

Grizzly **Industrial, Inc.**®

MODEL G0686 **LARGE DRILL BIT GRINDER** **OWNER'S MANUAL** *(For models manufactured since 01/15)*



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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.**
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V2.03.19

 **WARNING!**

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

 **WARNING!**

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

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

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

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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

Machine Description

The Model G0686 is designed to sharpen the cutting edges and point angle of 2-flute, twisted large drill bits from $\frac{5}{8}$ " to 2" in diameter.

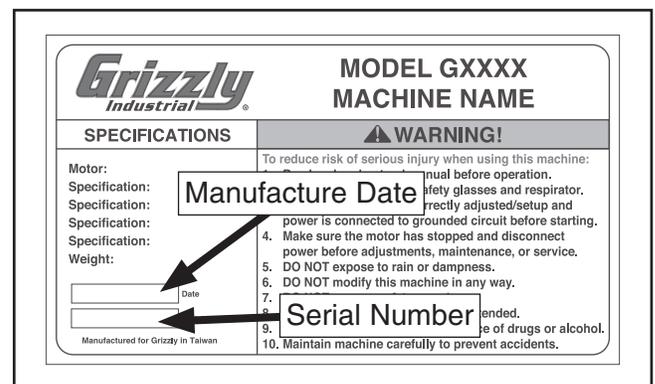
Manual Accuracy

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

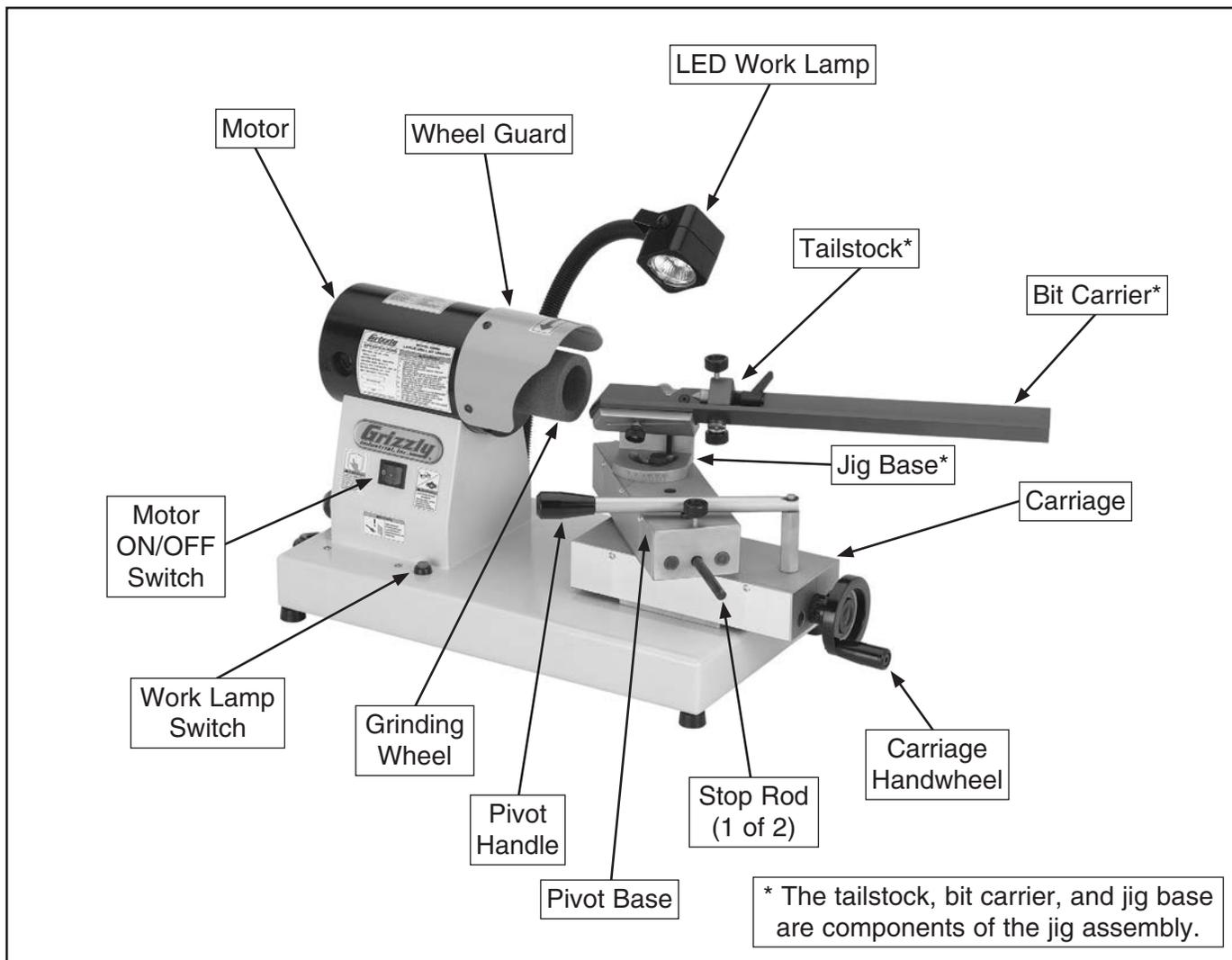


Figure 1. Model G0686 identification.

	<p>⚠ WARNING To reduce your risk of serious injury, read this entire manual BEFORE using machine.</p>
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Controls & Components

The jig assembly holds the drill bit at the selected height and horizontal/vertical angles during operation.

Refer to **Figure 2** and the descriptions below to become familiar with the jig components and controls.

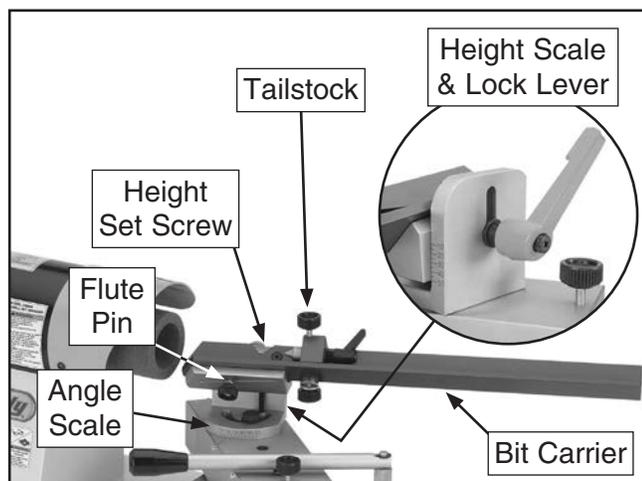


Figure 2. Jig assembly components and controls.

Height Scale: Displays the correct setting for the bit's diameter so that its center point is aligned with the wheel center point.

Height Lock Lever: Secures the bit carrier at the selected height and vertical angle.

Height Set Screw: Aligns the bit center point with the wheel center point.

Flute Pin: Keeps the bit from rotating in the carrier from the rotational force of the wheel.

Tailstock: Keeps the bit from moving away from the wheel during operation.

Angle Scale: Displays the combined angle of both bit point angles that will be cut.

Bit Carrier: Keeps the bit steady with a V-type trough configuration.

With the use of the pivot lever, the pivot base moves the drill bit in a precise path across the cutting edge of the grinding wheel.

The jig assembly and pivot base are mounted on the carriage, which is moved toward or away from the wheel with the use of the handwheel.

Refer to **Figure 3** and the following descriptions to become familiar with the pivot base and carriage controls.

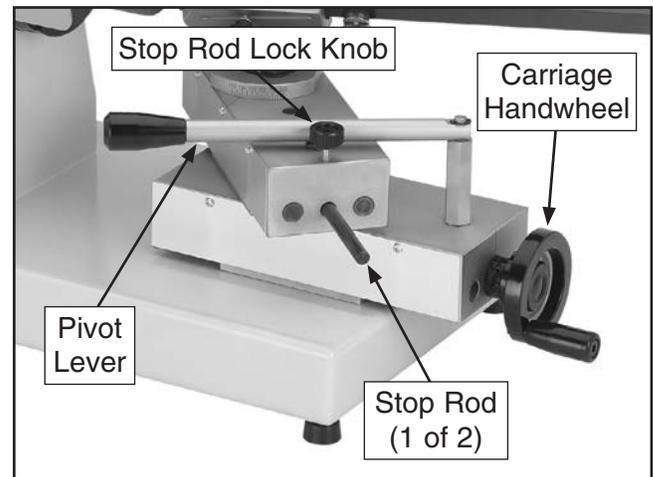


Figure 3. Pivot base and carriage controls.

Stop Rod Lock Knob: Secures the stop rod in place.

Carriage Handwheel: Moves the drill bit toward or away from the grinding wheel.

Pivot Lever: Moves the drill bit across the cutting edge of the wheel in a precise path.

Stop Rod: When properly adjusted, safely limits the travel of the drill bit across the wheel.





MACHINE DATA SHEET

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

MODEL G0686 LARGE DRILL BIT GRINDER

Product Dimensions:

Weight 75 lbs.
Width (side-to-side) x Depth (front-to-back) x Height 15-1/2 x 25 x 19 in.
Footprint (Length/Width) 11 x 20 in.

Shipping Dimensions:

Type Cardboard Box
Content..... Machine
Weight..... 77 lbs.
Length x Width x Height..... 16-1/2 x 26 x 18 in.
Must Ship Upright Yes

Electrical:

Power Requirement 110V, Single-Phase, 60 Hz
Full-Load Current Rating..... 4.5A
Minimum Circuit Size 15A
Connection Type Cord & Plug
Power Cord Included Yes
Power Cord Length 5 ft.
Power Cord Gauge 16 AWG
Plug Included Yes
Included Plug Type 5-15
Switch Type ON/OFF Rocker

Motor:

Main

Horsepower 1/2 HP
Phase Single-Phase
Amps 4.5A
Speed 6800 RPM
Type..... DC Universal
Number Of Speeds..... 1
Power Transfer..... Direct Drive
Bearings Shielded and Permanently Sealed

Main Specifications:

Operation Information

Drill Bit Capacity 5/8 – 2 in.
Miter Angle 50 – 150 deg.
Grinder Wheel Sizes 60mm O.D. x 35mm I.D. x 65mm W. x M14-1.5 Bore
..... 70mm O.D. x 54mm I.D. x 65mm W. x M14-1.5 Bore



Construction

BodySteel
Slides.....Steel
GuideSteel
Paint..... Powder Coated

Other Specifications:

Country of Origin..... Taiwan
Warranty..... 1 Year
Approximate Assembly & Setup Time30 min.
Serial Number LocationMachine ID Label
ISO 9001 Factory..... No
Certified by a Nationally Recognized Testing Laboratory (NRTL)..... No

Features: (Title Case)

Spiral Point Grinding Capability
Prism Clamp for Drill Grinding
Calibrated Infeed Handwheel
2-Axis Adjustable Center
16" Drill Tray
LED Work Light



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.



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



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

NOTICE

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

Safety Instructions for Machinery

WARNING

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

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

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

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

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

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

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



WARNING

WEARING PROPER APPAREL. Do not wear 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 Drill Bit Grinders

WARNING

The primary risks of operating a Drill Bit Grinder are as follows: You can be blinded or killed by flying debris created by a chipped or damaged grinding wheel. Your fingers can be cut or amputated by the rotating grinding wheel. You can also suffer crushing injuries from getting hair, loose clothing, or jewelry entangled in the wheel. To reduce your risk of serious injury when operating this machine, completely heed and understand the following.

PERFORM WHEEL INSPECTION. Before installing a grinding wheel, visually check it for cracks, chips, nicks or dents in the wheel surface. Additionally, perform a “ring” test. Do not use the wheel if it fails inspection.

USE UNDAMAGED WHEELS. Never use a wheel that has been dropped or received a heavy blow, even if there is no obvious damage.

SAFELY START UP GRINDER. To protect yourself, always stand to the side of the grinder until the wheel reaches full speed. Allow it to run for at least one minute before grinding. If a wheel is damaged, it will usually fly apart shortly after startup.

USE CORRECT SPEED RATING. Wheels operated at a faster speed than rated for may break or burst. Before mounting a new wheel, be sure wheel RPM rating is equal to or higher than speed of grinder. Never use unmarked wheels.

USE CORRECT WHEEL BORE. Only use wheel with same bore as machine arbor.

AVOID TOUCHING MOVING WHEEL. Be aware where your hands are relative to the grinding wheel, and keep them away from wheel while grinding.

USE DRILL BIT JIG. Always make sure the drill bit is properly positioned in the jig, and the jig is firmly secured to the base, and all locks are tight before turning the machine **ON**.

DRY-GRIND ONLY. To avoid the risk of electrocution, do not use fluids of any kind with this machine. This grinder is designed to perform dry-grinding only!

WEAR PROPER CLOTHING. Do not wear gloves, necktie or loose clothing. Keep long hair away from rotating grinding spindle.

WEAR PROPER PPE. Grinding ejects small particles at a high rate of speed. These particles can cause blindness, skin injuries, or respiratory damage. **ALWAYS** wear approved clothing, safety goggles or safety glasses with side shields and face shield, and a respirator appropriate for the type of grinding to be done.

NEWLY GROUND DRILL BITS WILL BE HOT. Drill bits can be sharp and get hot during grinding operations. Use leather gloves or shop rags to protect your hands when installing or removing drill bits. Remove the gloves before operating.

REDUCE RISK OF FIRE AND EXPLOSIONS. This machine creates a shower of hot sparks that can ignite explosive or flammable materials nearby. Move these types of materials a safe distance away.

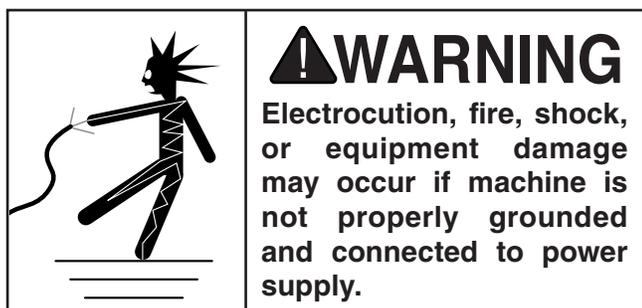
PROPERLY MAINTAIN MACHINE. Keep machine in proper working condition to help ensure all components work as intended and function safely. Perform routine inspections and all necessary maintenance, as indicated in owner’s manual. Never operate machine with damaged or worn parts that can break during operation.



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.



Full-Load Current Rating

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

Full-Load Current Rating at 110V..... 4.5 Amps

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

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

! WARNING

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

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.)

! CAUTION

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

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



Grounding & Plug Requirements

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

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

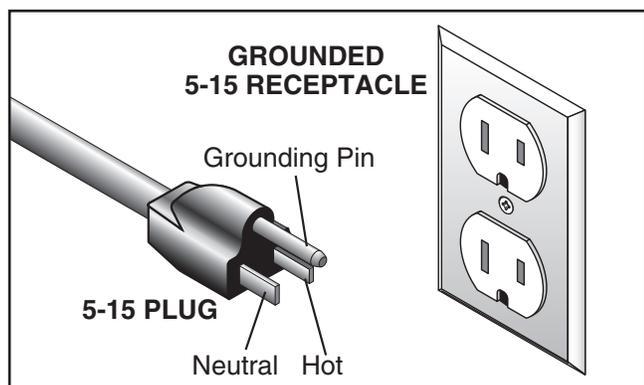
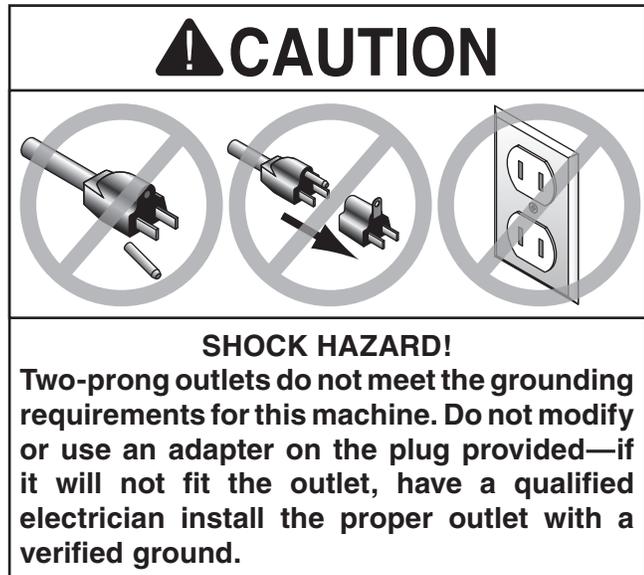


Figure 4. Typical 5-15 plug and receptacle.



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

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

Extension Cords

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

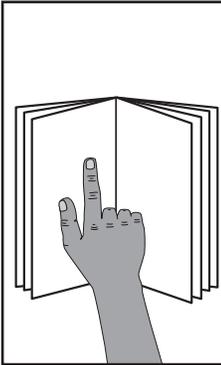
Extension cords cause voltage drop, which can damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes).

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

Minimum Gauge Size 14 AWG
Maximum Length (Shorter is Better).....50 ft.



SECTION 3: SETUP



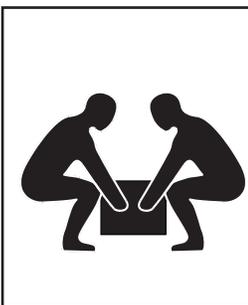
⚠️ WARNING

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



⚠️ WARNING

Wear safety glasses during the entire setup process!



⚠️ WARNING

This machine and its components are very heavy. Get lifting help and use safe lifting and moving methods when handling heavy machinery.

Unpacking

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

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

Inventory

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

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

Box 1 (Figure 5)	Qty
A. G0686 Grinder (Not Shown).....	1
B. Bit Carrier & Tailstock Assembly	1
C. Combo Wrenches 8/10, 14/17mm	1 Each
D. Small Grinding Wheels 60-Grit	2
E. Extra-Large Grinding Wheels 60-Grit	2
F. Handwheel Handle & Cap Screw.....	1 Each
G. T-Handle Hex Wrench 3mm.....	1

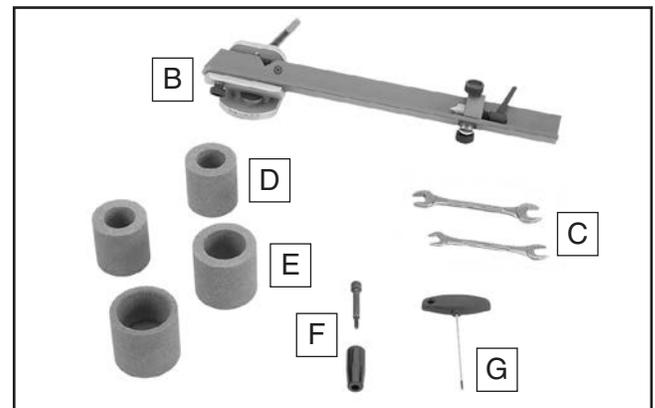


Figure 5. Model G0686 loose inventory.

Needed for Setup

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

Description	Qty
• Additional People	1
• Safety Glasses	1
• Hex Wrench 5mm.....	1
• Cleaner/Degreaser	As Needed
• Disposable Shop Rags.....	As Needed



Hardware Recognition Chart

USE THIS CHART TO MATCH UP
HARDWARE DURING THE INVENTORY
AND ASSEMBLY PROCESS.

MEASURE BOLT DIAMETER BY PLACING INSIDE CIRCLE

#10

1/4"

5/16"

3/8"

7/16"

1/2"

4mm

5mm

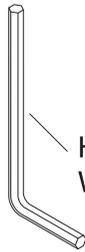
6mm

8mm

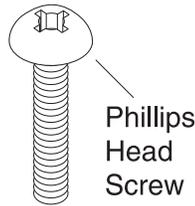
10mm

12mm

16mm



Hex Wrench



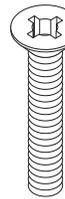
Phillips Head Screw



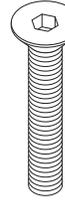
Lock Nut



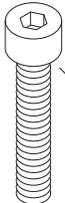
Wing Nut



Flat Head Screw



Flat Head Cap Screw



Cap Screw



Carriage Bolt



Flange Bolt



Button Head Screw



Tap Screw



External Retaining Ring



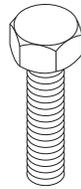
Internal Retaining Ring



E-Clip



Set Screw



Hex Bolt



Key



Flat Washer

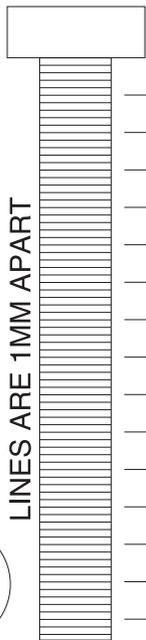


Lock Washer



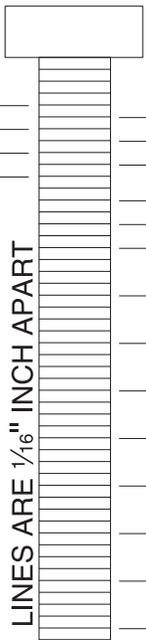
Hex Nut

LINES ARE 1MM APART



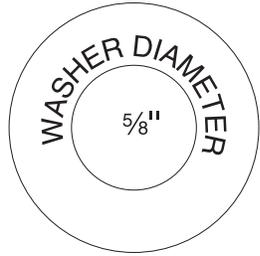
5mm
10mm
15mm
20mm
25mm
30mm
35mm
40mm
45mm
50mm
55mm
60mm
65mm
70mm
75mm

LINES ARE 1/16" INCH APART

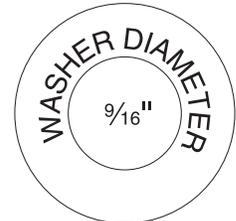


1/4"
3/8"
1/2"
5/8"
5/16"
7/16"
9/16"
3/4"
7/8"
1"
1 1/4"
1 1/2"
1 3/4"
2
2 1/4"
2 1/2"
2 3/4"
3

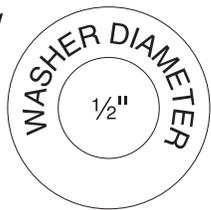
WASHERS ARE MEASURED BY THE INSIDE DIAMETER



WASHER DIAMETER
5/8"



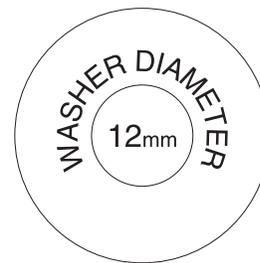
WASHER DIAMETER
9/16"



WASHER DIAMETER
1/2"



WASHER DIAMETER
7/16"



WASHER DIAMETER
12mm



WASHER DIAMETER
3/8"



WASHER DIAMETER
4mm



WASHER DIAMETER
5/16"



WASHER DIAMETER
10mm



WASHER DIAMETER
5mm



WASHER DIAMETER
1/4"



WASHER DIAMETER
8mm



WASHER DIAMETER
6mm



WASHER DIAMETER
#10



Cleanup

The unpainted surfaces of your machine are coated with a heavy-duty rust preventative that prevents corrosion during shipment and storage. This rust preventative works extremely well, but it will take a little time to clean.

Be patient and do a thorough job cleaning your machine. The time you spend doing this now will give you a better appreciation for the proper care of your machine's unpainted surfaces.

There are many ways to remove this rust preventative, but the following steps work well in a wide variety of situations. Always follow the manufacturer's instructions with any cleaning product you use and make sure you work in a well-ventilated area to minimize exposure to toxic fumes.

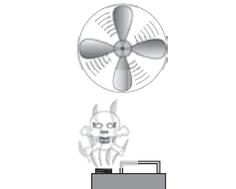
Before cleaning, gather the following:

- Disposable rags
- Cleaner/degreaser (WD•40 works well)
- Safety glasses & disposable gloves
- Plastic paint scraper (optional)

Basic steps for removing rust preventative:

1. Put on safety glasses.
2. Coat the rust preventative with a liberal amount of cleaner/degreaser, then let it soak for 5–10 minutes.
3. Wipe off the surfaces. If your cleaner/degreaser is effective, the rust preventative will wipe off easily. If you have a plastic paint scraper, scrape off as much as you can first, then wipe off the rest with the rag.
4. Repeat **Steps 2–3** as necessary until clean, then coat all unpainted surfaces with a quality metal protectant to prevent rust.

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

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

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

T23692—Orange Power Degreaser

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

<p>Call 1-800-523-4777 To Order</p>	
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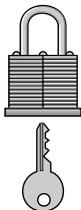
Site Considerations

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.**

	<p>CAUTION Children or untrained people may be seriously injured by this machine. Only install in an access restricted location.</p>
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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.

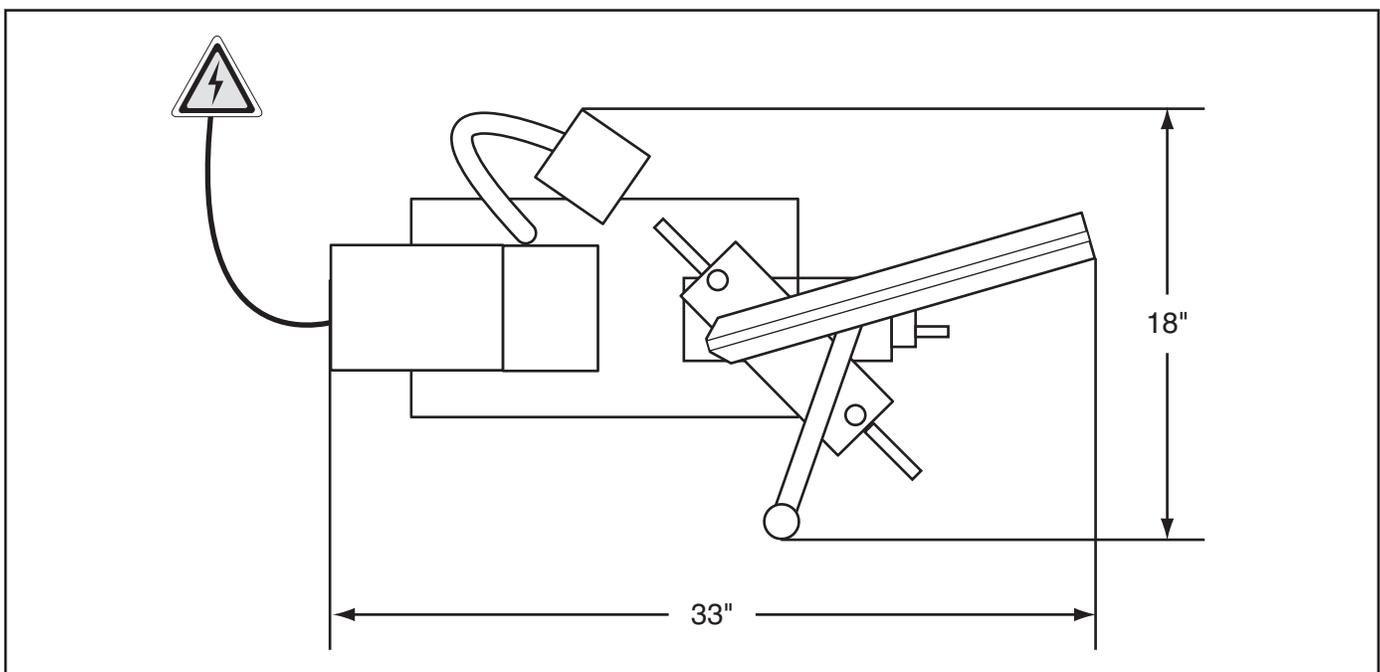


Figure 6. Minimum working clearances.



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).

Tools Needed (Not Included)	Qty
Hex Wrench 5mm.....	1

To assemble the grinder:

1. Use the provided cap screw to install the handle onto the handwheel, as shown in **Figure 7**.



Figure 7. Handle installed onto the handwheel.

2. Remove the jig mounting hex bolt and flat washer shown in **Figure 8** from the pivot base.

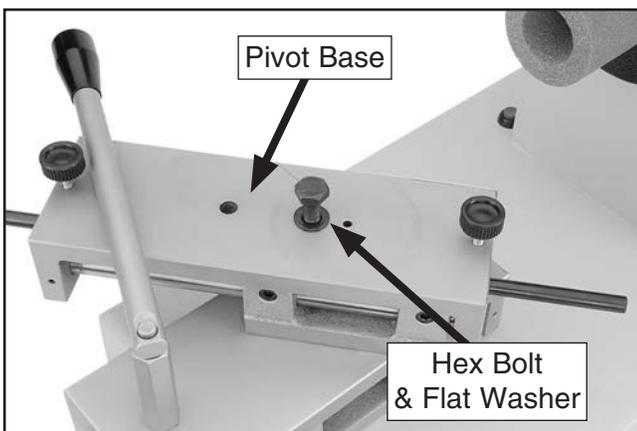


Figure 8. Jig mounting hex bolt and flat washer.

3. Fully unthread the jig set screw shown in **Figure 9**, raise the bit carrier up from the jig base, then tighten the height lock lever to hold the bit carrier in place.

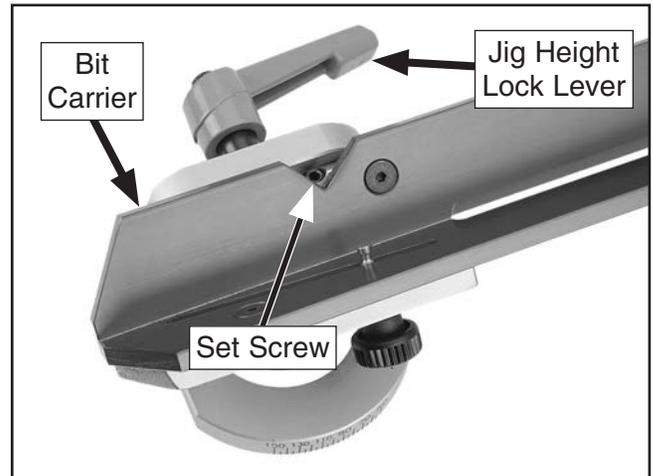


Figure 9. Jig set screw and height lock lever.

4. Apply a thin coat of light machine oil to the positioning pin and between the pivot and jig base for smooth rotation of the jig assembly (see **Figure 10**).

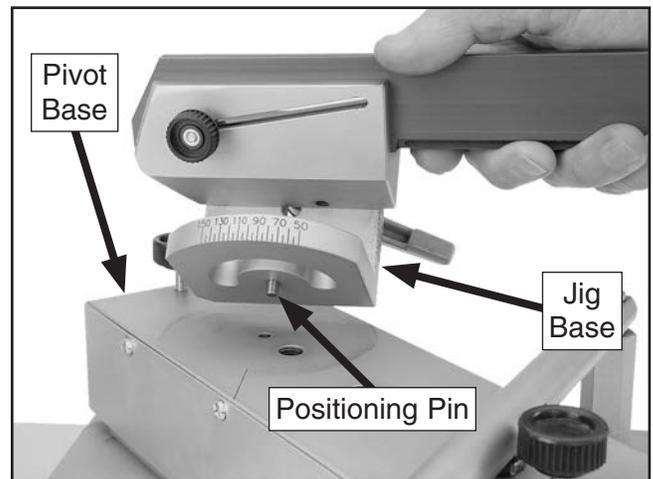


Figure 10. Aligning the jig positioning pin over the mounting hole in the pivot base.



- Align the positioning pin of the jig with the hole in the pivot base, as shown in **Figure 10**, then insert the pin and lay the jig base flat on the pivot base.
- To secure the jig assembly, install the hex bolt and flat washer removed in **Step 2** through the jig base and into the pivot base, as shown in **Figure 11**.

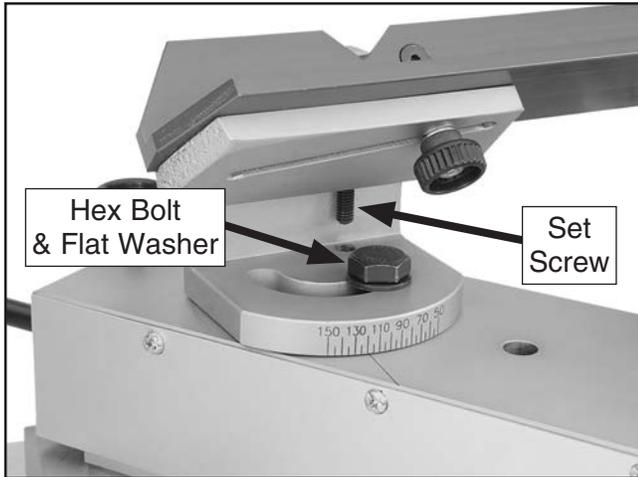


Figure 11. Jig attached to the pivot base.

- Loosen the jig height lock lever, thread the jig set screw back into the pivot base, then tighten the lock lever again to hold the assembly in place (see **Figure 9**).

Test Run

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

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

The Test Run consists of verifying the following: 1) The motor powers up and runs correctly.

!WARNING

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

!WARNING

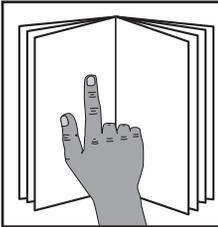
DO NOT start machine until all preceding setup instructions have been performed. Operating an improperly set up machine may result in malfunction or unexpected results that can lead to serious injury, death, or machine/property damage.

To test run the machine:

- Make sure all tools and objects used during setup are cleared away from the machine.
- Use the carriage handwheel to make sure the jig is positioned safely away from the grinding wheel.
- Connect the machine to power and turn it **ON**.
- Listen to and watch for abnormal noises or actions. The machine should run smoothly with little or no vibration or rubbing noises.
 - Strange or unusual noises should be investigated and corrected before operating the machine further. Always disconnect the machine from power when investigating or correcting potential problems.
- Turn the machine **OFF**.



SECTION 4: OPERATIONS

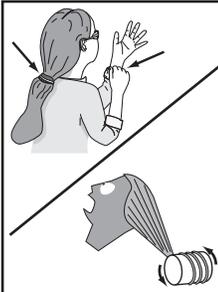
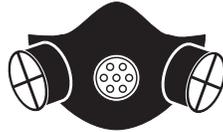


!WARNING

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

!WARNING

To reduce risk of eye injury from flying chips or lung damage from breathing dust, always wear safety glasses and a respirator when operating this machine.



!WARNING

Keep hair, clothing, and jewelry away from moving parts at all times. Entanglement can result in death, amputation, or severe crushing injuries!

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.

Grinding Tips

Once the drill bit is properly set up in the jig, using your grinder to sharpen the bit is a fairly easy and quick process. Follow the rules listed below to keep this process safe and efficient.

- Use the correct diameter grinding wheel for the diameter of the drill bit. When setting up the bit in the jig, make sure there is a safe clearance of at least $\frac{1}{4}$ " between the bit and the wheel when the bit has reached the end of its inward path (refer to **Selecting Correct Grinding Wheel** on the previous page for additional information).
- Use a steady motion with the pivot lever as you move the bit across the cutting edge of the wheel. An overly slow or jerky motion could cause the material of the bit to over-heat, damaging the tensile strength of the bit. An overly fast motion may leave the bit surface ridged or damage the wheel.
- **DO NOT** use cutting fluids of any type with this machine. Your grinder is designed to perform dry-grinding **ONLY**.
- Allow the drill bits to become cool to the touch by themselves if you make more than a few passes on each side. **DO NOT** use fluids to hurry the cooling process, which could damage the tensile strength of the bit.
- With the bit properly positioned on the jig, make sure the pivot base and jig can move freely and easily through the full required range of motion.
- **ALWAYS** lock the stop rods in the correct, safe settings before starting the machine.
- Multiple light passes produce better results than one or two heavy passes.



Drill Bit Terminology

Use the illustrations and terminology in **Figures 12–13** to aid in understanding the drill bit references in this manual.

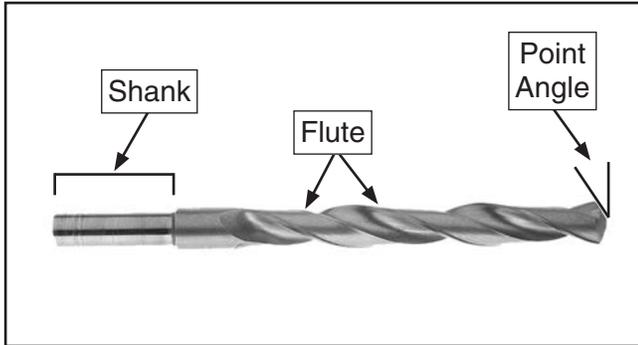


Figure 12. Typical 2-flute, twisted drill bit—side view.

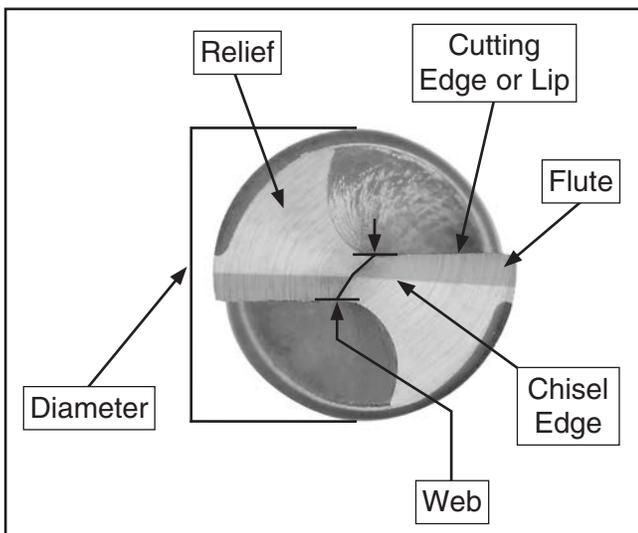


Figure 13. Typical 2-flute, twisted drill bit—front view.

Wheel Care

When grinding, your safety depends, to a large degree, on the condition of the wheel. A wheel in poor condition presents the possibility of breaking apart during rotation and injuring the operator and others in the area.

Here are some tips to help you avoid breaking the wheel:

- Always transport, store and handle wheels with care. Wheels may be damaged if they are dropped or if heavy objects are stacked on them.
- Only use wheels that are rated for the RPM of the grinder.
- Mount the wheel properly (see **Changing Grinding Wheel** on **Page 21**).
- Do not push the bit into the grinding wheel with such force that it causes the grinder to bog down. And do not apply pressure to stop the wheel after turning the grinder **OFF**.
- Dress the wheel when necessary. Do not allow it to become glazed.
- Do not store wheels in damp or wet locations.
- Do not overtighten the nut when mounting the wheel.
- Do not leave the wheel mounted when machine is not in use.



Wheel Inspection

Before installing a grinding wheel, it must always be inspected. DO NOT assume that a wheel is in sound condition just because it is new. Often, damage can occur during shipping, with age, or with exposure to moisture.

A damaged grinding wheel can fly apart at high RPM, throwing pieces of abrasive at the operator and anyone in the vicinity.

First, do a **Visual Inspection**. Look for any cracks, chips, nicks or dents in the surface of the wheel. If you see any of these, DO NOT use the wheel.

Second, do a **Ring Test**. This test will give you an indication of any internal damage that may not be obvious during a visual inspection.

WARNING

A damaged grinding wheel can fly apart and eject chunks of abrasive material with great force, causing serious injury or death. Inspect every grinding wheel before it is mounted. DO NOT use a damaged grinding wheel!

To perform a ring test:

1. Make sure wheel is clean and dry; otherwise, you may get false results.
2. Balance wheel with your finger in hole. If this is not possible, hang the wheel in the air with a piece of cord or string looped through hole in center.
3. At points shown in **Figure 14**, gently tap wheel with light, non-metallic device such as handle of screwdriver or a wooden mallet.

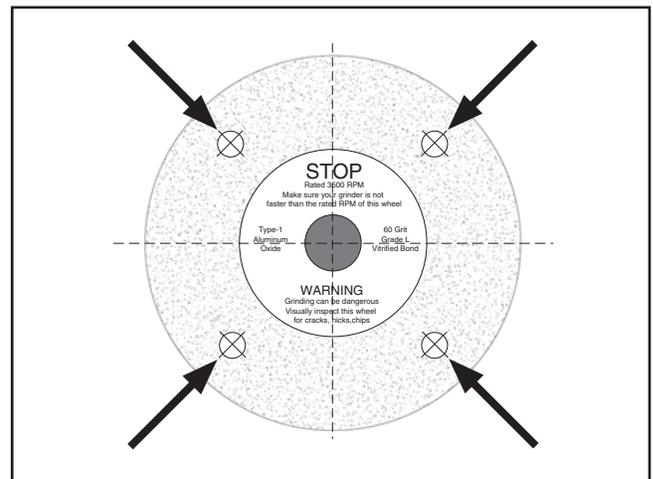


Figure 14. Tapping locations when performing a ring test.

4. An undamaged wheel will emit a clear metallic ring or “ping” sound in each of these spots. A damaged wheel will respond with a dull thud that has no clear tone.
5. If you determine from the ring test that the wheel is damaged, DO NOT use it!



Grinding Wheels

Selecting Correct Grinding Wheel

Grinding Wheel	Drill Bit Diameter
Small Wheel (60 x 35mm)	$\frac{5}{8}$ "– $1\frac{1}{4}$ "
Extra Large Wheel (70 x 54mm)	$1\frac{1}{4}$ "–2"

The inside diameter of the grinding wheel must be large enough to allow the bit inside the wheel at the correct angle WITHOUT coming closer than $\frac{1}{4}$ " to the opposite interior wall, as shown in **Figure 15** and illustrated in **Figure 16**.



Figure 15. Use the correct diameter wheel for the drill bit diameter.

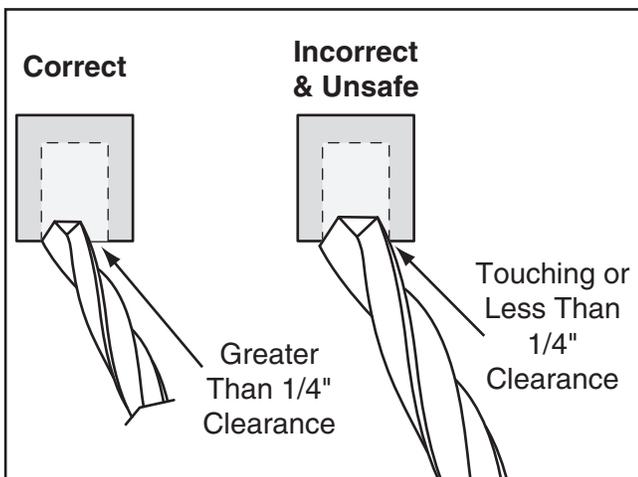


Figure 16. Correct and incorrect wheel diameter to bit diameter relationship.

!WARNING

To avoid serious personal injury from flying wheel or drill bit debris, **ALWAYS** use the correct grinding wheel diameter for the size of the drill bit.

Changing Grinding Wheel

Tools Needed	Qty
Wrench 10mm	1

To change the grinding wheel:

1. DISCONNECT GRINDER FROM POWER!
2. Use the wrench on the left-hand side of the motor arbor to keep it from turning, then rotate the grinding wheel counterclockwise to remove it from the arbor, as shown in **Figure 17**.



Figure 17. Removing the grinding wheel.

3. Store the grinding wheel in a safe, dry location that is not exposed to extreme temperatures.
4. Visually check the replacement wheel for cracks, soft spots, excessive wear, or any other damage—if you are not sure about the condition of the wheel, DO NOT use it!
5. Thread the wheel onto the motor arbor and only hand-tighten it.

Note: The force of the bit against the counterclockwise rotation of the wheel will keep it safely on the arbor.



Grinding Cutting Edge & Point Angle

The majority of sharpening operations of a 2-flute, twisted drill bit will involve grinding the cutting edge of the flute and the point angle.

Tools Needed	Qty
T-Handle Hex Wrench 3mm.....	1
Wrench 17mm.....	1

To grind the drill bit cutting edge and point angle:

1. DISCONNECT GRINDER FROM POWER!
2. Move the carriage fully away from the grinding wheel.
3. Mount the correct grinding wheel for your operation (refer to **Grinding Wheels** on **Page 21** for detailed instructions).
4. Loosen the height lock lever (see **Figure 18**).

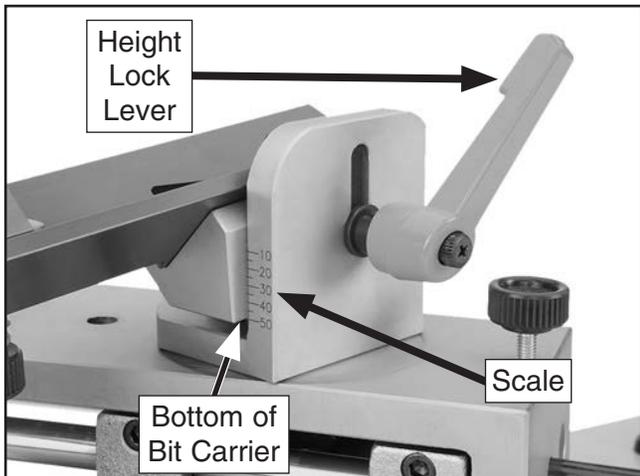


Figure 18. Bit carrier height scale and height lock lever.

5. Adjust the height set screw to raise or lower the bit carrier until the bottom of the carrier base is even with the number on the height scale that is equal to the bit's diameter (see **Figures 18–19**). The height scale is in millimeters.

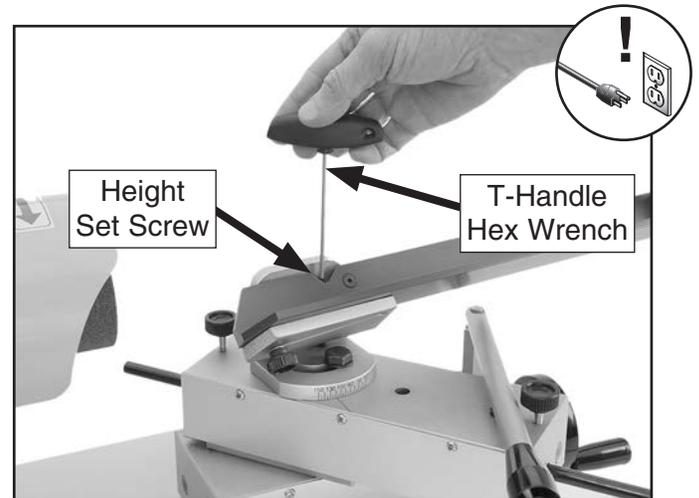


Figure 19. Adjusting the bit carrier height with the height set screw.

6. Tighten the height lock lever to secure the height setting of the carrier.
7. Position the drill bit so that it extends approximately 1" beyond the carrier, as shown in **Figure 20**.

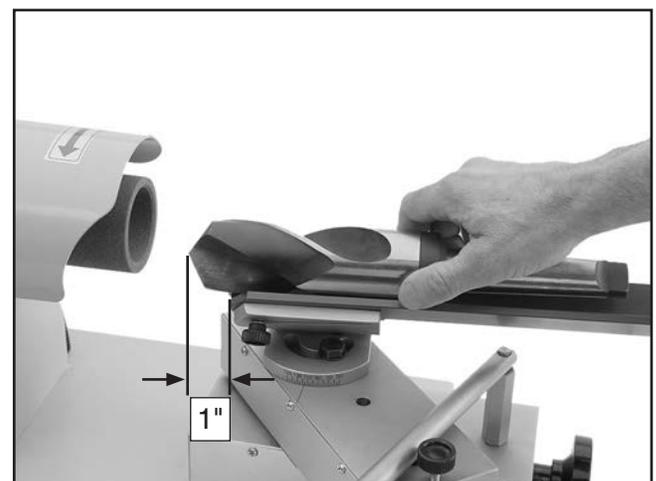


Figure 20. Correctly positioning the bit on the carrier.



- Position and secure the tailstock up against the back of the bit so that it will not move away from the grinding wheel during operation.

—If the bit shank is center-drilled: Insert the tailstock center point into the bit shank center-drilled hole, then tighten the tailstock bottom lock knob and height lock lever to secure the setting (see **Figures 21–22**).

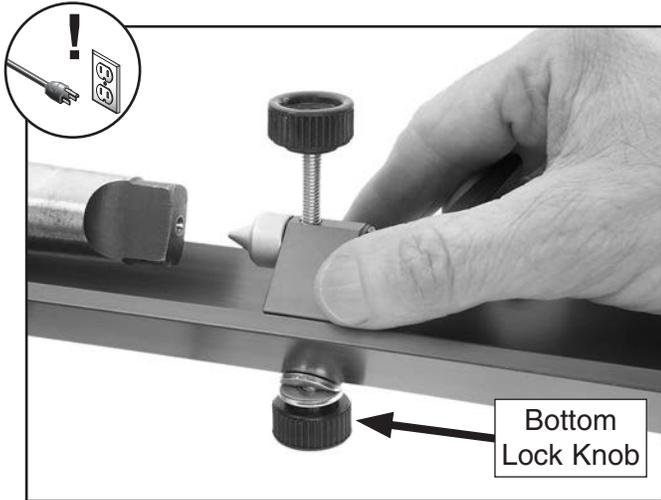


Figure 21. Aligning the tailstock with the center-drilled hole of the bit shank.

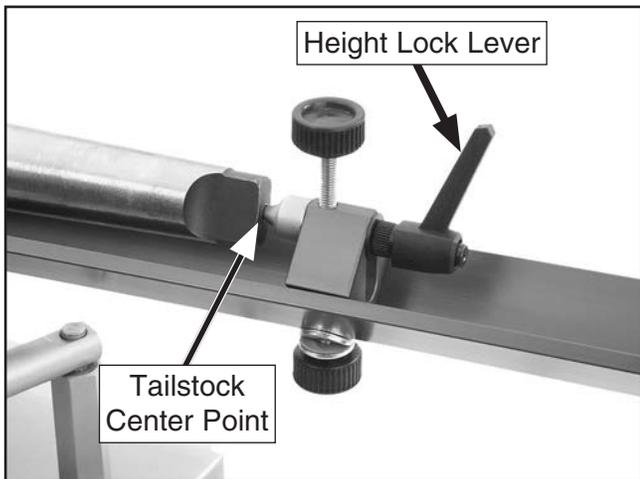


Figure 22. Tailstock in the correct position against the center-drilled shank.

- If the bit shank is not center-drilled: Raise the tailstock center point above the bit shank and lock it in place. Then, move the tailstock base up against the bit shank and tighten the bottom lock knob to hold it in place, as shown in **Figure 23**.

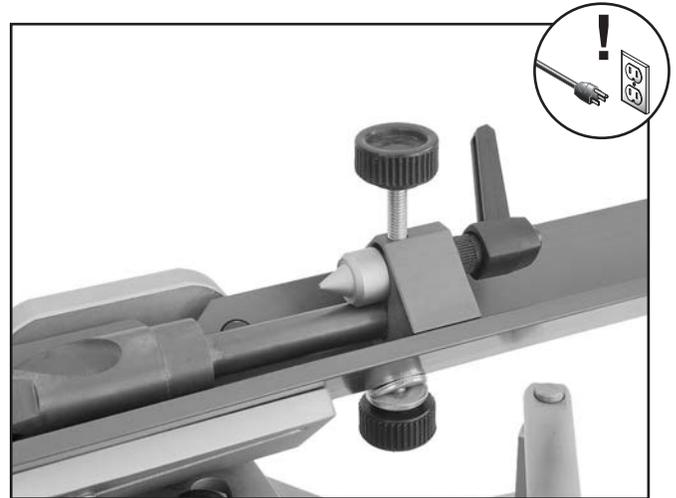


Figure 23. Tailstock in proper position against a bit shank that is not center-drilled.

- Rotate the bit so that the cutting edges are horizontal, as shown in **Figure 24**.

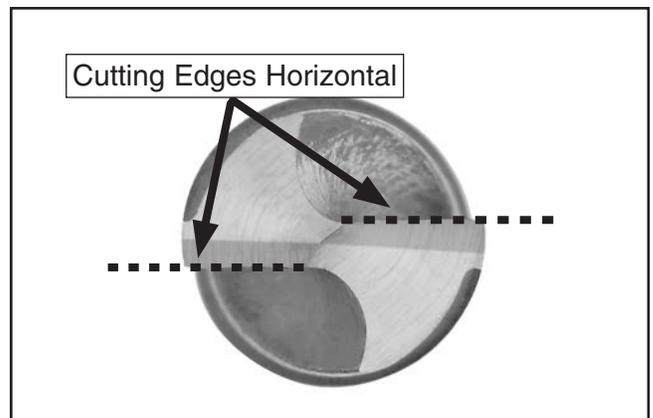


Figure 24. Bit rotated so that the cutting edges are horizontal.



10. Loosen the flute pin lock knob and move the flute pin firmly against a flute until the bit cannot rotate clockwise, as shown in **Figure 25**.

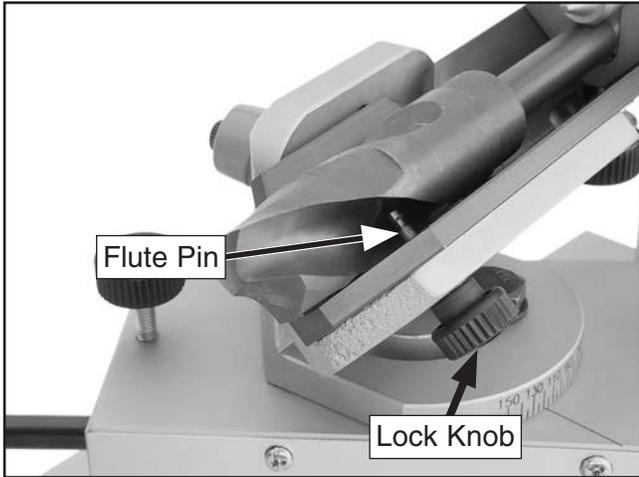


Figure 25. Flute pin in the proper position.

Note: You can adjust the distance that the flute pin extends above the bit carrier by holding the pin's lock knob from the bottom and turning the pin from the top, as shown in **Figure 26**.



Figure 26. Adjusting the height of the flute pin.

! WARNING

If the drill bit should unexpectedly rotate or move during the drilling operation, the grinding wheel could be damaged and fly apart or the operator's hands could be drawn into the wheel. To reduce the risk of personal injury and property damage, **ALWAYS** make sure the drill bit is properly secured with the tailstock and flute pin before operation.

11. Rotate the jig assembly until the rotational scale reads the desired angle of cut at the mark, then tighten the hex bolt at the base to secure the setting (see **Figure 27**).

Note: The example shown in **Figure 27** is set for a 118° combined angle of both point angles, as illustrated in **Figure 28**. For general drilling with 2-flute, twisted bits, 118° is acceptable. However, the correct angle may vary, depending upon your drilling requirements.

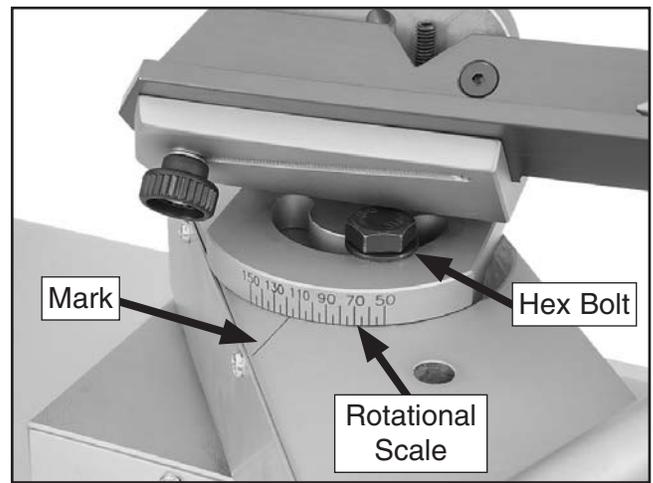


Figure 27. Jig rotational scale set at 118° .

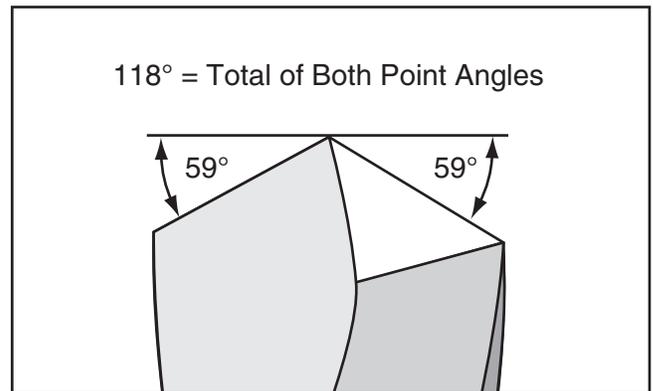


Figure 28. Illustration of calculating total point angle.



12. Loosen the lock knob shown in **Figure 29** and pull the stop rod all the way out from the pivot base.

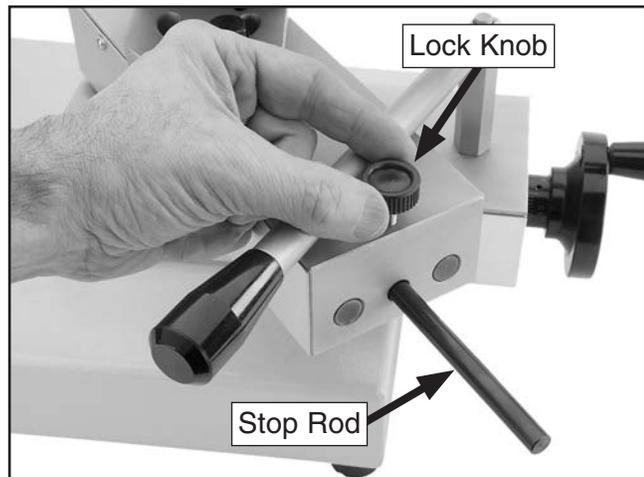


Figure 29. Loosening the knob on the front stop rod.

13. Use the carriage handwheel and pivot lever to position the outside diameter of the bit slightly past the inside cutting edge of the wheel, as shown in **Figure 30**.

Note: Make sure there is at least $\frac{1}{4}$ " clearance between the forward edge of the drill bit and the right inside edge of the wheel when you have completed **Step 13**.

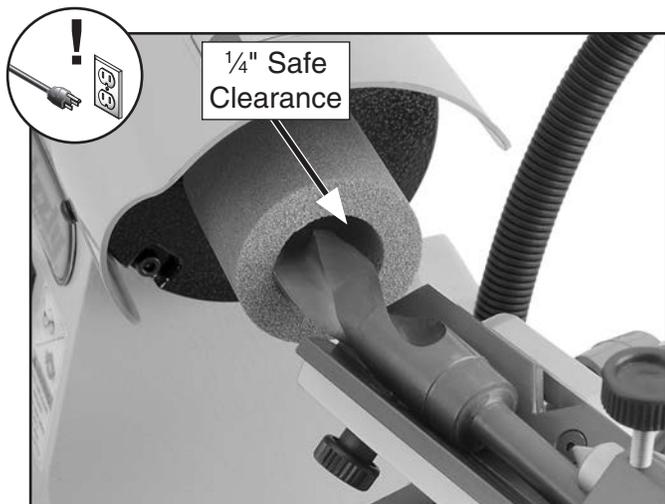


Figure 30. Drill bit outer edge slightly past the inside cutting edge of the wheel.

14. While holding the drill bit to keep it from moving, carefully push the stop rod in until you feel resistance, then tighten the lock knob to secure the setting.

Note: When the stop rod is locked in the correct position, it will limit the travel of the bit so that it will not reach the opposite wheel lip.

15. Recheck the position of the drill bit in the jig. Make sure all lock knobs and levers are tight, then move the pivot lever back and forth to check the clearance between the bit and the wheel.
16. Use the carriage handwheel and pivot lever to position the center point of the bit's chisel edge, so that it just touches the inside edge of the grinding wheel, as shown in **Figure 31**.

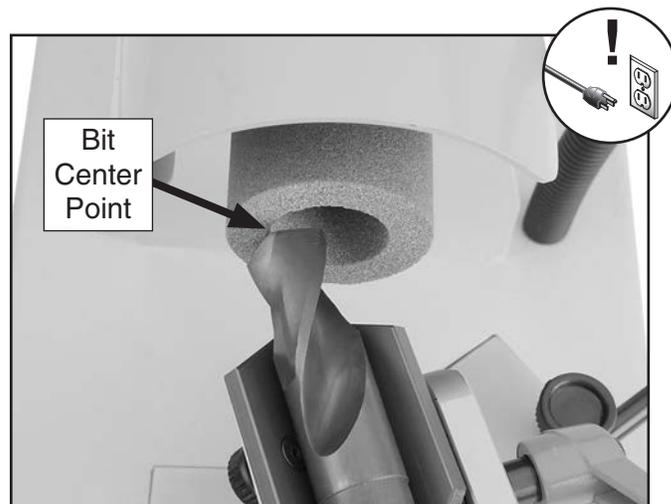


Figure 31. Bit center point touching the wheel inside edge.



17. Rotate the carriage handwheel counterclockwise one increment of the scale shown in **Figure 32** to move the drill bit away.

The handwheel scale is in increments of 0.30mm or approximately 0.012", with one full rotation moving the carriage 15mm or approximately 0.600".

Note: *Slightly backing the drill bit away from the wheel will allow the first grinding passes to take off any burrs or high spots.*

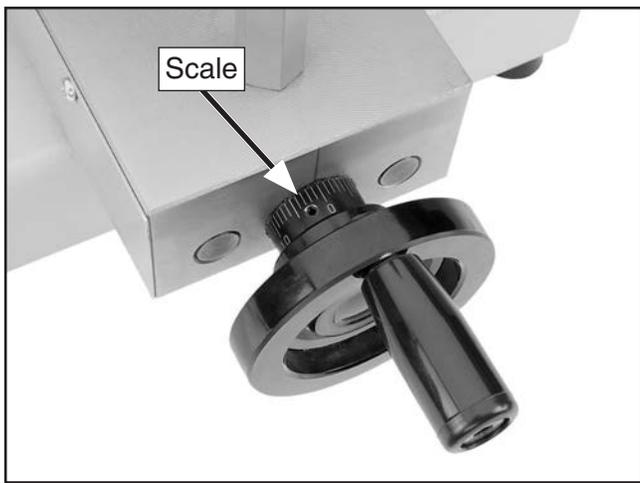


Figure 32. Carriage handwheel and scale.

! WARNING

Grinding wheels have the capability of removing a lot of skin quickly. Keep a firm grip on the drill bit in the jig and position your hands safely away from the wheel during operation.

18. Pull the pivot lever all the way back to move the drill bit away from the grinding wheel, then connect the machine to power, turn it **ON**, and wait for the wheel to reach full speed.
19. Hold the drill bit firmly against the tailstock and flute pin with your right hand.
20. To perform a grinding pass, move the pivot lever with a moderate and steady motion to pass the bit across the wheel's inside cutting edge, then stop when you feel resistance from the front stop rod.
21. Without moving your right hand, reverse the motion of the pivot lever until the drill bit is clear of the grinding wheel.
22. Turn the machine **OFF** and wait for the grinding wheel to come to a complete stop.
23. Rotate the drill bit 180° in the bit carrier and repeat **Steps 18–22** to grind the opposite side of the bit.
24. Rotate the carriage handwheel clockwise one increment of the handwheel scale to move the drill bit toward the grinding wheel 0.30 mm (or approximately 0.012"), then repeat **Steps 18–22** again.
25. Repeat **Step 24** until you are satisfied with cutting edges and point angles of the bit.



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.

Basic Eye Protection

T20501—Face Shield Crown Protector 4"

T20502—Face Shield Crown Protector 7"

T20503—Face Shield Window

T20451—"Kirova" Clear Safety Glasses

T20452—"Kirova" Anti-Reflective S. Glasses

T20456—DAKURA Safety Glasses, Black/Clear



Figure 33. Assorted eye protection.

H5891, H5892 Diamond Dressers

Industrial diamond for dressing grinding wheels. 8¼" long round body with knurled grip for maximum control. Includes protective rubber end cap.

Model H5891 ¼ Carat.

Model H5892 ¾ Carat.



Figure 34. Models H5891 & H5892 Diamond Dressers.

H5946—Wheel Dresser #2

Exposes new grains for aggressive cutting on all types of grinding wheels. Star wheels and discs are hardened steel. Cast iron handle provides stabilizing mass for better control.

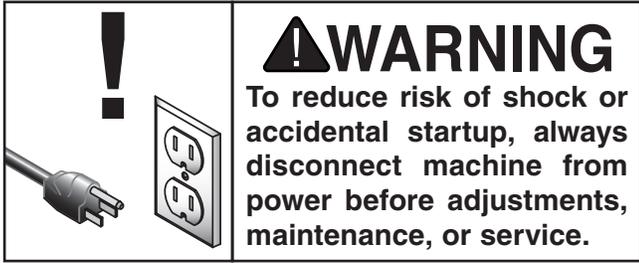


Figure 35. H5946 Wheel Dresser #2.

order online at www.grizzly.com or call 1-800-523-4777



SECTION 6: MAINTENANCE



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:

- Worn or damaged grinding wheel.
- Worn or damaged wires.
- Any other unsafe condition.

Weekly Maintenance

- Lubricate pivot handle.
- Lubricate leadscrew and slides.
- Clean/vacuum dust buildup.
- Lubricate leadscrew and slides.
- Check grinding wheel for loading up.

Cleaning & Protecting

Cleaning the Model G0686 is relatively easy. Vacuum excess debris, and wipe off the remaining dust with a dry cloth.

Wheel Dressing

When the wall of the wheel becomes too thin and begins to chip during operation, use a diamond dresser to remove the bevel on the front edge of the wheel.

Wheel Storage

Grinding wheels can be easily damaged, so it is important to store them properly. Follow all wheel manufacturer storage instructions. Always store grinding wheels in a location that is dry and protected from potential damage due to them being dropped or having other items dropped on them. Also, avoid storing grinding wheels where there is high humidity, extreme heat or cold, or solvents.

Replacing Light Bulb

Replacement Bulb P0686002V2

To remove the bulb, gently pull it straight out of the housing.

Insert the new bulb by gently pressing it into the housing until it is fully seated.



Lubrication

Pivot Rod

Pull up on the pivot rod to remove it from the pivot base, then use a shop rag and mineral spirits to clean away the grease and grime from the rod slot and the pivot points (see **Figure 36**). Apply a small amount of multi-purpose grease to each of the pivot points.

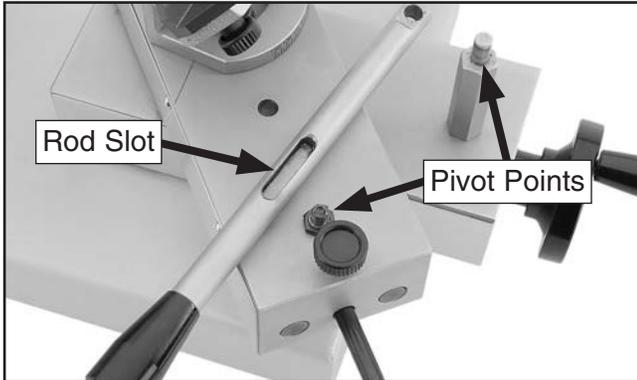


Figure 36. Pivot rod lubrication.

Leadscrew & Slides

Remove the front panels of the pivot base and carriage to access the slides and carriage leadscrew (see **Figure 37**), then use a shop rag, clean brush, and mineral spirits to clean away the grease and grime from the slides and leadscrew. Apply a small amount of multi-purpose grease to the slides and leadscrew, then move the devices through their full range of motion to distribute the lubricant.

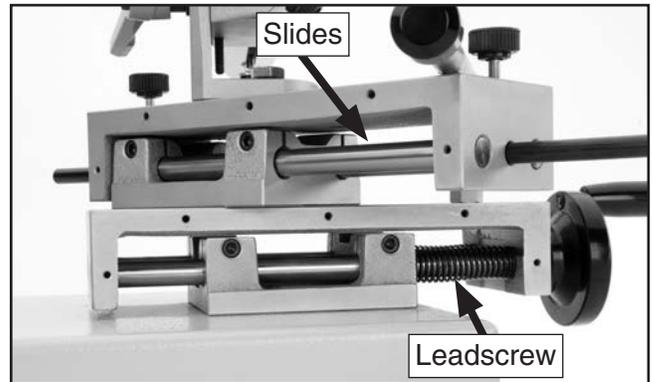


Figure 37. Leadscrew and slide lubrication.



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



Symptom	Possible Cause	Possible Solution
Machine does not start or a breaker trips.	<ol style="list-style-type: none"> 1. Power supply switched OFF or at fault. 2. Plug/receptacle at fault/wired wrong. 3. Motor connection wired wrong. 4. Wall circuit breaker tripped. 5. Wiring open/has high resistance. 6. Motor brushes at fault. 7. Motor ON/OFF switch at fault. 8. Motor at fault. 	<ol style="list-style-type: none"> 1. Ensure power supply is ON/has correct voltage. 2. Test for good contacts; correct the wiring. 3. Correct motor wiring connections (Page 33). 4. Ensure circuit size is correct/replace weak breaker. 5. Check/fix broken, disconnected, or corroded wires. 6. Remove/replace brushes (Page 31). 7. Replace switch. 8. Test/repair/replace.
Machine stalls or is underpowered.	<ol style="list-style-type: none"> 1. Drill bit not properly aligned with wheel. 2. Motor wired incorrectly. 3. Plug/receptacle at fault. 4. Motor brushes at fault. 5. Machine undersized for task. 6. Motor at fault. 7. Motor bearings at fault. 	<ol style="list-style-type: none"> 1. Properly align drill bit with wheel; make light passes. 2. Wire motor correctly (Page 33). 3. Test for good contacts/correct wiring. 4. Remove/replace brushes (Page 31). 5. Use new grinding wheel; reduce the feed rate. 6. Test/repair/replace. 7. Test/repair/replace.
Machine has vibration or noisy operation.	<ol style="list-style-type: none"> 1. Motor or component loose. 2. Grinding wheel at fault. 3. Incorrectly mounted to workbench. 4. Drill bit loose. 5. Motor bearings at fault. 6. Motor shaft bent. 	<ol style="list-style-type: none"> 1. Inspect/replace damaged bolts/nuts, and re-tighten with thread locking fluid. 2. Dress/replace grinding wheel. 3. Adjust feet, shim, or tighten mounting hardware. 4. Properly mount the bit in the jig assembly; hold firmly during operation. 5. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement. 6. Test with dial indicator and replace motor.
Drill bit not sharpened to desired point angle.	<ol style="list-style-type: none"> 1. Pivot base not set at the correct angle. 2. Drill bit not at the correct height. 3. Bit sharpened unevenly or more pressure applied to one side than the other when grinding. 	<ol style="list-style-type: none"> 1. Set the pivot base to the correct angle. 2. Use the jig assembly height scale to adjust the bit to the proper height for its diameter. 3. Apply even pressure to both sides of the point when grinding.
Drill bit smokes or tip has black, blue, or purple color.	<ol style="list-style-type: none"> 1. Too much pressure applied. 	<ol style="list-style-type: none"> 1. Reduce pressure and feed rate, and discard the damaged bit.
Wheel dulls or clogs quickly, grit falls off.	<ol style="list-style-type: none"> 1. Too much pressure applied. 2. Bad wheel dress. 3. Wheel stored in moist or extreme temperature environment. 	<ol style="list-style-type: none"> 1. Reduce pressure and feed rate. 2. Properly dress the wheel surfaces. 3. Replace wheel; store wheels in dry, moderate temperature environment.



Motor Brushes

The motor is equipped with two long-life carbon brushes. The brush life is affected by motor loads and usage.

Replace both brushes as a set if the motor becomes noisy, loses speed, heats up, does not start, or either brush is worn down to less than 1/4" in length.

Tools Needed	Qty
Standard Screwdriver	1

To check/replace the motor brushes:

1. DISCONNECT GRINDER FROM POWER!
2. Unscrew the plastic cover, and remove the front motor brush assembly, as shown in **Figure 38**.

Note: As you remove the brush assembly, make note of the orientation of the carbon tip so that if it is still good you can re-install it the same way.

3. Measure the length of the carbon tip.
—If the carbon tip is worn down to 1/4" (6mm) or less, replace both brush assemblies with new ones.

Note: Replacement motor brushes are available through Grizzly.

4. Repeat **Steps 2–3** with the motor brush found on the rear of the motor.
5. After inserting the brush assemblies back into the motor, re-install the plastic caps to hold them in place.

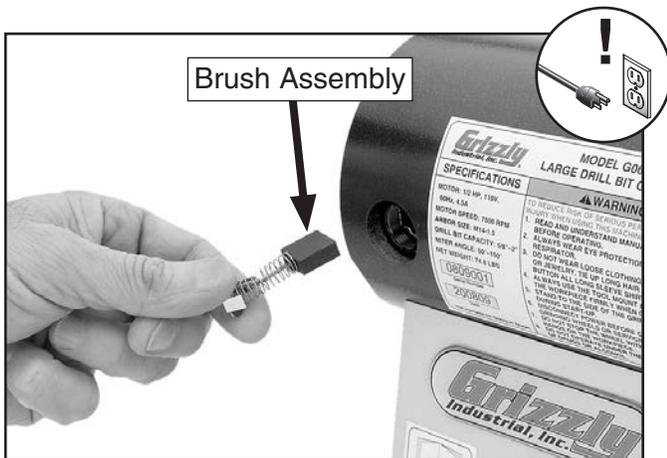


Figure 38. Removing the front motor brush assembly.



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 after-market parts.

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

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

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

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

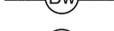
CAPACITORS/INVERTERS. Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.

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

NOTICE

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

COLOR KEY

BLACK 	BLUE 	YELLOW 	LIGHT BLUE 
WHITE 	BROWN 	YELLOW GREEN 	BLUE WHITE 
GREEN 	GRAY 	PURPLE 	TURQUOISE 
RED 	ORANGE 	PINK 	



Wiring Diagram

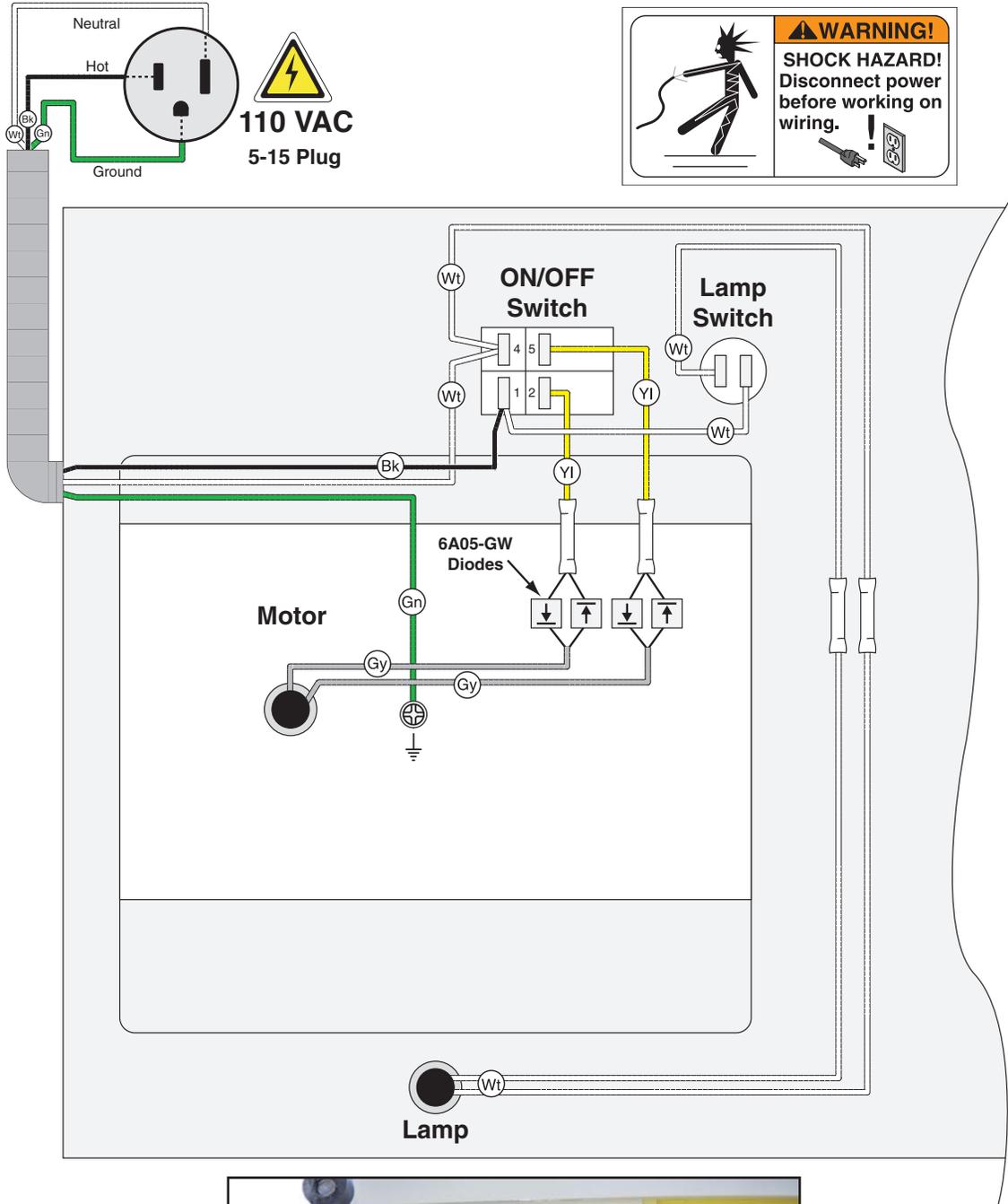


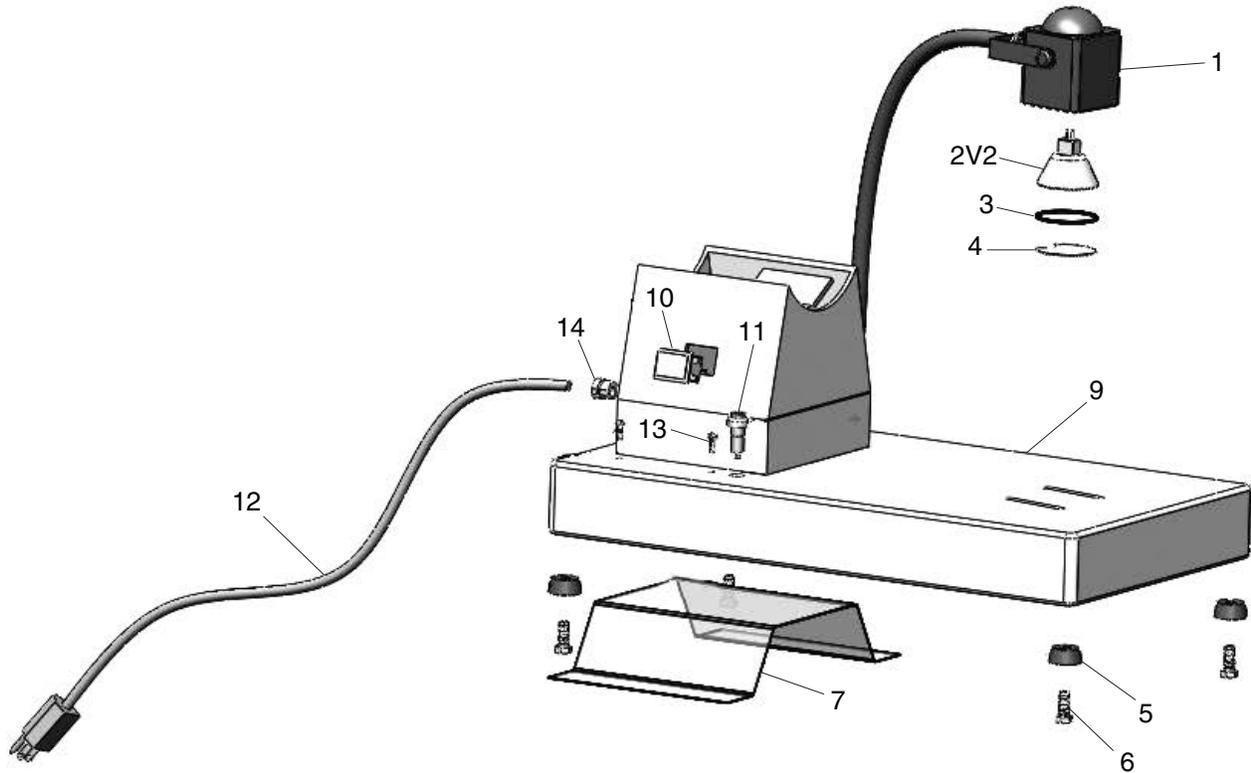
Figure 39. Model G0686 wiring.



SECTION 9: PARTS

We do our best to stock replacement parts when possible, but we cannot guarantee that all parts shown are available for purchase. Call (800) 523-4777 or visit www.grizzly.com/parts to check for availability.

Base

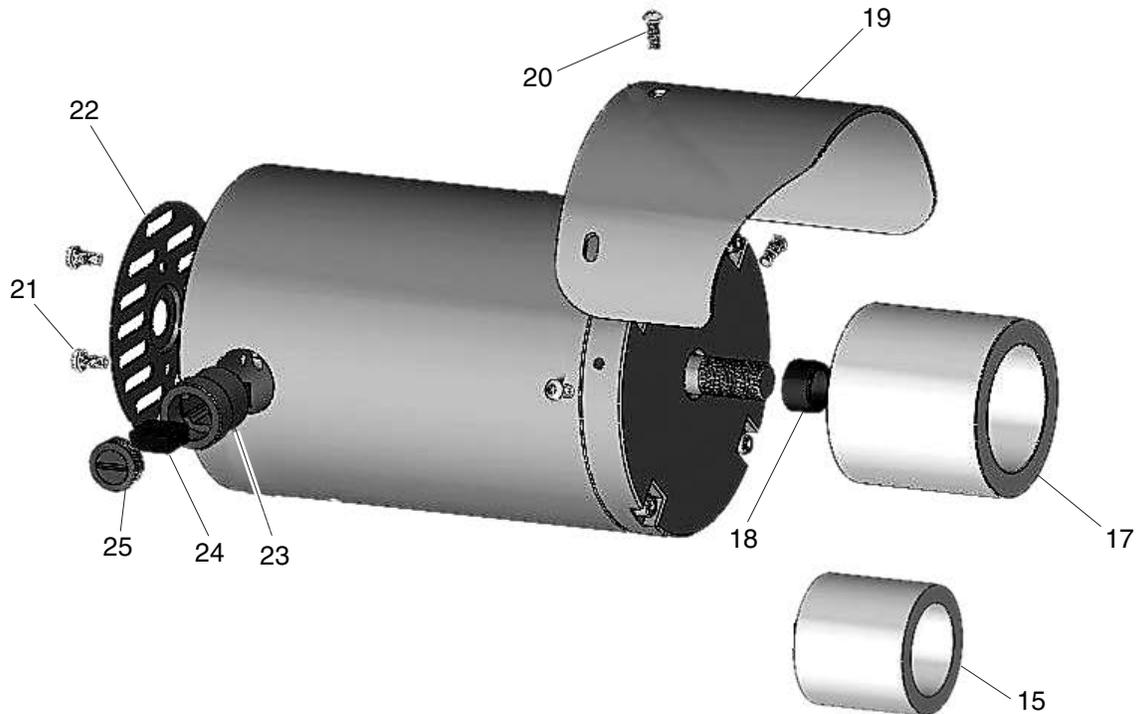


REF	PART #	DESCRIPTION
1	P0686001	LAMP HOUSING ASSEMBLY
2V2	P0686002V2	LED LAMP 5W 100-240V V2.02.19
3	P0686003	LAMP LENS
4	P0686004	LENS RUBBER SEAL
5	P0686005	RUBBER FOOT
6	P0686006	HEX BOLT M8-1.25 X 20
7	P0686007	ACRYLIC COVER

REF	PART #	DESCRIPTION
9	P0686009	BASE
10	P0686010	MOTOR POWER SWITCH 16A 250V
11	P0686011	LAMP SWITCH 12V-240V
12	P0686012	POWER CORD 16G 3W 73" 5-15P
13	P0686013	PHLP HD SCR M3-.5 X 10
14	P0686014	STRAIN RELIEF TYPE-6 5/8" ST



Motor & Wheel

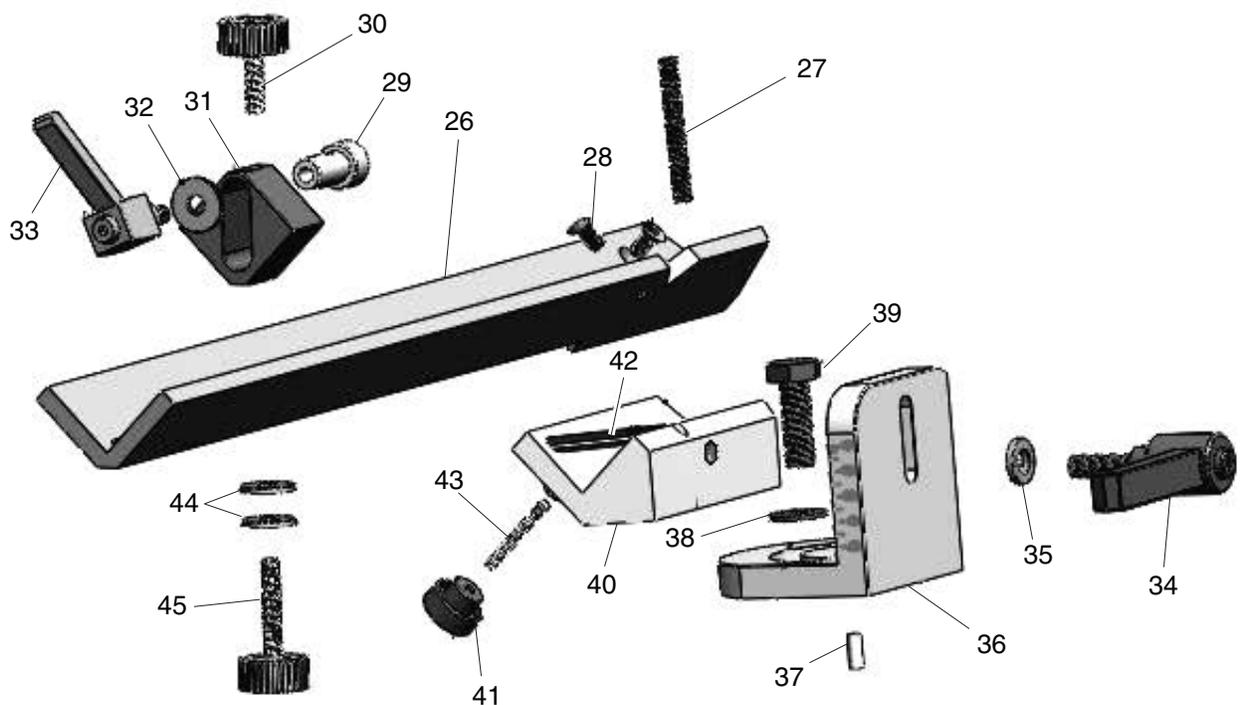


REF	PART #	DESCRIPTION
15	P0686015	GRINDING WHEEL 60G 60OD X 35MMID
17	P0686017	GRINDING WHEEL 60G 70OD X 54MMID
18	P0686018	ARBOR SPACER
19	P0686019	WHEEL GUARD
20	P0686020	BUTTON HD CAP SCR M5-.8 X 12

REF	PART #	DESCRIPTION
21	P0686021	PHLP HD SCR M5-.8 X 10
22	P0686022	FAN COVER
23	P0686023	MOTOR BRUSH HOUSING
24	P0686024	MOTOR BRUSH
25	P0686025	MOTOR BRUSH CAP



Jig Assembly

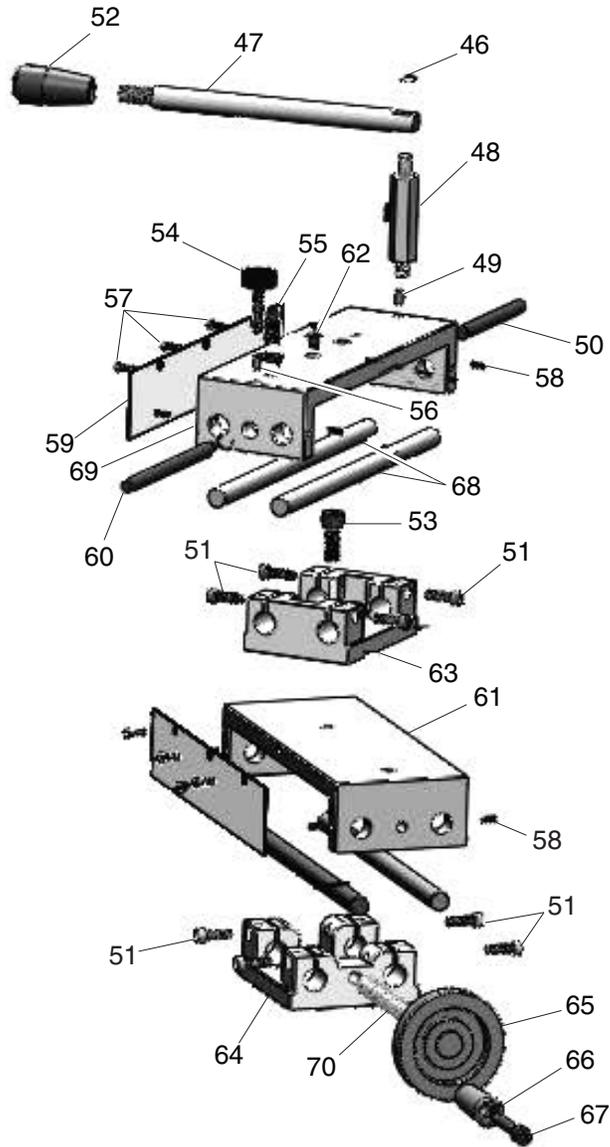


REF	PART #	DESCRIPTION
26	P0686026	BIT CARRIER
27	P0686027	SET SCREW M6-1 X 50
28	P0686028	FLAT HD SCR M5-.8 X 8
29	P0686029	THREADED LOCK SHAFT
30	P0686030	KNURLED KNOB M6-1 X 32
31	P0686031	SLIDE BLOCK
32	P0686032	FLAT WASHER 6MM
33	P0686033	LOCK LEVER M6-1 X 12
34	P0686034	LOCK LEVER M8-1.25 X 25
35	P0686035	FLAT WASHER 8MM

REF	PART #	DESCRIPTION
36	P0686036	JIG BASE
37	P0686037	PIN 5 X 12
38	P0686038	FLAT WASHER 10MM
39	P0686039	HEX BOLT M10-1.5 X 30
40	P0686040	SLOTTED V-BLOCK
41	P0686041	KNURLED KNOB M4-.7
42	P0686042	HEX NUT M4-.7
43	P0686043	SPECIAL SET SCREW M4-.7 X 32
44	P0686044	FLAT WASHER 6MM
45	P0686045	KNURLED KNOB M6-1 X 30



Pivot Base & Carriage

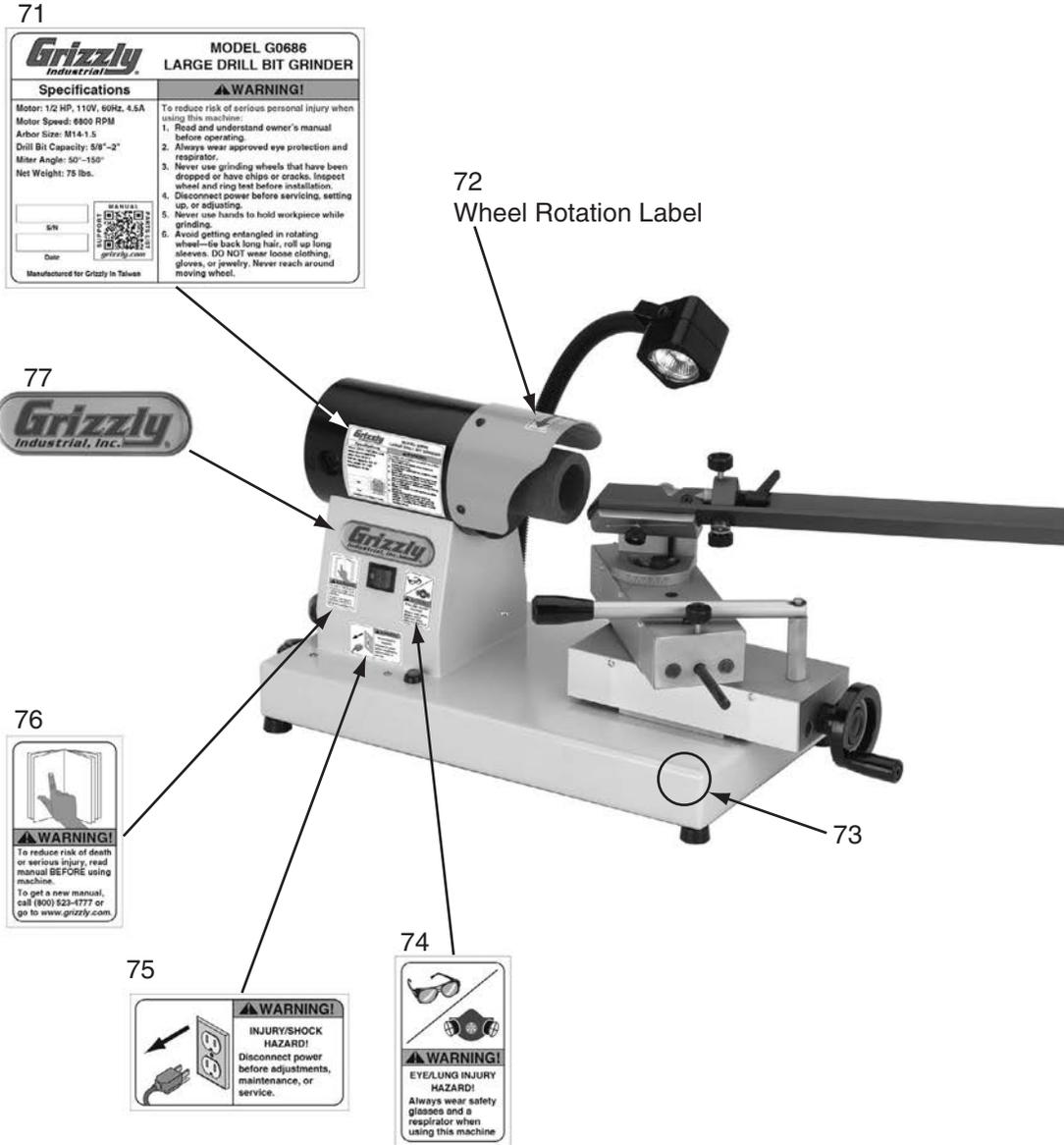


REF	PART #	DESCRIPTION
46	P0686046	E-CLIP 10MM
47	P0686047	PIVOT HANDLE
48	P0686048	HANDLE AXLE
49	P0686049	COPPER PIN
50	P0686050	REAR STOP ROD
51	P0686051	CAP SCREW M6-1 X 20
52	P0686052	KNOB 1/2-20
53	P0686053	CAP SCREW M10-1.5 X 25
54	P0686054	KNURLED KNOB M6-1 X 30
55	P0686055	SPECIAL SCREW M10-1.5 X 25
56	P0686056	SPECIAL HEX NUT M10-1.5
57	P0686057	PHLP HD SCR M4-.7 X 10
58	P0686058	SLIDE AXIS SCREW M4-.7 X 10

REF	PART #	DESCRIPTION
59	P0686059	CARRIAGE COVER
60	P0686060	FRONT STOP ROD
61	P0686061	CARRIAGE
62	P0686062	PLUG
63	P0686063	UPPER CONNECTING BLOCK
64	P0686064	LOWER CONNECTING BLOCK
65	P0686065	HANDWHEEL
66	P0686066	HANDLE
67	P0686067	SPECIAL SCREW M6-1 X 55
68	P0686068	SLIDE BAR
69	P0686069	PIVOT BASE
70	P0686070	CARRIAGE LEADSCREW



Labels & Cosmetics



REF	PART #	DESCRIPTION
71	P0686071	MACHINE ID LABEL
72	P0686072	WHEEL ROTATION LABEL
73	P0686073	GRIZZLY PUTTY TOUCH-UP PAINT
74	P0686074	EYE/LUNG HAZARD LABEL

REF	PART #	DESCRIPTION
75	P0686075	DISCONNECT POWER LABEL
76	P0686076	READ MANUAL LABEL
77	P0686077	GRIZZLY LOGO

⚠ WARNING

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



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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 register the warranty, scan the QR code below. You will be directed to the Warranty Registration page on Grizzly.com. Enter all applicable information for the product.



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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