MODEL G0987
16" X 46" WOOD LATHE w/DRO
OWNER'S MANUAL
(For models manufactured since 12/24)

Intertek
4000909

#SG23338 PRINTED IN CHINA V1.01.25

******Keep for Future Reference******

⚠ 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

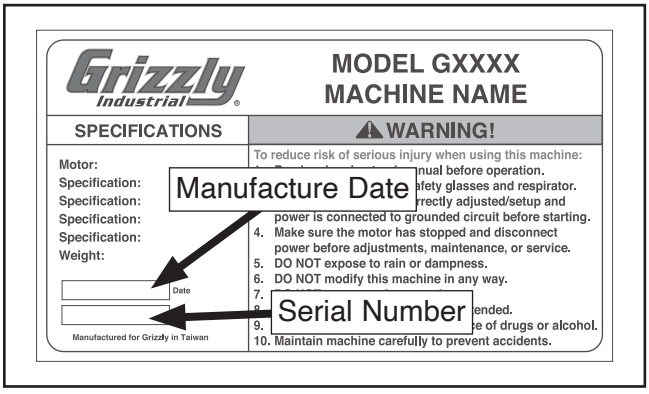
Manual Accuracy

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**.

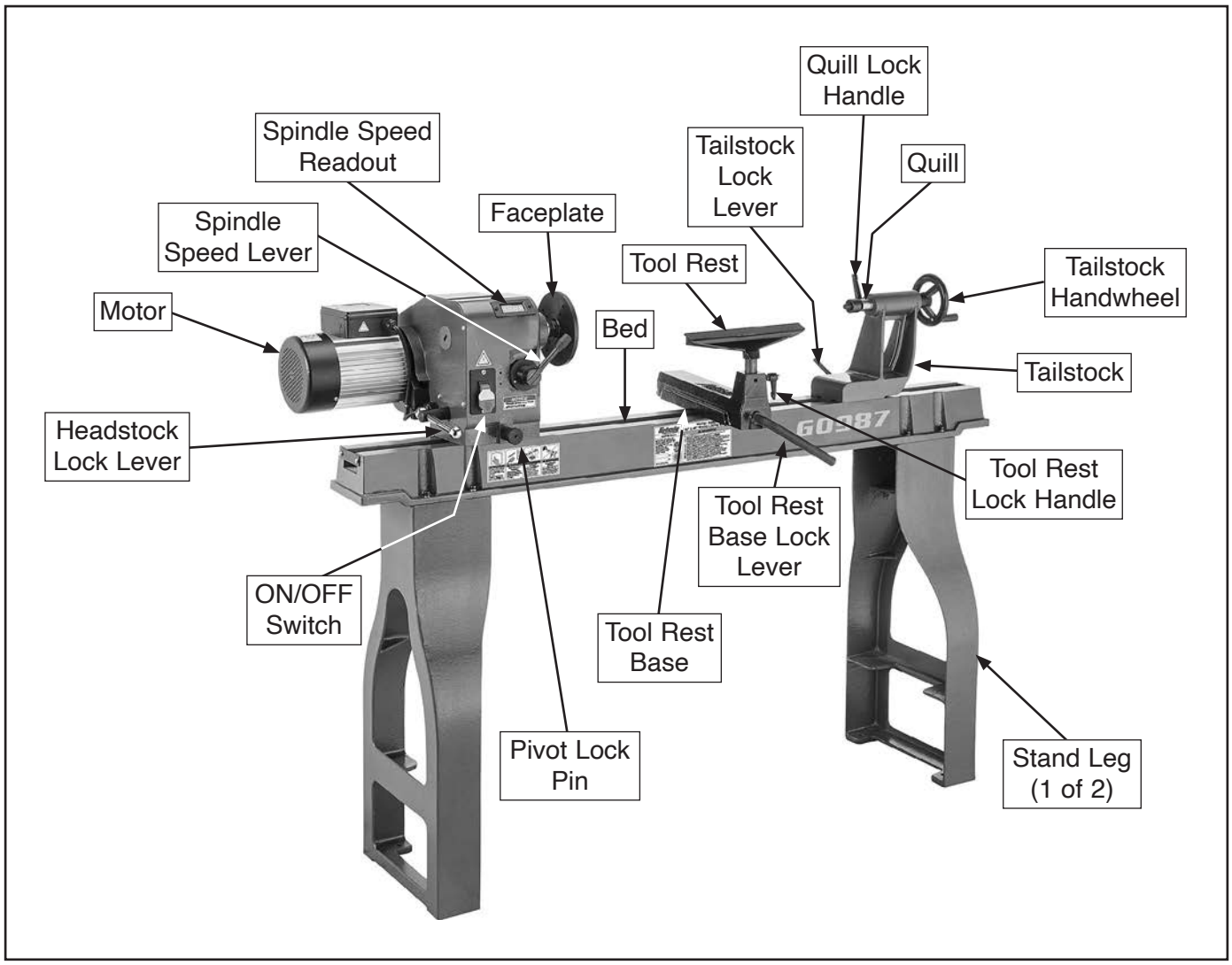
If you find this to be the case, and the difference between the manual and machine leaves you confused or unsure about something, check our website for an updated version. We post current manuals and manual updates for free on our website at **www.grizzly.com**.

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

Become familiar with the names and locations of the controls and features shown below to better understand the instructions in this manual.

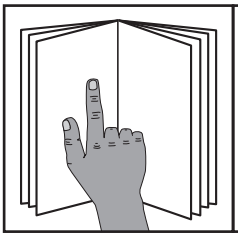


⚠WARNING

For Your Own Safety Read Instruction Manual Before Operating Lathe

a) Wear eye protection.
b) Do not wear gloves, necktie, or loose clothing.
c) Tighten all locks before operating.
d) Rotate workpiece by hand before applying power.
e) Rough out workpiece before installing on faceplate.
f) Do not mount split workpiece or one containing knot.
g) Use lowest speed when starting new workpiece.

Controls & Components



⚠WARNING

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

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.

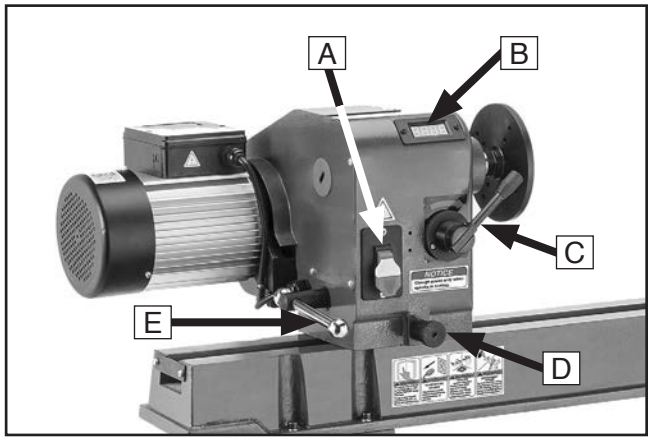


Figure 1. Headstock controls.

A. ON/OFF Switch w/Removable Key: Turns motor ***ON*** and ***OFF***. Remove yellow key to disable.

B. Spindle Speed Readout: Indicates spindle speed in revolutions per minute (RPM).

C. Spindle Speed Lever: Adjusts spindle speed.

D. Pivot Lock Pin: When headstock lock lever is engaged, pulls to pivot headstock 60, 90, 120, or 180 degrees.

E. Headstock Lock Lever: Secures headstock in position along bed.

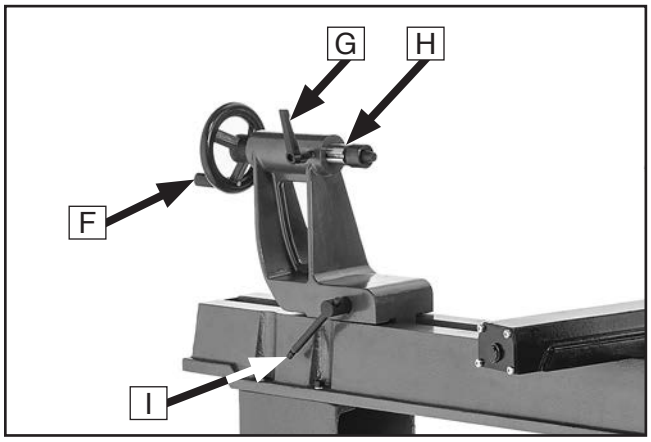


Figure 2. Tailstock controls.

F. Tailstock Handwheel: Moves quill toward or away from spindle.

G. Quill Lock Handle: Secures quill in position.

H. Quill: Holds centers or tooling. Can be moved toward or away from spindle.

I. Tailstock Lock Lever: Secures tailstock in position along bed.

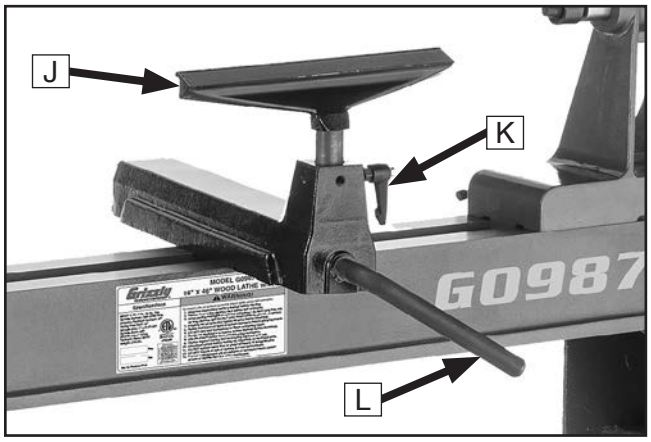


Figure 3. Tool rest controls.

J. Tool Rest: Provides stable platform for cutting tools.

K. Tool Rest Lock Handle: Secures tool rest in position.

L. Tool Rest Base Lock Lever: Secures tool rest base in position along bed.

MACHINE DATA SHEET

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

MODEL G0987 16" X 46" WOOD LATHE WITH DRO

Product Dimensions:

Weight	278 lbs.
Width (side-to-side) x Depth (front-to-back) x Height	80 x 21 x 46 in.
Footprint (Length x Width)	54 x 14 in.

Shipping Dimensions:

Type	Wood Crate
Content	Machine
Weight	316 lbs.
Length x Width x Height	63 x 18 x 21 in.
Must Ship Upright	Yes

Electrical:

Power Requirement	120V, Single-Phase, 60 Hz
Full-Load Current Rating	13A
Minimum Circuit Size	15A
Connection Type	Cord & Plug
Power Cord Included	Yes
Power Cord Length	98 in.
Power Cord Gauge	16 AWG
Plug Included	Yes
Included Plug Type	5-15
Switch Type	Paddle Safety Switch w/Removable Key

Motors:

Main

Horsepower	2 HP
Phase	Single-Phase
Amps	13A
Speed	1725 RPM
Type	Permanent Split Capacitor Motor
Power Transfer	Belt
Bearings	Sealed & Permanently Lubricated
Centrifugal Switch/Contacts Type	N/A

Main Specifications:

Operation Information

Swing Over Bed	16 in.
Swing Over Tool Rest Base	11-5/8 in.
Distance Between Centers	46 in.
Max. Distance Tool Rest to Spindle Center	13 in.
No of Spindle Speeds	Variable
Spindle Speed Range	600 - 2400 RPM
Floor to Center Height	43 in.
Headstock Rotation	0, 60, 90, 120, 180 deg.

Spindle Information

Spindle Taper	MT#2
Spindle Thread Size	1" x 8 TPI
Spindle Thread Direction	Right Hand
Spindle Bore	3/8 in.
Type of Included Spindle Center	Spur

Tool Rest Information

Tool Rest Width	11-3/4 in.
Tool Rest Post Diameter	1 in.
Tool Rest Post Length	3 in.
Tool Rest Base Height	2-1/8 in.

Tailstock Information

Tailstock Quill Travel	2-3/8 in.
Tailstock Taper	MT#2
Type of Included Tailstock Center	Live

Construction

Bed	Precision-Ground Cast Iron
Stand	Cast Iron
Headstock	Cast Iron
Tailstock	Cast Iron
Paint Type/Finish	Powder Coating

Other Related Information

Bed Width	4-1/2 in.
Faceplate Size	6 in.

Other Specifications:

Country of Origin	China
Warranty	1 Year
Approximate Assembly & Setup Time	1 Hour
Serial Number Location	ID Label
ISO 9001 Factory	Yes
Certified by a Nationally Recognized Testing Laboratory (NRTL)	Yes

Features:

Spindle Tachometer with Digital Readout
Quick Lock/Release Levers for Tailstock and Headstock
Heavy-Duty Cast-Iron Bed and Legs
Headstock Rotates 180 Degrees and Positions Anywhere Along Bed
46" Between Centers
11-3/4" Cast-Iron Tool Rest with 1" Tool Post
Self-Ejecting Tailstock

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.

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

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

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

NOTICE **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 loose clothing, gloves, neckties, 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 Wood Lathes

⚠WARNING

Serious injury or death can occur from getting entangled in, crushed between, or struck by rotating parts on a lathe! Rotating workpieces can come loose and strike operator or bystanders with deadly force if they are improperly secured, rotated too fast, or are not strong enough for the rotational forces required for turning. Improper tool setup or usage can cause tool kickback or grabbing, resulting in impact injury or entanglement. To reduce the risk of operator (or bystander) injury or death, anyone operating this machine MUST completely heed the hazards and warnings below.

VERIFY WORKPIECE INTEGRITY. Verify each workpiece is free of knots, splits, nails, or foreign material to ensure it can safely rotate on spindle without breaking apart or causing tool kickback.

PROPERLY PREPARE WORKPIECE. Before mounting, cut off waste portions to balance workpiece for safe rotation and removal of large edges that can catch on tooling.

SECURE LOCKS. Verify tool rest, headstock, and tailstock are secure before turning lathe ***ON***.

SECURE WORKPIECE. Use proven setup techniques and always verify workpiece (and centers/tooling holding workpiece) are well-secured before starting lathe. Only use high-quality fasteners with non-tapered heads for faceplate attachment.

ADJUST TOOL SUPPORT. An improperly supported tool may be grabbed or ejected. Adjust tool rest approximately ¼" away from workpiece and ⅛" above workpiece center line to provide proper support for turning tool. Firmly hold turning tool with both hands against tool rest.

REMOVE ADJUSTMENT TOOLS. Remove all chuck keys, wrenches, and adjustment tools before turning lathe ***ON***. These items can become deadly projectiles when spindle is started.

CHECK CLEARANCES. Before starting spindle, verify workpiece has adequate clearance by hand-rotating it through its entire range of motion.

TEST NEW SETUPS. Test each new setup by starting spindle rotation at lowest speed and standing to side of lathe until workpiece reaches full speed and you can verify safe rotation.

WEAR PROPER PPE. Always wear a face shield and safety glasses when operating lathe. Do not wear gloves, necktie or loose clothing. Keep long hair away from rotating spindle.

USE CORRECT SPEEDS. Select correct spindle speed for workpiece size, type, shape, and condition. Use low speeds when roughing or when turning large, long, or non-concentric workpieces. Allow spindle to reach full speed before turning.

AVOID TOOL KICKBACK. This occurs when turning tool is grabbed or ejected from workpiece with great force. Commonly caused by poor workpiece selection/preparation, improper tool usage, or improper machine setup or tool rest adjustment.

SAFELY PERFORM ROUGHING. Use correct tool. Take light cuts, use low speeds, and firmly support tool with both hands.

USE SHARP TOOLS. Sharp tools cut with less resistance than dull tools. Using dull tools increases the risk of tool kickback or grabbing.

SAFELY STOPPING ROTATION. Always allow rotating workpiece to stop on its own. Never put hands or another object on workpiece to stop it.

SAFELY MEASURE WORKPIECE. Only measure mounted workpiece after it has completely stopped. Trying to measure a spinning workpiece increases entanglement risk.

SANDING/POLISHING. To reduce entanglement risk, remove tool rest before sanding. Never completely wrap sandpaper around workpiece.

SECTION 2: POWER SUPPLY

Availability

Before installing the machine, consider the availability and proximity of the required power supply circuit. If an existing circuit does not meet the requirements for this machine, a new circuit must be installed. To minimize the risk of electrocution, fire, or equipment damage, installation work and electrical wiring must be done by an electrician or qualified service personnel in accordance with all applicable codes and standards.

⚠WARNING

Electrocution, fire, shock, or equipment damage may occur if machine is not properly grounded and connected to power supply.

Full-Load Current Rating

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

Full-Load Current Rating at 120V ..... 13 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.

120V 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
Plug/Receptacle ..... NEMA 5-15

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!

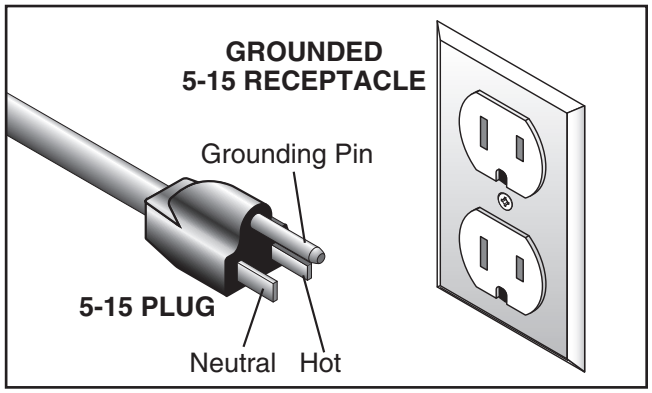
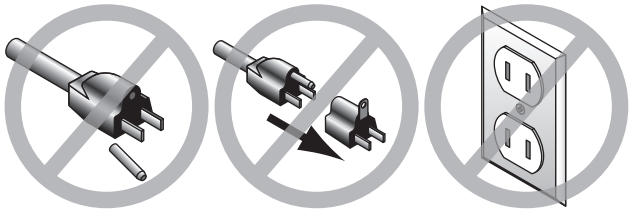


Figure 4. Typical 5-15 plug and receptacle.

⚠CAUTION



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 machine is properly grounded. If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

Extension Cords

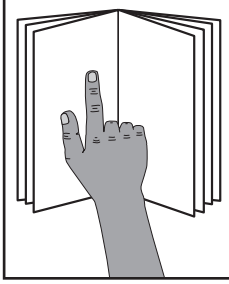
We do not recommend using an extension cord with this machine. If you must use an extension cord, only use it if absolutely necessary and only on a temporary basis.

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

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

Minimum Gauge Size.....16 AWG
Maximum Length (Shorter is Better).....50 ft.

SECTION 3: SETUP

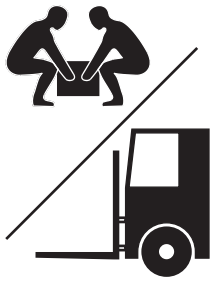


⚠WARNING

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

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.

⚠CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or poor work results.

Needed for Setup

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

Description	Qty
• Additional People	As Needed
• Safety Glasses (for each person)	1
• Wrench or Socket 26mm	1
• Cleaner/Degreaser (**Page 15**)	As Needed
• Disposable Shop Rags	As Needed
• Mounting Hardware	As Needed

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.

Inventory (Figures 5–6) **Qty**

A. Lathe Assembly
- —Lathe Bed 1
- —Headstock (mounted) 1
- —Tailstock (mounted) 1
- —Faceplate (mounted) 1

B. Stand Legs 2
C. Tool Rest Assembly 1

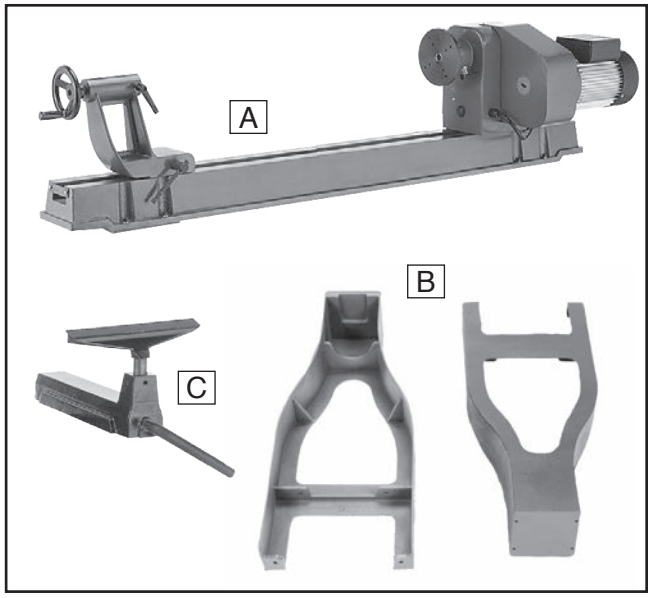


Figure 5. Main components.

D. Knockout Tool 1
E. Flat Wrenches 32mm 2
F. Spur Center MT#2 1
G. Live Center MT#2 1
H. Cap Screws M8-1.25 x 30 8
I. Lock Washers 8mm 8
J. Flat Washers 8mm 8
K. Hex Wrenches 3, 4, 6mm ..... 1 Ea

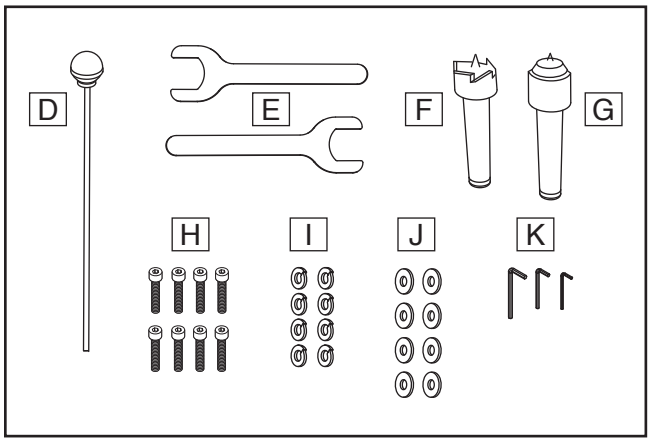
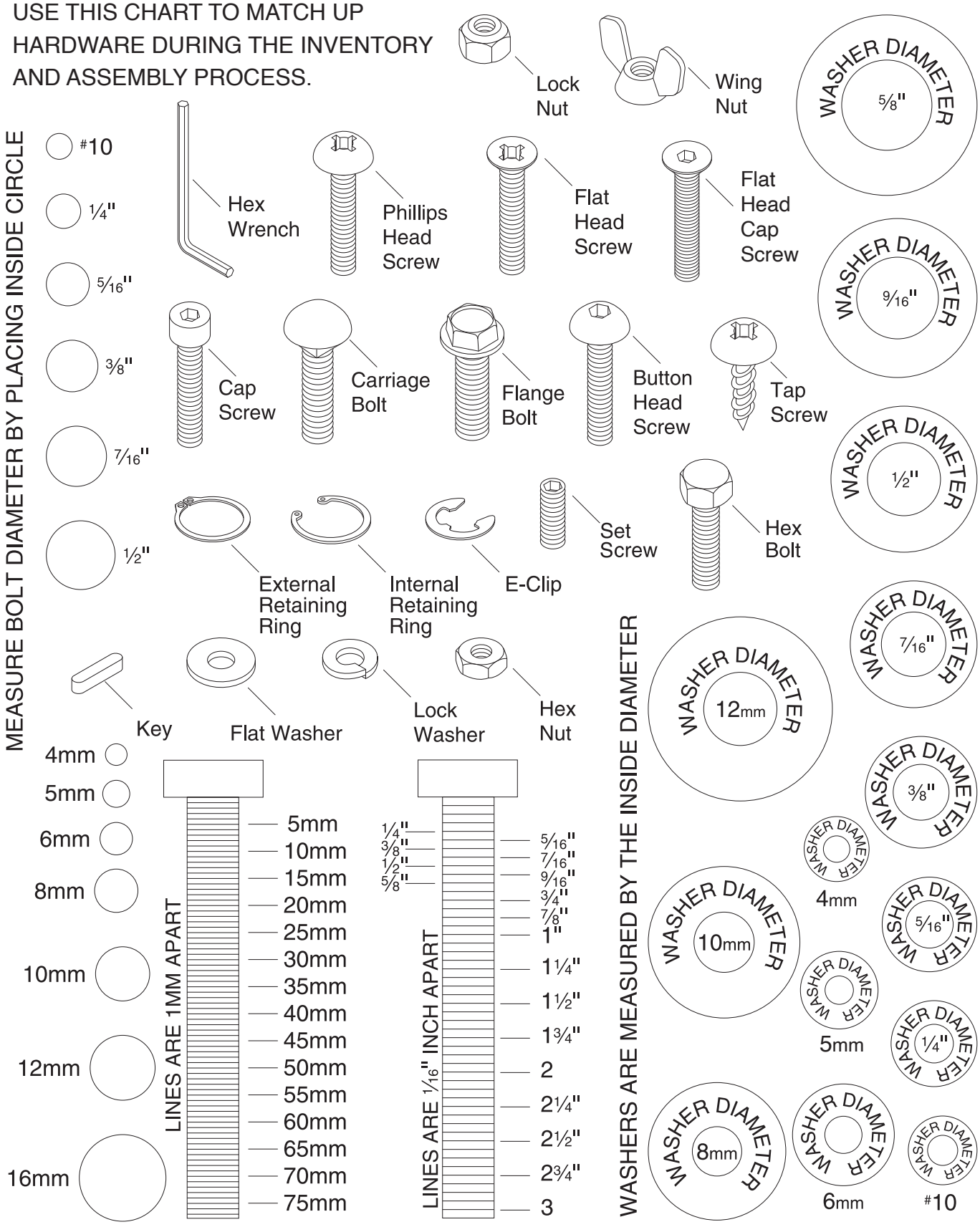


Figure 6. Loose parts.

Hardware Recognition Chart

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



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.

Figure 7. T23692 Orange Power Degreaser.

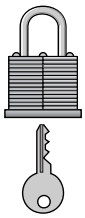
Site Considerations

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.**



⚠CAUTION

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.

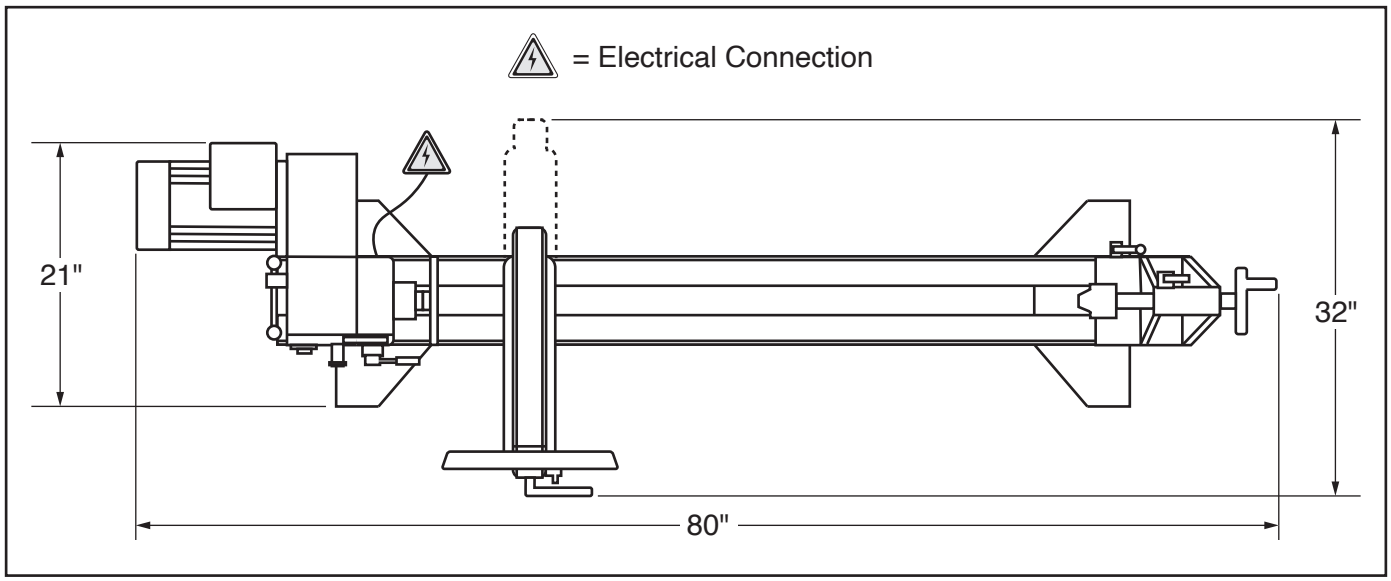


Figure 8. Minimum working clearances.

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. Position (2) stand legs upright approximately 46" apart and get them reasonably aligned.

2. Use help of additional people to carefully lift lathe bed onto stand legs, then secure lathe bed to legs with (8) M8-1.25 x 30 cap screws, 8mm lock washers, and 8mm flat washers (see **Figure 9**).

   Note: *Headstock end is heaviest and usually requires (2) people lifting at that end.*

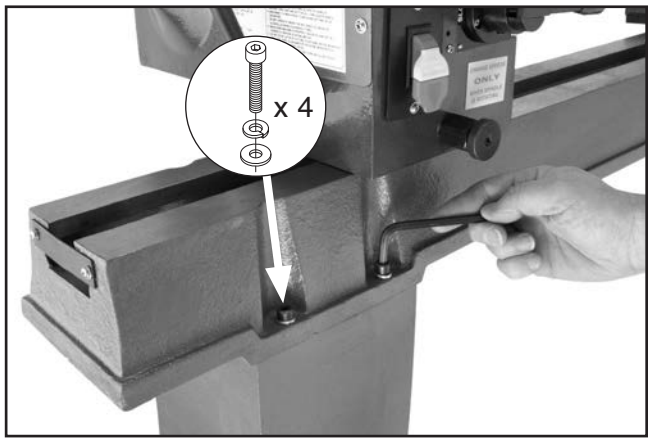


Figure 9. Example of securing lathe bed to stand legs.

3. Loosen tailstock lock lever, slide tailstock to end of lathe bed opposite headstock, as shown in **Figure 10**, then tighten lock lever.

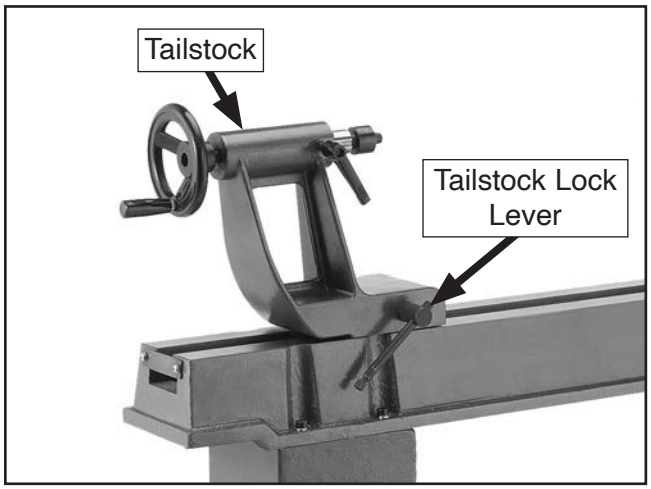


Figure 10. Tailstock positioned at end of bed.

4. Remove hex nut and clamp plate from tool rest base (see **Figure 11**).

5. Place tool rest base on lathe bed between headstock and tailstock with clamp bolt inserted between bed ways (see **Figure 11**). Tool rest base lock lever must point toward front of lathe (same side as power switch).

6. Install clamp plate and hex nut removed in **Step 4** on clamp bolt and hand-tighten (see **Figure 11**). Clamp plate must be aligned with lathe bed to fit together tightly.

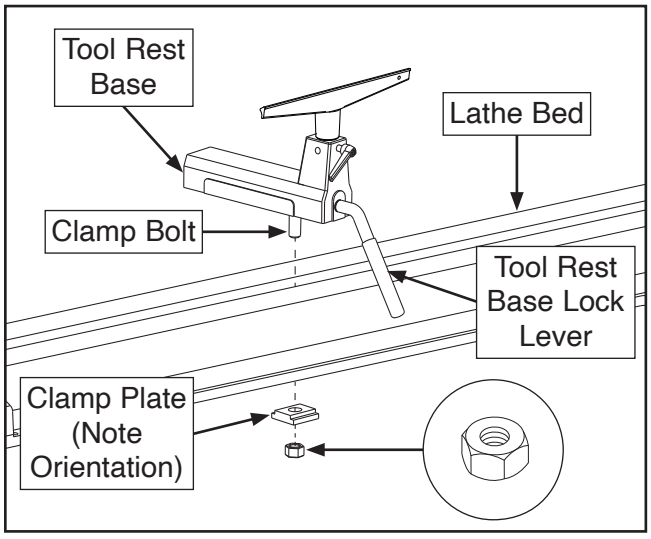


Figure 11. Mounting tool rest base.

7. Rotate tool rest base lock lever until it feels tight to secure tool rest base on lathe bed (see **Figure 11** on **Page 17**).

   Note: *If tool rest base lock lever does not secure tool rest base, tighten hex nut from* ***Step 4*** *until it does.*

⚠WARNING

If tool rest lock lever, lock handle, or hex nut is not tight enough, tool rest or base could unexpectedly slip during operation and draw turning tool and your hand into spinning workpiece. Failure to heed this warning could result in serious personal injury.

8. Loosen tool rest lock handle, install tool rest in tool rest base, then tighten tool rest lock handle to secure (see **Figure 12**).

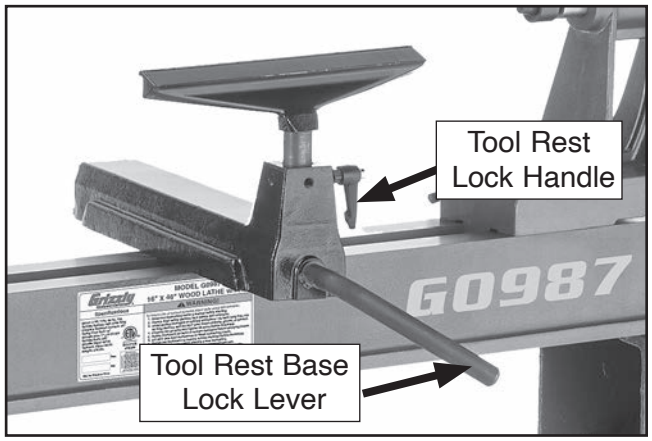


Figure 12. Tool rest controls.

Anchoring to Floor

Number of Mounting Holes 4
Diameter of Mounting Hardware ..... 3/8"

Anchoring machinery to the floor prevents tipping or shifting and reduces vibration that may occur during operation, resulting in a machine that runs slightly more quietly and feels more solid.

If the machine will be installed in a commercial or workplace setting, or if it is permanently connected (hardwired) to the power supply, local codes may require that it be anchored to the floor.

If not required by any local codes, fastening the machine to the floor is an optional step. If you choose not to do this with your machine, we recommend placing it on machine mounts, as these provide an easy method for leveling and they have vibration-absorbing pads.

Anchoring to Concrete Floors

Lag shield anchors with lag screws (see below) are a popular way to anchor machinery to a concrete floor, because the anchors sit flush with the floor surface, making it easy to unbolt and move the machine later, if needed. However, anytime local codes apply, you MUST follow the anchoring methodology specified by the code.

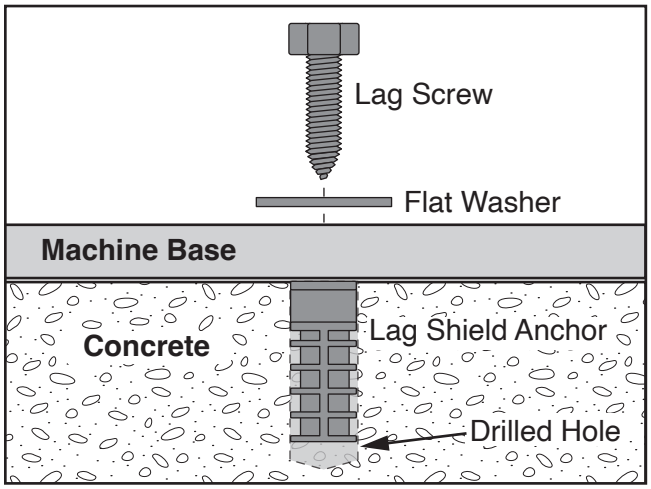


Figure 13. Popular method for anchoring machinery to a concrete floor.

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, and 2) the switch disabling key disables the switch properly.

⚠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 machine:

1. Remove all setup tools from machine.

2. Connect machine to power supply. Spindle speed readout will illuminate.

3. Turn machine ***ON***, and verify motor operation. Motor should run smoothly and without unusual problems or noises.

4. Slowly move spindle speed lever back and forth to test variable speed function, then turn machine ***OFF***.

5. Remove switch disabling key, as shown in **Figure 14**.

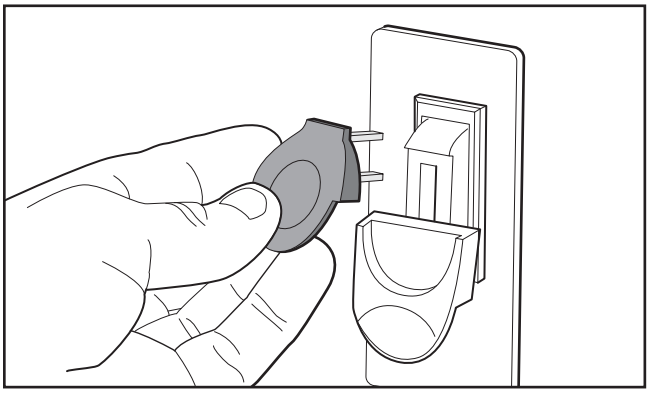


Figure 14. Removing switch key from paddle switch.

6. Try to start machine with paddle switch. Machine should not start.

   — If machine *does not* start, switch disabling feature is working correctly.

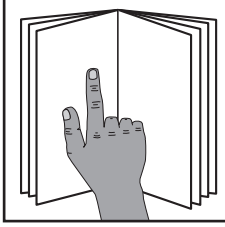
   — If machine *does* start, immediately stop machine. Switch disabling feature is not working correctly. This safety feature must work properly before proceeding with regular operations. Call Tech Support for help.

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.

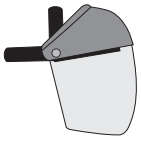


⚠WARNING

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, face shield, and a respirator when operating this machine.



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:

1. Examines workpiece to make sure it is suitable for turning. No extreme bows, knots, or cracks should exist.
2. Prepares and trims workpiece with a bandsaw or table saw to make it roughly concentric.
3. Installs workpiece between centers, or attaches it to faceplate or chuck.
4. Adjusts tool rest according to type of operation, and sets minimum clearance between workpiece and lip of tool rest to ¼" gap.
5. Rotates workpiece by hand to verify spindle and workpiece rotate freely through full range of motion.
6. Determines best speed for operation based on type of wood and size of workpiece installed (see **Page 27**).
7. Ties back long hair and clothing.
8. Puts on safety glasses, face shield, and respirator.
9. Turns machine ***ON***, adjusts lathe speed, and carefully begins turning operation, keeping chisel against tool rest entire time it is cutting.
10. Once operation is complete, moves spindle lever all the way counterclockwise, then turns machine ***OFF***.

Workpiece Inspection

Some workpieces are not safe to turn or may require modification before they are safe to turn. **Before turning, inspect all workpieces for the following:**

- ***Workpiece Type:***
  This machine is intended for turning natural wood products. Never attempt to turn any composite wood materials, plastics, metal, stone, or rubber workpieces; turning these materials can lead to machine damage or severe injury.

- ***Foreign Objects:***
  Nails, staples, dirt, rocks and other foreign objects are often embedded in wood. While cutting, these objects can become dislodged and hit the operator, cause tool grab, or break the turning tool, which might then fly apart. Always visually inspect your workpiece for these items. If they can't be removed, DO NOT turn the workpiece.

- ***Large/Loose Knots:***
  Loose knots can become dislodged during the turning operation. Large knots can cause a workpiece to completely break in half during turning and cause machine damage and injury. Choose workpieces that do not have large/loose knots.

- ***Excessive Warping:***
  Workpieces with excessive bowing or twisting are unstable and unbalanced. Never turn these workpieces at high speed, or instability will be magnified and the workpiece can be ejected from the lathe causing injury. Only turn concentric workpieces!

- ***Wet or "Green" Stock:***
  Turning wood with a moisture content over 20% can cause increased wear on tooling.

Adjusting Headstock

The Model G0987 headstock is equipped with a cam-action clamping system to secure it to the lathe bed. When the lever is tightened, a locking plate lifts up underneath the bed and secures the headstock in place. The headstock can be positioned anywhere along the lathe bed and pivoted to 60, 90, 120, or 180 degrees.

⚠WARNING

Always operate lathe with headstock firmly locked to bed. Otherwise, serious personal injury may occur, as workpiece or faceplate could shift during operation or be ejected from lathe.

Positioning Headstock

1. DISCONNECT MACHINE FROM POWER!

2. Loosen headstock lock lever (see **Figure 15**).

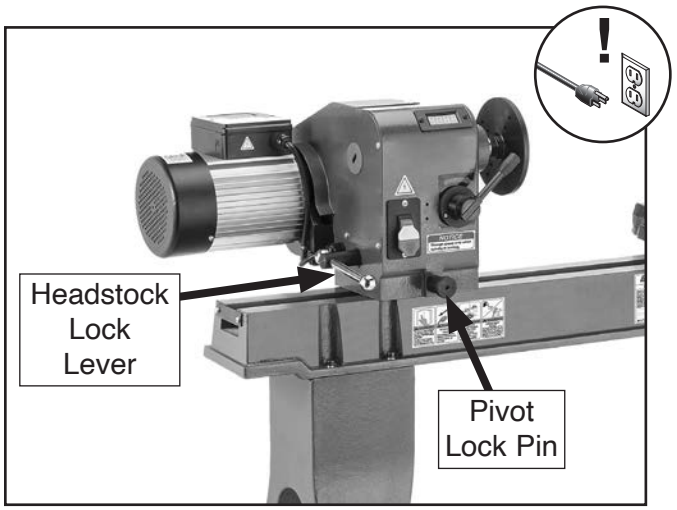


Figure 15. Location of headstock lock lever and pivot lock pin.

3. Slide headstock to desired location on bed, and use headstock lock lever to secure headstock in position.

   Note: *Large clamping hex nut underneath headstock will require occasional adjusting to ensure proper clamping pressure of headstock to bed. Turn this hex nut in small increments to fine tune clamping pressure as needed.*

Pivoting Headstock

1. DISCONNECT MACHINE FROM POWER!

2. Make sure headstock lock lever is tight.

3. Pull pivot lock pin out (see **Figure 15** on **Page 21**) and pivot headstock clockwise 60˚, 90˚, 120˚, or 180˚ (see **Figure 16**).

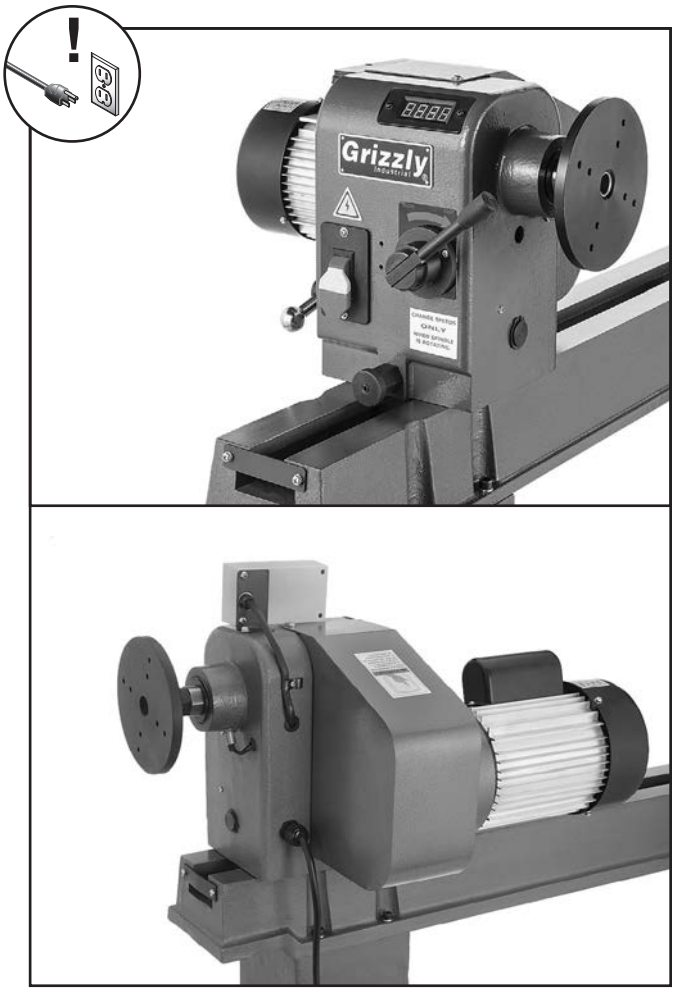


Figure 16. Examples of headstock at 90˚ and 180˚.

4. Release pivot lock pin. Make sure pin has engaged in its detent by trying to rotate headstock.

Adjusting Tailstock

The tailstock can be repositioned along the lathe bed in the same manner as the headstock.

⚠WARNING

If clamping plate is not tight enough for lock lever to fully secure tailstock base, it could unexpectedly slip during operation and workpiece could be ejected at high speed. Failure to heed this warning could result in serious personal injury.

To adjust tailstock:

1. Loosen tailstock lock lever and move tailstock to desired position along bed, as shown in **Figure 17**.

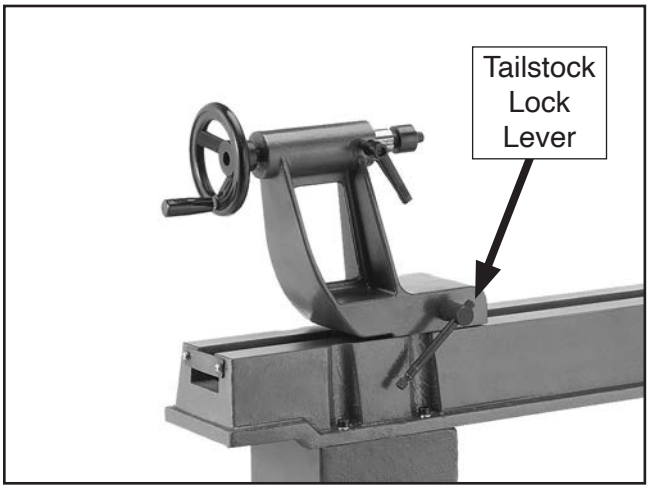


Figure 17. Location of tailstock lock lever.

2. Tighten tailstock lock lever to secure tailstock to bed.

   Note: *Large clamping hex nut underneath tailstock will require occasional adjusting to ensure proper clamping pressure of tailstock to bed. Turn this hex nut in small increments to fine tune clamping pressure as needed.*

Adjusting Tool Rest

The tool rest assembly consists of two components: the tool rest base and the tool rest. The tool rest base moves forward/backward and along the length of the lathe bed. The tool rest rotates and moves up and down in the tool rest base. Locks for both components allow you to secure the tool rest in position as needed after making these adjustments.

When adjusting the tool rest, position it as close as possible to the workpiece without actually touching it. This maximizes support where the cutting occurs and minimizes leverage, reducing the risk of injury if a "catch" occurs.

Many woodturners set the height of the tool rest ⅛" above or below the centerline of the workpiece depending on their height, type of tool they are using, and type of orientation. For most spindle turning operations, the cutting tool should contact the workpiece slightly above centerline. For most inside (bowl) turning operations, the cutting tool should contact the workpiece slightly below centerline.

Keeping all these factors in mind, your main goal when adjusting the tool rest should be providing maximum support for the type of tool being used, in a position that is safe and comfortable for you.

⚠WARNING

Improperly supported or positioned cutting tools can "catch" on workpiece, ejecting tool from your hands with great force. To reduce this risk, always ensure tool rest is properly positioned for each type of operation, cutting tool is firmly supported against tool rest BEFORE cutting, and cutting tool is properly positioned to cut at correct angle for tool and operation type.

⚠WARNING

Always operate lathe with tool rest assembly firmly locked in position. Otherwise, serious personal injury may occur by tool being pulled from operator's hands.

Positioning Tool Rest Base

1. Loosen tool rest base lock lever and move tool rest assembly to desired position on bed (see **Figure 18**).

   Note: *To maximize support, tool rest base should always be locked on both rails of lathe bed. Never pull tool rest base so far back that it is only secured on one rail.*

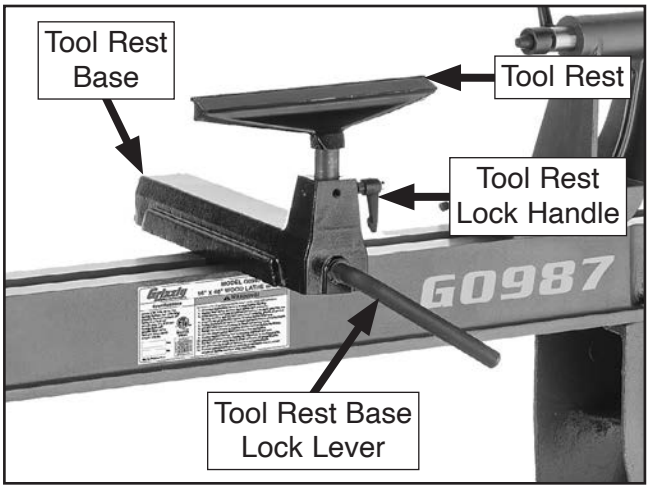


Figure 18. Tool rest controls.

2. Rotate tool rest base lock lever until it feels tight to secure tool rest base on lathe bed.

   Note: *Clamping hex nut underneath tool rest base will require occasional adjusting to ensure proper clamping pressure of tool rest base to bed. Turn hex nut in small increments to fine-tune clamping pressure as needed.*

⚠WARNING

If hex nut is not tight enough for lock lever to fully secure tool rest base, it could unexpectedly slip during operation and draw turning tool and your hand into spinning workpiece. Failure to heed this warning could result in serious personal injury.

Adjusting Tool Rest Angle & Height

1. Loosen tool rest lock handle (see **Figure 18** on **Page 23**).

2. Position tool rest in desired location.

3. Tighten tool rest lock handle to secure tool rest in position.

⚠WARNING

If tool rest lock handle is not tight enough to secure tool rest, it could slip during operation and draw tool/hand into moving workpiece. Failure to heed this warning could result in serious personal injury.

Installing/Removing Headstock Center

The included spur center installs in the headstock spindle with an MT#2 tapered fit.

Items Needed	Qty
Leather Glove/Clean Rag	1
Knockout Tool	1
Acetone/Lacquer Thinner	As Needed
Shop Rags	As Needed

Installing Headstock Center

1. DISCONNECT MACHINE FROM POWER!

2. Make sure mating surfaces of center and spindle are free of debris and oily substances before inserting center to ensure a good fit and reduce runout.

3. Insert tapered end of center into spindle, and push it in with a quick, firm motion, as shown in **Figure 19**.

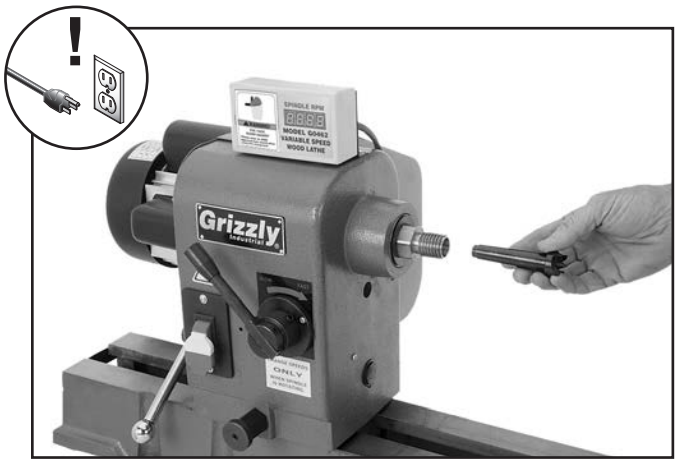


Figure 19. Example of installing center in headstock spindle.

4. Make sure center is securely installed by attempting to pull it out by hand—a properly installed center will not pull out easily.

Removing Headstock Center

1. DISCONNECT MACHINE FROM POWER!

2. Hold clean rag under spindle or wear leather glove to catch center when you remove it.

3. Insert knockout tool through outbound end of spindle and firmly tap back of center, catching it as it falls, as shown in **Figure 20**.

Figure 20. Example of removing headstock center with knockout tool.

Installing/Removing Tailstock Center

The included live center installs into the tailstock quill with an MT#2 tapered fit.

Items Needed	Qty
Leather Glove/Clean Rag	1
Acetone/Lacquer Thinner	As Needed
Shop Rags	As Needed

Installing Tailstock Center

1. Loosen quill lock handle, and rotate handwheel until quill extends about 1", as shown in **Figure 21**.

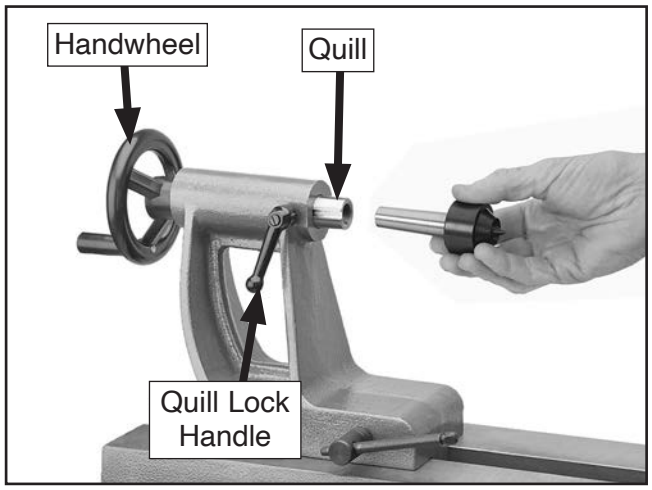


Figure 21. Installing center in tailstock quill.

2. Make sure mating surfaces of center and quill are free of debris and oily substances before inserting center to ensure a good fit and reduce runout.

3. Firmly insert tapered end of center into tailstock quill, as shown in **Figure 21**.

4. Make sure center is securely installed by attempting to pull it out by hand—a properly installed center will not pull out easily.

5. Make sure center of quill lock handle is aligned with quill keyway to ensure tailstock center and quill will not freely rotate under load (see **Figure 22**).

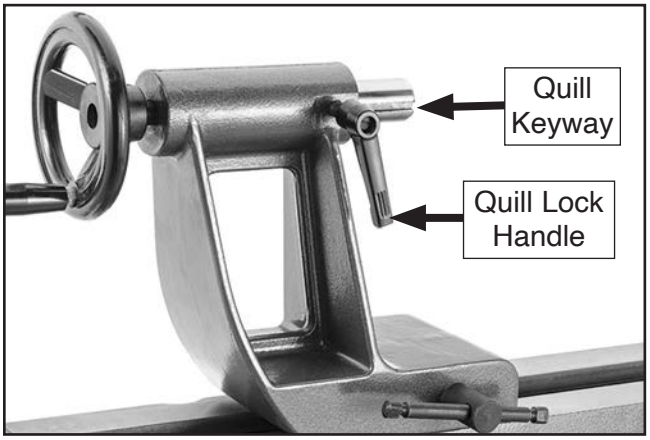


Figure 22. Quill keyway aligned with quill lock handle (center not shown for clarity).

6. Secure quill in place by tightening quill lock handle.

Removing Tailstock Center

1. Loosen quill lock handle.

2. Hold clean rag under center or wear leather glove to catch center when you remove it.

3. Rotate quill handwheel counterclockwise to retract quill back into tailstock until center is forced out.

⚠WARNING

Tailstock quill must always be locked in place during lathe operation. Before tightening quill lock handle, it must be properly aligned with quill keyway. Otherwise, workpiece can be thrown from lathe at high speed causing serious personal injury or death.

Removing/Installing Faceplate

The faceplate is used when you need to remove material from the face of the workpiece, such as during hollowing operations. For detailed instructions on mounting the workpiece to the faceplate, refer to **Faceplate Turning** on **Page 30**.

Items Needed	Qty
Flat Wrenches 32mm	2
Acetone/Lacquer Thinner	As Needed
Machine Oil	As Needed
Rags	As Needed

Removing Faceplate

1. DISCONNECT MACHINE FROM POWER!

2. Use two included 32mm flat wrenches to turn faceplate counterclockwise to loosen, as shown in **Figure 23**.

Figure 23. Example of loosening faceplate.

3. Turn faceplate counterclockwise until it is removed.

⚠WARNING

To prevent faceplate and workpiece separating from spindle during operation, headstock faceplate MUST be firmly threaded onto spindle and secured in place. If these instructions are not properly performed, serious personal injury could occur.

Installing Faceplate

1. DISCONNECT MACHINE FROM POWER!

2. If spur center is installed, remove it (see **Page 24**).

3. Make sure internal threads of faceplate and threads of spindle are free of any debris, then wipe threads with lightly oiled rag to aid in installation and removal.

4. Thread faceplate clockwise onto spindle.

5. Use two included 32mm flat wrenches to turn faceplate clockwise to tighten.

Adjusting Spindle Speed

NOTICE

Spindle speed must be adjusted while lathe is running. Adjusting spindle speed while machine is not in operation could result in permanent damage to machine not covered under warranty.

Spindle Speed Range: 600–2400 RPM

With the spindle turning, select the speed by pulling out the spindle speed lever and moving it right to increase the RPM or left to decrease the RPM (see **Figure 24**).

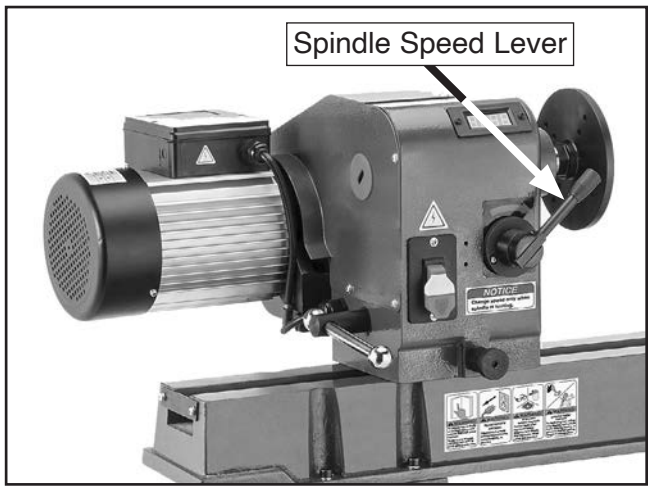


Figure 24. Spindle speed lever.

— When turning a workpiece where a lot of material must be removed and a rough finish does not matter, use low range (lever positioned left of center).

— When making light cuts or when a clean finish is required, use high range (lever positioned right of center).

— For general turning operations, or as a compromise between the two ranges, use mid range (lever in center position).

⚠WARNING

Always choose correct spindle speed for your operation. Using wrong speed may lead to workpiece breaking loose or being thrown from lathe at a high rate of speed, causing fatal or severe impact injuries.

Refer to the chart in **Figure 25** to help choose the appropriate RPM for your operation.

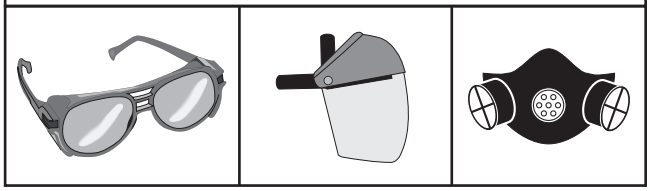
Diameter of Workpiece	Roughing RPM	General Cutting RPM	Finishing RPM
Under 2"	1520	Fastest available	Fastest available
2–4"	760	1600	Fastest available
4–6"	Slowest available	1080	1650
6–8"	Slowest available	810	1240
8–10"	Slowest available	650	1000
10–12"	Slowest available	Slowest available	830
12–14"	Slowest available	Slowest available	710
14–16"	Slowest available	Slowest available	620

Figure 25. Spindle speed recommendations.

Spindle Turning

⚠WARNING

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



Spindle turning is the operation performed when a workpiece is mounted between centers in the headstock and tailstock, as shown in **Figure 26**. Bowls, table legs, tool handles, and candlesticks are typical projects where this operation is used.

Figure 26. Typical spindle turning operation.

Items Needed	Qty
Precision Ruler	1
Wood Mallet	1
Power Drill	1
Drill Bit ¼"	1
Table Saw/Bandsaw	1
Pencil	1

Preparing to Spindle Turn

1. Find center point of both ends of workpiece by drawing diagonal lines from corner to corner across ends (see **Figure 27**).

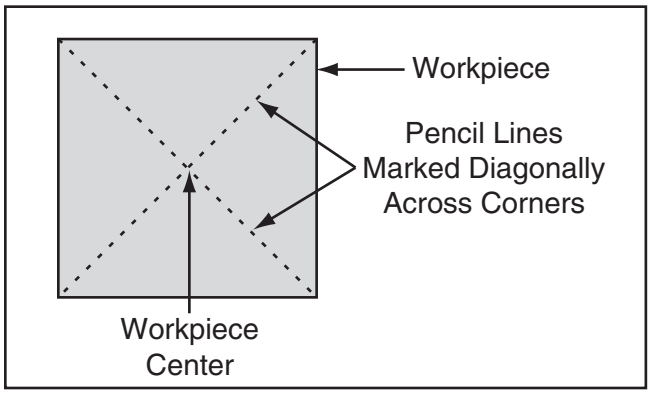


Figure 27. Workpiece marked diagonally to determine center.

2. Make center mark by using wood mallet, tapping point of spur center into center of workpiece on both ends.

3. Using ¼" drill bit, drill ¼" deep hole at center mark on end of workpiece to be mounted on headstock spur center.

4. To help embed spur center into workpiece, cut ⅛" deep saw kerfs in headstock end of workpiece along diagonal lines marked in **Step 1**.

5. If your workpiece is over 2" x 2", cut corners off workpiece lengthwise to make turning safer and easier (see **Figure 28**).

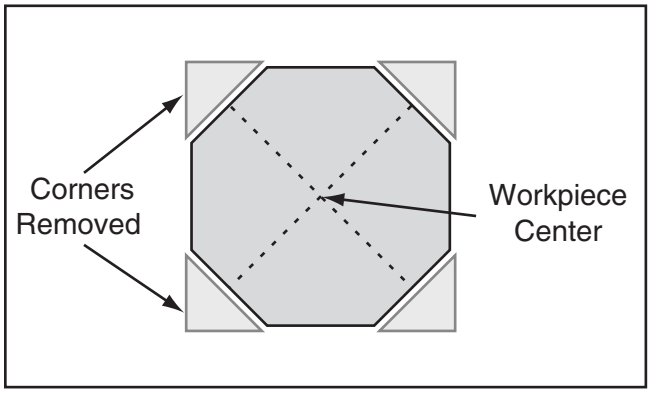


Figure 28. Corners of workpiece removed.

6. Drive spur center into end center mark of workpiece with wood mallet to embed at least ¼" into workpiece, as shown in **Figure 29**.

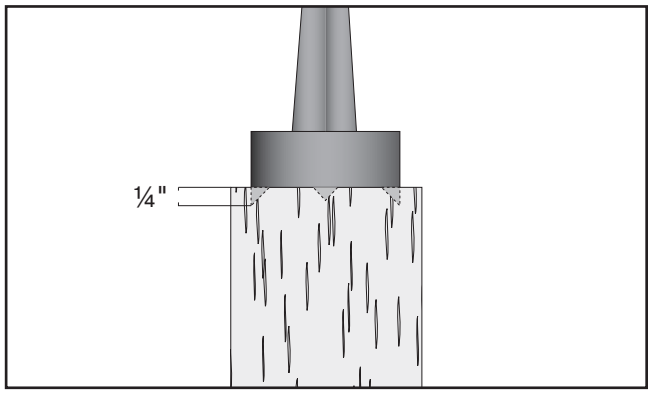


Figure 29. Spur center properly embedded.

7. With workpiece still attached, insert spur center into headstock spindle (refer to **Figure 20** on **Page 24** for additional instructions).

   Note: *Use tool rest to support opposite end of workpiece so that workpiece and spur center do not separate during installation.*

8. Install live center into tailstock quill and tighten quill lock handle to lock quill in position (refer to **Figure 20** on **Page 24** for additional instructions).

9. Slide tailstock toward workpiece until point of live center touches workpiece center mark, then lock tailstock in position.

10. Loosen quill lock handle and rotate tailstock handwheel to push live center into workpiece at least ¼".

⚠WARNING

Do not press workpiece too firmly with tailstock or bearings will bind and overheat. Do not adjust tailstock too loosely or workpiece will spin off lathe. Use good judgment and care, otherwise serious personal injury could result from workpiece being ejected at high speeds.

11. Properly adjust tool rest to workpiece (see **Adjusting Tool Rest** on **Page 23**).

12. Before beginning lathe operation, rotate workpiece by hand to ensure there is safe clearance on all sides.

⚠WARNING

Keep lathe tool resting on tool rest ENTIRE time it is in contact with workpiece or when preparing to make contact between lathe tool and workpiece. Otherwise, spinning workpiece could force lathe tool out of your hands or entangle your hands with workpiece. Failure to heed this warning could result in serious personal injury.

Spindle Turning Tips:

- When turning the lathe ***ON***, stand away from the path of the spinning workpiece until the spindle reaches full speed and you can verify that the workpiece will not come loose.

- Use the slowest speed when starting or stopping the lathe.

- Select the right speed for the size of workpiece that you are turning (refer to **Figure 25** on **Page 27**).

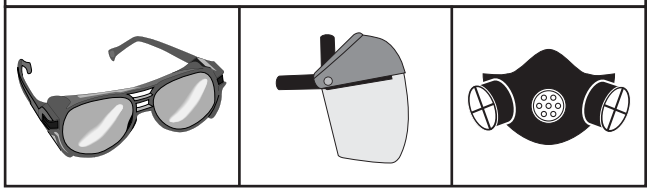
- Keep the turning tool on the tool rest the ENTIRE time that it is in contact with the workpiece.

- Learn the correct techniques for each tool you will use. If you are unsure about how to use the lathe tools, read books or magazines about lathe techniques, and seek training from experienced and knowledgeable lathe users.

Faceplate Turning

WARNING

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



Faceplate turning is when a workpiece is mounted to the faceplate, which is then mounted to the headstock spindle, as shown in **Figure 30**. This type of turning is usually done with open-faced workpieces like bowls or plates.

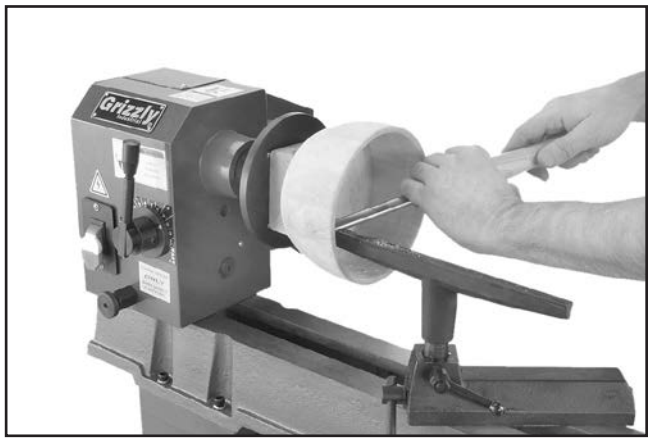


Figure 30. Typical faceplate turning operation.

Mounting Workpiece on Faceplate

Items Needed	Qty
Precision Ruler	1
Wood Screws	As Needed
Power Drill	1
Drill Bit ¼"	1
Table Saw/Bandsaw	1
Pencil	1

To mount workpiece on faceplate:

1. Mark workpiece center in same manner as described in **Spindle Turning** on **Page 28**.

   Note: *Cut off corners of workpiece to make it as close to "round" as possible, as described in **Step 5** of **Spindle Turning** on **Page 28**.*

2. Center faceplate on workpiece, mark and drill pilot holes with ¼" drill bit, and attach faceplate (see **Figure 31**) with wood screws.

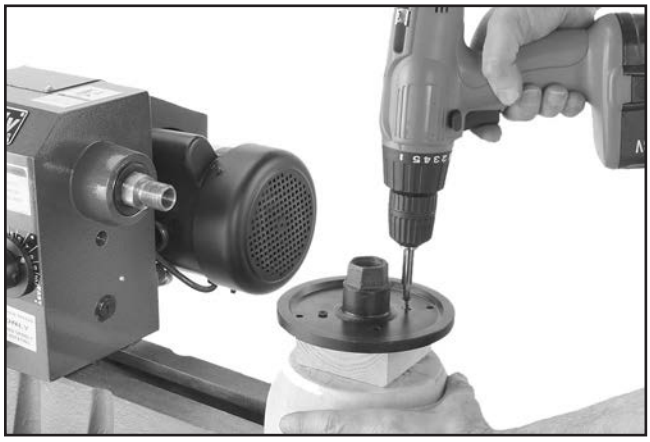


Figure 31. Typical attachment of faceplate to workpiece.

NOTICE

Only use screws with non-tapered heads (see Figure 32) to attach faceplate to the workpiece. Screws with tapered heads can split faceplate or snap off during operation.

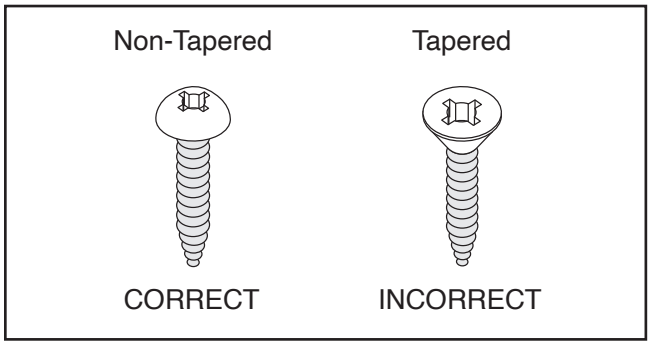


Figure 32. Comparison of screw types.

3. Thread and secure faceplate onto headstock spindle (refer to **Removing/Installing Faceplate** on **Page 26**).

   — If wood screws cannot be placed in workpiece, faceplate can be mounted to a backing block attached to workpiece (see **Mounting Workpiece on Backing Block** on **Page 31**).

Mounting Workpiece on Backing Block

Items Needed	Qty
Scrap Wood	As Needed
Precision Ruler	1
Table Saw or Bandsaw	1
Power Drill	1
Drill Bit ¼"	1
Wood Glue	As Needed
Clamp	1
Pencil	1
Wood Screws	As Needed

To mount workpiece on backing block:

1. Make backing block from a suitable size piece of scrap wood.

   Note: *Faces of backing block must be flat and parallel with each other, or uneven surfaces will cause workpiece to spin eccentrically, causing unnecessary vibration and runout. It is best to mount backing block to faceplate and turn other surface flat prior to mounting.*

2. Locate and mark center of workpiece and backing block.

3. Drill ¼" hole through center of backing block.

4. Look through hole in backing block to line up center with workpiece, and then glue and clamp backing block to workpiece.

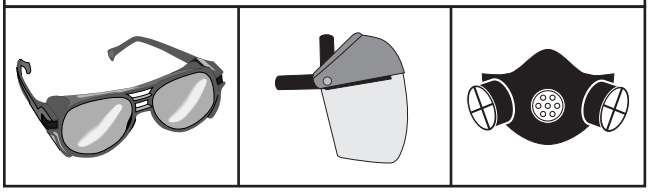
   Note: *Allow glue to cure according to manufacturer's instructions.*

5. Follow **Steps 1–3** under **Mounting Workpiece on Faceplate Turning** (see **Page 30**) to attach backing block to faceplate.

Outboard Turning

⚠WARNING

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



Outboard turning is a variation of faceplate turning and is accomplished with the headstock positioned so the faceplate is not directly over the bed, allowing a larger turning capacity than the swing specification of the lathe.

To outboard turn:

1. DISCONNECT MACHINE FROM POWER!

2. Loosen headstock lock lever (see **Figure 33**), position headstock at end of lathe bed, and tighten to secure.

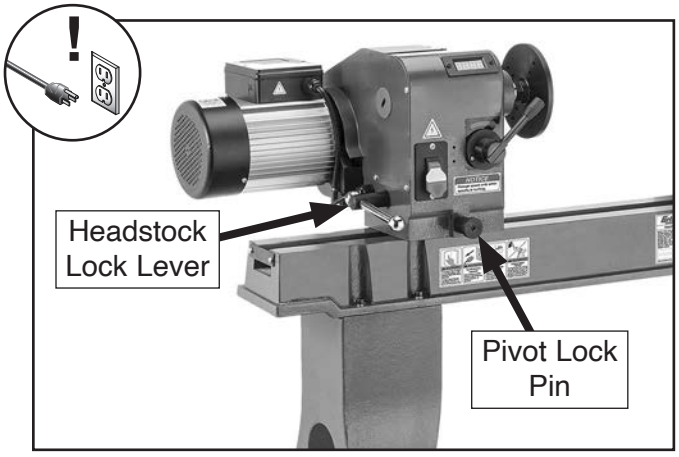


Figure 33. Lock and pivot controls.

⚠WARNING

When outboard turning, ALWAYS use a floor-mounted tool rest and keep tool in contact with rest during all turning operations. Failure to do so could cause tool to be pulled out of operator's control and ejected at high speed.

3. Pull pivot lock pin (see **Figure 33** on **Page 31**), rotate headstock to 90 or 180 degrees (see **Figure 34**), and push pivot lock pin back into lock position.

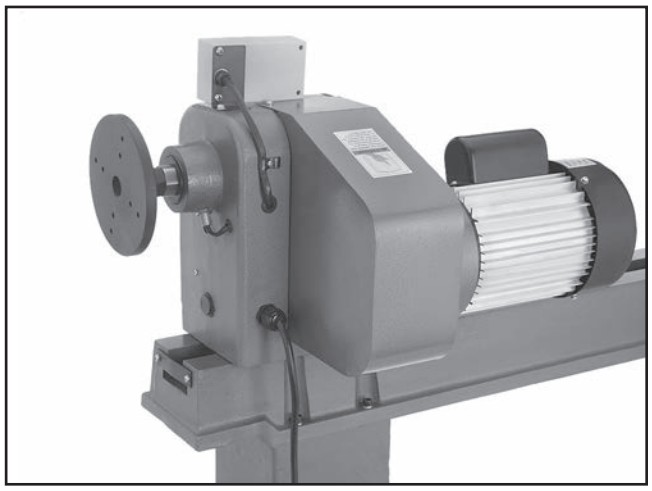


Figure 34. Example of headstock set at 180˚.

4. Position floor-mounted tool rest (not included) to support tool in outboard position.

Sanding/Finishing

After the turning operations are complete, the workpiece can be sanded and finished before removing it from the lathe, as shown in **Figure 35**.

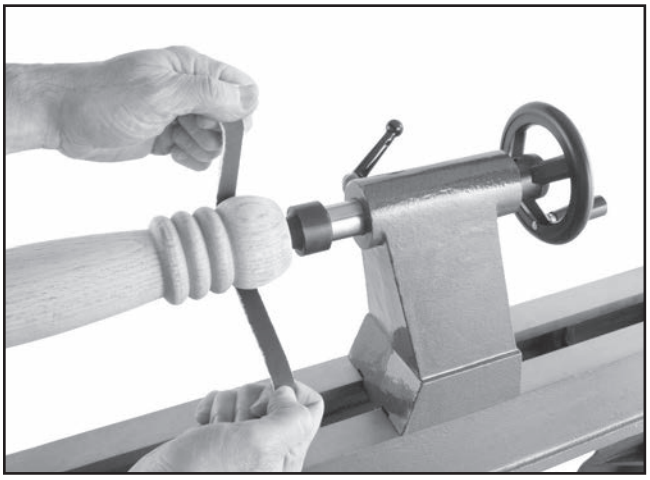
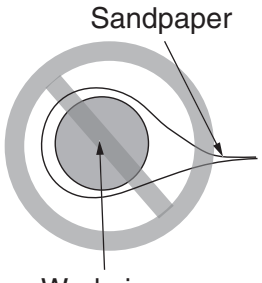


Figure 35. Typical sanding operation.

Note: *Whenever sanding or finishing, move the tool rest holder out of the way to increase personal safety and gain adequate working room.*



⚠WARNING

Wrapping sandpaper completely around workpiece could pull your hands into moving workpiece and may cause serious injury. Never wrap sandpaper or finishing materials completely around workpiece.

Selecting Turning Tools

Lathe tools come in a variety of shapes and sizes, and usually fall into five major categories.

- **Gouges**—Mainly used for rough cutting, detail cutting, and cove profiles. The rough gouge is a hollow, double-ground tool with a round nose, and the detail gouge is a hollow, double-ground tool with either a round or pointed nose.

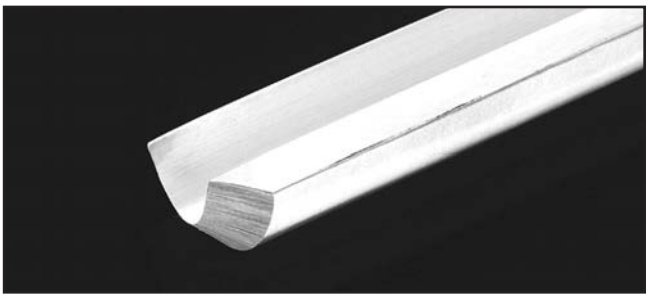


Figure 36. Gouge example.

- **Skew Chisel**—A very versatile tool that can be used for planing, squaring, V-cutting, beading, and parting off. The skew chisel is flat, double-ground with one side higher than the other (usually at an angle of 20°–40°).

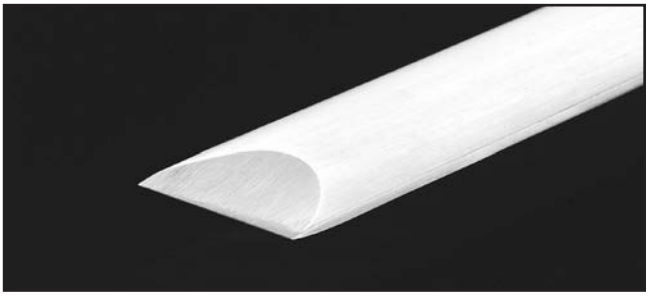


Figure 37. Skew chisel example.

- **Scrapers**—Typically used where access for other tools is limited, such as hollowing operations. This is a flat, double-ground tool that comes in a variety of profiles (round nose, spear point, square nose, etc.) to match many different contours.

Figure 38. Round nose scraper example.

- **Parting Tools**—Used for sizing and cutting off work. This is a flat tool with a sharp pointed nose that may be single- or double-ground.

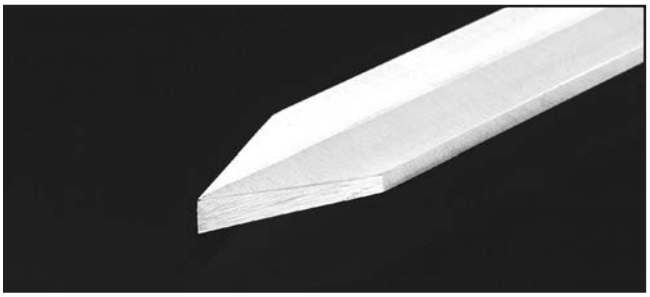


Figure 39. Parting tool example.

- **Specialty Tools**—These are the unique, special function tools to aid in hollowing, bowl making, cutting profiles, etc.

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.

D2304—Deluxe HSS Lathe Chisel Set, 6-Pc.
Features beefy ash handles for unsurpassed control, brass ferrules, and high speed steel blades. HSS (high-speed steel) has been heat treated for hardness and wear resistance, which keeps a sharp edge longer than other carbon steels. All HSS chisels will require regular sharpening.

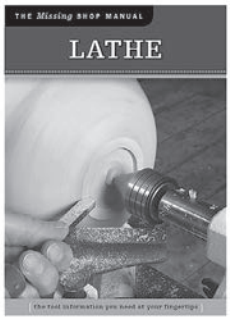


Figure 40. D2304 Deluxe HSS Lathe Chisel Set.

T25611—Wood Turning Reference Manual
In addition to explaining the basics of safety and set-up, this handy reference will help you get the most from your equipment. From sharpening your tools to faceplate, bowl, and spindle turning, you'll discover the techniques and tips you need to maximize your lathe's performance. Soft cover, 152 pages.

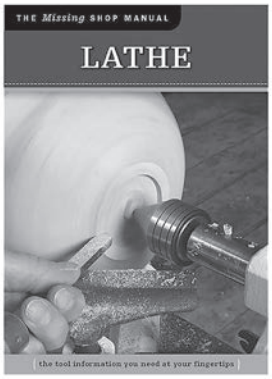


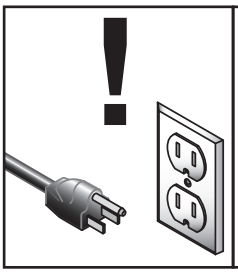
Figure 41. T25611 The Missing Shop Manual: Lathe.

G5562 & G5563—Slipit Sliding Compound
This cast-iron table sealant is also a bit and cutting blade lubricant that reduces sliding friction and hang-ups. It inhibits rust while preventing resin build-up and also repels moisture and dirt.

Contains no silicone or CFC's and outperforms paste wax.

Figure 42. G5562 & G5563 Slipit.

SECTION 6: MAINTENANCE



⚠WARNING
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 faceplate or mounting bolts.
- Damaged center or tooling.
- Worn or damaged wires.
- Loose machine components.
- Any other unsafe condition.

Daily
- Clean off dust buildup.
- Clean and lubricate lathe bed, spindle, and quill.

Monthly
- Belt tension, damage, or wear.
- Clean out dust buildup from inside belt/pulley cavity.

Cleaning & Protecting

Cleaning the Model G0987 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.

Protect the unpainted cast-iron surfaces by wiping them clean after every use—this ensures moisture from wood dust does not remain on bare metal surfaces. Keep the surfaces rust-free with regular applications of products like those in **Figure 42** on **Page 34**.

Lubrication

All bearings for the Model G0987 are lubricated and sealed at the factory, and do not need additional lubrication.

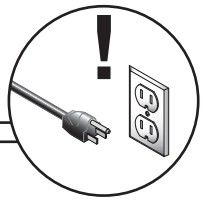
Wipe a lightly oiled shop rag on the outside of the headstock spindle. DO NOT allow any oil to get on the inside mating surfaces of the spindle.

Use the tailstock handwheel to extend the quill out to the furthest position and apply a thin coat of white lithium grease to the outside of the quill. DO NOT allow any oil or grease to get on the inside mating surfaces of the quill.

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 not start, or power-supply breaker immediately trips after startup.	1. Switch disabling key removed. 2. Incorrect power supply voltage or circuit size. 3. Power supply circuit breaker tripped or fuse blown. 4. Motor wires connected incorrectly. 5. Start capacitor at fault. 6. Centrifugal switch adjustment/contact points at fault. 7. Wiring broken, disconnected, or corroded. 8. ON/OFF switch at fault. 9. Motor or motor bearings at fault.	1. Install switch disabling key. 2. Ensure correct power supply voltage and circuit size (**Page 10**). 3. Ensure circuit is free of shorts. Reset circuit breaker or replace fuse. 4. Correct motor wiring connections (**Page 40**). 5. Test/replace if at fault. 6. Adjust centrifugal switch/clean contact points. Replace either if at fault. 7. Fix broken wires or disconnected/corroded connections (**Page 40**). 8. Replace switch. 9. Replace motor.
Machine stalls or is underpowered.	1. Workpiece material not suitable for machine. 2. Feed rate/cutting speed too fast. 3. Belt slipping. 4. Using excessive cutting force with cutting tool. 5. Workpiece too heavy for spindle. 6. Motor wires connected incorrectly. 7. Machine undersized for task. 8. Extension cord too long. 9. Centrifugal switch adjustment/contact points at fault. 10. Motor or motor bearings at fault.	1. Cut only wood with moisture below 20% (**Page 21**). 2. Decrease feed rate/cutting speed (**Page 27**). 3. Clean/tension/replace belt (**Page 38**). 4. Decrease force applied to cutting tool. 5. Remove excess material before remounting; use lighter workpiece. 6. Correct motor wiring connections (**Page 40**). 7. Use sharp chisels; reduce feed rate/depth of cut. 8. Move machine closer to power supply; use shorter extension cord. 9. Adjust centrifugal switch/clean contact points. Replace either if at fault. 10. Replace motor.
Machine has vibration or noisy operation.	1. Motor or component loose. 2. V-belt worn, loose, pulleys misaligned or belt slapping cover. 3. Incorrectly mounted to floor. 4. Pulley loose. 5. Motor mount loose/broken. 6. Workpiece or chuck at fault. 7. Motor fan rubbing on fan cover 8. Centrifugal switch needs adjustment/at fault. 9. Motor or spindle bearings at fault.	1. Replace damaged or missing bolts/nuts or tighten if loose. 2. Inspect/replace belts (**Page 38**). 3. Shim or tighten mounting hardware (**Page 18**). 4. Secure pulley on shaft 5. Tighten/replace. 6. Center workpiece in chuck/faceplate; reduce RPM (**Page 27**); replace defective chuck. 7. Fix/replace fan cover; replace loose/damaged fan. 8. Adjust/replace if at fault. 9. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.

Motor & Electrical (Cont.)

Digital readout (DRO) does not work; display is incorrect.	1. Speed sensor obstructed/at fault. 2. Wiring broken, disconnected, or corroded. 3. DRO or LED driver at fault.	1. Rotate spindle by hand to clear obstructions and remove debris from sensor area. Replace if at fault. 2. Fix broken wires or disconnected/corroded connections (**Page 40**). 3. Inspect/replace if at fault.

Operation

Symptom	Possible Cause	Possible Solution
Poor surface finish quality.	1. Dull tooling or wrong tool used for task. 2. Tool height is not correctly adjusted. 3. Spindle speed incorrect. 4. Excessive vibration.	1. Sharpen tooling, select correct tool for operation (**Page 33**). 2. Adjust tool rest so tool is $\frac{1}{8}$" above centerline of workpiece (**Page 23**). 3. Adjust for appropriate spindle speed (**Page 27**). 4. Troubleshoot possible causes/solutions using table on **Page 36**.
Excessive vibration upon startup (when workpiece is installed).	1. Workpiece mounted incorrectly. 2. Workpiece warped, out of round, or flawed. 3. Spindle speed too fast for workpiece. 4. Workpiece hitting stationary object. 5. Headstock, tailstock, or tool rest not securely clamped to lathe bed.	1. Remount workpiece; verify centers are embedded in centerline of workpiece (**Page 28**). 2. Cut workpiece to correct (**Page 28**), or use a different workpiece. 3. Reduce spindle speed (**Page 27**). 4. Stop lathe and correct interference problem. 5. Check lock levers, tighten if needed (**Pages 21–23**).
Turning tool grabs or digs into workpiece.	1. Wrong turning tool being used. 2. Turning tool is too dull. 3. Tool rest height not set correctly. 4. Tool rest is set too far from workpiece.	1. Use correct turning tool (**Page 33**). 2. Sharpen or replace turning tool. 3. Correct tool rest height (**Page 23**). 4. Move tool rest closer to workpiece.
Tailstock moves under load.	1. Tailstock mounting bolt/lock nut is loose. 2. Bed or clamping surface is excessively oily or greasy.	1. Tighten mounting bolt/lock nut (**Page 22**). 2. Clean bed or clamping surface to remove excess oil/grease.
Quill does not move when handwheel is turned.	1. Keyway is not aligned with quill set screw.	1. Align quill keyway and quill set screw and slightly tighten screw to engage keyway (**Page 25**).

Replacing V-Belt

The pulley system that allows the Model G0987 to operate at variable speeds also keeps the V-belt properly tensioned. However, if the V-belt shows signs of cracking, splitting, or any other damage, we recommend you replace it to ensure optimum power transmission.

To replace V-belt:

1. DISCONNECT MACHINE FROM POWER!

2. Remove (4) Phillips head screws holding V-belt cover in place (see **Figure 43**).

3. Pull lower corner of V-belt cover (Position A) at an angle until motor shaft is visible, and pull top of V-belt cover (Position B) toward you to remove it (see **Figure 43**).

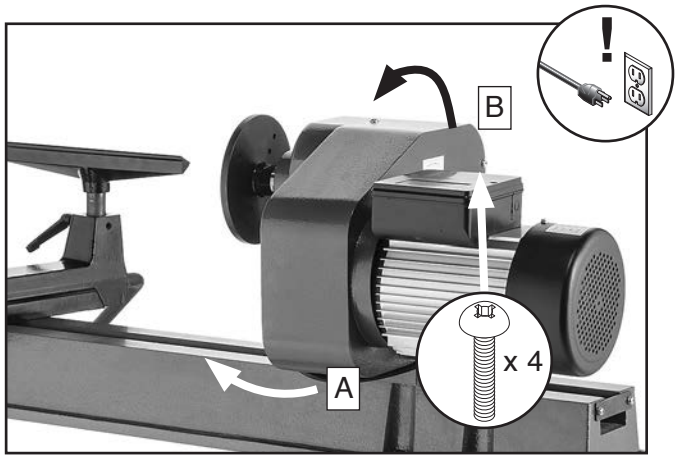


Figure 43. Opening V-belt cover.

4. Manually rotate spindle pulley plate and simultaneously move spindle speed lever all the way right to loosen spindle pulley plates (see **Figure 44**).

5. Pull motor pulley plates apart so V-belt slips down to motor arbor, as shown in **Figure 44**. This will decrease tension on V-belt.

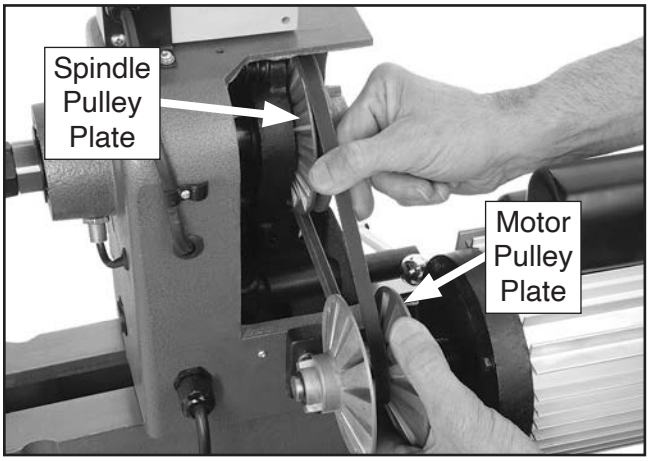


Figure 44. Example of replacing V-belt.

6. While keeping tension off, roll V-belt off spindle pulley and remove it.

7. Install new V-belt by reversing **Steps 2–6**, verifying that V-belt cover is properly installed before connecting lathe to power.

SECTION 8: WIRING

These pages are current at the time of printing. However, in the spirit of improvement, we may make changes to the electrical systems of future machines. Compare the manufacture date of your machine to the one stated in this manual, and study this section carefully.

If there are differences between your machine and what is shown in this section, call Technical Support at (570) 546-9663 for assistance BEFORE making any changes to the wiring on your machine. An updated wiring diagram may be available. **Note:** *Please gather the serial number and manufacture date of your machine before calling. This information can be found on the main machine label.*

⚠WARNING
Wiring Safety Instructions

SHOCK HAZARD. Working on wiring that is connected to a power source is extremely dangerous. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. Disconnect the power from the machine before servicing electrical components!

MODIFICATIONS. Modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire. This includes the installation of unapproved aftermarket parts.

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

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

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

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

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

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

NOTICE

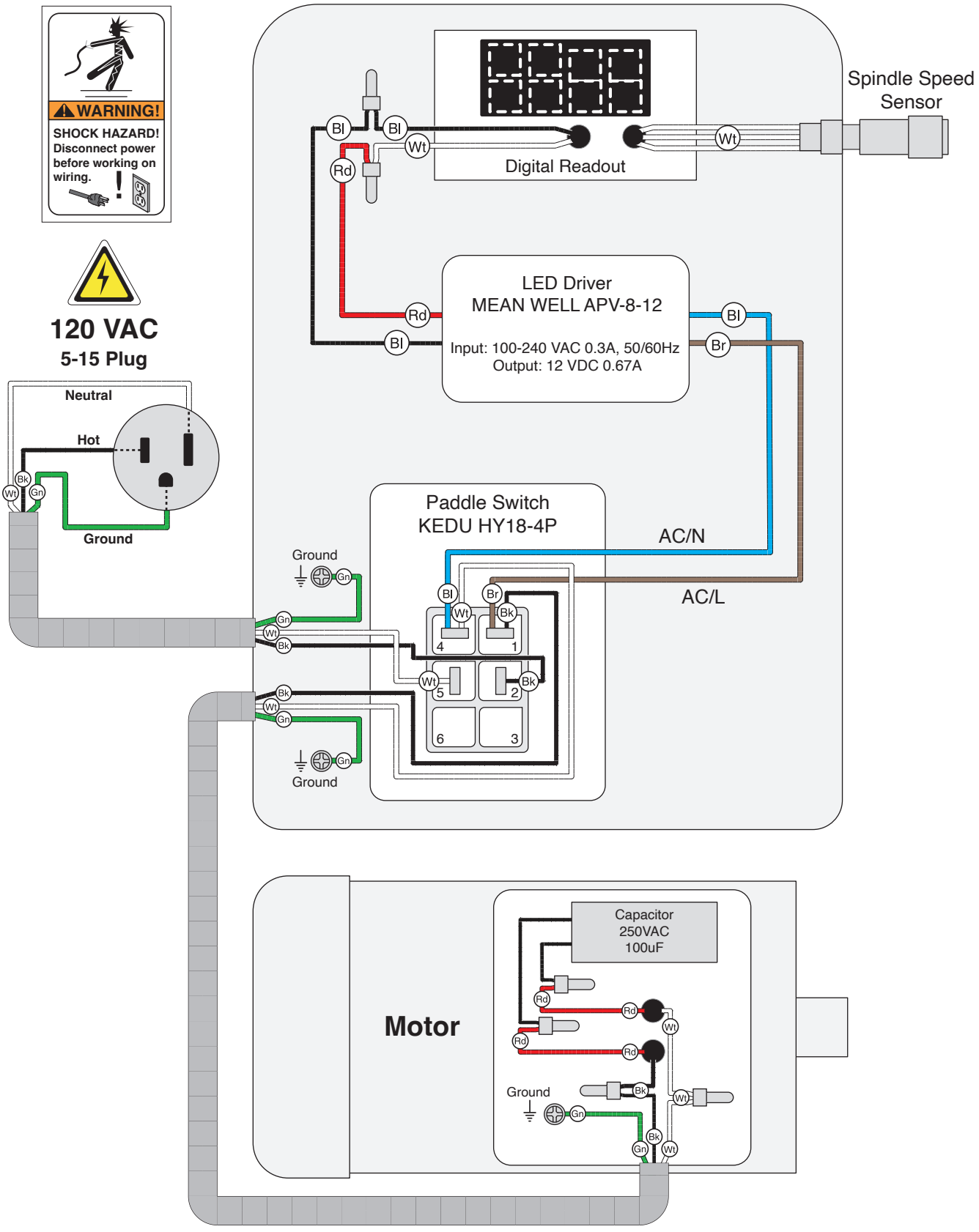
The photos and diagrams included in this section are best viewed in color. You can view these pages in color at www.grizzly.com.

COLOR KEY

BLACK	Bk	BLUE	Bl	YELLOW	Yl	LIGHT BLUE	Lb
WHITE	Wt	BROWN	Br	YELLOW GREEN	Yg	BLUE WHITE	Bw
GREEN	Gn	GRAY	Gy	PURPLE	Pu	TURQUOISE	Tu
RED	Rd	ORANGE	Or	PINK	Pk		

Wiring Diagram

Headstock



STOP *READ ELECTRICAL SAFETY ON PAGE PAGE 39!*

Wiring Components

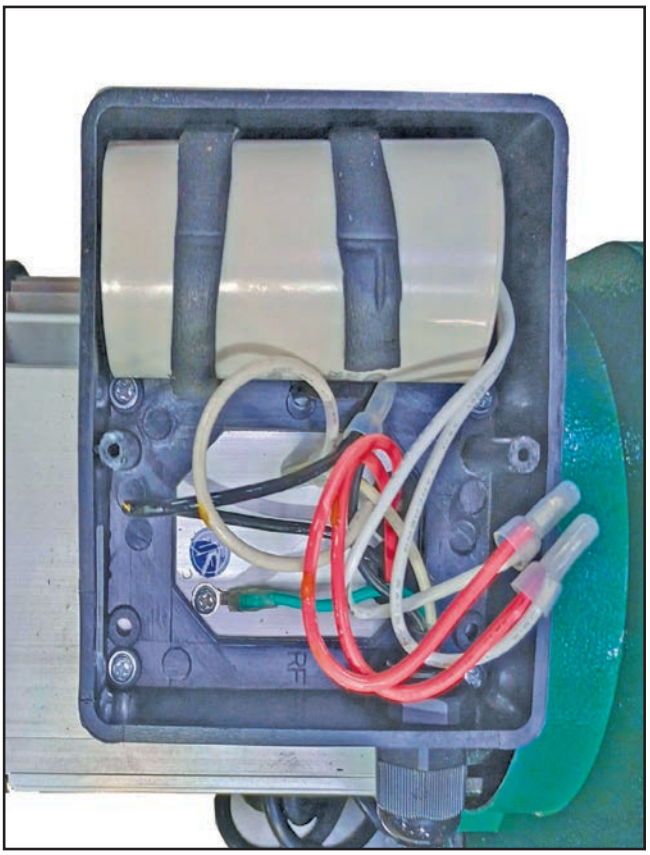


Figure 45. Motor junction box wiring.

Figure 47. LED Driver

Figure 46. DRO wiring.

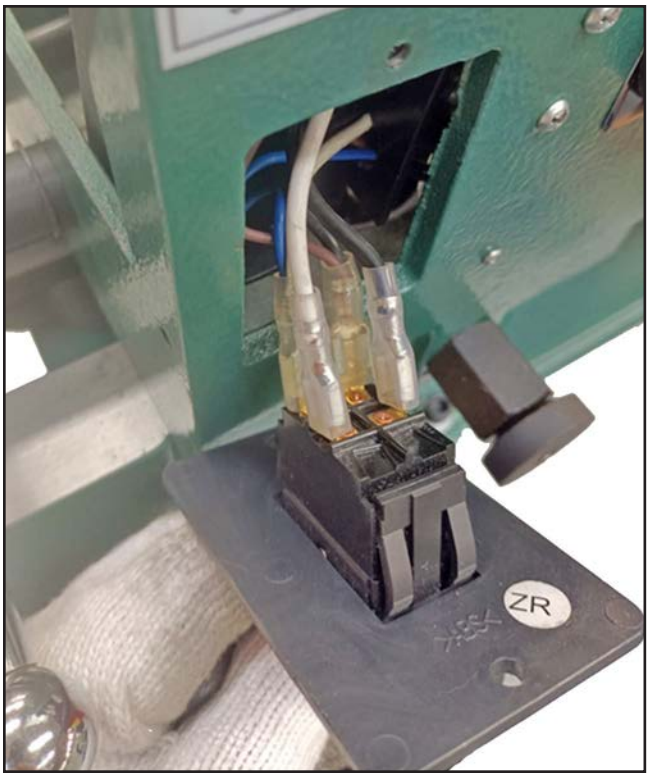
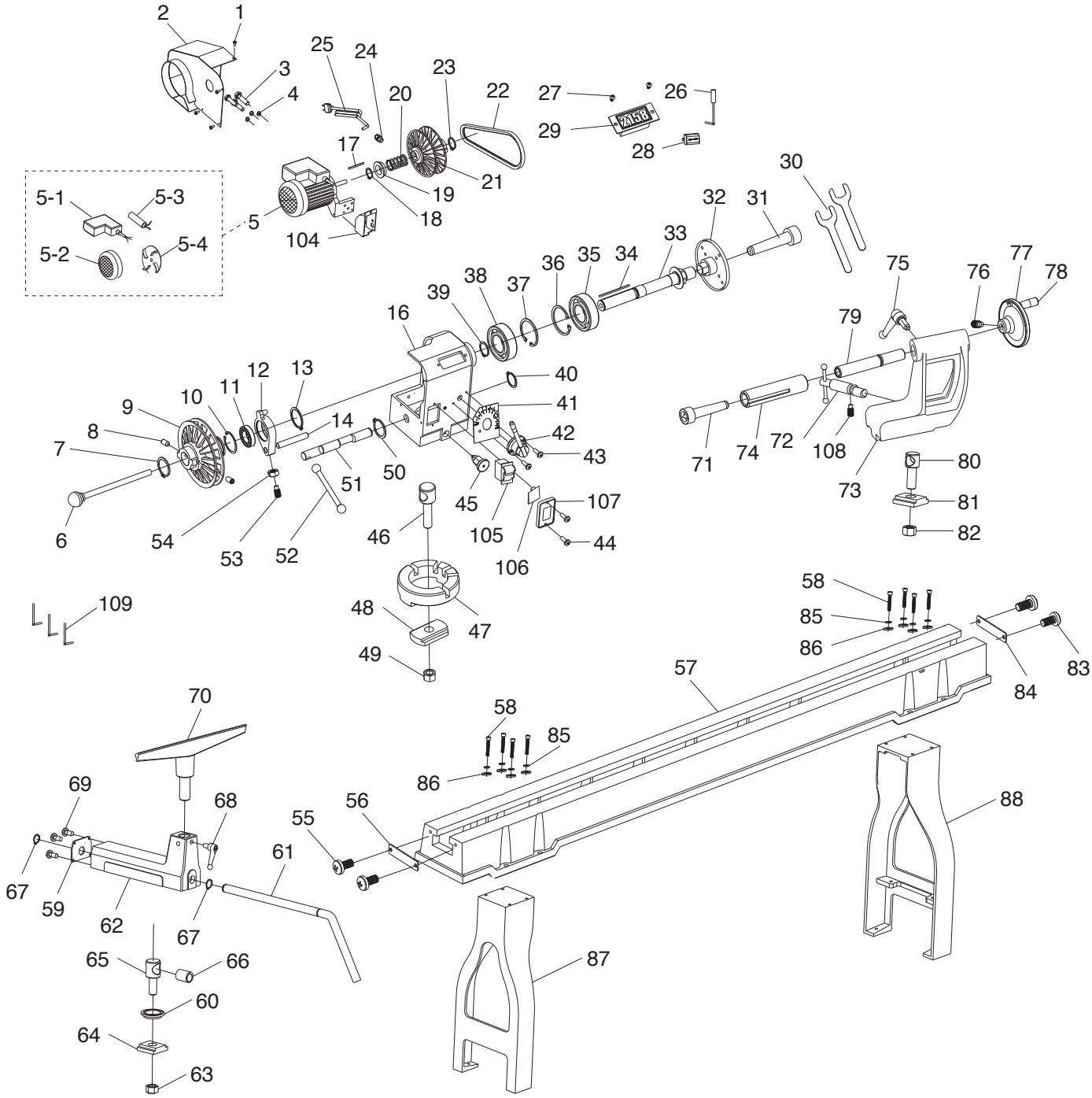


Figure 48. Paddle switch wiring.

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.

Main

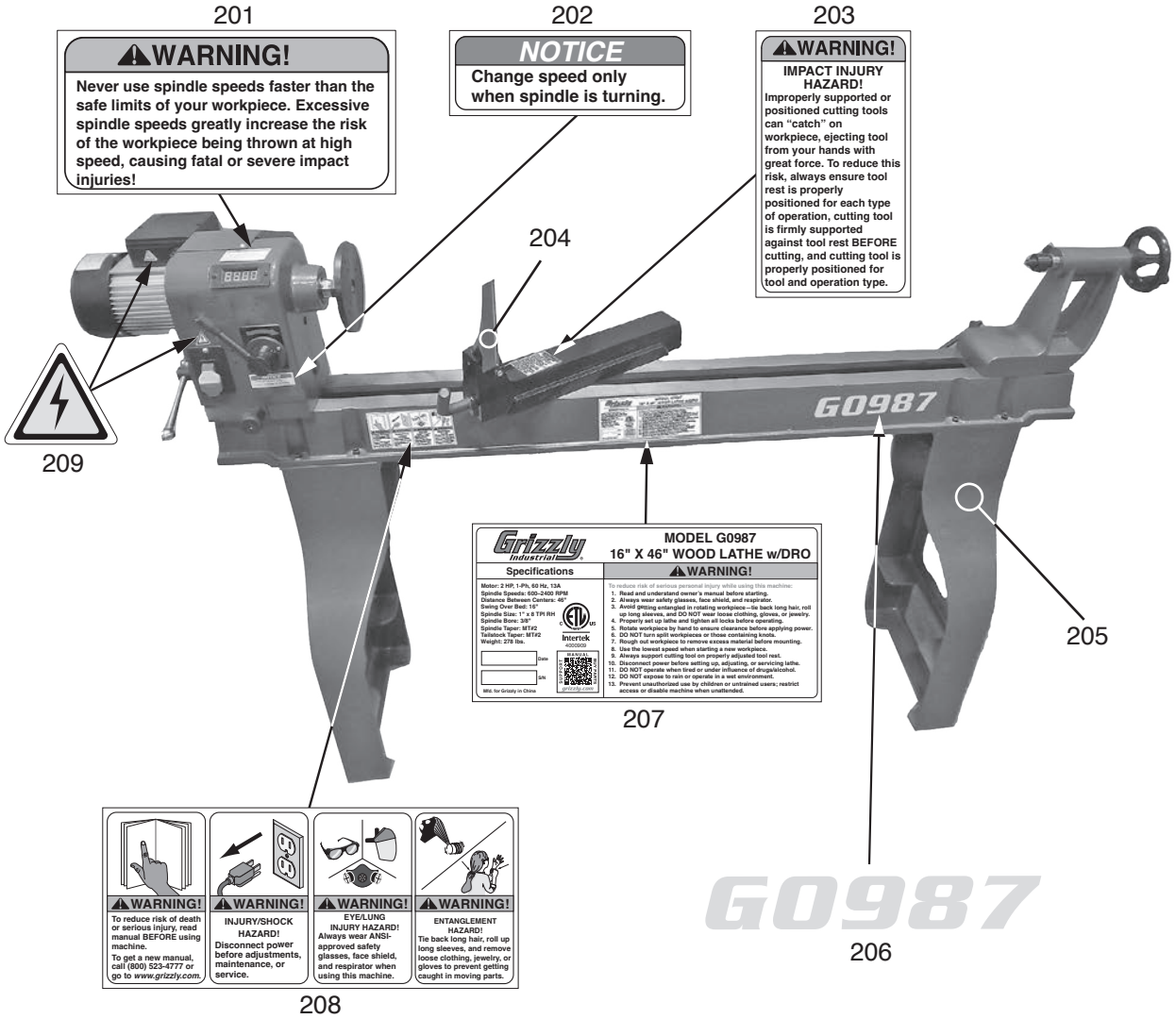


Main Parts List

REF	PART #	DESCRIPTION
1	P0987001	PHLP HD SCR M5-.8 X 8
2	P0987002	MOTOR COVER
3	P0987003	HEX BOLT M8-1.25 X 30
4	P0987004	LOCK WASHER 8MM
5	P0987005	MOTOR 2HP 120V 1-PH
5-1	P0987005-1	JUNCTION BOX
5-2	P0987005-2	MOTOR FAN COVER
5-3	P0987005-3	S CAPACITOR 100M 250V 2 X 3-3/4
5-4	P0987005-4	MOTOR FAN
6	P0987006	KNOCKOUT TOOL
7	P0987007	EXT RETAINING RING 24MM
8	P0987008	SET SCREW M6-1 X 10
9	P0987009	MOTOR PULLEY SET (2pcs)
10	P0987010	INT RETAINING RING 62MM
11	P0987011	BALL BEARING 6007-2RZ/Z3
12	P0987012	SHIFTING LEVER BRACKET
13	P0987013	EXT RETAINING RING 35MM
14	P0987014	RACK
16	P0987016	HEADSTOCK CASTING
17	P0987017	KEY 4 X 4 X 80 RE
18	P0987018	EXT RETAINING RING 16MM
19	P0987019	SPRING SEAT
20	P0987020	COMPRESSION SPRING 2.8 X 25.6 X 58
21	P0987021	SPINDLE PULLEY SET (2pcs)
22	P0987022	V-BELT M24.5 3L245, COGGED
23	P0987023	EXT RETAINING RING 16MM
24	P0987024	STRAIN RELIEF M20-1.5
25	P0987025	POWER CORD 16G 3W 108" 5-15P
26	P0987026	SENSOR
27	P0987027	PHLP HD SCR M4-.7 X 8
28	P0987028	LED DRIVER MEAN WELL APV-8-12
29	P0987029	DIGITAL READOUT
30	P0987030	FLAT WRENCH 32MM
31	P0987031	SPUR CENTER MT#2
32	P0987032	FACEPLATE
33	P0987033	SPINDLE 1" X 8 TPI
34	P0987034	KEY 4 X 4 X 80 RE
35	P0987035	BALL BEARING 6205-2RZ/Z3
36	P0987036	INT RETAINING RING 52MM
37	P0987037	INT RETAINING RING 52MM
38	P0987038	BALL BEARING 6205-2RZ/Z3
39	P0987039	EXT RETAINING RING 25MM
40	P0987040	EXT RETAINING RING 24MM
41	P0987041	SPEED CHANGE LABEL
42	P0987042	GEAR SHIFT ASSEMBLY
43	P0987043	PHLP HD SCR M5-.8 X 12
44	P0987044	PHLP HD SCR M4-.7 X 10
45	P0987045	HEADSTOCK PIVOT LOCK PIN
46	P0987046	HEADSTOCK CLAMP BOLT

REF	PART #	DESCRIPTION
47	P0987047	HEAD CLAMP BASE
48	P0987048	HEADSTOCK CLAMP PLATE
49	P0987049	HEX NUT M18-2.5
50	P0987050	EXT RETAINING RING 24MM
51	P0987051	HEADSTOCK ECCENTRIC SHAFT
52	P0987052	HEAD LOCK LEVER
53	P0987053	SET SCREW M8-1.25 X 25 DOG-PT
54	P0987054	HEX NUT M8-1.25
55	P0987055	PHLP HD SCR M5-.8 X 8
56	P0987056	BED END PLATE
57	P0987057	BED
58	P0987058	CAP SCREW M8-1.25 X 30
59	P0987059	SUPPORT PLATE
60	P0987060	SUPPORT BRACKET
61	P0987061	TOOL REST LOCK LEVER
62	P0987062	TOOL REST BASE 1"
63	P0987063	HEX NUT M18-2.5
64	P0987064	TOOL REST BASE CLAMP PLATE
65	P0987065	TOOL REST CLAMP BOLT
66	P0987066	TOOL REST BASE ECCENTRIC BUSHING
67	P0987067	EXT RETAINING RING 19MM
68	P0987068	ADJUSTABLE HANDLE M10-1.5 X 18
69	P0987069	PHLP HD SCR M4-.7 X 10
70	P0987070	TOOL REST 1"
71	P0987071	LIVE CENTER MT#2
72	P0987072	TAILSTOCK LOCK LEVER
73	P0987073	TAILSTOCK CASTING
74	P0987074	TAILSTOCK QUILL
75	P0987075	QUILL LOCK HANDLE M10-1.25 X 20
76	P0987076	SET SCREW M8-1.25 X 12 DOG-PT
77	P0987077	HANDWHEEL 15B X M8-1.25
78	P0987078	REVOLVING HANDLE M8-1.25 X 10
79	P0987079	LEADSCREW
80	P0987080	TAILSTOCK CLAMP BOLT
81	P0987081	TAILSTOCK CLAMP PLATE
82	P0987082	HEX NUT M18-2.5
83	P0987083	PHLP HD SCR M5-.8 X 8
84	P0987084	BED END PLATE
85	P0987085	LOCK WASHER 8MM
86	P0987086	FLAT WASHER 8MM
87	P0987087	STAND LEG (LEFT)
88	P0987088	STAND LEG (RIGHT)
104	P0987104	SWITCH BOX
105	P0987105	PADDLE SWITCH KEDU HY18-4P
106	P0987106	PADDLE SWITCH KEY
107	P0987107	SWITCH BOX PLATE
108	P0987108	SET SCREW M6-1 x 8
109	P0987109	HEX WRENCH SET 3MM, 4MM, 6MM

Labels & Cosmetics



REF	PART #	DESCRIPTION
201	P0987201	SPINDLE SPEED WARNING LABEL
202	P0987202	SPEED CHANGE NOTICE LABEL
203	P0987203	IMPACT INJURY HAZARD LABEL
204	P0987204	TOUCH-UP PAINT, BLACK
205	P0987205	TOUCH-UP PAINT, GRIZZLY GREEN

REF	PART #	DESCRIPTION
206	P0987206	MODEL NUMBER LABEL
207	P0987207	MACHINE ID LABEL
208	P0987208	COMBO WARNING LABEL
209	P0987209	ELECTRICITY LABEL 0.7W X 0.6H

⚠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.

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.

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.

In the event you need to use 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.

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.

For further information about the warranty, visit **https://www.grizzly.com/forms/warranty** or scan the QR code below to be automatically directed to our warranty page.

WARRANTY

grizzly.com