rotate in hub.
- D. Vise: Secures workpiece against the fence during operation. Press vise face against workpiece and secure in place using lock lever.

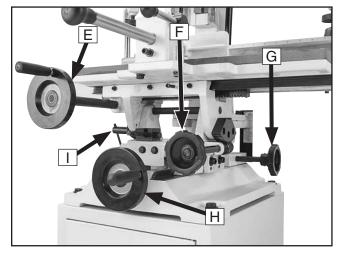


Figure 2. Table and column controls (lower).

- **E. X-Axis Handwheel:** Rotates handwheel to move table horizontally left or right. Table features a reference scale and indicator for X-axis movement.
- **F. Table Tilt Handwheel:** Rotates handwheel to tilt table up to 22.5° forward/backward. Tighten table tilt lock to secure setting.
- G. Column Tilt Handwheel: Rotates handwheel to tilt column and headstock up to 22.5° left or right. Features tilt angle scale with reference indicator, column tilt lock, and adjustable tilt stop (see Figure 3).
- H. Y-Axis Handwheel: Rotates handwheel to move table horizontally forward or backward.
- I. Table Tilt Lock: Secures table position.

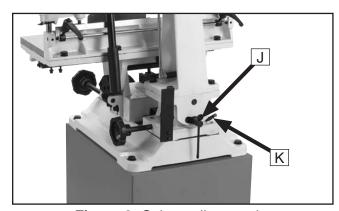


Figure 3. Column tilt controls.

- J. Column Tilt Lock: Secures column position.
- K. Tilt Stop: Adjusts to stop column tilt at specific angle for operation.





MACHINE DATA SHEET

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

MODEL G0840 MORTISING MACHINE WITH XY TABLE AND STAND

Product Dimensions:	
Weight	
Width (side-to-side) x Depth (front-to-back) x Height	
Footprint (Length x Width)	
Space Required for Full Range of Movement (Width x Depth)	
Shipping Dimensions:	
Carton #1	
Туре	Wood Crate
Content	Machine
Weight	
Length x Width x Height	25 x 22 x 39 in.
Must Ship Upright	Yes
Carton #2	
Туре	Cardboard
Content	Stand
Weight	27 lbs.
Length x Width x Height	20 x 16 x 25 in.
Must Ship Upright	Yes
Electrical:	
Power Requirement	110V, Single-Phase, 60 Hz
Full-Load Current Rating	10.2A
Minimum Circuit Size	
Connection Type	Cord & Plug
Power Cord Included	Yes
Power Cord Length	6 ft.
Power Cord Gauge	14 AWG
Plug Included	Yes
Included Plug Type	NEMA 5-15
Switch Type	Paddle Switch w/Removable Safety Key
Motors:	
Main	
Horsepower	1
Phase	Single-Phase
Amps	9
Speed	
Туре	
Power Transfer	
Bearings	



Main Specifications:

Operation

	Table Tilt (Left/Right)	22.5 deg.
	Table Cross Travel	11 in.
	Table Longitudinal Travel	5-1/4 in.
	Spindle Travel	8-5/8 in.
	Column Tilt (Left/Right)	22.5 deg.
	Number of Spindle Speeds	1
	Range of Spindle Speeds	3580 RPM
(Cutting Capacities	
	Maximum Stock Width	
	Maximum Stock Thickness	8-5/8 in.
	Maximum Mortising Depth	Variable
	Maximum Chisel Travel	8-5/8 in.
	Maximum Distance Column to Chisel	7-1/4 in.
	Maximum Chisel Size	1/4 - 1 in.
	Collar Size	3/4 in.
	Fence to Chisel Center Distance	
-	Table Information	
	Table Size Length	
	Table Size Width	
	Table Size Thickness	5/8 in.
	Floor to Table Height	
(Chuck Information	
	Chuck Capacity	5/8 in
(Construction	
	Base	
	Head	
	Table	
	Paint Type/Finish	
	Cabinet	Steel
	Column	
	Fence	Precision-Ground Cast Iron
	Saddle	Cast Iron
(Other	
	Handle Length	
	Clamp Drive	
	Head Drive	
Othor	Specifications:	
	Country of Origin	
	Warranty	
	Approximate Assembly & Setup Time	
	Serial Number Location	Machine ID Label

Features:

Tilting Column Assembly
Tilting Y-Axis Table
X- and Y-Axis Table Movement
Solid Cast-Iron Construction
Built-In Headstock Gas-Powered Return Strut
Adjustable Depth-Stop and Table-Tilt Stops
Adjustable Handle Height



SECTION 1: SAFETY

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

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



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

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

▲CAUTION

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

NOTICE

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

Safety Instructions for Machinery

AWARNING

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.



AWARNING

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



Additional Safety for Mortising Machines

AWARNING

Serious injury or death can occur from getting clothing, jewelry, or long hair entangled in rotating spindle or bit/cutting tool. Contact with rotating bit/cutting tool can result in severe cuts or amputation of fingers. Flying metal chips can cause blindness or eye injuries. Broken bits/chisels, unsecured workpieces, chuck keys, or other adjustment tools thrown from rotating spindle can strike nearby operator or bystanders with deadly force. To reduce the risk of these hazards, operator and bystanders MUST completely heed hazards and warnings below.

WEARING PROPER PPE. Flying chips created by mortising can cause eye injuries or blindness. Always wear a face shield in addition to safety glasses. Always keep hands and fingers away from chisel. Avoid awkward hand positions, where a sudden slip could cause hand to move into bit/chisel.

AVOIDING ENTANGLEMENT. DO NOT wear loose clothing, gloves, or jewelry, and tie back long hair. Keep all guards in place and secure. Always allow spindle to stop on its own. DO NOT stop spindle using your hand or any other object.

REMOVING ADJUSTMENT TOOLS. Chuck key and other tools left on machine can become deadly projectiles when spindle is started. Remove all loose items or tools used on spindle immediately after use.

CHISEL COMPATIBILITY. Mortising chisels can fly out of chuck at operator if not properly secured, causing serious personal injury. Make sure mortising chisel fits a minimum of ½" into chuck.

WORKPIECE PREPARATION. To avoid loss of workpiece control, DO NOT mortise material with an uneven surface on the table, unless a suitable support is used. To avoid impact injuries, make sure workpiece is free of nails or foreign objects in area to be mortised.

CLEANING MACHINE SAFELY. To avoid contact with chisel/bit, never clear chips while spindle is turning. To avoid cuts and eye injuries, DO NOT clear chips by hand or with compressed air—use a brush or vacuum instead.

WORKPIECE CONTROL. An unsecured workpiece may unexpectedly shift, spin out of control, or be thrown if bit/chisel "grabs" during operation. Clamp workpiece to table or in table-mounted vise, or brace against column to prevent rotation. NEVER hold workpiece by hand during operation. NEVER start machine with bit/cutting tool touching workpiece; allow spindle to gain full speed before drilling.

INSPECTING BIT/CUTTING TOOL. Damaged bits/chisels may break apart during operation and hit operator or bystanders. Dull bits/chisels increase cutting resistance and are more likely to grab and spin/throw workpiece. Always inspect bits/chisels for sharpness, chips, or cracks before each use. Replace dull, chipped, or cracked bits/ chisels immediately.

MAINTAINING MACHINE. Keep machine in proper working condition to help ensure that it functions safely and all guards and other components work as intended. Perform routine inspections and all necessary maintenance. Never operate machine with damaged or worn parts that can break or result in unexpected movement during operation.

SECURING TABLE AND HEADSTOCK. To avoid accidental contact with tool/bit, tighten all table and headstock locks before operating machine.

DISCONNECT POWER FIRST. To reduce risk of electrocution or injury from unexpected startup, make sure machine is turned *OFF*, disconnected from power, and all moving parts have come to a complete stop before changing bits/chisel or starting any inspection, adjustment, or maintenance procedure.



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.



AWARNING

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... 10.2 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.

AWARNING

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

110V Circuit Requirements

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

Nominal Voltage	110V, 115V, 120V
Cycle	60 Hz
Phase	Single-Phase
Power Supply Circuit	15 Amps

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.)

ACAUTION

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

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



Grounding & Plug Requirements

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

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

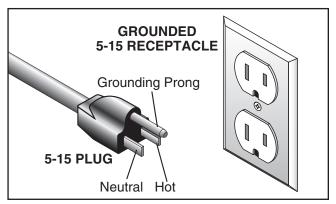
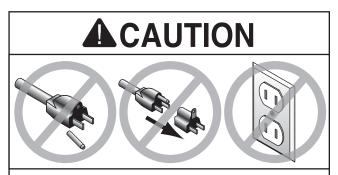


Figure 4. Typical 5-15 plug and receptacle.



SHOCK HAZARD!

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

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

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

Extension Cords

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

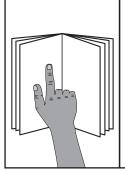
Extension cords cause voltage drop, which can damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes).

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

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



SECTION 3: SETUP



AWARNING

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



AWARNING

Wear safety glasses during the entire setup process!



AWARNING

HEAVY LIFT!

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

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 reduce risk of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.



WARNING

SUFFOCATION HAZARD!

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

Needed for Setup

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

Des	scription	Qty
•	Safety Glasses (for each person)	1
•	Wrenches or Sockets 10, 14, 17mm	1 Ea
•	Phillips Head Screwdriver #2	1
•	Flat Head Screwdriver	1
•	Additional People	
•	Floor Mounting Hardware 3/8"	
•	Tools For Mounting To Floor As I	Veeded

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

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 may result in serious personal injury or property damage.



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.

Вох	(1 (Figure 5)	Qty
Α.	Handle	1
B.	Hex Wrenches 3, 5, 6, 8mm1	Ea
C.	Handwheel Handles	2
D.	Chuck Key	1
	Workstop	
	Floor Mounting Brackets (not shown)	
	Hardware (not shown)	
	—Hex Bolts M12-1.75 x 40	4
	—Flat Washers 12mm	8
	—Lock Washers 12mm	4
	—Hex Nuts M12-1.75	
	—Cap Screws M6-1 x 20	
	—Lock Washers	

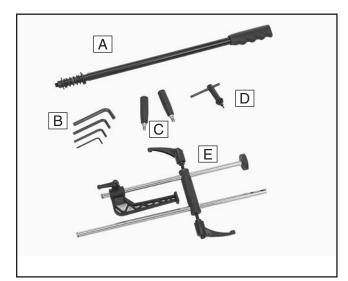
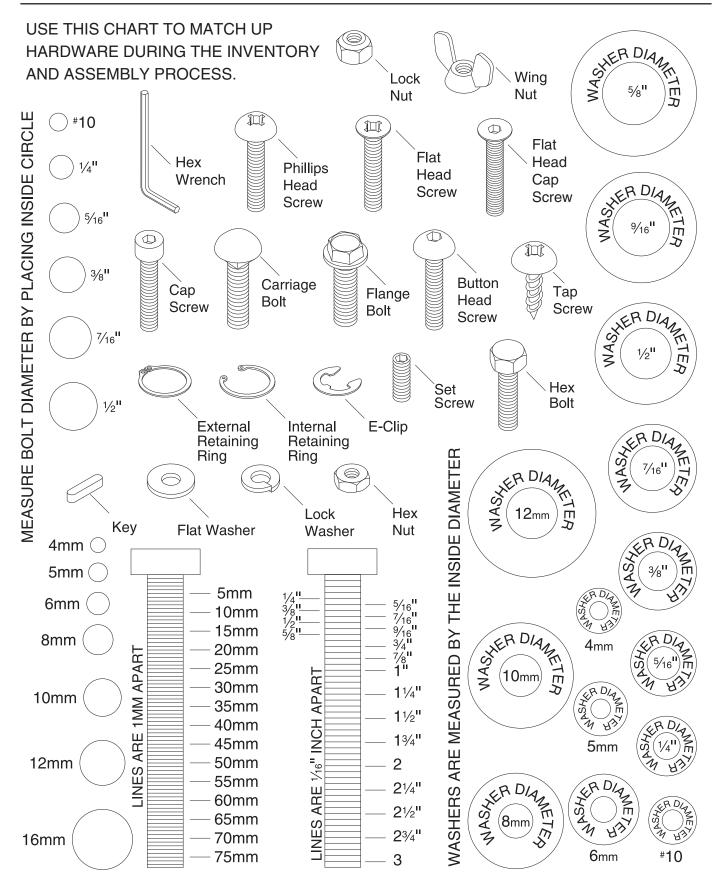


Figure 5. Inventory items.

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.

Hardware Recognition Chart



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.



AWARNING

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.



ACAUTION

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.

T23692—Orange Power Degreaser

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



Figure 6. T23692 Orange Power Degreaser.

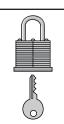
Site Considerations

Weight Load

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

Space Allocation

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



ACAUTION

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

Physical Environment

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

Electrical Installation

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

Lighting

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

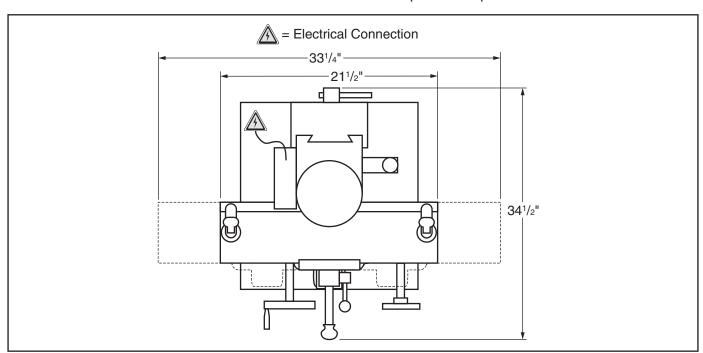


Figure 7. Minimum working clearances.



Assembly

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

To assemble machine:

1. With help from two assistants, lift mortiser onto stand, and secure to stand using (4) M12-1.75 x 40 hex bolts, (8) 12mm flat washers, (4) 12mm lock washers, and (4) M12-1.75 hex nuts (see **Figure 8**).

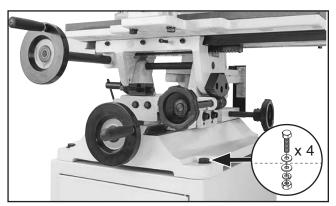


Figure 8. Mortiser secured to stand.

2. Install handle assembly so roll pin aligns with splined hub, then install (2) 12mm flat washers, (1) compression spring, and M12-1.75 hex nut onto end of handle, as shown in Figure 9.

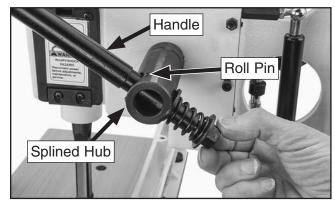


Figure 9. Attaching handle assembly to splined hub.

Test Run

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

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

The test run consists of verifying the following: 1) the main motor runs correctly, and 2) the safety disabling mechanism on the switch works correctly.

AWARNING

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

AWARNING

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

To test run the machine:

- 1. Clear all setup tools away from machine.
- 2. Connect machine to power supply.
- Turn machine *ON*, verify motor operation, and then turn machine *OFF*.

The motor should run smoothly and without unusual problems or noises.

4. Remove switch disabling key, as shown in **Figure 10**.

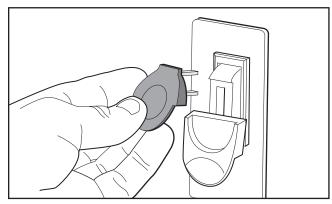


Figure 10. Removing switch key from paddle switch.

- **5.** Try to start machine with paddle switch. The machine should not start.
 - If the machine *does not* start, the switch disabling feature is working as designed.
 - If the machine does start, immediately stop the machine. The switch disabling feature is not working correctly. This safety feature must work properly before proceeding with regular operations. Call Tech Support for help.

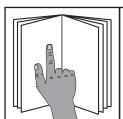


SECTION 4: OPERATIONS

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.



AWARNING

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

WARNING

Eye injuries, respiratory problems, or hearing loss can occur while operating this tool. Wear personal protective equipment to reduce your risk from these hazards.







NOTICE

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

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

- Examines workpiece to make sure workpiece is suitable for mortising.
- 2. Adjusts headstock tilt angle and chisel vertical depth stops, if necessary, for desired cut.
- Lays out desired mortise clearly on workpiece and uses X- and Y-axis table controls (and Y-axis tilt) to align chisel with layout marks on workpiece (see Figure 11).

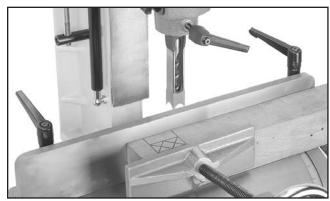


Figure 11. Example of aligning mortising chisel.

- **4.** Puts on safety glasses, hearing protection, and a respirator, if needed.
- 5. Turns machine ON.
- **6.** Uses handle to lower chisel steadily into workpiece.
 - Feed rate must be fast enough to prevent tip of the bit from burning, but slow enough to prevent motor from stalling. Speed will vary depending on wood type.
 - When cutting deep mortises, make a 1" deep cut, then back off and allow the chips to clear before cutting deeper.
- Reaches depth stop and removes chisel from workpiece. Repeats Step 6 until all material is removed from within layout marks.
- 8. Turns machine OFF.



Adjusting Hand Lever

To maximize torque and ensure ease of use, the position of the hand lever can be adjusted to accommodate the operator.

To adjust hand lever:

- 1. Lift hand lever to highest position.
- 2. Pull lever to right, 90 degrees to machine.
- When hand lever clutch separates from hub (see Figure 12), rotate hand lever to desired position.

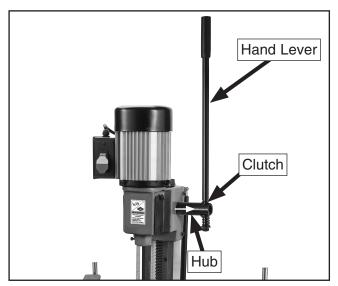


Figure 12. Location of hand lever components.

4. Push hand lever left, ensuring that teeth in hub and clutch mesh.

Installing/Adjusting Mortising Chisel

Make sure your mortising chisel and bit are properly installed before each use and every time after the mortise chisel is changed. Proper chisel/bit alignment helps to ensure the highest quality result.

Note: This mortiser uses 3/4" shank chisels.

Item(s) Needed	Qty
Chuck Key	1
Heavy Leather Gloves	
Wood Scrap	1
Chisel/Bit	1
Precision Square	1

To install a mortising chisel:

- 1. DISCONNECT MACHINE FROM POWER!
- **2.** Raise headstock to highest position with hand lever and open chuck covers.
- Using chuck key, loosen chuck, then loosen chisel lock screw on outside of bushing collar (see Figure 13).

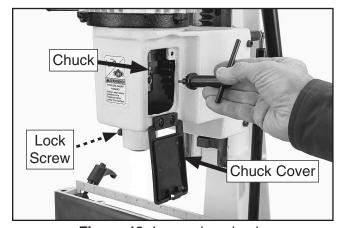


Figure 13. Loosening chuck.

4. Wear heavy leather gloves to protect your hands, or wrap a shop towel around sharp end of chisel. Place wood scrap on table to protect it during chisel and bit installation.



5. Slide bit into chisel (see **Figure 14**), and insert chisel/bit assembly into headstock until it stops at bushing and allow it to slide back down ½4". Tighten bit in chuck using chuck key, then tighten lock screw to secure chisel.

Note: Set chisel chip ejection slot to left, right, or outward to minimize obstructions while operating.

- Lower headstock down to just above worktable surface and place a precision square against fence face. Ensure outside of chisel is perpendicular to fence, as shown in Figure 14.
 - If chisel is not square to fence, then loosen chisel lock screw, twist chisel into alignment, then retighten screw.

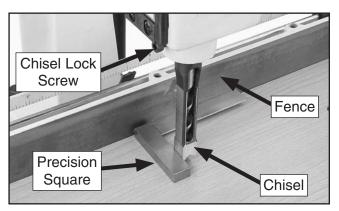


Figure 14. Squaring chisel to fence.

- **7.** Close chuck covers.
- 8. With precision square still in place, loosen chuck and position bit so it extends ¹/₁₆—³/₁₆" beyond chisel (see Figure 15), then tighten chuck and lock screw to secure bit setting.

Note: You may need to loosen chisel lock screw again to adjust chisel up or down.

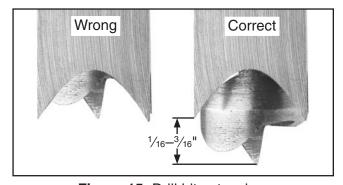


Figure 15. Drill bit extension.

Squaring Chisel to Table

Each time the mortising chisel is changed, or column tilt angle is adjusted, it is good practice to verify chisel is square to table to ensure mortises remain square to workpiece.

Item(s) Needed	Qty
Precision Square	1
Open-End Wrench 10mm	1

To square chisel to table:

- 1. DISCONNECT MACHINE FROM POWER!
- Loosen column tilt lock, and loosen tilt stop (see Figure 3 on Page 4).

Note: Tilt stop can be pivoted away to allow left-to-right movement of column.

3. Place square vertically on table, allowing edge to rest against side of chisel, as shown in **Figure 16**.

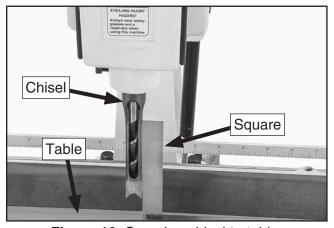


Figure 16. Squaring chisel to table.

- Turn column tilt handwheel (see Figure 2 on Page 4) to align edge of square with side of chisel.
- 5. Once chisel and table are aligned, adjust tilt stop until tilt stop (see Figure 3 on Page 4) rests against base of column, then tighten column tilt lock to secure setting.



Cutting a Mortise

Mortises can be cut at varying lengths depending upon the size of tenon/joint being used. We recommend staggering mortise cuts to maximize material removed with each pass (see **Figure 17** for example), and to ensure chisel does not bend/ tilt during operation.

Tip: Always allow chips to clear chisel after each pass. For deeper cuts, raise chisel from mortise every 1" of depth to allow chips to clear.

To cut a basic mortise:

- 1. DISCONNECT MACHINE FROM POWER!
- Verify chisel and fence are square (see Installing/Adjusting Mortising Chisel on Page 20), and adjust as needed.
- 3. Lay out desired mortise on test piece of scrap lumber.
- Position test piece flush with fence, and set depth stop (see Adjusting Headstock Depth Stops on Page 25).
- Adjust fence so chisel is aligned with outline of mortise (see Figure 17).

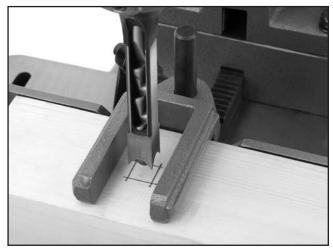


Figure 17. Example of aligning chisel with mortise outline.

6. Position and lock hold-downs (see Using Workpiece Hold-Downs on Page 24).

AWARNING

Pulling down on the handle can be difficult on some woods. However, NEVER use a cheater pipe or handle extender on the handle. You could break the hand lever and be seriously injured.

- **7.** Turn power **ON**, and use hand lever to feed mortising chisel into test piece.
 - Feed rate must be fast enough to prevent tip of auger from burning, but slow enough to prevent motor from stalling. This speed will vary depending on wood type, moisture content, and frequency of chip clearing from mortise.
 - When cutting deep mortises, make a 1" deep cut, then back off and allow chips to clear before cutting deeper.

Note: With some chisels, noise and smoke is normal, but we recommend using a small amount of lubrication on augers (not chisels) to keep this to a minimum. See **Page 27** for more information on lubricating augers.

- **8.** Once desired depth is achieved, move hand lever back to highest position. The test piece should remain in place as this is done.
- **9.** Turn power *OFF*.
- 10. Check placement of hole on test piece, and adjust fence and depth stop, if necessary. When desired accuracy of placement is achieved, repeat Steps 3–8 on actual workpiece.
- **11.** When making rectangular mortises, follow sequence of cuts shown in **Figure 18**. Position chisel over center of cuts 5, 6, and 7, since these only use part of the chisel.

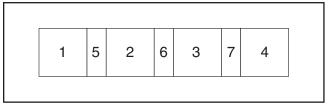


Figure 18. Sequence of cuts.



Installing/Adjusting Work Stop

The dual-position work stop connects to either end of the table, and is used for repeat mortising operations.

Item(s) Needed	Qty
Hex Wrench 4mm	1

To install and adjust work stop:

1. Use (2) M6-1 x 20 cap screws and (2) 6mm lock washers to connect work stop to underside of table (see **Figure 19**).

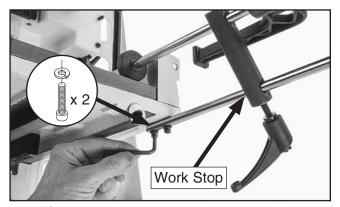


Figure 19. Attaching work stop to table.

2. Unlock work stop and position it at desired distance from chisel.

Note: If two mortising positions are required, pivot secondary stop in alignment with end of fence (see **Figure 20**).

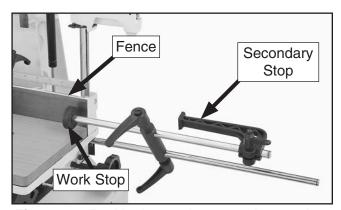


Figure 20. Positioning work stop and secondary stop.

Adjusting Table Tilt

The work table tilts forward/backward up to 22.5°, allowing for a wide variety of mortising angles.

To tilt work table:

 Unlock table tilt lock handle (see Figure 21), and turn tilt handwheel left or right to tilt table.

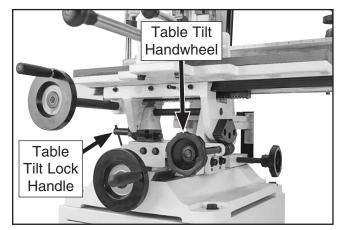


Figure 21. Table tilt controls.

Use table angle scale (see Figure 22) as a reference, and secure table position by tightening table tilt lock handle.

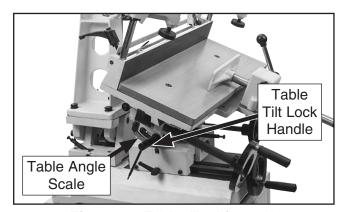


Figure 22. Table tillted forward.

NOTICE

For best results, follow steps in Squaring Chisel to Table section to reset table-to-chisel position at 90° after mortising operations are completed with table tilted.



Adjusting Column Tilt

CAUTION CRUSHING INJURY HAZARD!

- To reduce risk of tipping mortiser:
 - DO NOT tilt column beyond maximum 22.5° left or right mark on scale.
 - When column is tilted, DO NOT move table all the way left or right (in direction of column tilt).
 - DO NOT mortise large/heavy workpieces with column tilted.
- Always lock column and work table in place before performing operations with column tilted.

The mortiser column tilts 22.5° left or right using the column tilt handwheel (see **Figure 23**).

IMPORTANT: Always return headstock to vertical position when operation is complete.

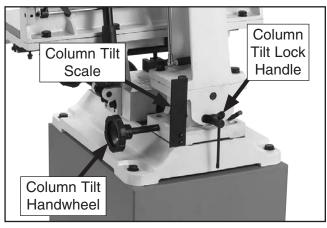


Figure 23. Column tilt controls.

To tilt column:

- **1.** Move table to center position.
- Unlock column tilt lock and rotate column tilt handwheel as needed to set proper angle of column tilt.
- **3.** Tighten column tilt lock handle to secure setting.

Using Workpiece Hold-Downs

The table features two adjustable hold-downs for securing the workpiece during operation. Due to the force involved in mortising, we highly recommend using the hold-downs for the best possible result.

To adjust workpiece hold-downs:

- 1. Squeeze post lock and position hold-downs away from fence to allow workpiece to sit flush against fence.
- Squeeze post lock to raise/lower hold-downs until pad rests on workpiece (see Figure 24). Post lock will automatically lock when released.

Note: For larger workpieces, hold-downs may be rotated out of the way, and an alternative hold-down system may be used, such as clamps.

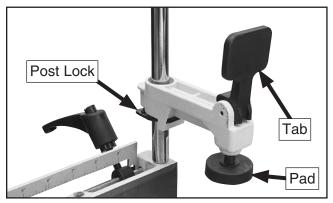


Figure 24. Setting hold-down height.

- 3. Engage hold-down by flipping tab up to lock workpiece in place. With both hold-downs engaged, check to verify workpiece is secure.
 - If workpiece does not shift, hold-downs are set properly and table can be adjusted for mortising operation (see Installing/ Adjusting Work Stop on Page 23).
 - If workpiece shifts slightly, repeat Steps 1-2, only lowering pad slightly closer to workpiece until workpiece does not shift.



Adjusting Headstock Depth Stops

The headstock can be raised to accommodate workpieces up to 85/8". Vertical depth stops adjust to preset mortising depth for repeat operations.

The lower depth stop controls the mortise depth of cut. The upper depth stop prevents the head-stock from raising any farther than necessary.

Tip: Always make the mortise at least an 1/8" deeper than the tenon to allow enough room for excess glue.

To adjust headstock height using depth stops:

- Lower mortising chisel to your desired depth of cut.
- 2. Tighten lower depth stop against base of depth indicator (see Figure 25).

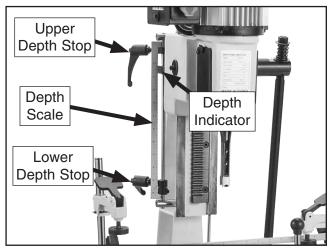


Figure 25. Depth stop controls.

3. Raise headstock and place workpiece onto table. Set upper depth stop so chisel is approximately ½" above workpiece at top headstock position.

Setting Work Stops

The table has 11" of movement along X-axis (left/right) and 5½" of movement along the Y-axis (forward/backward).

Adjusting the work stops ensures the mortise does not exceed the desired length of the tenon.

To adjust table stops:

 Use handwheels (see Figure 26) to position table and column with workpiece at desired starting location for mortising.

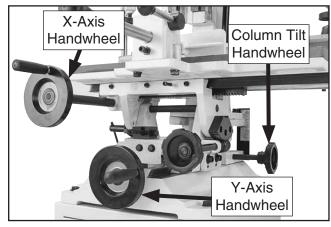


Figure 26. Table and column controls.

Tighten work stop against indicator (see Figure 27) and turn X-axis handwheel until opposite edge of mortise is reached. Set remaining work stop against indicator to limit table travel and perform cuts as outlined in Cutting a Mortise on Page 22.

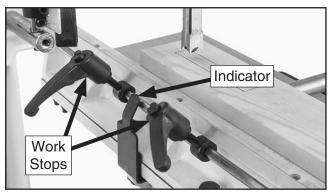


Figure 27. Setting table work stops.



SECTION 5: ACCESSORIES

▲WARNING

Installing unapproved accessories may cause machine to malfunction, resulting in serious personal injury or machine damage. To reduce this risk, only install accessories recommended for this machine by Grizzly.

NOTICE

Refer to our website or latest catalog for additional recommended accessories.

H7583—Tenoning Jig

Use this simple jig on your table saw to make tenons for a mortise and tenon joint. Precision adjustments make it easy to create a perfect tenon every time.

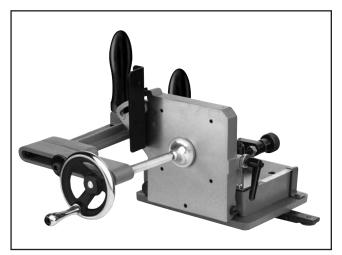


Figure 28. Table saw tenoning jig.

H2544—Mortising Chisel 5/16" H2545—Mortising Chisel 3/8" H2546—Mortising Chisel 1/2" H2547—Mortising Chisel 5/8" H2548—Mortising Chisel 3/4" H1154—Mortising Chisel 1" H2549—4-Pc. Mortising Chisel Set

H2543—Mortising Chisel 1/4"

1/4", 5/16", 3/8", 1/2"



Figure 29. 4-Pc. Mortising Chisel Set.

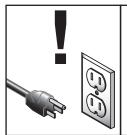
T28000—"Bear Crawl" Mobile Base

We took years of input and months of testing and design to come out with the Grizzly "Bear Crawl" Mobile Base. Its 1200 lb. capacity, steel and rubber, heavy-duty ball bearing wheels, and toe flipstops are only a few of the features that will make this mobile base a staple under your machines for years to come. Adjusts from 19" x 21" to 29½" x 29½"!



Figure 30. T28000 Bear Crawl Mobile Base.

SECTION 6: MAINTENANCE



AWARNING

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

Schedule

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

Ongoing:

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

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

Cleaning

Cleaning the Model G0840 is relatively easy. Vacuum excess wood chips and sawdust, and wipe off the remaining dust with a dry cloth. If any resin has built up, use a resin dissolving cleaner to remove it. Treat all unpainted cast iron and steel with a non-staining lubricant after cleaning.

Lubrication

Since all bearings are sealed and permanently lubricated, simply leave them alone until they need to be replaced. Do not lubricate them.

For other items on this machine an occasional application of light machine oil is all that is necessary. Clean machine thoroughly before lubricating. Your goal is to achieve adequate lubrication. Too much lubrication will attract dirt and sawdust. Various parts of your machine could lose their freedom of movement as a result.

G5562—SLIPIT® 1 Qt. Gel G5563—SLIPIT® 12 Oz. Spray

Used on unpainted metal surfaces to reduce sliding friction and hangups. This product also reduces rust and prevents resin build-up.



Figure 31. SLIPIT® gel and spray.

Augers & Mortising Chisels

The auger for mortising chisels operate under extreme conditions. A small amount of bees wax applied to the drill bit can aid in reducing heat and expelling chips. It is important that a small amount is used and none is applied to the chisel. Bees wax coming into contact with the finished surfaces will impede adhesion of glues and finishes.



SECTION 7: SERVICE

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

Troubleshooting



Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does	Switch disabling key removed.	Install switch disabling key.
not start,	2. Incorrect power supply voltage or circuit size.	2. Ensure correct power supply voltage and circuit size.
or power-	3. Power supply circuit breaker tripped or fuse	3. Ensure circuit is sized correctly and free of shorts.
supply fuse/ breaker trips	blown.	Reset circuit breaker or replace fuse.
immediately	4. Motor wires connected incorrectly.	Correct motor wiring connections.
after startup.	5. Wiring open/has high resistance.	5. Check/fix broken, disconnected, or corroded wires.
	6. ON/OFF switch at fault.	6. Replace switch.
	7. Circuit breaker has tripped.	7. Reset; adjust trip load dial if necessary; replace.
	8. Motor at fault.	8. Test/repair/replace.
Motor stalls	Machine undersized for task.	Use sharp augers/reduce feed rate/reduce spindle
or is under		RPM.
-powered.	2. Workpiece material not suitable for machine.	2. Only cut wood/ensure moisture is below 20%.
	3. Feed rate/cutting speed too fast.	Decrease feed rate/cutting speed.
	4. Workpiece crooked; fence loose or	4. Straighten or replace workpiece/adjust fence.
	misadjusted.	
	5. Dull chisel/auger.	5. Sharpen/replace chisel/auger.
	Motor wired incorrectly.	6. Wire motor correctly (Page 34).
	7. Run capacitor at fault.	7. Test/replace.
	8. Motor overheated.	8. Clean motor, let cool, and reduce workload.
Machine has	1. Machine incorrectly mounted to workbench or	Adjust feet, shim, or tighten mounting hardware
vibration or	floor.	(Page 19).
noisy operation.	2. Motor or component loose.	2. Inspect/replace damaged bolts/nuts, and retighten with
		thread-locking fluid.
	3. Motor fan rubbing on fan cover.	3. Fix/replace fan cover; replace loose/damaged fan.
	4. Motor bearings at fault.	4. Test by rotating shaft; rotational grinding/loose shaft
		requires bearing replacement.



Operation

Symptom	Possible Cause	Possible Solution
Difficult to pull lever down during machine operation.	 Drill bit does not protrude far enough from end of chisel. Chisel or auger bit is dull. Mortiser operating handle is not positioned for maximum leverage. Too many chips binding the cut. 	 Adjust auger bit depth (Page 20). Sharpen/replace auger bit and chisel (Page 20). Adjust handle for maximum length, and position handle so maximum leverage is applied at hardest mortising depth. Raise lever frequently to clear chips.
Mortising bit and chisel are extremely noisy and chatter. (Some amount of noise and chatter are normal.)	Drill bit out of alignment with chisel. Chisel/auger bent. The chisel/auger chuck damaged causing poor auger-to-chisel alignment.	 Re-install chisel in a different position (Page 20). Replace with straight chisel/auger as a matched set. Replace chuck; use care not to over-tighten chisel lock screw.
Moritising auger and chisel generate smoke and burn workpiece.	 Auger is dull. Drilling pressure is too aggressive and overheats drill bit. Wood chips load up in chisel and overheat drill bit. Wood is too green, has high moisture content, or is pressure-treated. 	 Sharpen/replace auger and chisel. Adjust drill bit depth, reduce drilling pressure, clear chips often. Apply small amount of bees wax to drill bit; face chisel slot sideways; clear chips often. Only mortise dry (moisture content below 20%), untreated wood.
Headstock drops when hand lever is released.	1. Gas spring is at fault.	Replace gas spring (Page 32).
Table hard to move.	 Table tilt locked. Table stops interfering. 	 Disengage table tilt lock. Adjust table stops out of the way.
Headstock does not fully retract.	 Poorly adjusted return spring. Debris of spindle/quill rack. Worn return spring. 	 Increase return spring tension. Clean and lubricate spindle/quill rack. Replace return spring.



Adjusting Gibs

The Model G0840 has three gibs. One gib is located on the side of the headstock and the other two gibs are located under the table (see **Figures 32–33**).

Item(s) Needed	Qty
Open-End Wrench 12mm	1
Hex Wrench 4mm	1

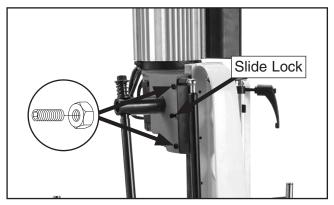


Figure 32. Adjustment screws for headstock gib.

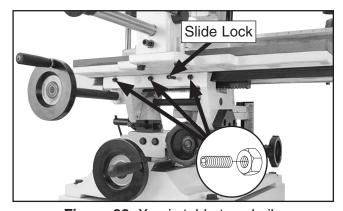


Figure 33. X-axis table travel gib.

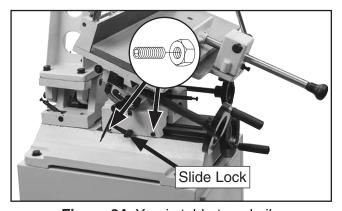
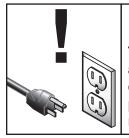


Figure 34. Y-axis table travel gib.



AWARNING

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

The gibs control the accuracy of the sliding parts and keep them stable during operation. The goal of adjusting the gibs is to remove unnecessary play when the slides are moved, without tightening them so much that they bind. Each gib can be tightened or loosened by using the adjustment screws.

To adjust gibs:

- Loosen hex nut securing each set screw.
- Evenly adjust set screws while moving sliding part until you feel a slight amount of resistance.
- Tighten hex nuts against sliding part casting while holding set screws in place so they do not move when hex nut is tightened.



Calibrating Head Tilt

Item(s) Needed	Qty
Wrench 10mm	1
90° Square	1
Sliding Bevel Gauge	Optional

The head tilting mechanism features a positive stop for calibrating head position accurately to 0°. In addition to setting the positive stop during calibration, the scale pointer alignment with the 0° mark should also be checked.

Figure 35 shows the pointer scale marks and the column tilt handwheel. **Figure 36** shows the column tilt lock and the 0° positive stop.

Note: Headstock is heavy and may require you help move it back to vertical position with one hand, while turning column tilt handwheel with the other hand.

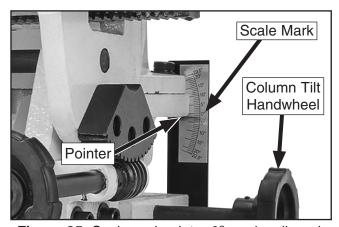


Figure 35. Scale and pointer 0° marks aligned.

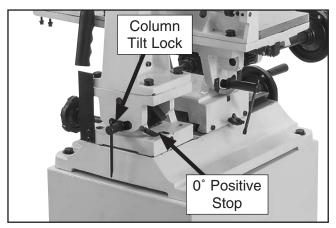


Figure 36. Head tilt controls.

NOTICE

For best results, we recommend using a sliding bevel gauge or fixed bevel gauge for exact head tilt calibration (see Figure 37). Head tilt scale should be used for reference purposes only.

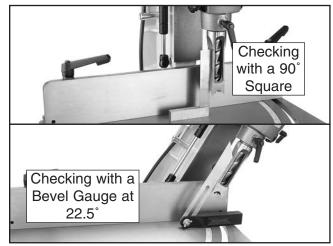


Figure 37. Checking head tilt angles.

To calibrate 0° positive stop:

 Loosen hex nut securing the stop hex bolt (see Figure 38).

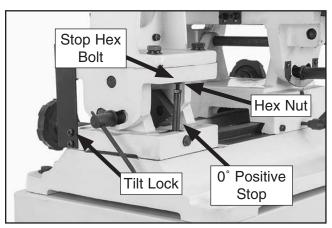


Figure 38. Positive stop adjustment.

- Adjust stop hex bolt position and check chisel angle with square. Repeat as needed until head tilt angle is correct.
- **3.** Hold stop in position and tighten hex nut loosened in **Step 1**, so stop hex bolt cannot move.
- Tighten tilt lock to secure setting.



Adjusting Vise Pressure

The vise locking mechanism may require adjustment over time, depending upon use. If vise does not move freely inward or outward when in unlocked position, adjust as outlined below.

Item(s) Needed	Qty
Open-End Wrench 13mm	1
Hex Wrench 6mm	1

To adjust vise:

- 1. Place lock handle in unlock (vertical) position, and loosen hex nut securing tension cap screw (see **Figure 39**).
- Move lock handle forward or backward to stop pressure bar (see Figure 39). Pressure bar should not move when lock is engaged.
 - If pressure bar moves, return lock handle to unlocked position and adjust tension cap screw, and re-lock handle. Repeat until pressure bar is locked properly.

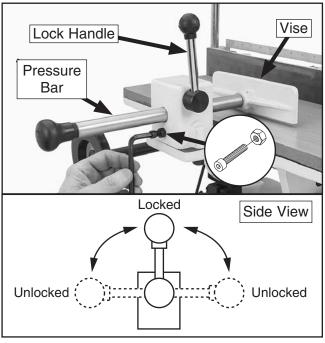


Figure 39. Loosen tension cap screw hex nut.

3. Tighten hex nut to secure setting.

Replacing Gas Return Spring

The gas return spring (see **Figure 40**) keeps the headstock under pressure so it does not drop when the operating handle is released. If you notice that the gas spring stops working correctly, then it should be replaced before using machine again.

Item(s) Needed	Qty
Open-End Wrench 12mm	1

To replace gas return spring:

- Raise headstock as far as it will go and set upper depth stop as high as it will go to keep head from falling.
- 2. Loosen (2) hex nuts securing both ends of gas return spring bolts (see **Figure 40**).

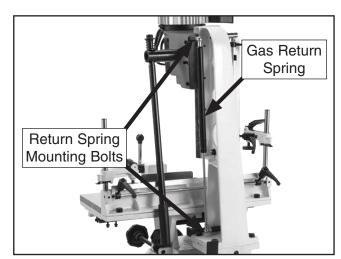


Figure 40. Gas spring mounting bolt and lock nut (top end shown).

- **3.** Unthread gas return spring mounting bolts to remove gas spring from mortiser.
- 4. Install new gas return spring in the reverse order as the old one was removed. Be sure to use the hex nuts from the old gas spring if hex nuts are not included with the new one.



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 COLOR KEY BLACK I **BLUE** LIGHT The photos and diagrams YELLOW included in this section are **YELLOW** WHITE = **BROWN** BLUE **GREEN** best viewed in color. You GREEN GRAY **PURPLE** can view these pages in TUR-QUOISE color at www.grizzly.com. RED ORANGE **PINK**



Wiring Diagram

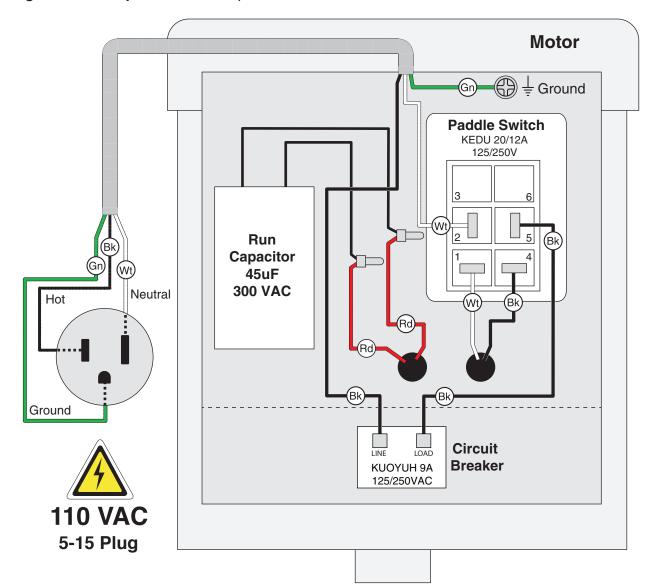


Figure 41. Motor junction box components.

NOTICE

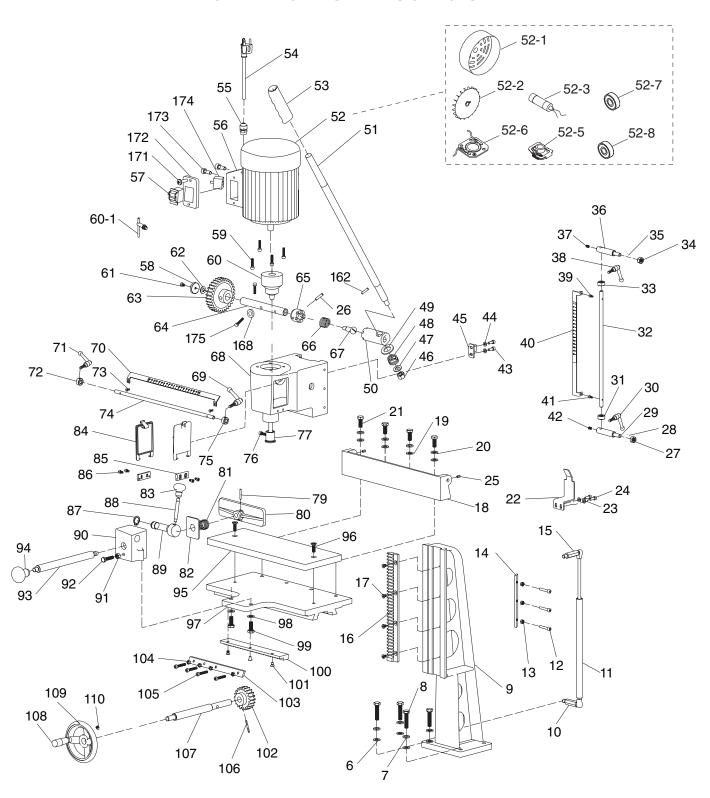
The motor wiring shown here is current at the time of printing, but it may not match your machine. Always use the wiring diagram inside the motor junction box.





SECTION 9: PARTS

Main Parts Breakdown



Please Note: We do our best to stock replacement parts whenever possible, but we cannot guarantee that all parts shown here are available for purchase. Call (800) 523-4777 or visit our online parts store at www.grizzly.com to check for availability.



Main Parts List

REF PART # DESCRIPTION

	FADI#	DESCRIPTION
6	P0840006	FLAT WASHER 10MM
7	P0840007	LOCK WASHER 10MM
8	P0840008	CAP SCREW M10-1.5 X 40
9	P0840009	COLUMN
10	P0840010	HEX STAND-OFF MF, M10-1.5 X 20
11	P0840011	GAS SPRING
12	P0840012	SET SCREW M6-1 X 35
13	P0840013	HEX NUT M6-1
14	P0840014	Z-AXIS GIB
15	P0840015	HEX STAND-OFF MF, M10-1.5 X 20
16	P0840016	COLUMN RACK
17	P0840017	CAP SCREW M6-1 X 10
18	P0840018	FENCE
19	P0840019	FLAT WASHER 10MM
20	P0840020	LOCK WASHER 10MM
21	P0840021	CAP SCREW M10-1.5 X 25
22	P0840022	POINTER
23	P0840023	FLAT WASHER 6MM
24	P0840024	CAP SCREW M6-1 X 15
25	P0840025	SET SCREW M6-1 X 10
26	P0840026	ROLL PIN 8 X 35
27	P0840027	HEX NUT M10-1.5
28	P0840028	FLAT WASHER 10MM
29	P0840029	STANDOFF-ROUND MF M10-1.5 X 20, M6-1
30	P0840030	ADJUSTABLE HANDLE M8-1.25 X 26 88L
31	P0840031	DEPTH STOP COLLAR
32	P0840032	DEPTH STOP ROD
33	P0840033	SETTING COLLAR
34	P0840034	HEX NUT M10-1.5
35	P0840035	FLAT WASHER 10MM
36	P0840036	STANDOFF-ROUND MF M10-1.5 X 20, M6-1
37	P0840037	SET SCREW M6-1 X 16

38	P0840038	ADJUSTABLE HANDLE M8-1.25 X 26 88L
39	P0840039	PHLP HD SCR M47 X 12
40	P0840040	DEPTH RULER
41	P0840041	PHLP HD SCR M47 X 12
42	P0840042	SET SCREW M6-1 X 8
43	P0840043	CAP SCREW M6-1 X 15
44	P0840044	FLAT WASHER 6MM
45	P0840045	POINTER
46	P0840046	HEX NUT M12-1.75
47	P0840047	FENDER WASHER 12MM
48	P0840048	COMPRESSION SPRING
49	P0840049	FENDER WASHER 14MM
50	P0840050	CLUTCH COLLAR
51	P0840051	HANDLE 24"
52	P0840052	MOTOR 1HP 110V 1-PH
52-1	P0840052-1	FAN COVER
52-2	P0840052-2	MOTOR FAN
52-3	P0840052-3	R CAPACITOR 45UF 300V 1-1/2 X 2-1/2
52-5	P0840052-5	CONTACT PLATE
52-6	P0840052-6	CENTRIFUGAL SWITCH
52-7	P0840052-7	BALL BEARING 6203ZZ (FRONT)
52-8	P0840052-8	BALL BEARING 6203ZZ (REAR)
53	P0840053	HANDLE GRIP
54	P0840054	POWER CORD 14G 3W 72" 5-15P
55	P0840055	STRAIN RELIEF TYPE-3 10MM
56	P0840056	SWITCH BOX
57	P0840057	ON/OFF PADDLE SWITCH KEDU-HY18
58	P0840058	FENDER WASHER 6MM
59	P0840059	CAP SCREW M6-1 X 10
60	P0840060	DRILL CHUCK 1-16MM
60-1	P0840060-1	DRILL CHUCK KEY 5/16" TH-SE 12T SD-1/2



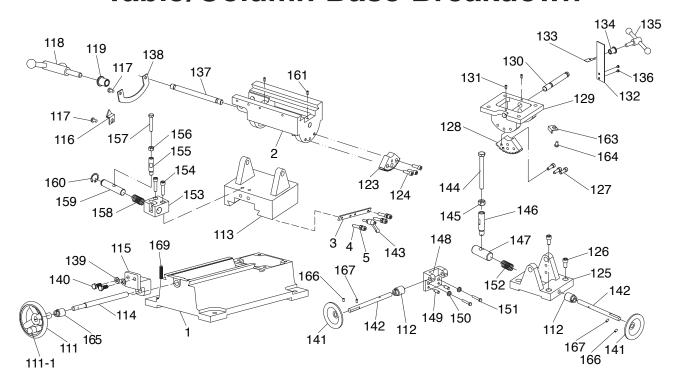
Main Parts List

REF PART # DESCRIPTION

	Ι ΑΙΙΙ π	DESCRIPTION
61	P0840061	CAP SCREW M6-1 X 10
62	P0840062	COVER
63	P0840063	GEAR 31T
64	P0840064	SHAFT
65	P0840065	CLUTCH
66	P0840066	COMPRESSION SPRING
67	P0840067	SHOULDER SCREW M10-1.5 X 14, 12.5 X 26
68	P0840068	HEADSTOCK
69	P0840069	ADJUSTABLE HANDLE M8-1.25 X 26 88L
70	P0840070	RULER MARK
71	P0840071	ADJUSTABLE HANDLE M8-1.25 X 26 88L
72	P0840072	SET COLLAR
73	P0840073	PHLP HD SCR M47 X 12
74	P0840074	SET ROD
75	P0840075	SET COLLAR
76	P0840076	PHLP HD SCR M6-1 X 25
77	P0840077	BUSHING
79	P0840079	ROLL PIN 4 X 25
80	P0840080	CLAMP PLATE
81	P0840081	COMPRESSION SPRING
82	P0840082	SPRING COVER
83	P0840083	BALL KNOB M10-1.5, D28
84	P0840084	COVER HINGE
85	P0840085	COVER BASE
86	P0840086	PHLP HD SCR M58 X 10
87	P0840087	EXT RETAINING RING 20MM
88	P0840088	STUD DE M10-1.5
89	P0840089	SHAFT

90	P0840090	CLAMPING BLOCK
91	P0840091	HEX NUT M10-1.5
92	P0840092	CAP SCREW M8-1.25 X 25
93	P0840093	LOCKING SHAFT
94	P0840094	BALL KNOB M12-1.75, D40
95	P0840095	WOOD TABLE
96	P0840096	FLAT HD SCR M8-1.25 X 25
97	P0840097	CAST-IRON TABLE
98	P0840098	FLAT WASHER 10MM
99	P0840099	HEX BOLT M10-1.5 X 25
100	P0840100	RACK
101	P0840101	CAP SCREW M6-1 X 10
102	P0840102	GEAR 15T
103	P0840103	DRIFT X-AXIS GIB
104	P0840104	HEX NUT M6-1
105	P0840105	SET SCREW M6-1 X 16
106	P0840106	ROLL PIN 4 X 30
107	P0840107	GEAR SHAFT
108	P0840108	FIXED HANDLE 22 X 74, M8-1.25
109	P0840109	HANDWHEEL TYPE-18 120D X 22B X M8-1.25
110	P0840110	SET SCREW M8-1.25 X 10
162	P0840162	ROLL PIN 5 X 30
168	P0840168	LOCK WASHER 8MM
171	P0840171	PHLP HD SCR M47 X 12
172	P0840172	SWITCH PLATE
173	P0840173	PHLP HD SCR M35 X 14
174	P0840174	CIRCUIT BREAKER 9A KUOYUH
175	P0840175	CAP SCREW M8-1.25 X 10

Table/Column Base Breakdown



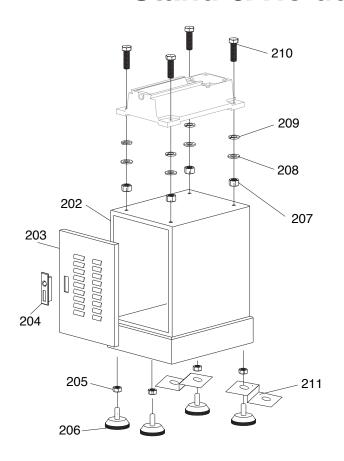
REF PART # DESCRIPTION

REF	PART #	DESCRIPTION
1	P0840001	MACHINE BASE
2	P0840002	TABLE TILTING BASE
3	P0840003	Y-AXIS GIB
4	P0840004	SET SCREW M6-1 X 35
5	P0840005	HEX NUT M6-1
111	P0840111	HANDWHEEL TYPE-18 120D X 22B X M8-1.25
111-1	P0840111-	FIXED HANDLE 22 X 74, M8-1.25
112	P0840112	WORM GEAR
113	P0840113	TABLE BASE HINGE
114	P0840114	Y-AXIS LEADSCREW
115	P0840115	LEADSCREW NUT
116	P0840116	POINTER
117	P0840117	PHLP HD SCR M58 X 10
118	P0840118	LOCK HANDLE M6-1.25 X 24
119	P0840119	BUSHING
123	P0840123	TABLE TILT RACK
124	P0840124	CAP SCREW M10-1.5 X 25
125	P0840125	COLUMN HINGE BASE
126	P0840126	CAP SCREW M10-1.5 X 25
127	P0840127	CAP SCREW M10-1.5 X 25
128	P0840128	COLUMN TILT RACK
129	P0840129	COLUMN TILTING BASE
130	P0840130	SHAFT
131	P0840131	SET SCREW M6-1.0 X 16
132	P0840132	ANGLE GAUGE
133	P0840133	ANGLE RULER
134	P0840134	BUSHING
135	P0840135	COLUMN LOCK HANDLE M10-1.5 X 28
136	P0840136	PHLP HD SCR M47 X 10
137	P0840137	GEAR SHAFT

	I AILI #	DEGOTIII 11014
138	P0840138	ANGLE SCALE
139	P0840139	FLAT WASHER 8MM
140	P0840140	CAP SCREW M8-1.25 X 25
141	P0840141	KNOB 6-LOBES, D78
142	P0840142	GEAR SHAFT
143	P0840143	ADJUSTABLE HANDLE M6-1 X 24N 52L
144	P0840144	HEX BOLT M6-1 X 30
145	P0840145	HEX NUT M6-1.0
146	P0840146	Z-AXIS LEADSCREW
147	P0840147	SHAFT
148	P0840148	GEAR BASE
149	P0840149	ROLL PIN 5 X 30
150	P0840150	LOCK WASHER 8MM
151	P0840151	CAP SCREW M8-1.25 X 30
152	P0840152	COMPRESSION SPRING
153	P0840153	LEADSCREW BASE
154	P0840154	CAP SCREW M6-1 X 25
155	P0840155	Z-AXIS LEADSCREW
156	P0840156	HEX NUT M6-1
157	P0840157	HEX BOLT M6-1 X 30
158	P0840158	COMPRESSION SPRING
159	P0840159	SHAFT
160	P0840160	EXT RETAINING RING 14MM
161	P0840161	SET SCREW M8-1.25 X 10
163	P0840163	POINTER
164	P0840164	SET SCREW M47 X 10
165	P0840165	BUSHING
166	P0840166	GIB SCREW
167	P0840167	ROLL PIN 6 X 20
169	P0840169	PHLP HD SCR M47 X 12

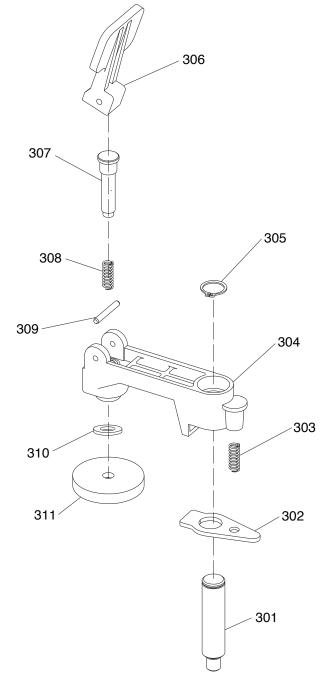


Stand & Holddown Breakdown



REF PART # DESCRIPTION

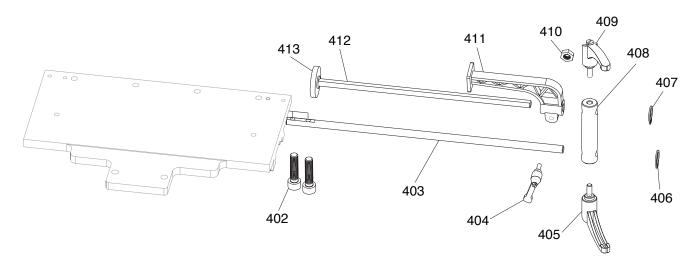
202	P0840202	STAND
203	P0840203	STAND DOOR
204	P0840204	DOOR LATCH
205	P0840205	HEX NUT M10-1.5
206	P0840206	FOOT
207	P0840207	HEX NUT M10-1.5
208	P0840208	FLAT WASHER 10MM
209	P0840209	LOCK WASHER 10MM
210	P0840210	CAP SCREW M12-1.75 X 40
211	P0840211	FOOT PLATE



301	P0840301	SHOULDER STUD M10-1.5 X 12, 204L
302	P0840302	SETTING PIECE
303	P0840303	COMPRESSION SPRING
304	P0840304	CLAMPING BODY
305	P0840305	EXT RETAINING RING 16MM
306	P0840306	LOCK TAB
307	P0840307	LOCK PIN
308	P0840308	COMPRESSION SPRING
309	P0840309	ROLL PIN 4 X 28
310	P0840310	FLAT WASHER 10MM
311	P0840311	STOP DISC



Work-Stop Breakdown

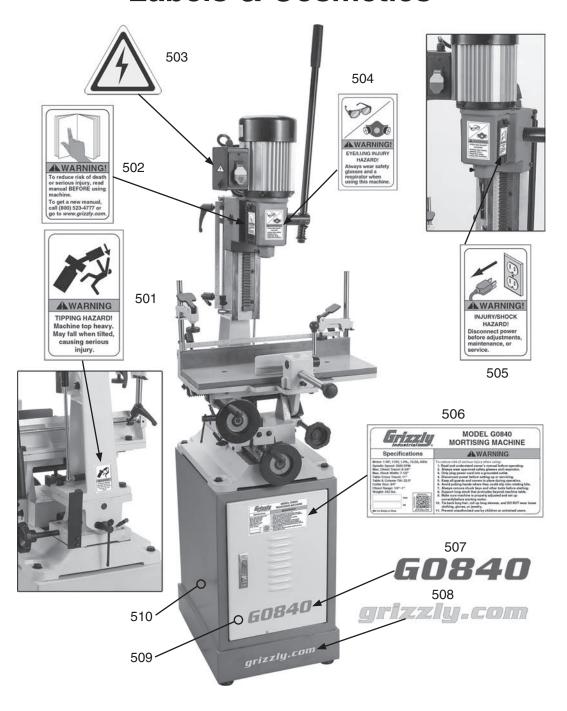


REF PART # DESCRIPTION

402	P0840402	CAP SCREW M6-1 X 25
403	P0840403	REAR LENGTH SETTING ROD
1.0.	P0840404	ADJUSTABLE HANDLE M6-1 X 12 54L
405	P0840405	ADJUSTABLE HANDLE M8-1.25 X 26 88L
	P0840406	EXT RETAINING RING 12MM
407	P0840407	EXT RETAINING RING 12MM

4	80	P0840408	LENGTH SETTING BLOCK
4	09	P0840409	LOCKING HANDLE M8-1.25 X 26
4	10	P0840410	HEX NUT M6-1
4	11	P0840411	SECONDARY STOP
4	12	P0840412	FRONT LENGTH SETTING ROD
4	13	P0840413	STOP DISC

Labels & Cosmetics



REF PART # DESCRIPTION

501	P0840501	TIPPING HAZARD WARNING
502	P0840502	READ MANUAL WARNING
503	P0840503	ELECTRICITY LABEL
504	P0840504	EYE/LUNG WARNING
505	P0840505	INJURY/SHOCK WARNING

REF PART # DESCRIPTION

506	P0840506	MACHINE ID LABEL
507	P0840507	MODEL NUMBER LABEL
508	P0840508	GRIZZLY.COM LABEL
509	P0840509	TOUCH-UP PAINT, GREY PUTTY
510	P0840510	TOUCH-UP PAINT, GRIZZLY GREEN

AWARNING

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





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4.	What is your age group? 20-29 50-59	30-39 60-69	40-49 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	s or tools are Grizzly? 3-5 6-9	10+
7.	Do you think your machine r	represents a good value?	YesNo
8.	Would you recommend Griz	zly Industrial to a friend?	YesNo
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 timesYesNo		
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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.



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