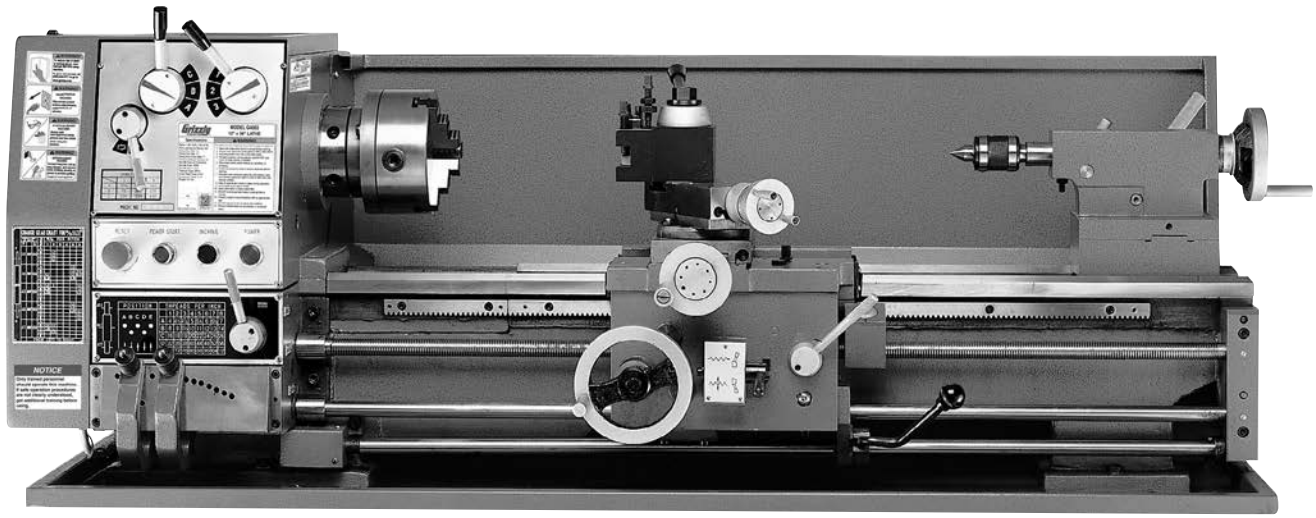
Grizzly Industrial, Inc.®

MODEL G4003
GEAR-HEAD LATHE
OWNER'S MANUAL
(For models manufactured since 6/20)



#0350 PRINTED IN CHINA V5.03.21

⚠ 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

Machine Description

The purpose of a metal lathe is to face, turn, knurl, thread, bore, or cut tapers in a metal workpiece with perfect accuracy.

During typical operations, the lathe spindle rotates the workpiece at various speeds against a fixed cutting tool that is positioned at a particular angle for the desired type of cut.

The cutting tool is mounted on a quick change tool post, which allows cutting tools to be quickly loaded and unloaded.

Opposite of the headstock and spindle is a support device called a tailstock. The tailstock can be slid along the lathe bed and locked in place to firmly support the end of a workpiece.

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

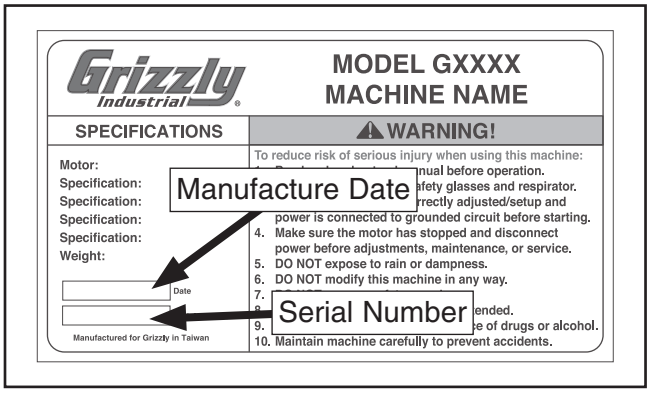
Manual Accuracy

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.



MACHINE DATA SHEET

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

MODEL G4003 12" X 36" GEAR-HEAD, CAM LOCK SPINDLE, LATHE

Product Dimensions:

Weight	917 lbs.
Width (side-to-side) x Depth (front-to-back) x Height	61 x 23 x 23 in.
Footprint (Length x Width)	61 x 23 in.

Shipping Dimensions:

Type	Wood Crate
Content	Machine
Weight	1020 lbs.
Length x Width x Height	29 x 66 x 29 in.
Must Ship Upright	Yes

Electrical:

Power Requirement	220V, Single-Phase, 60 Hz
Prewired Voltage	220V
Full-Load Current Rating	12A
Minimum Circuit Size	15A
Connection Type	Cord & Plug
Power Cord Included	No
Recommended Power Cord	“S”-Type, 3-Wire, 14 AWG, 300 VAC
Plug Included	No
Recommended Plug Type	6-15
Switch Type	Control Panel w/Magnetic Switch Protection

Motors:

Main

Horsepower	2 HP
Phase	Single-Phase
Amps	8.5A
Speed	1725 RPM
Type	TEFC Capacitor-Start Induction
Power Transfer	Belt Drive
Bearings	Shielded & Permanently Lubricated
Centrifugal Switch/Contacts Type	Internal

Main Specifications:

Operation Info

Swing Over Bed	12 in.
Distance Between Centers	36 in.
Swing Over Cross Slide	7 in.
Swing Over Saddle	7 in.
Maximum Tool Bit Size	5/8 in.
Compound Travel	3-1/4 in.
Carriage Travel	30-1/2 in.
Cross Slide Travel	6-1/4 in.

Headstock Info

Spindle Bore	1.417 in.
Spindle Taper	MT#5
Number of Spindle Speeds	9
Spindle Speeds	70 – 1400 RPM
Spindle Type	D1-4 Camlock
Spindle Bearings	Tapered Roller
Spindle Length	16 in.
Spindle Length with 3-Jaw Chuck	20-3/4 in.
Spindle Length with 4-Jaw Chuck	20-3/8 in.

Tailstock Info

Tailstock Quill Travel	4 in.
Tailstock Taper	MT#3
Tailstock Barrel Diameter	1.570 in.

Threading Info

Number of Longitudinal Feeds	40
Range of Longitudinal Feeds	0.0011 – 0.0310 in./rev.
Number of Cross Feeds	40
Range of Cross Feeds	0.0004 – 0.0105 in./rev
Number of Inch Threads	40
Range of Inch Threads	4 – 112 TPI
Number of Metric Threads	29
Range of Metric Threads	0.2 – 4.5 mm

Dimensions

Bed Width	7-1/4 in.
Carriage Leadscrew Diameter	0.870 in.
Leadscrew TPI	8 TPI
Carriage Leadscrew Length	44 in.
Steady Rest Capacity	2 in.
Follow Rest Capacity	1 in.
Faceplate Size	10 in.
Feed Rod Diameter	3/4 in.

Other

Optional Stand	G4005

Construction

Base	Cast Iron
Headstock	Cast Iron
End Gears	Flame Hardened Steel
Bed	Induction-Hardened, Precision-Ground Cast Iron
Body	Cast Iron
Paint Type/Finish	Epoxy

Fluid Capacities

Headstock Capacity	3.5 qt.
Headstock Fluid Type	ISO 32 (eg. Grizzly T23963, Mobil DTE Light)
Gearbox Capacity	1 – 2 Pumps
Gearbox Fluid Type	ISO 68 (SB1365, Grizzly T23962, Mobil Vactra 2)
Apron Capacity	0.5 qt.
Apron Fluid Type	ISO 68 (eg. Grizzly T23962, Mobil Vactra 2)

Other Specifications:

Country of Origin	China

Features:

Carriage-Mounted On/Off Control Lever
Easy To Use Lever Controls
Full Length Splash Guard
Hardened and Ground Cast-Iron Bed
Threading Dial
Compatible with G7028, G7029, G7030, & G7031, tool holders

Accessories Included:

6" 3-Jaw Chuck w/2 Sets of Jaws
8" 4-Jaw Chuck w/Reversible Jaws
10" Faceplate
Steady Rest
Follow Rest
Quick-Change Tool Post w/Holder
4-Piece Insert Tool Holder Set
Set of Seven Change Gears
Dead Center MT#3 HSS Tip
Dead Center MT#3 Carbide Tip
Live Center MT#3
1/2" Drill Chuck w/MT#3 Arbor
Spindle Sleeve MT#5/MT#3
Oil Can
Toolbox

Accessories Recommended:

G4005 Lathe Stand for G4003
T10556 Taper Attachment Kit for G4002/G4003/G4003G

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 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 Metal Lathes

⚠WARNING

Serious injury or death can occur from getting entangled in, crushed between, or struck by rotating parts on a lathe! Unsecured tools or workpieces that fly loose from rotating objects can also strike nearby operators with deadly force. To minimize the risk of getting hurt or killed, anyone operating this machine MUST completely heed the hazards and warnings below.

CLOTHING, JEWELRY & LONG HAIR. Tie back long hair, remove jewelry, and do not wear loose clothing or gloves. These can easily get caught on rotating parts and pull you into lathe.

ROTATING PARTS. Always keep hands and body at a safe distance from rotating parts—especially those with projecting surfaces. Never hold anything against rotating workpiece, such as emery cloth, that can pull you into lathe.

GUARDING. Guards and covers protect against entanglement or flying objects. Always ensure they are properly installed while machine is running.

ADJUSTMENT TOOLS. Remove all chuck keys, wrenches, and adjustment tools before turning lathe ***ON***. A tool left on the lathe can become a deadly projectile when spindle is started.

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

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

SPINDLE SPEEDS. Using spindle speeds that are too fast for the workpiece or clamping equipment can cause rotating parts to come loose and strike nearby people with deadly force. Always use slow spindle speeds with large or non-concentric workpieces. Never exceed rated RPM of the chuck.

LONG STOCK SAFETY. Long stock can whip violently if not properly supported. Always support any stock that extends from the chuck/headstock more than three times its own diameter.

CLEARING CHIPS. Metal chips can be razor sharp. Avoid clearing them by hand or with a rag. Use a brush or vacuum instead.

SECURE WORKPIECE. An improperly secured workpiece can fly off spindle with deadly force. Make sure workpiece is properly secured before starting the lathe.

CHUCKS. Chucks can be heavy and difficult to hold. During installation and removal, protect your hands and precision bed ways by using a chuck cradle or piece of plywood over the bed ways. Use lifting equipment, as necessary, for large chucks.

STOPPING SPINDLE. Always allow spindle to completely stop on its own, or use a brake, if provided. Never put hands or another object on a spinning workpiece to make it stop faster.

CRASHING. A serious explosion of metal parts can occur if cutting tool or other lathe component hits rotating chuck or a projecting part of workpiece. Resulting metal fragments can strike nearby people and lathe will be seriously damaged. To reduce risk of crashing, ALWAYS release automatic feeds after use, NEVER leave lathe unattended, and CHECK all clearances before starting lathe.

COOLANT SAFETY. Coolant can become very toxic through prolonged use and aging. To minimize toxicity, change coolant regularly. When using, position nozzle properly to avoid splashing operator or causing a slipping hazard on floor.

TOOL SELECTION. Cutting with incorrect or dull tooling increases risk of injury from broken or dislodged components, or as a result of extra force required for operation. Always use sharp tooling that is right for the job.

SANDING/POLISHING. To reduce risk of entanglement, never wrap emery cloth around rotating workpiece. Instead, use emery cloth with the aid of a tool or backing board.

MEASURING WORKPIECE. To reduce risk of entanglement, never measure rotating workpieces.

Additional Chuck Safety

⚠WARNING

ENTANGLEMENT. Entanglement with a rotating chuck can lead to death, amputation, broken bones, or other serious injury. Never attempt to slow or stop the lathe chuck by hand, and always roll up long sleeves, tie back long hair, and remove any jewelry or loose apparel BEFORE operating.

CHUCK SPEED RATING. Excessive spindle speeds greatly increase the risk of the workpiece or chuck being thrown from the machine with deadly force. Never use spindle speeds faster than the chuck RPM rating or the safe limits of your workpiece.

USING CORRECT EQUIPMENT. Many workpieces can only be safely turned in a lathe if additional support equipment, such as a tailstock or steady/follow rest, is used. If the operation is too hazardous to be completed with the lathe or existing equipment, the operator must have enough experience to know when to use a different machine or find a safer way.

TRAINED OPERATORS ONLY. Using a chuck incorrectly can result in workpieces coming loose at high speeds and striking the operator or bystanders with deadly force. To reduce the risk of this hazard, read and understand this document and seek additional training from an experienced chuck user before using a chuck.

CHUCK CAPACITY. Avoid exceeding the capacity of the chuck by clamping an oversized workpiece. If the workpiece is too large to safely clamp with the chuck, use a faceplate or a larger chuck if possible. Otherwise, the workpiece could be thrown from the lathe during operation, resulting in serious impact injury or death.

CLAMPING FORCE. Inadequate clamping force can lead to the workpiece being thrown from the chuck and striking the operator or bystanders. Maximum clamping force is achieved when the chuck is properly maintained and lubricated, all jaws are fully engaged with the workpiece, and the maximum chuck clamping diameter is not exceeded.

PROPER MAINTENANCE. All chucks must be properly maintained and lubricated to achieve maximum clamping force and withstand the rigors of centrifugal force. To reduce the risk of a thrown workpiece, follow all maintenance intervals and instructions in this document.

DISCONNECT POWER. Serious entanglement or impact injuries could occur if the lathe is started while you are adjusting, servicing, or installing the chuck. Always disconnect the lathe from power before performing these procedures.

⚠WARNING

As with all power tools, there is danger associated with the Model G4003. Use the tool with respect and caution to lessen the possibility of mechanical damage or operator injury. If normal safety precautions are overlooked or ignored, injury to the operator or others in the area is likely.

NOTICE

The Model G4003 was specifically designed for turning operations. Do not modify and/or use this LATHE for any other purpose. Modifications or improper use of this tool will void the warranty. If you are confused about any aspect of this machine, DO NOT use it until you have answered all your questions.

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 electrican or qualified service personnel in accordance with all applicable codes and standards.

⚠WARNING

Electrocution, fire, or equipment damage may occur if machine is not correctly grounded and connected to the 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 220V ..... 12 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 requirements in the following section.

Circuit Requirements for 220V

This machine is prewired to operate on a 220V power supply circuit that has a verified ground and meets the following requirements:

Nominal Voltage 220V/240V
Cycle ..... 60 Hz
Phase 1-Phase
Power Supply Circuit ..... 15 Amps
Plug/Receptacle ..... NEMA 6-15
Cord ..... "S"-Type, 3-Wire, 14 AWG, 300 VAC

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: *The circuit requirements listed in this manual apply to a dedicated circuit—where only one machine will be running at a time. If this machine will be connected to a shared circuit where multiple machines will be running at the same time, consult a qualified electrician to ensure that the circuit is properly sized for safe operation.*

Grounding Instructions

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.

The power cord and plug specified under "Circuit Requirements for 220V" on the previous page has an equipment-grounding wire and a grounding prong. The plug must only be inserted into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances (see figure below).

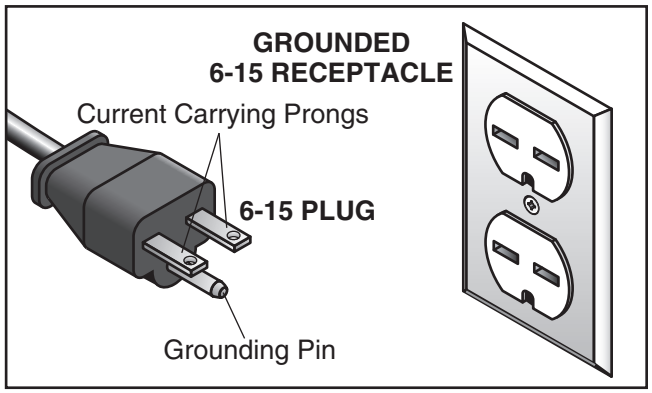
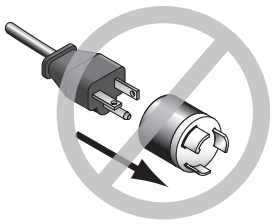


Figure 1. Typical 6-15 plug and receptacle.

⚠WARNING

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

⚠CAUTION



No adapter should be used with the required plug. If the plug does not fit the available receptacle, or the machine must be reconnected for use on a different type of circuit, the reconnection must be made by a qualified electrician and comply with all local codes and ordinances.

⚠WARNING

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

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 may 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 contain a ground wire, match the required plug and receptacle, and meet the following requirements:

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

Power Connection

Before the machine can be connected to the power source, an electrical circuit, power cord, plug, and receptacle must be prepared according to the specifications and instructions in **POWER SUPPLY** on **Page 10**.

⚠WARNING

Before connecting the machine to power, always make sure the reset button on the control panel is pushed in to avoid unexpected start-ups.

Connecting Power Cord

1. Make sure the power cord is NOT connected to power.

2. Open the electrical cabinet and identify the **L** and **N** terminals, and the grounding plate (**PE**) at the bottom left of the cabinet (see **Figure 2**).

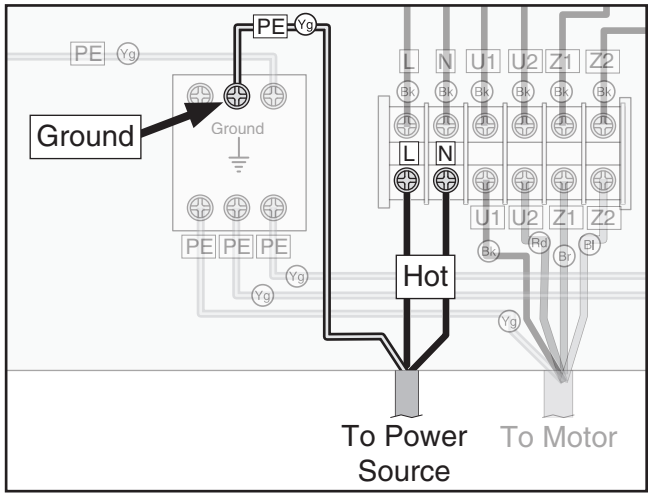


Figure 2. Incoming power cord connections.

3. Attach insulated crimp-on wire terminals to the wires of the power cord.

4. Securely connect the incoming ground to the **PE** terminal and the two incoming hot leads to the **L** and **N** terminals.

5. Close and secure the electrical cabinet.

Connecting Power

1. Turn the machine power switch **OFF**.

2. Insert the power cord plug into a matching power supply receptacle. The machine is now connected to the power source.

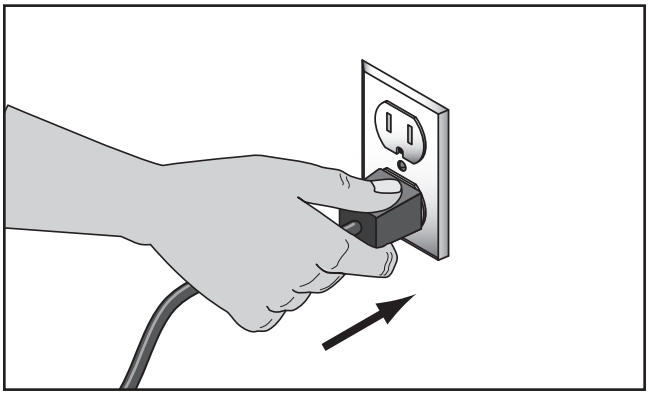


Figure 3. Connecting power.

Disconnecting Power

1. Turn the machine power switch **OFF**.

2. Grasp the molded plug and pull it completely out of the receptacle. Do not pull by the cord as this may damage the wires inside.

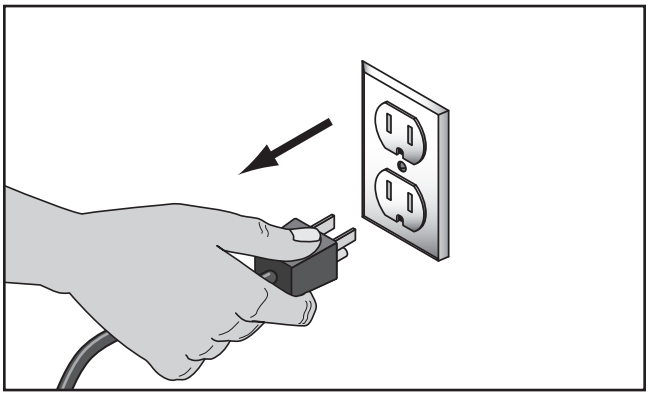


Figure 4. Disconnecting power.

Unpacking

Your machine was carefully packaged for safe transportation. Remove the packaging materials from around your machine and inspect it. If you discover any damage, *please call us immediately at (570) 546-9663 for advice.*

Save the containers and all packing materials for possible inspection by the carrier or its agent. *Otherwise, filing a freight claim can be difficult.*

When you are completely satisfied with the condition of your shipment, inventory the contents.

⚠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.

Needed for Setup

The following are needed to complete the setup process, but are not included with your machine.

Description	Qty
• Additional People	1
• Safety Glasses	1 For Each Person
• Cleaner/Degreaser (**Page 14**)	As Needed
• Quality Metal Protectant	As Needed
• Disposable Shop Rags	As Needed
• Precision Level	1
• Lifting Straps (rated for at least 1300 lbs.)	2
• Forklift/Power Lifting Device (rated for at least 1300 lbs.)	1
• Bench or Stand Mounting Hardware	As Needed

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.

Description	Qty
• Lathe	1
• 6" 3-Jaw Chuck with 2 Sets of Jaws	1
• 8" 4-Jaw Chuck with Reversible Jaws	1
• 10" Faceplate	1
• Steady Rest	1
• Follow Rest	1
• Quick Change Tool Post with Holder	1
• 4-Piece Insert Tool Holder Set	1
• Change Gear Set	7
–26T, 27T, 35T, 36T, 45T, 50T, 60T	
• Open-End Wrench Set	4
–9/11, 10/12, 12/14, 17/19mm	
• Hex Wrench Set	6
–2.5, 3, 4, 5, 6, 8, 10mm	
• Flat Screwdriver #2	1
• Phillips Screwdriver #2	1
• Lathe Chuck Key	1
• Dead Center MT#3 HSS Tip	1
• Dead Center MT#3 Carbide Tip	1
• Live Center MT#3	1
• ½" Drill Chuck with MT#3 Arbor	1
• Spindle Sleeve MT#5/MT#3	1
• Oil Can	1
• Toolbox	1
• Hardware Bag	1
–Hex Bolts M12-1.75 x 40	6
–Flat Washers 12mm	6
–Cap Screws M6-1 x 8	8
–Flat Washers 6mm	8
–Hex Nuts M6-1	8

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)

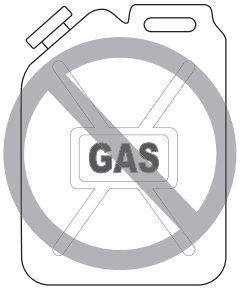
Basic steps for removing rust preventative:

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.

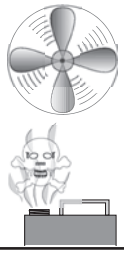
3. Wipe off the surfaces. If your cleaner/degreaser is effective, the rust preventative will wipe off easily. If you have a plastic paint scraper, scrape off as much as you can first, then wipe off the rest with the rag.

4. Repeat **Steps 2–3** as necessary until clean, then coat all unpainted surfaces with a quality metal protectant to prevent rust.



⚠WARNING

Gasoline or products with low flash points can explode or cause fire if used to clean machinery. Avoid cleaning with these products.



⚠CAUTION

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

NOTICE

Avoid chlorine-based solvents, such as acetone or brake parts cleaner, that may damage painted surfaces. Test all cleaners in an inconspicuous area before using to make sure they will not damage paint.

T23692—Orange Power Degreaser
A great product for removing the waxy shipping grease from your machine during clean up.

Figure 5. T23692 Orange Power Degreaser.

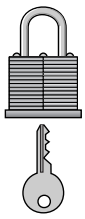
Site Considerations

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 access to a means of disconnecting the power source or engaging 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.

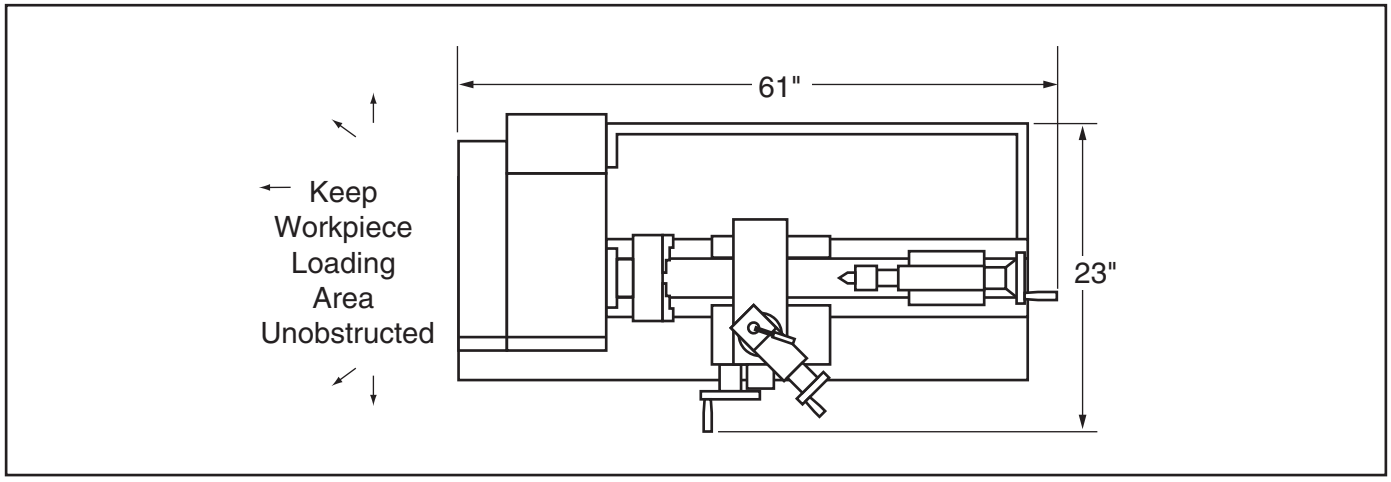


Figure 6. Minimum working clearances.

SECTION 3: ASSEMBLY & SETUP

Mounting

This lathe should be securely mounted to a stand or bench top. An accessory stand is available from Grizzly. Please see our current catalog for pricing. There are 2 holes in the base at the tailstock end of the lathe and four holes on the gearhead end which can be used to secure the machine to a stand.

The lathe does not require a great deal of assembly. This section details the installation of the various accessory holding devices. The following section will familiarize you with the controls for your new lathe. After you have completed both of these sections we will do a test run of the machine. Do not attempt a test run until you have become familiar with both of these sections.

Lubricating Lathe

The Model G4003 lathe is shipped without oil. You must fill the headstock and apron with oil, and complete the **Lubrication** procedures outlined in the **MAINTENANCE** section beginning on **Page 33**. If you run this lathe without oil, even for a short period of time, drivetrain parts will be damaged and your lathe warranty will be void. Make sure to change the oil immediately after spindle break-in.

Chucks

The Model G4003 Metal Lathe comes equipped with a 6" 3-jaw chuck (already installed), a 8" 4-jaw chuck and a face plate.

The 3-jaw chuck is a scroll-type chuck, meaning that all three jaws move in unison when adjustments are made. The 4-jaw chuck, on the other hand, features independent jaws. The 4-jaw chuck is used for square or unevenly-shaped stock.

The 3 and 4-jaw chucks have a D-1 Camlock mount. Please note that there are lines stamped into the cam and on the chuck body. A chuck key is used to turn the locking cams as in **Figure 7**.

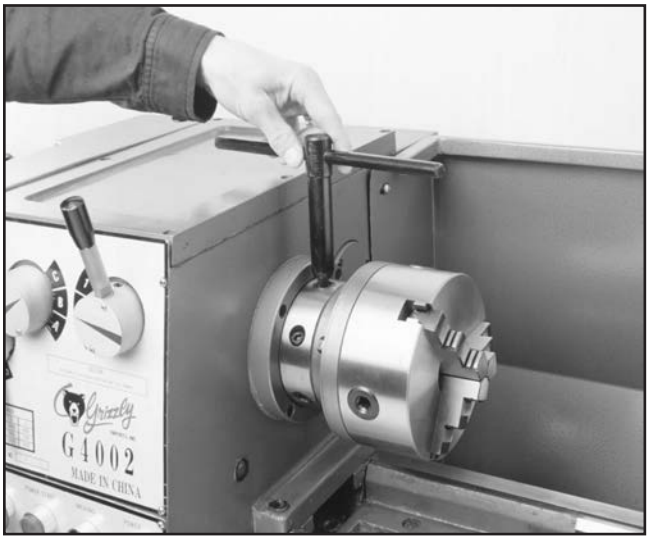


Figure 7. Key positioned to remove chuck.

⚠CAUTION

Always place a piece of plywood over the ways of the lathe before removing or installing a chuck. This helps by covering the sharp corners of the bed, protecting your hands and fingers. Use extreme care when removing or installing a chuck so that your hands do not become trapped between the chuck and the plywood.

To remove a chuck:

1. Place a piece of plywood across the lathe bed and position it just under the chuck. The board should be at least 8" wide and 10" long.

⚠WARNING

Never leave a chuck key in the chuck when it is not in use. If the machine is accidentally started with this in place, it can become a projectile and cause serious injury.

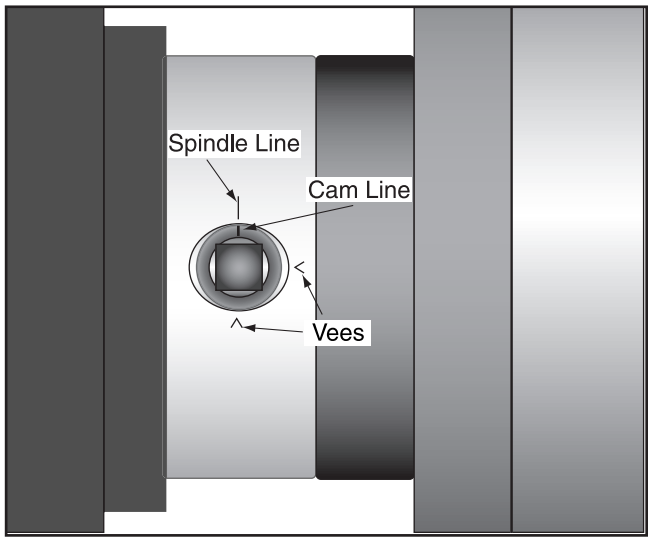


Figure 8. Cam lines aligned to spindle line.

2. Turn a cam, with the chuck key, in the lathe spindle in a counter-clockwise rotation until the line on the cam is aligned with the line going *across* the spindle housing as in **Figure 8.**

⚠WARNING

The chuck is heavy and can be awkward to handle. Be aware that when removing or installing a chuck a finger pinch situation exists.

3. Turn the other cams in the same way. Make sure to support the chuck with one hand as you align the last cam. The chuck may come off at this point so it is important you are ready to support its weight.

4. Remove the chuck key.

If the chuck is still tight on the spindle:

Tap the back of the chuck with a rubber or wooden mallet while supporting the bottom of the chuck with your free hand. If the chuck does not immediately come off, rotate the spindle approximately 60˚ and tap again. Make sure all the marks on the cams and spindle are in proper alignment.

To install a chuck:

1. Place a piece of plywood across the lathe bed and position it just under the spindle.

2. Lift the chuck up to the spindle and align the pins in the back with the holes on the spindle's face and insert the pins.

3. While supporting the weight of the chuck, turn one cam with the chuck key until the cam line is between the two vees on the spindle. Do not tighten at this time.

4. Rotate the spindle and repeat step 3 on the last two cams.

5. Return to the first cam and snug it up. Repeat with the rest of the cams.

6. Finally, tighten all three cams.

Live Center

The live center is used to support stock which is too long to be supported by the chuck alone. Stock protruding more than three times its diameter should be supported by the live center.

The tailstock barrel and live center have a Morse taper #3. Before assembling these, insure that the mating surfaces are “white glove” clean. These parts will last longer and remain accurate when properly maintained. Morse tapers will not interlock when oil is present on the mounting surfaces. Insert the end of the live center into the tailstock bore until it seats. The force of a mounted workpiece will fully seat the taper.

When using a live center, the tailstock barrel should protrude about 1⁄2'' and not more than 3''. See **Figure 9**.

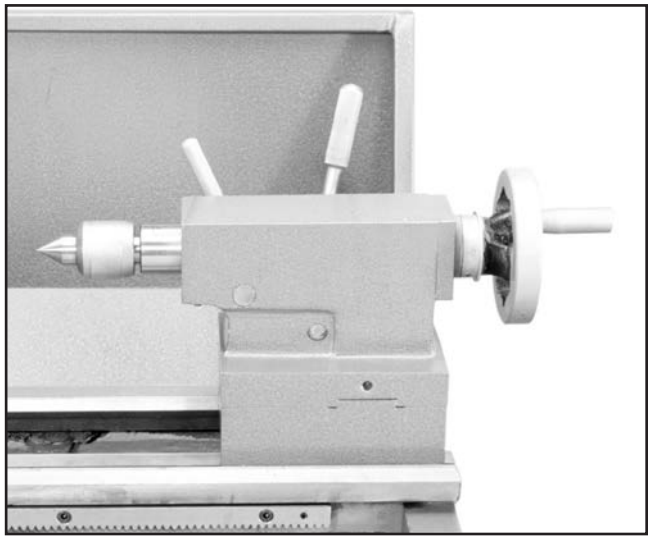


Figure 9. Live center installed in tailstock.

To remove the live center, back the tailstock barrel all the way into the tailstock casting. The live center will pop out. Be sure to catch it when it comes out to avoid damaging the tip.

Steady Rest

The steady rest supports long, small diameter stock that otherwise could not be turned. The steady rest can also replace the tailstock to allow for cutting tool access at the outboard end of your workpiece.

To mount the steady rest:

1. Secure to bedway from below with the locking plate.

2. A single hex bolt, along with a nut and washer, is used to hold the steady rest in place. See **Figure 10**.

3. The bearing surfaces on the steady rest should receive periodic lubrication while in use to prevent premature wear.

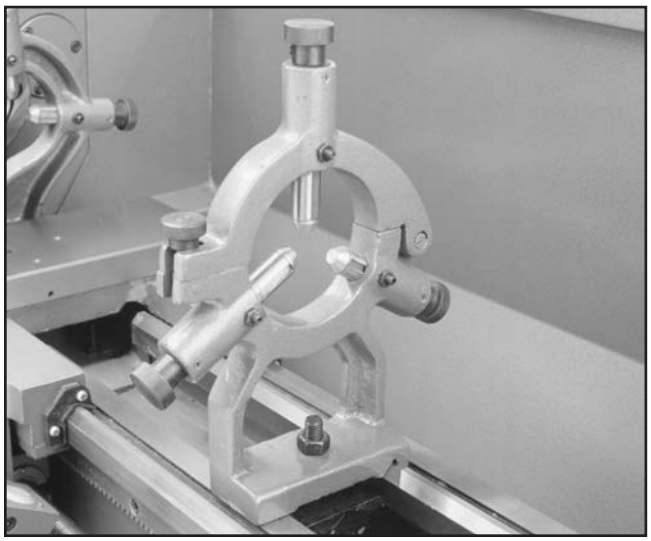


Figure 10. Steady rest in place.

Follow Rest

The follow rest is normally used with small diameter stock to prevent the workpiece from “springing” under pressure from the turning tool. To install the follow rest:

1. The follow rest is secured to the saddle with two cap screws. See **Figure 11**.

2. The bearing surfaces on the follow rest are similar to those on the steady rest, and should be lubricated to prevent premature wear.

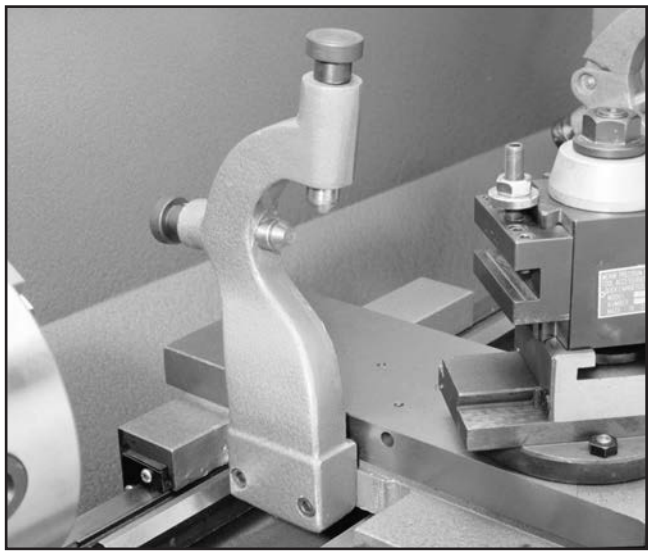


Figure 11. Follow rest secured to saddle.

4-Jaw Chuck

The 4-jaw chuck supplied with the G4003 is not mounted to the back plate. Assembly of the back plate components is also required.

1. Make note of the reference lines on each of the 3-jaw chuck studs. Thread each of the 4-jaw chuck cam lock studs into the 4-jaw chuck back plate to the exact same depth as the 3-jaw studs. Screw in the locking cap screws.

2. Mount the back plate on the spindle.

3. Accurately measure the inside of the back relief bore on the 4-jaw chuck. This dimension is critical, ± .001".

4. Face the back plate to true it. Make passes across the face until its entire surface has been cut.

5. Turn a shoulder into the face ⅛" deep and .001" to .002" larger than the back relief bore diameter. Chamfer the corner a small amount.

6. Set the chuck on the back plate aligning the shoulder with the relief bore. Use a transfer punch to mark the back plate. If a transfer punch is not available, a drill bit of the same size as the mounting holes in the chuck can be used. Lightly tap on the bit, rotate it 90° and tap it again.

7. Remove the chuck from the back plate and center punch the marks. Drill and tap the holes for ⅜"-16.

8. Set the chuck on the back plate. Line up the mounting holes and thread in the cap screws supplied. Remember that this is a .001" to .002" press fit. Snug up the first cap screw then alternate to the cap screw across the chuck. Alternating the tightening process insures the chuck will go on straight. This step should be repeated until the back plate fits snugly against the chuck. If the chuck fits loosely on the back plate, or is crooked on the shoulder, it will be necessary to face and shoulder the back plate again.

SECTION 4: CONTROLS

Spindle Speeds

Never change speeds while spindle or motor is in motion.

The speed of the spindle is controlled by the positions of the speed control knobs. See **Figure 12**. By positioning the knobs using the chart in Figure 8, you can achieve all of these speed ranges: 70, 200, 220, 270, 360, 600, 800, 1000 and 1400 RPM.

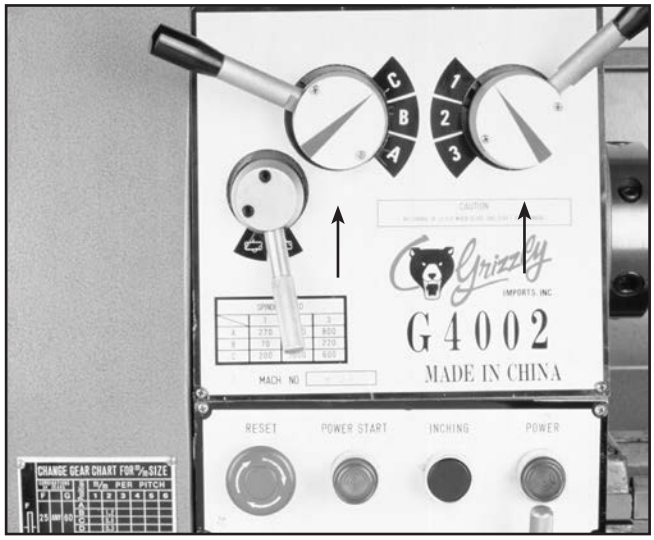


Figure 12. Speed shifting levers.

Spindle Speed

	1	2	3
A	270	1400	800
B	70	360	220
C	200	1000	600

Figure 13. Speed chart.

The chart above shows the various combinations of knob positions for achieving a desired speed.

Example:

To select a spindle speed of 600 RPM, move the left-hand selector knob until the indicator arrow on its hub is pointing to the “C”. Move the right-hand selector knob until its indicator arrow is pointed at the “3”.

Feed Direction

Never move selection levers while machine is running.

The G4003 Metal Lathe can cut left or right while feeding or threading and across both ways for facing operations. This feed direction is controlled by the selection knob as shown in **Figure 14**.

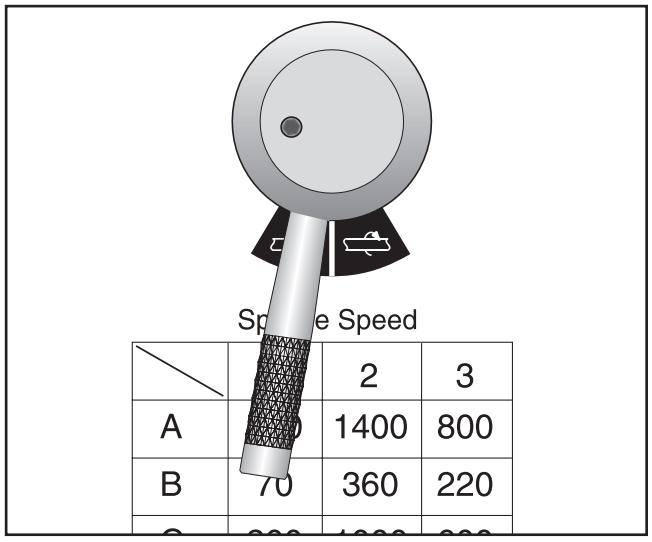


Figure 14. Directional control lever.

When the selection knob is positioned as depicted in **Figure 14**, the apron will move to the right along the bed or the cross feed will travel away from the operator. The cross feed and longitudinal feed selection is controlled on the apron and will be discussed later.

To reverse the direction of the feeding or threading operation, rotate the selection knob to the right. It should be noted that when the lever is positioned in the middle, no direction is selected and all of the drive mechanisms after this point are in neutral.

Important:

Do not force any selection lever on the machine. If the lever will not engage, rotate the chuck by hand while keeping light pressure on the selector. As the chuck rotates it aligns the gears and the selector will engage.

Selecting the Feed Rod

The feed rod can be selected by rotating the handle to the left as in **Figure 15**. Use this position for all feeding operations. When the lever is positioned straight up, no drive device is selected and the gear train is in neutral after this point.

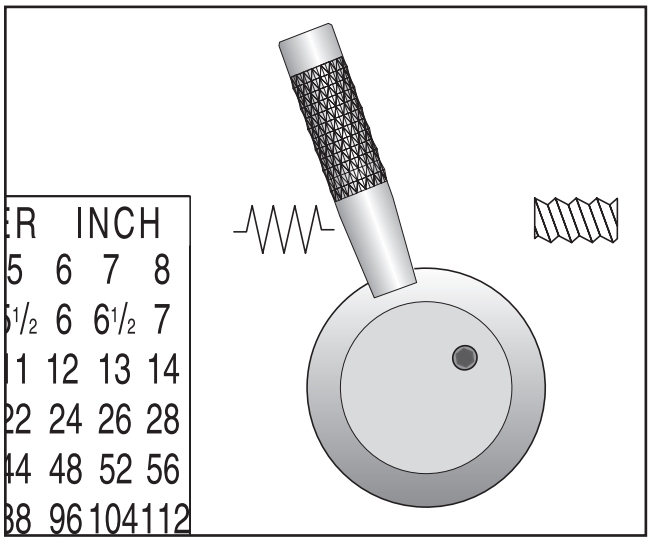


Figure 15. Feed rod selected.

Quick Change Selection

The two levers at the bottom of the headstock change the feed rate, or the number of threads-per-inch. This section of the machine is commonly known as the Quick Change Gear Box. See **Figure 16**. The left-hand lever can be engaged in any of five different positions and are listed on the charts as A, B, C, D, and E. The right-hand lever has 8 positions and are listed on the charts as 1 through 8.

The machine label describes some of the more typical settings which might be used. **Figure 17** shows the feed rate chart located on the gear cover of the lathe. The chart is divided into metric feed rates and inch feed rates.

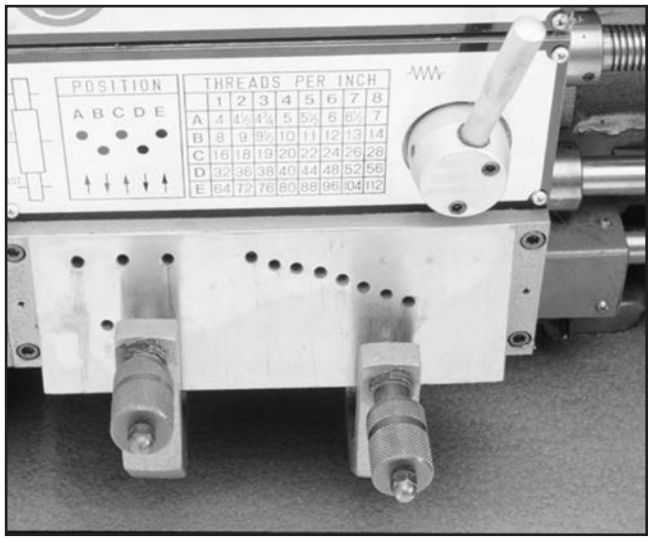


Figure 16. Feed rate selector levers.

Important:
Do not force any selection lever on the machine. If the lever will not engage, rotate the chuck by hand while keeping light pressure on the selector. As the chuck rotates, it aligns the gears and the selector will engage.

To change the position of the feed selector, pull the knurled handle. This disengages a pin which is inserted into a selection hole. Position the lever in the down position and slide to the right or left until it is positioned below the desired selection hole. Raise the lever with one hand while pulling the handle with the other. The pin at the end of the lever should align with the selection hole. If it does not, rotate the feed rod or chuck by hand while maintaining gentle pressure on the lever.

Feed Rate Chart

To perform a longitudinal cut in inches, use the bottom portion of the chart. If the desired feed rate is 0.0062"/revolution, look at the longitudinal ranges. According to the chart we would put the left-hand lever in the “C” position and the right-hand lever in the “4” position. Metric calculations would be done the same way. To perform a cross feed cut with a feed rate of 0.0013" move the left-hand lever to the “D” position and the right-hand lever to the “1” position.

Please note that when either of the two selector levers are left in the down position, the drive train after this point is in neutral.

40T
86T
40T

Position		1	2	3	4	5	6	7	8
		mm C.T.							
A	~	0.791	0.703	0.666	0.632	0.575	0.527	0.486	0.452
	⋕	0.268	0.238	0.226	0.214	0.196	0.178	0.166	0.154
B	~	0.395	0.351	0.333	0.316	0.287	0.264	0.243	0.226
	⋕	0.134	0.119	0.113	0.107	0.098	0.089	0.083	0.077
C	~	0.198	0.175	0.167	0.158	0.144	0.132	0.122	0.113
	⋕	0.067	0.060	0.057	0.054	0.049	0.045	0.042	0.038
D	~	0.099	0.088	0.083	0.079	0.072	0.066	0.061	0.057
	⋕	0.033	0.030	0.028	0.027	0.025	0.022	0.021	0.019
E	~	0.050	0.044	0.042	0.040	0.036	0.033	0.031	0.028
	⋕	0.017	0.015	0.014	0.014	0.012	0.011	0.011	0.010
		inch							
Position		1	2	3	4	5	6	7	8
A	~	0.0311	0.0277	0.0262	0.0249	0.0226	0.0207	0.0191	0.0178
	⋕	0.0105	0.0094	0.0089	0.0084	0.0077	0.0070	0.0065	0.0061
B	~	0.0156	0.0138	0.0131	0.0124	0.0113	0.0104	0.0096	0.0089
	⋕	0.0053	0.0047	0.0044	0.0042	0.0039	0.0035	0.0032	0.0030
C	~	0.0078	0.0069	0.0066	0.0062	0.0057	0.0052	0.0048	0.0044
	⋕	0.0026	0.0024	0.0022	0.0021	0.0019	0.0018	0.0017	0.0015
D	~	0.0039	0.0035	0.0033	0.0031	0.0028	0.0026	0.0024	0.0022
	⋕	0.0013	0.0012	0.0011	0.0011	0.0010	0.0009	0.0008	0.0007
E	~	0.0020	0.0017	0.0017	0.0016	0.0014	0.0013	0.0012	0.0011
	⋕	0.0007	0.0006	0.0006	0.0006	0.0005	0.0004	0.0004	0.0004

Figure 17. Feed rate selection.

~ This symbol indicates longitudinal feed.
⋕ This symbol indicates cross feed rates.

Feed Lever - Longitudinal and cross slide powered motions are controlled by the feed lever. The lever pivots through two stops which require moving the lever left and right as well as up and down. Moving this lever upward activates the automatic longitudinal feed. Moving the lever down activates the cross slide. See **Figure 18**.

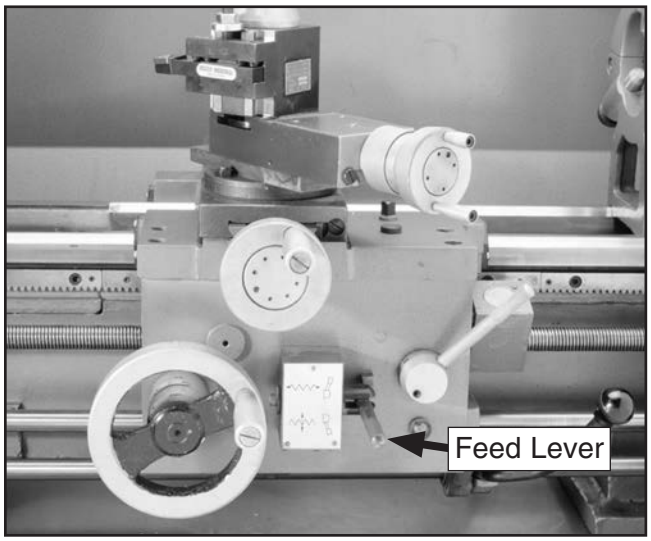


Figure 18. Feed lever in neutral position.

Thread Selection

Inch thread selection:

To cut threads with inch pitches, a selection must be made for feed direction, pitch and lead screw.

Select the desired direction of cut as described in the section titled **Feed Direction**.

Rotate the Feed/Lead Screw selection lever to the position shown in **Figure 19**. If the lever does not readily engage, rotate the lead screw or the chuck by hand while maintaining gentle pressure on the lever.

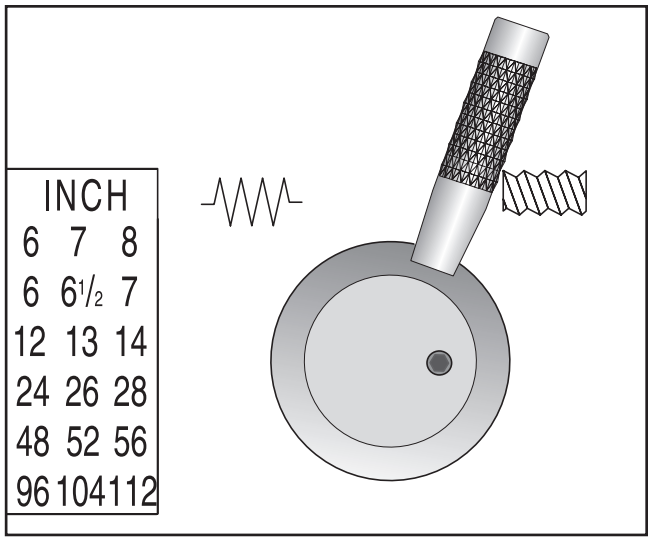


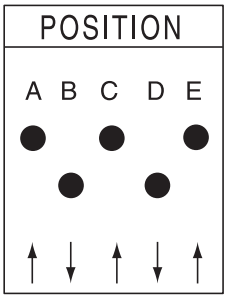
Figure 19. Selector positioned for threads.

While other thread pitches may be achieved, the G4003 comes with a chart that requires no gear changes for cutting inch threads.

To achieve a desired thread pitch in inches, it is necessary to determine the quick-change lever positions. Refer to **Figure 20** and find the desired thread.

Example:

The thread to be cut has 20 threads per inch (TPI). Looking at the chart we find that the left hand lever would be positioned at “C”. The right hand lever would be positioned at “4”.



THREAD PER INCH								
	1	2	3	4	5	6	7	8
A	4	4½	4¾	5	5½	6	6½	7
B	8	9	9½	10	11	12	13	14
C	16	18	19	20	22	24	26	28
D	32	36	38	40	44	48	52	56
E	64	72	76	80	88	96	104	112

Figure 20. Thread pitch chart.

NOTICE

The threading dial cannot be used when cutting metric threads. Once the half nut has been engaged, it must remain engaged throughout the threading process.

Half Nut Lever - This lever compresses and releases the half nut that engages the leadscrew. See **Figure 21**. The lever is only engaged while turning threads in stock. A lockout device featured in the lever mechanism engages when the feed selector is used.

NOTICE

Do not simultaneously engage the feed lever and the threading lever. Doing so will damage the lathe.

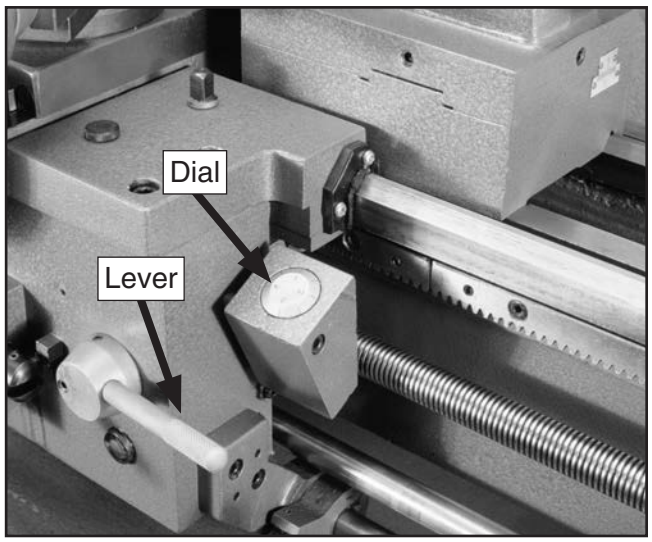


Figure 21. Threading dial and half nut lever.

Threading Dial Indicator - The indicator tells you when to engage the half nut to begin the threading process. See **Figure 21**.

The Threading Dial Indicator has 8 lines and four numbers printed on the dial. An indicator mark is positioned near the rim of the dial. The dial is mounted on a shaft that has a worm gear mounted at its opposite end. These rest in a housing that pivots so that the gear can be engaged or disengaged. An Allen® head cap screw is located on the side of the housing. Loosen this screw to change the positioning of this housing.

When engaged, the dial will turn when the spindle is turning. If the dial does not turn, readjust the housing.

When the half nut is engaged the dial stops turning. By carefully engaging the half nut as the appropriate line or number passes by the indicator mark, a thread can be established and the lead maintained through the multiple passes that are required to cut a thread to the finished depth.

The chart listed in **Figure 22** shows a system for using the threading dial indicator while cutting inch threads.

Example:

To cut 11 threads per inch engage the half nut when the 1 or the 3 is on the indicator mark. Determine the length of the thread to be cut. Make a cut along the part and disengage the half nut. Return the carriage to the beginning of the cut. Watch the dial and when the 1 or the 3 comes around to the indicator mark engage the half nut. Repeat this process until the desired depth of cut has been achieved.

4	N	8	ANY	16	ANY	32	ANY	64	ANY
4½	1	9	1-3	18	N	36	ALL	72	ANY
4¾	1	9½	1	19	1	38	N	76	ALL
5	1	10	N	20	ALL	40	ANY	80	ANY
5½	1	11	1-3	22	N	44	ALL	88	ANY
6	1-3	12	ALL	24	ANY	48	ANY	96	ANY
6½	1	13	1-3	26	N	52	ALL	104	ANY
7	1	14	N	28	ALL	56	ANY	112	ANY

ANY = Engage at any time
ALL = Engage on all lines
N = Engage on any Number
1-3 = Engage on 1 or 3
1 = Engage only on 1

Figure 22. Dial indicator chart.

Metric thread selection:

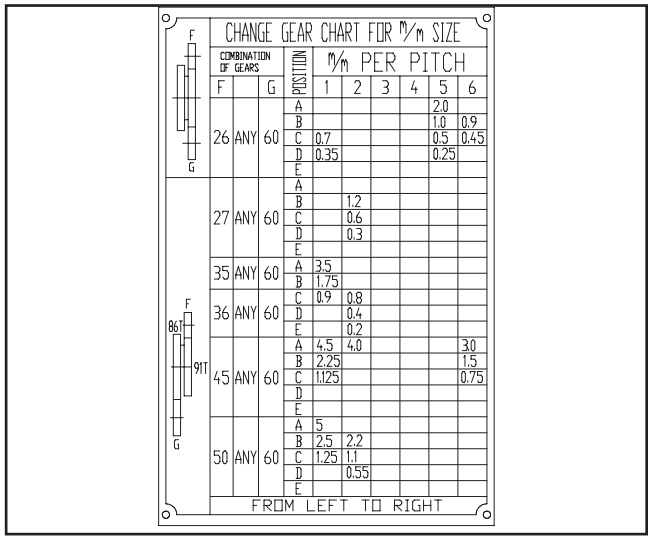
The chart in **Figure 23** lists 30 metric threads that can be cut on the G4003. Five ranges are used on the left hand quick change selector and 6 on the right hand quick change selector. Additionally, 5 gear changes are necessary to accomplish all of the available metric threads. These gear changes take place on the left hand end of the machine. See **Figure 23**.

The chart is divided into 3 main sections or columns. Starting from the left: Gear diagram, Combination of Gears and m/m Per Pitch.

To use the chart:

1. Find the desired pitch in the chart.

2. Below the m/m Per Pitch label are numbers. Find the corresponding number above the desired pitch and change the right hand quick change lever to that position.



CHANGE GEAR CHART FOR m/m SIZE

COMBINATION OF GEARS			POSITION	m/m PER PITCH					
F		G		1	2	3	4	5	6
26	ANY	60	A					2.0	
			B					1.0	0.9
			C	0.7				0.5	0.45
			D	0.35				0.25	
			E						
27	ANY	60	A						
			B		1.2				
			C		0.6				
			D		0.3				
			E						
35	ANY	60	A	3.5					
			B	1.75					
36	ANY	60	C	0.9	0.8				
			D		0.4				
			E		0.2				
45	ANY	60	A	4.5	4.0				3.0
			B	2.25					1.5
			C	1.125					0.75
			D						
			E						
50	ANY	60	A	5					
			B	2.5	2.2				
			C	1.25	1.1				
			D		0.55				
			E						

FROM LEFT TO RIGHT

Figure 23. Metric thread chart.

3. To the left of the desired pitch is a small column with a letter. This letter indicates placement of the left hand quick change lever. Move the lever to the corresponding location.

4. In the “Combination of Gears” column are 3 small columns. Please note the “F” and “G” at the top. The numbers below F and G represent the number of gear teeth of a gear included with the lathe. Find the gears that have the corresponding number of teeth as stated in the chart to the left of the desired pitch.

Example:

The desired metric pitch is 1.25mm. Find this number in the chart and find the number of teeth of the two gears to the left. The F gear will need to have 50 teeth and the G gear will need 60 teeth (see **Figure 24**). A diagram on the left side of the chart on the machine tells us the 50-tooth gear goes on top of the middle gear and the 60-tooth gear goes on the bottom.

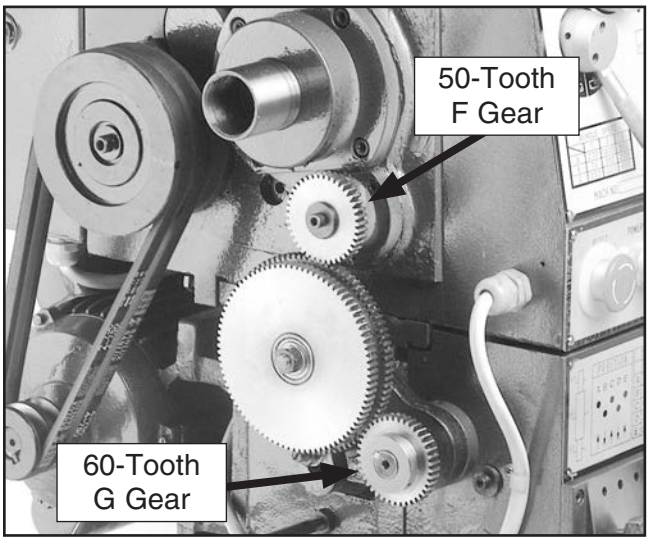


Figure 24. Change gears for 1.25mm pitch.

Metric threading requires 5 gear changes to achieve all of the available pitches listed on the chart. Refer to **Figure 25** while reading the instructions below.

To change gears:

1. Loosen the nut below the middle gear and rotate the bracket so the middle gear moves away from gear F.

2. Loosen the cap screw at the center of the middle gear and slide it away from gear G.

3. Gear F can be removed by loosening the cap screw in its middle. Gear G has a setscrew in its rim. Loosen this screw and pull the gear off of the shaft.

4. Replace these two gears with the gears which will produce the desired pitch and secure with screws provided.

5. Slide the middle gear until it is in mesh with the G Gear. Tighten the cap screw at the center.

6. Pivot the bracket until the middle gear is in mesh with gear F and tighten the nut below.

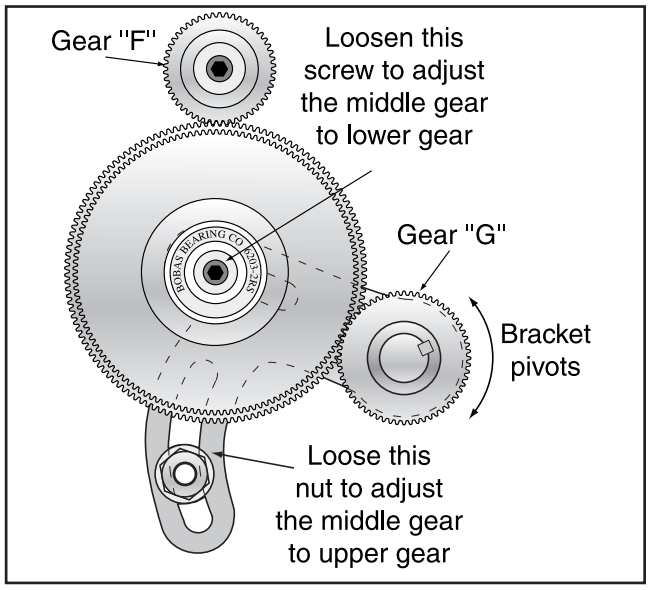


Figure 25. Gear placement.

Carriage Controls

The carriage handwheel allows the cutting tool to move along the length of the lathe bed. The cross slide allows the cutting tool to travel perpendicular to the bed. The carriage features a top slide which allows linear movement of the cutting tool at any preset angle. This section will review the individual controls on the carriage and provide descriptions of their uses. See **Figure 26**.

Compound Slide Handwheel - The Top Slide Handwheel controls the position of the cutting tool relative to the workpiece. The top slide is adjustable for any angle. The graduated dial is adjustable using the same method as the dial on the cross slide. Angle adjustment is controlled by hex nuts on the base of the top slide.

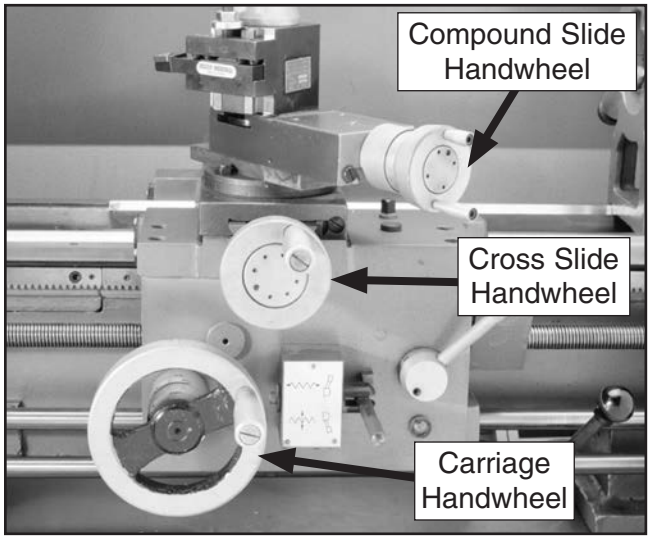


Figure 26. Handwheel locations.

Cross Slide Handwheel - The Cross Slide Handwheel moves the top slide toward and away from the work. Turning the dial clockwise moves the slide toward the workpiece. The graduated dial can be adjusted by holding the handwheel with one hand and turning the dial with the other.

Carriage Handwheel - The Longitudinal Handwheel moves the carriage left or right along the bed. The control is helpful when setting up the machine for turning or when manual movement is desired during turning operations.

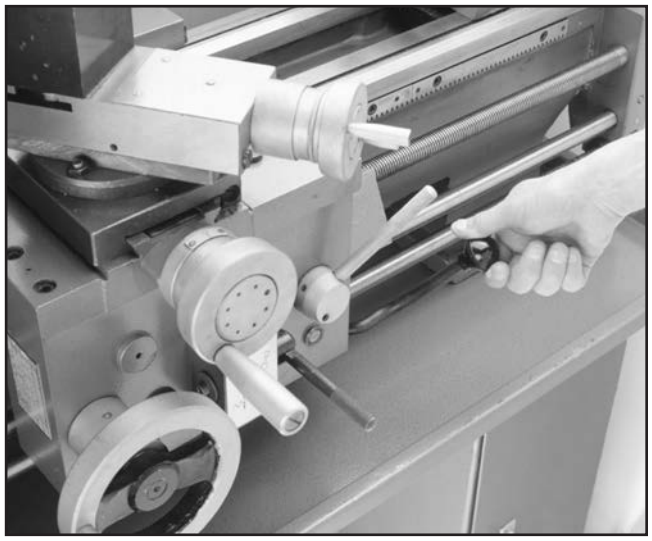


Figure 27. Spindle rotation control lever.

Spindle rotation control - The spindle rotation is controlled from the lever on the right hand side of the carriage. Moving the lever down causes the spindle to rotate counter clockwise. Moving the lever up causes the spindle to turn clockwise. The middle position stops the motor and the lever is considered to be in a neutral position. See **Figure 27**.

Tool Post & Holder

Tool post - A quick change tool post and 2 tool holders are supplied with the Model G4003. **Figure 28** shows tool post and a holder with optional bit. Cutting tools can be secured and removed by tightening or loosening the clamping screws in the top of the holder. A threaded stud is mounted in the top of the holder and has a knurled thumb wheel. Rotating the thumb wheel allows for adjustment of the tool holder so the cutting tool can be centered. The handle on the tool post can be rotated to lock and unlock the tool holder onto the dovetail ways. The tool post may be rotated by loosening the nut at the top of the tool post.

More styles of tool holders are available through Grizzly Industrial, Inc. Consult the latest catalog for styles, prices and ordering information.

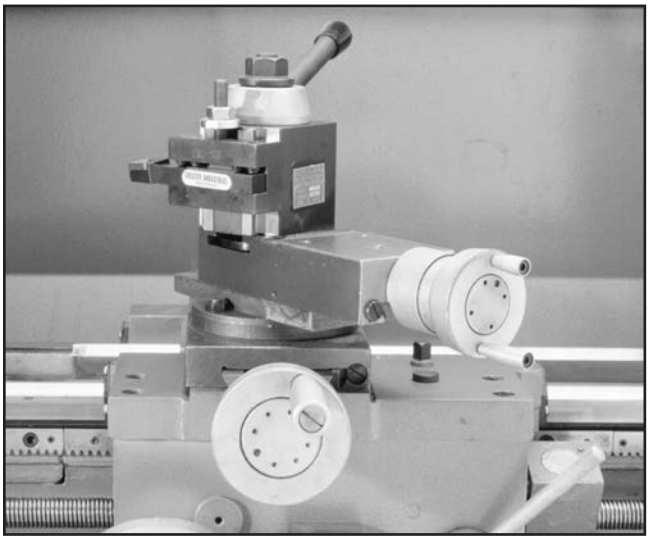


Figure 28. Quick change tool post.

Tailstock Controls

The tailstock serves many functions. The primary use is for holding centers and drill chucks. The barrel has a Morse taper #3 bore and is imprinted with graduations in millimeters and inches. Please refer to **Figure 29**.

Tailstock Handwheel - Turning the handwheel advances or retracts the barrel in the tailstock. The graduated dial on the handwheel is adjustable.

Top Lock Lever - This lever locks the tailstock barrel in place.

Side Lock Lever - This lever locks the tailstock in place on the lathe bed.

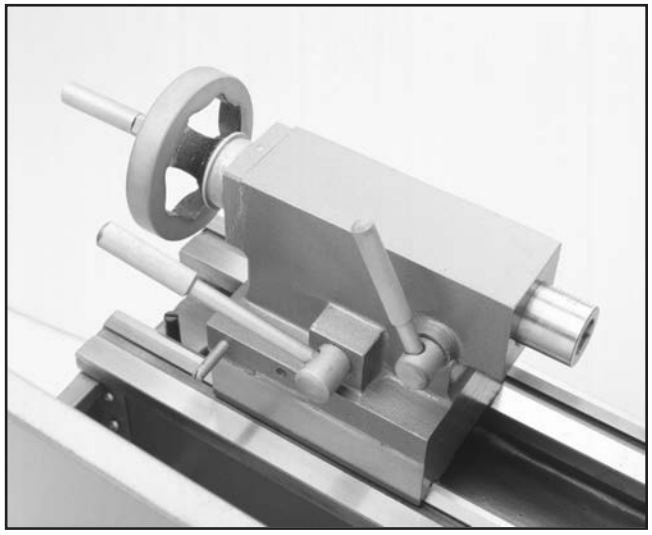


Figure 29. Detail of tailstock controls.

⚠WARNING

Always make sure the power switch is in the "off" position and the spindle control lever is in the neutral position before plugging in power cord.

Test Run

Now that the lathe is securely in place and you've read the safety guidelines, it's time to give the machine a test run.

Before starting the machine:

1. Make sure the machine is properly grounded, the Power Switch is in the "OFF" position and the spindle control lever is in the neutral position. See **Figure 30**.

2. Inspect the machine to ensure that all hand tools are out of the way, guards are in place and nothing is impeding the movement of the chuck. Check this by rotating the chuck by hand.

3. Rotate the stop switch, on the headstock of the lathe, in the direction indicated by the arrows imprinted on the button.

4. Lower the control lever on the apron. The spindle should start turning in a counter clockwise direction.

If the direction is reversed, contact our service department for further instructions.

5. If the lathe is running correctly, lift the spindle control lever to the neutral position, wait for the machine to come to a complete stop and take some time to become familiar with the various controls.

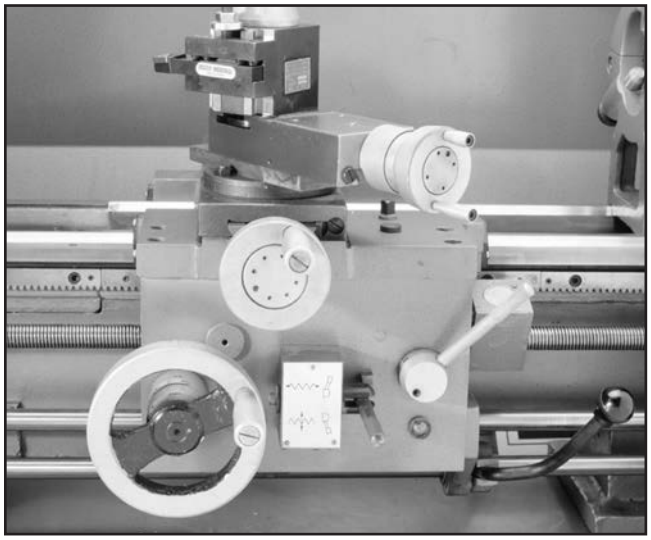


Figure 30. Carriage control lever in neutral.

SECTION 5: ADJUSTMENTS

Gibs

There are three main gib adjustments for the Model G4003. They are: the cross-slide gib, the compound slide gib and the saddle gib.

Cross-slide Gib - The gib on the cross-slide is adjusted by the two screws located at each end. See **Figure 31**. To adjust, loosen the set-screw located along the edge of the cross-slide. This setscrew is provided for locking the slide for certain operations. After making the adjustments detailed below, tighten the setscrew until it just touches the gib.

The gib is wedge shaped and by loosening the screw closest to the operator and then tightening the opposite screw, the slide will become looser. Conversely, loosening the screw furthest away from the operator and tightening the closer screw will tighten the gib. Do not over tighten. Adjust the gib so that it creates a slight drag when the slide is in motion. Test the ease of motion with the gib slightly loose. Begin tightening the gib and test after making small adjustments. When a slight drag is detected the gib is properly adjusted.

NOTICE

When adjusting gibs, keep in mind that the goal of gib adjustment is to remove unnecessary sloppiness from the slide's movement without causing them to bind. Loose gibs may cause poor finishes on the workpiece. Over tightening may cause premature wear.

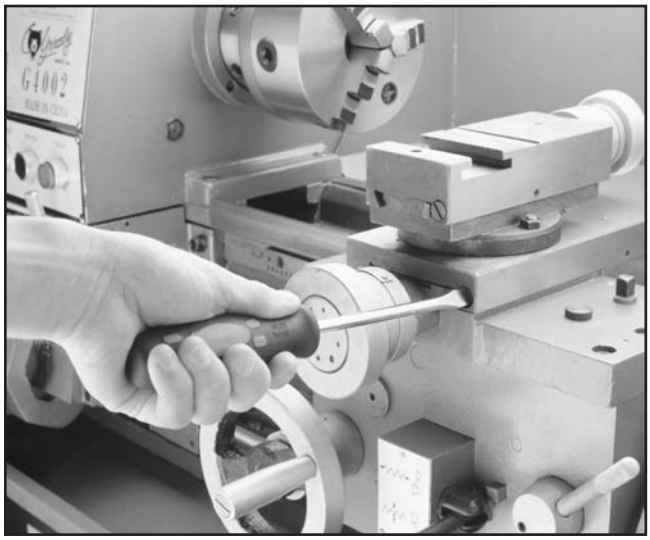


Figure 31. Adjusting the cross-slide gib.

Compound Gib - The gib on the compound is adjusted by the same method as the gibs on the cross-slide, except the screw closest to the operator (when the compound slide is aligned with the cross slide) must be loosened and the screw furthest from the operator tightened to make the gib tighter. See **Figure 32**.

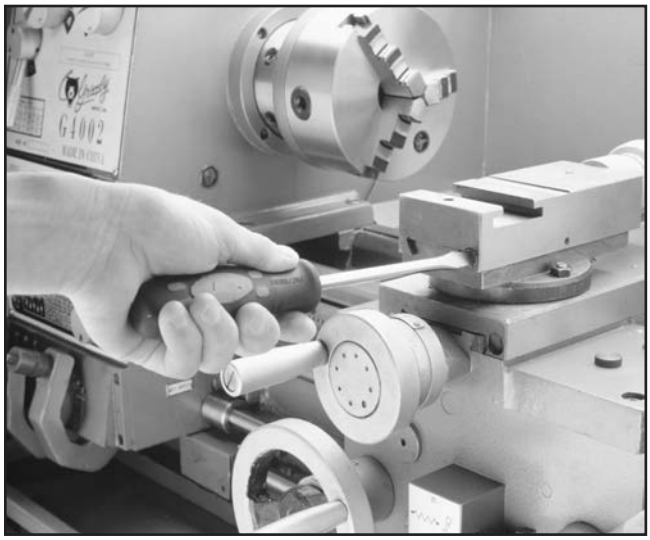


Figure 32. Tightening this screw tightens gib.

Saddle Gib - The saddle is supplied with a square head bolt on the front right hand side of the slide. Before making adjustments to the saddle gib, ensure that this bolt is loose by turning it counter clockwise. See **Figure 33**.

It is important that the apron gib be properly adjusted. A loose gib will cause finish problems in a workpiece. A gib adjusted too tightly will cause premature wear.

The gib for the saddle is located on the bottom of the back edge of the slide. The tension on this gib is maintained by four setscrews with jam nuts. By loosening the jam nuts and tightening the setscrews, the gib will tighten. Loosening the setscrews will loosen the gib. The gib strip is properly adjusted when a slight drag is detected while moving the apron. Do not over tighten.

It is important the 4 setscrews are tightened evenly. When tightening the jam nuts, hold the setscrew's position using an Allen® wrench.

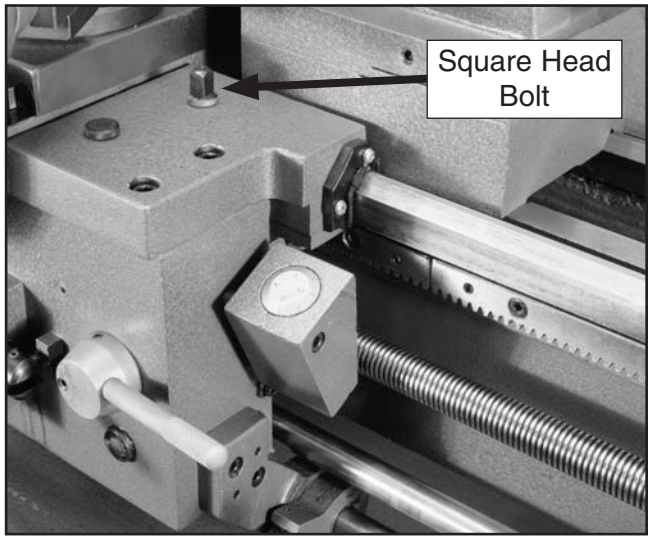


Figure 33. This bolt locks the apron in place.

Steady/Follow Rest

To adjust the Steady Rest:

1. Loosen the lock nuts. See **Figure 34**.

2. Open the sliding fingers by turning the knurled screws until they fit around the workpiece. Secure the steady rest in position.

3. Tighten the knurled screws so that the fingers are snug, but not tight against the workpiece. Tighten the setscrews and the lock nuts.

4. Lubricate the brass points with machine oil.

The Follow Rest is setup in the same manner except that the place of the third finger is taken up by the tool bit. The follow rest prevents long, small diameter pieces from flexing under the cutting pressure from the tool bit.

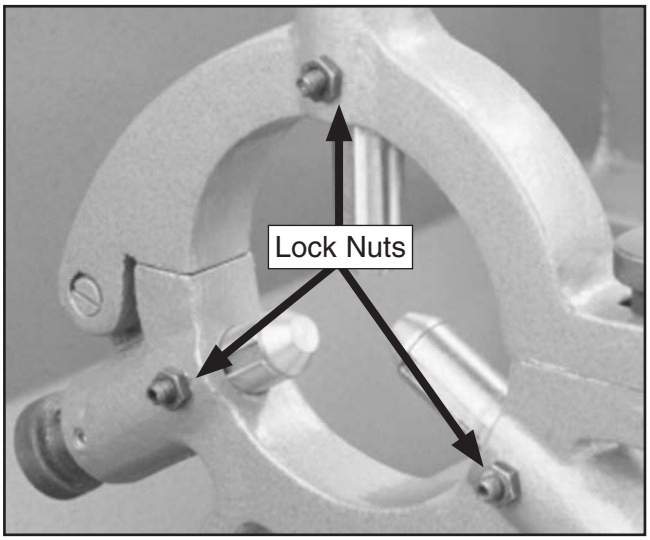


Figure 34. Steady rest lock nuts.

Tailstock

The tailstock on the Model G4003 is aligned at the factory with the headstock. It is recommended that you take the time to ensure that the tailstock is aligned to your own desired tolerances.

To align the tailstock:

1. Center drill a 6" long piece of bar stock on both ends. Set it aside for use in step 4.

2. Make a dead center by turning a shoulder to make a shank. Flip the piece over in the chuck and turn a 60° point. See **Figure 35**. As long as it remains in the chuck, the point of your center will be accurate to your spindle's axis. Keep in mind that the point will have to be refinished whenever it is removed and returned to the chuck.

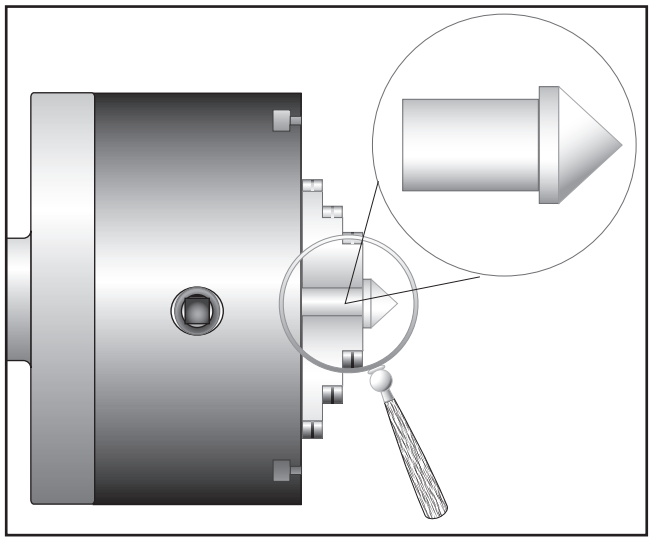


Figure 35. Finished dead center.

3. Place the live center in your tailstock.

4. Attach a lathe dog to the bar stock and mount it between the centers. See **Figure 36**.

5. Turn approximately .010" off the diameter.

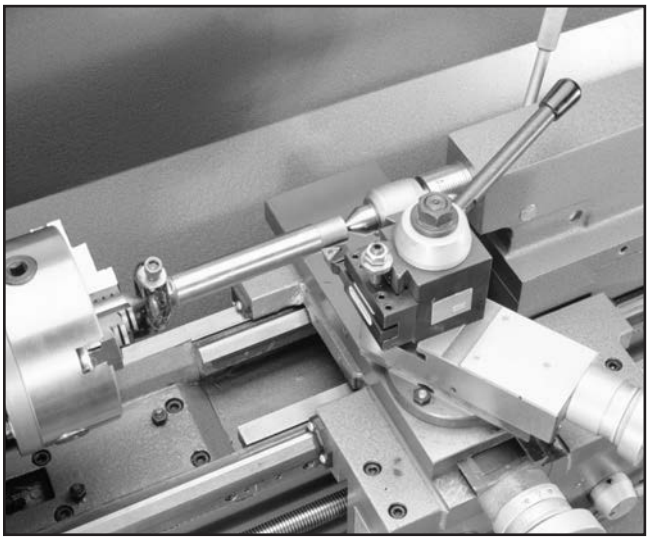


Figure 36. Bar stock mounted on centers.

TIP

Before making adjustments to the tailstock, mount a dial indicator so that the dial's plunger is on the tailstock barrel. **See Figure 37.**

6. Measure the stock with a micrometer. If the stock is fat at the tailstock end, the tailstock needs to be moved toward you the amount of the taper. See **Figure 37**.

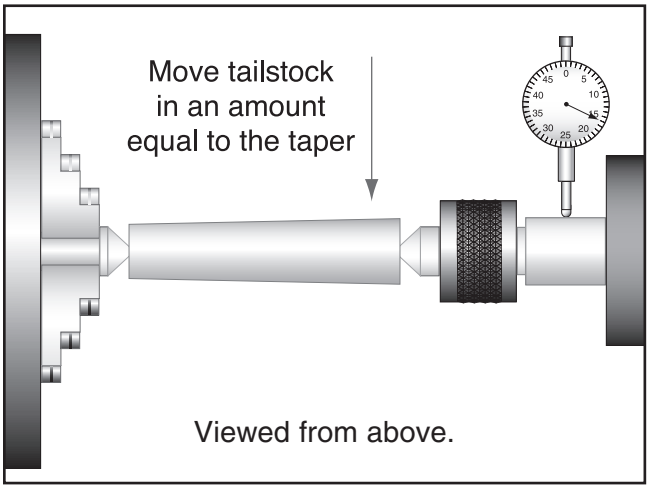


Figure 37. Adjusting for headstock end taper.

—If the stock is thinner at the tailstock end, the tailstock needs to be moved away from the operator by at least the amount of the taper. See **Figure 38**.

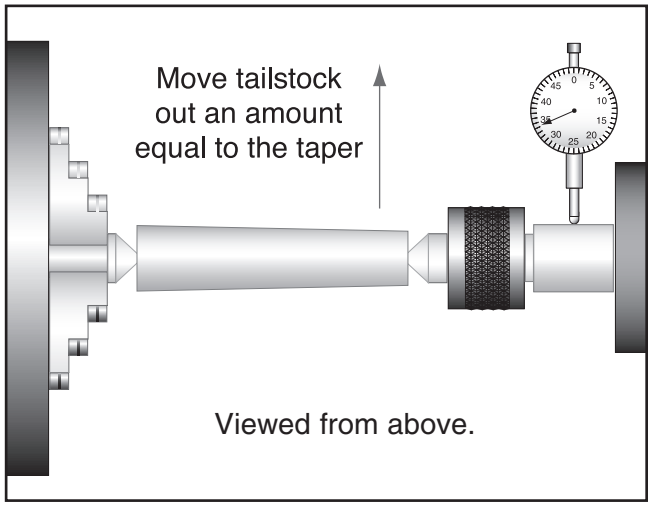


Figure 38. Adjusting for tailstock end taper.

7. Loosen the tailstock mounting bolt. Adjust the tailstock offset by the amount of the taper by turning the adjustment setscrews. See **Figure 39**. Turn another .010" off of the stock and check for taper. Repeat as necessary until the desired amount of accuracy is achieved.

NOTICE

Lock down the tailstock after each adjustment.

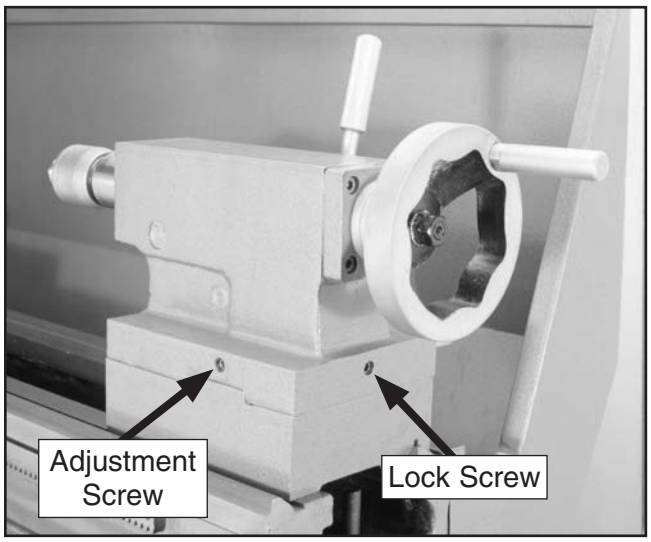


Figure 39. Tailstock offset adjustment screw.

SECTION 6: MAINTENANCE

⚠WARNING

Always disconnect the electric power to the machine before servicing. Never lubricate your lathe while it is running.

Lubrication

Component	Lubricant
Headstock.....	Grizzly T23963 (or ISO 32 equiv.)
Apron.....	Grizzly T23962 (or ISO 68 equiv.)
Ball Oilers.....	Grizzly T23963 (or ISO 32 equiv.)
Oil Ports.....	Grizzly T23963 (or ISO 32 equiv.)
Leadscrew	Grizzly T23962 (or ISO 68 equiv.)
Bed Ways	Grizzly T23962 (or ISO 68 equiv.)
End Gears	NLGI #2 Lithium Grease

Headstock Gearbox: The oil in the headstock should be changed after the first 2 hours of use, then every 6 months, depending on usage.

The headstock reservoir requires approximately 3.5 quarts of oil. Use Grizzly T23963 or another ISO 32 equivalent. The fill cap is located on top of the headstock. The drain plug and sight glass are located near the spindle nose (see **Figure 40**). Add oil until the oil level is in the middle of the sight glass.

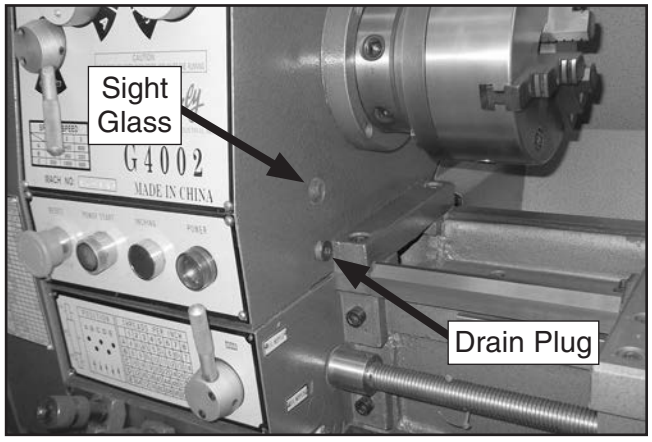


Figure 40. Headstock sight glass and drain plug.

Quick Change Gearbox: Lubrication for the Gearbox is provided through 3 oil points, labeled oil nipple. Add a squirt or two of oil after every three-to-four hours of use. See **Figure 41**.

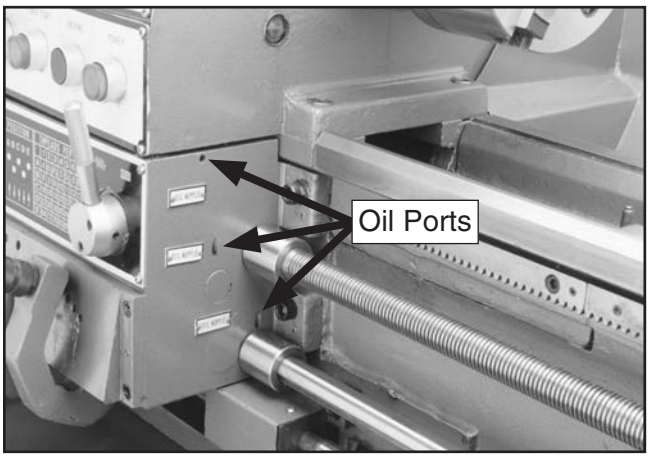


Figure 41. Gearbox lubrication points.

End Gears: Apply a thin coating of grease to the end gears. Avoid applying excess grease to the gears. Apply one squirt of ISO 32 oil into the port shown in **Figure 42**.

Note: *Problems can occur if excess grease is flung onto the V-belts during operation, causing a loss of power from the belts slipping on the pulleys. If this happens, remove and discard the contaminated V-belts, clean the pulleys with mineral spirits or solvent, and install new V-belts.*

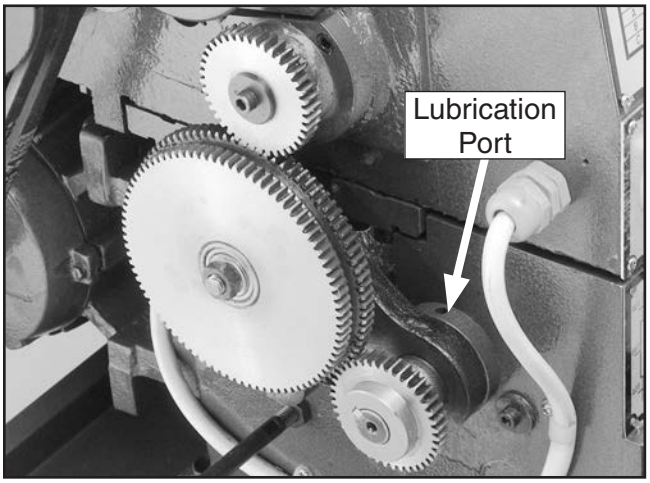


Figure 42. External gears and port.

Slides and Ways: Apply ISO 68 oil to the ways and slides after each use. Wipe the ways with a clean rag prior to lubrication to ensure that no grime is carried along with your lubricant into friction-sensitive areas. Applying oil to the bedways and other bare metal parts also protects the lathe from rust and pitting.

Apron: Use Grizzly T23962 or an ISO 68 equivalent. The drain plug is located underneath the apron. The fill plug is located on top of the apron. Add oil until the oil level is in the middle of the site glass, which is located on the face of the apron.

Saddle, Cross Slide and Compound Ball Oilers: Add 1-2 drops of oil to the ball oilers shown in **Figure 43**.

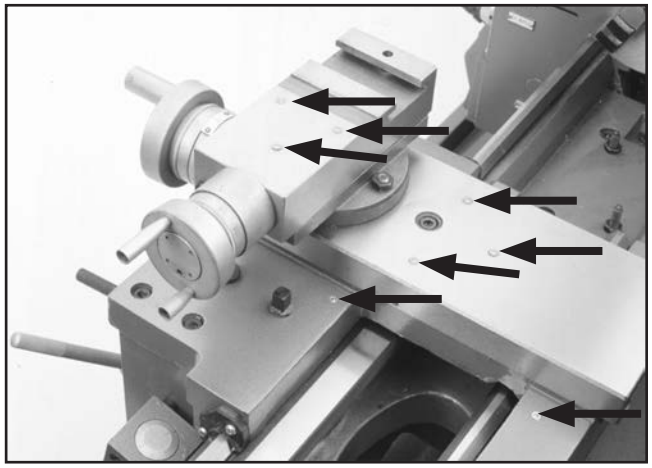


Figure 43. Saddle, cross slide, compound rest.

Lead Screw and Feed Rod: Be sure to clean and lubricate the leadscrew, feed rod and switch control rod. The lead screw and feed rod have a bearing on the tail stock end support that will require one to two squirts of oil. See **Figure 44**.

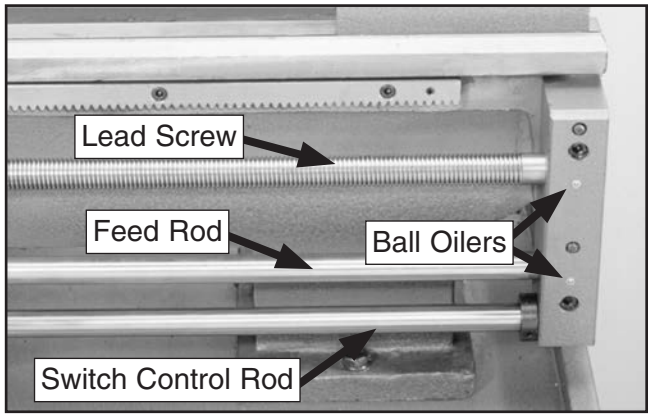


Figure 44. Lead screw, feed rod and switch rod.

Tailstock: The tailstock is fitted with one oiling port. The tailstock barrel may be oiled directly. Apply oil each week, or after every five uses (depending on the frequency of operation). Be sure to clean the slide ways for the tailstock and lift the tailstock and squirt a few drops of oil on the ways. It is a good idea to remove the tailstock once a month and wipe the bottom thoroughly and replace. See **Figure 45**.

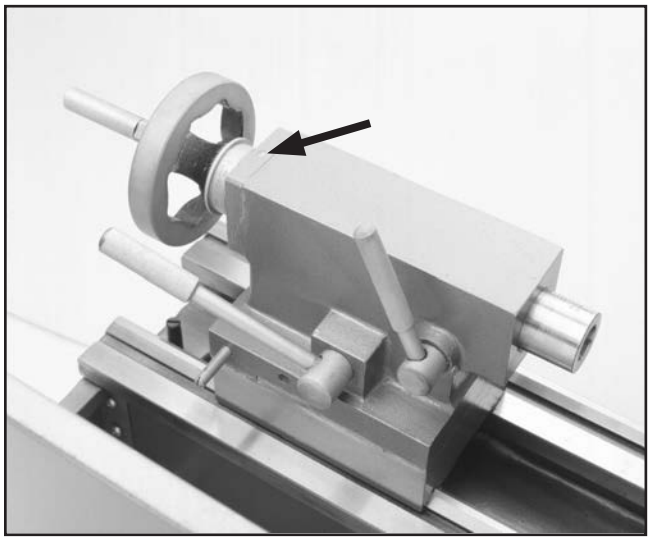


Figure 45. Tailstock oiling point.

Bearing Preload

This lathe is shipped from the factory with the bearing preload already set. If the preload requires resetting for whatever reason, please contact our service department for further instructions.

SECTION 7: 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.

G4005—Optional Lathe Stand for G4003
Measures 57"L x 15"W x 29"H. Approximate shipping weight: 157 lbs.

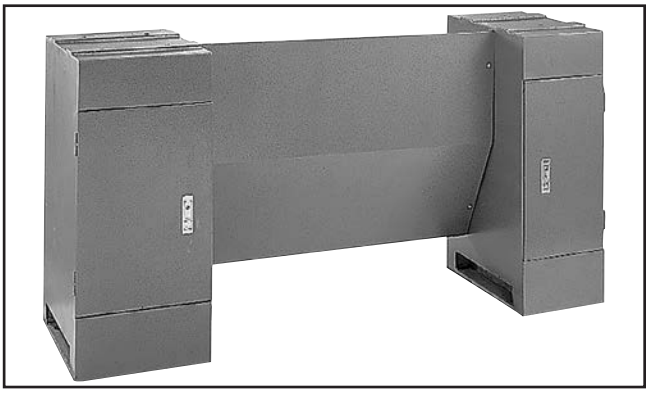


Figure 46. G4005 Lathe Stand for G4003.

T26419—Syn-O-Gen Synthetic Grease
Formulated with 100% pure synthesized hydrocarbon basestocks that are compounded with special thickeners and additives to make Syn-O-Gen non-melt, tacky, and water resistant. Extremely low pour point, extremely high temperature oxidation, and thermal stability produce a grease that is unmatched in performance.

Figure 47. T26419 Syn-O-Gen Grease.

T10556—Taper Attachment for Model G4003
The Model T10556 Taper Attachment provides precision outside and inside tapers up to 12" without having to offset the tailstock or disengage the cross slide. This allows the taper attachment to be used at any time by simply tightening the bed clamp bracket. However, the taper attachment does not interfere with other turning operations. The T10556 features scales at both ends, reading inches-of-taper per foot and angle of taper. An adjustment knob with fine threads achieves precise control when setting tapers.

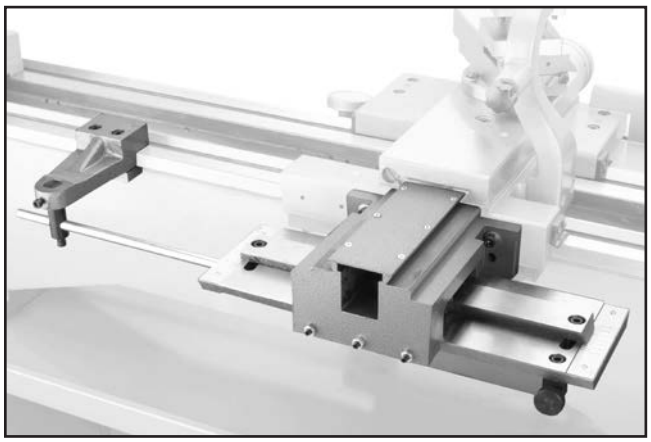


Figure 48. T10556 Taper Attachment.

T23962—ISO 68 Moly-D Way Oil, 5 gal.
T23963—ISO 32 Moly-D Machine Oil, 5 gal.
T26685—ISO 32 Moly-D Machine Oil, 1 gal.
Moly-D oils are some of the best we've found for maintaining the critical components of machinery because they tend to resist run-off and maintain their lubricity under a variety of conditions—as well as reduce chatter or slip. Buy in bulk and save with 5-gallon quantities.

Figure 49. ISO 68 and ISO 32 Moly-D oils.

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.

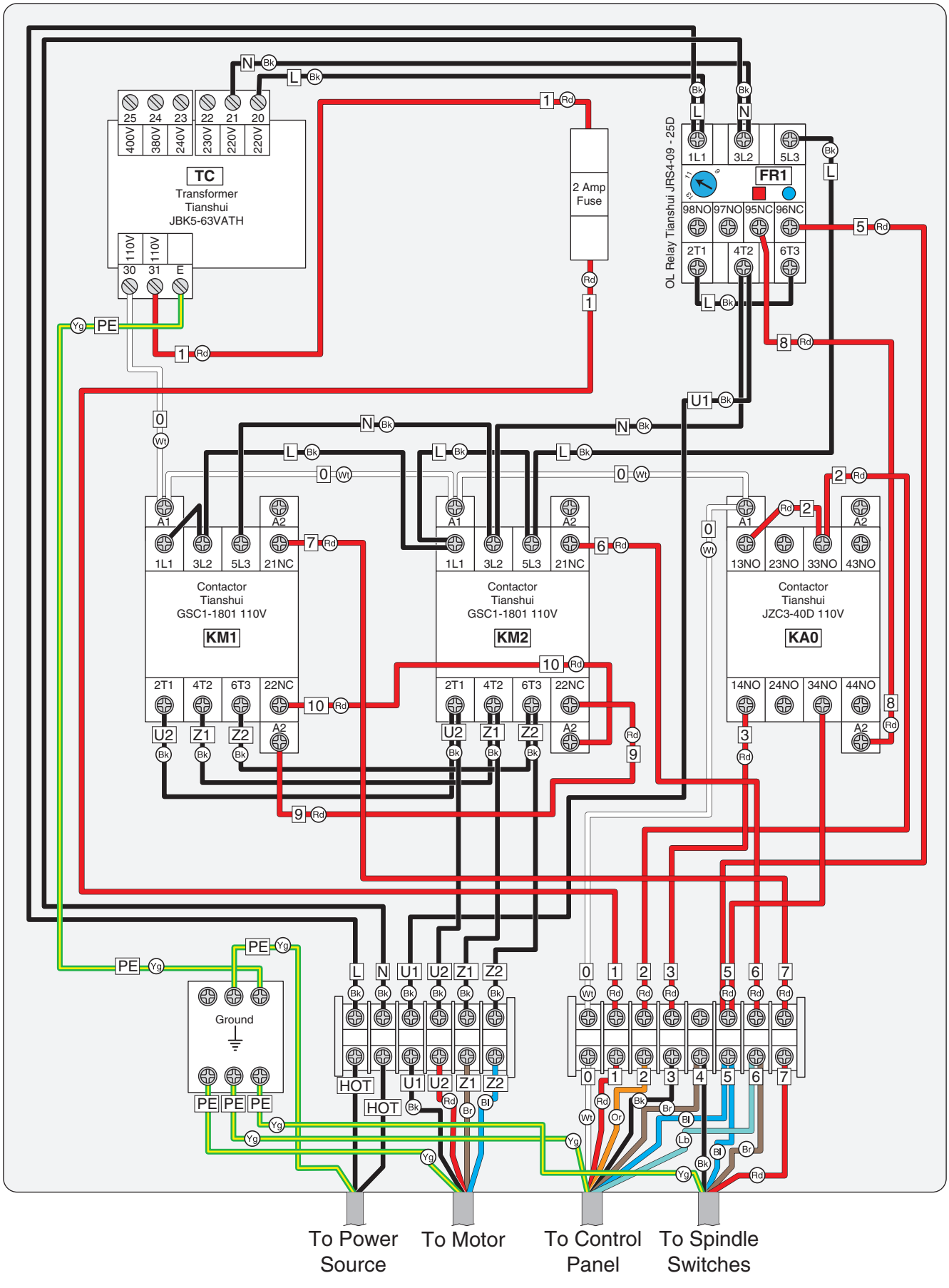
NOTICE

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

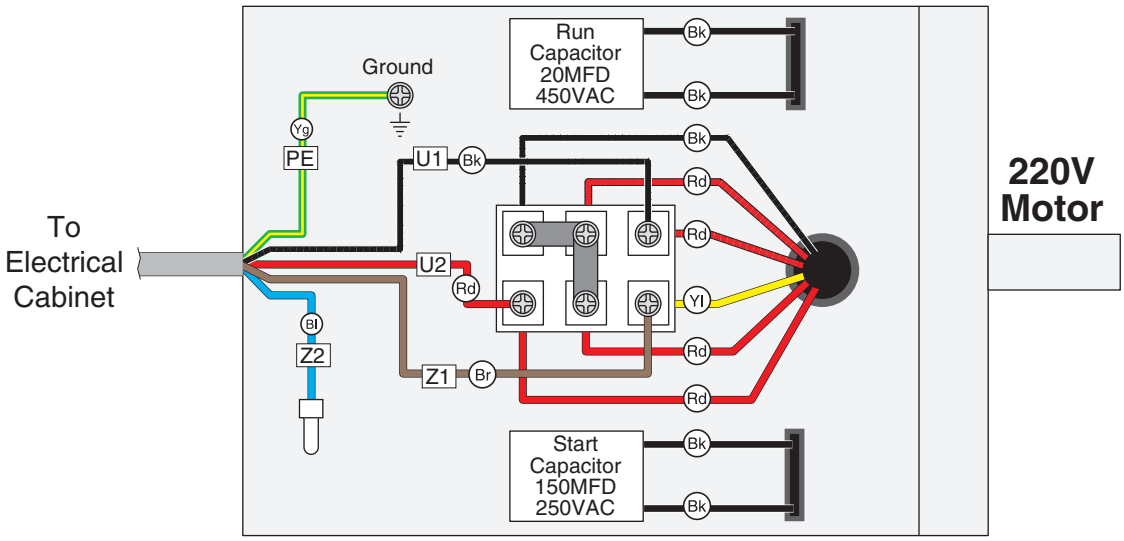
BLACK	Bk	BLUE	Bl	YELLOW	Yl	LIGHT BLUE	Lb
WHITE	Wt	BROWN	Br	YELLOW GREEN	Yg	BLUE WHITE	Bw
GREEN	Gn	GRAY	Gy	PURPLE	Pu	TURQUOISE	Tu
RED	Rd	ORANGE	Or	PINK	Pk		

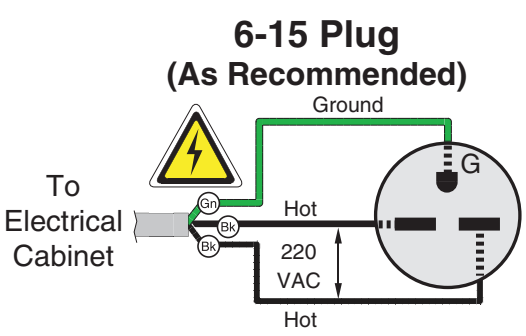
Electrical Cabinet Wiring Diagram

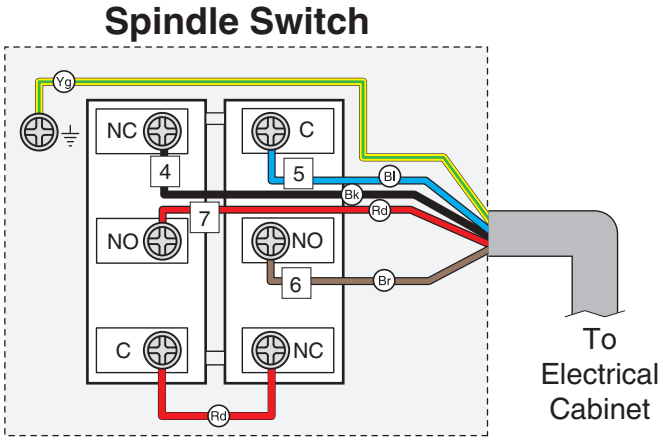


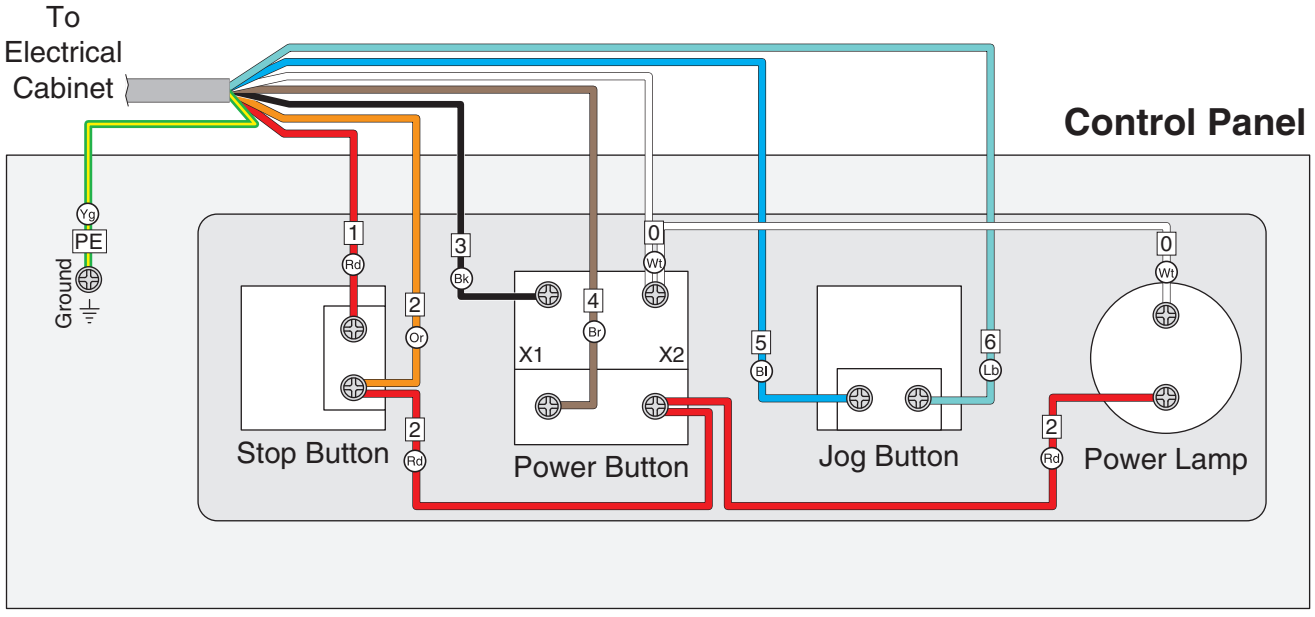
STOP READ ELECTRICAL SAFETY ON PAGE 36!

Motor & Control Panel Wiring Diagram





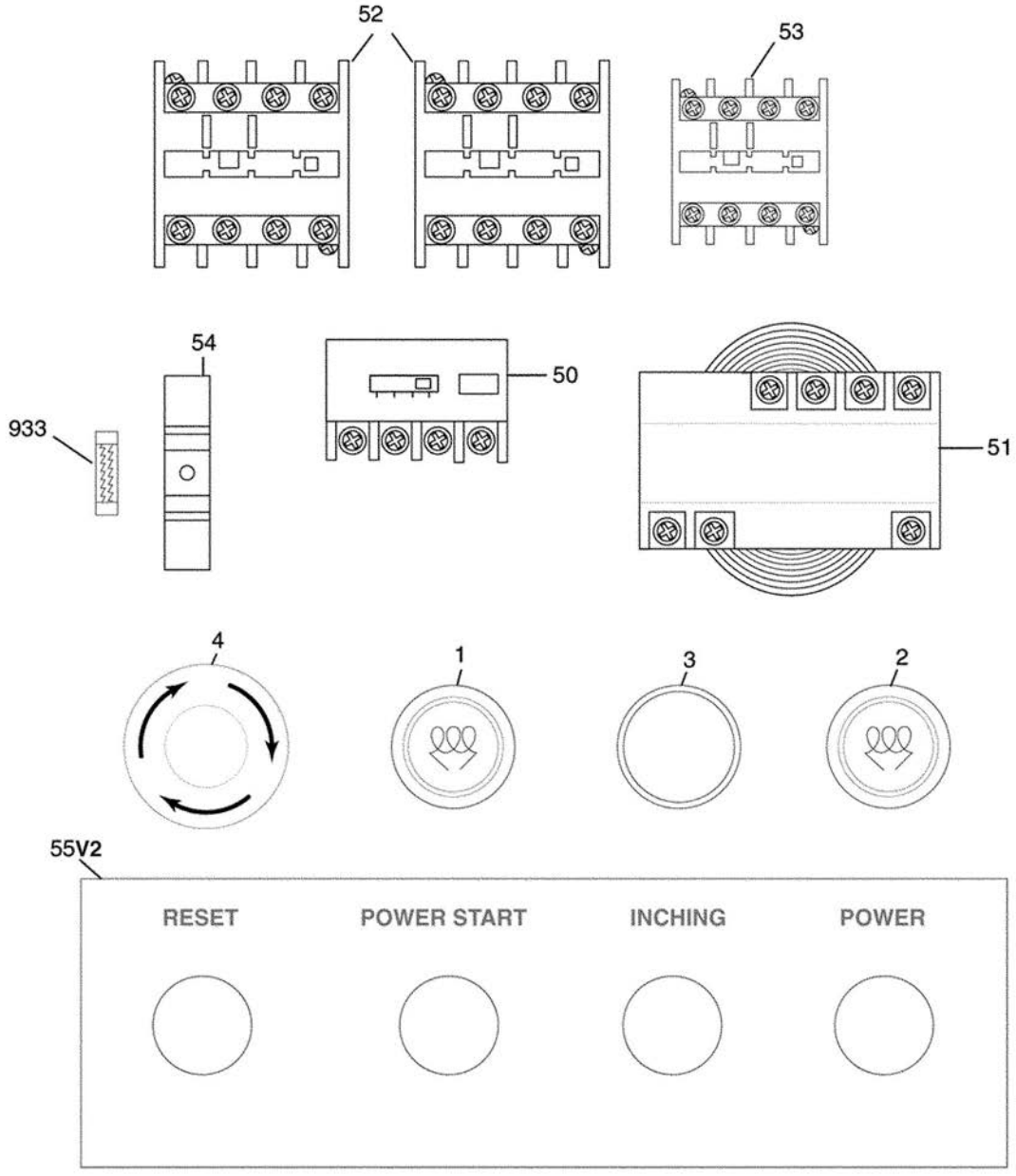




READ ELECTRICAL SAFETY ON PAGE 36!

SECTION 9: PARTS

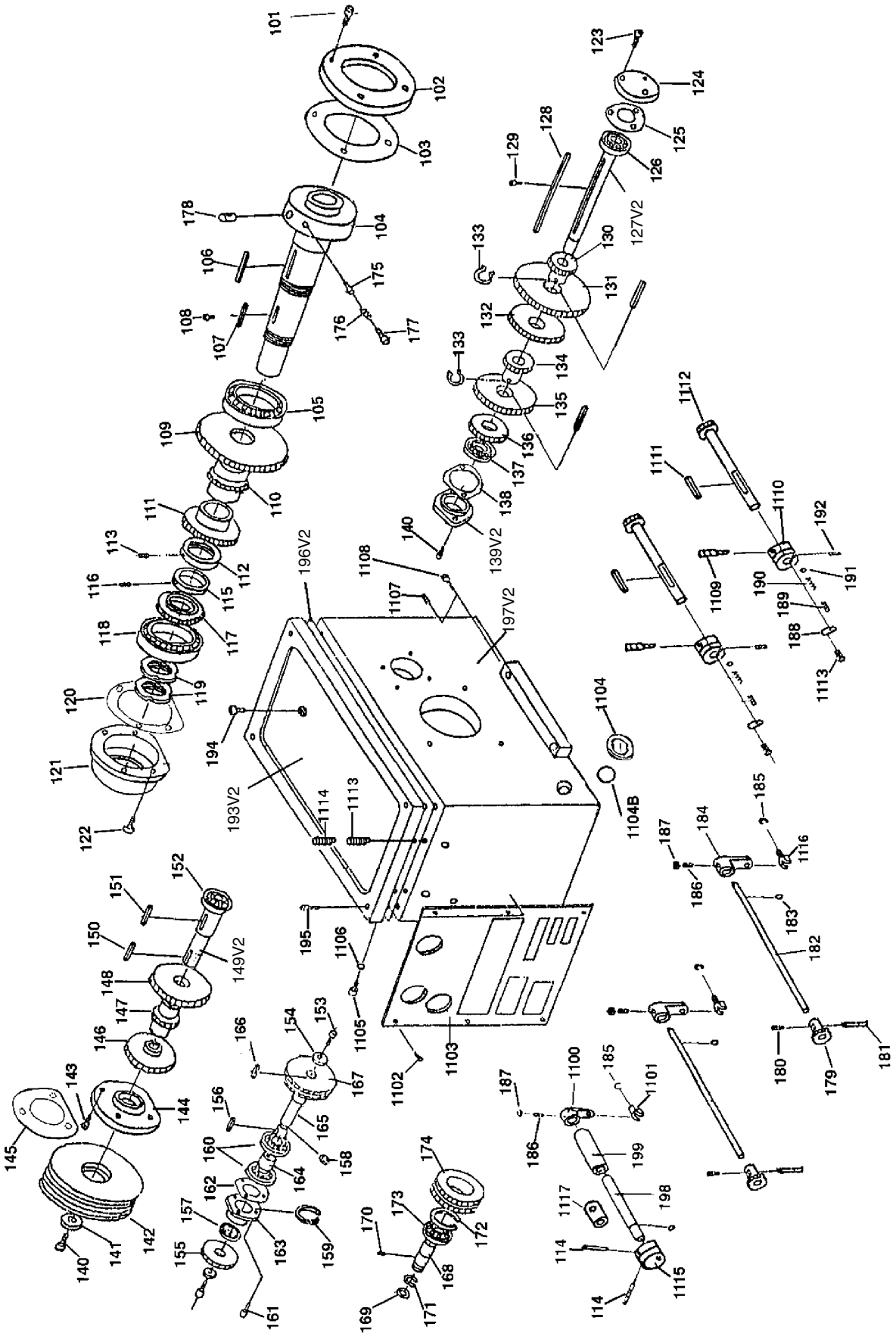
Electrical



REF	PART #	DESCRIPTION
1	P4003001	START BUTTON
2	P4003002	INDICATOR LIGHT
3	P4003003	JOG BUTTON
4	P4003004	RESET BUTTON
50	P4003050	THERMAL PROT. BLOCK
51	P4003051	TRANSFORMER

REF	PART #	DESCRIPTION
52	P4003052	CONTACTOR GSC1CJX4-D 110V
53	P4003053	CONTACTOR JZC3-40D 110V
54	P4003054	FUSE HOLDER
55V2	P4003055V2	CONTROL PANEL PLATE V2.03.07
933	P4003933	FUSE 2 AMP

Headstock



Headstock Parts List

REF	PART #	DESCRIPTION
101	P4003101	CAP SCREW M6-1 X 25
102	P4003102	COVER
103	P4003103	OIL SEAL
104	P4003104	SPINDLE 16"
105	P4003105	BEARING D-7212
106	P4003106	KEY 8 X 8 X 80
107	P4003107	KEY
108	P4003108	CAP SCREW M3-.5 X 8
109	P4003109	GEAR 37T/74T
110	P4003110	GEAR 46T
111	P4003111	GEAR 59T
112	P4003112	NUT 58OD
113	P4003113	CAP SCREW M8-1.25 X 10
114	P4003114	ROLL PIN 5 X 40
115	P4003115	COLLAR
116	P4003116	CAP SCREW M3-.5 X 8
117	P4003117	GEAR
118	P4003118	BEARING D-7211
119	P4003119	NUT
120	P4003120	OIL SEAL
121	P4003121	COVER
122	P4003122	CAP SCREW M8-1.25 X 20
123	P4003123	CAP SCREW M6-1 X 12
124	P4003124	COVER
125	P4003125	OIL SEAL
126	P4003126	BALL BEARING 6304 ZZ
127V2	P4003127V2	SHAFT 219MM V2.01.03
128	P4003128	KEY 8 X 180
129	P4003129	CAP SCREW M3-.5 X 8
130	P4003130	GEAR
131	P4003131	GEAR
132	P4003132	GEAR
133	P4003133	INT RETAINING RING 15MM
134	P4003134	GEAR
135	P4003135	GEAR
136	P4003136	GEAR
137	P4003137	BALL BEARING 6004 OPEN
138	P4003138	OIL SEAL
139V2	P4003139V2	COVER 45MM V2.01.03
140	P4003140	CAP SCREW M8-1.25 X 20
141	P4003141	WASHER
142	P4003142	PULLEY
143	P4003143	CAP SCREW M6-1 X 12
144	P4003144	COVER
145	P4003145	OIL SEAL
146	P4003146	GEAR
147	P4003147	GEAR
148	P4003148	GEAR
149V2	P4003149V2	SHAFT 178MM V2.01.03
150	P4003150	KEY CS X 80
151	P4003151	KEY 5 X 5 X 80
152	P4003152	BALL BEARING 6004 OPEN
153	P4003153	CAP SCREW M6-1 X 12

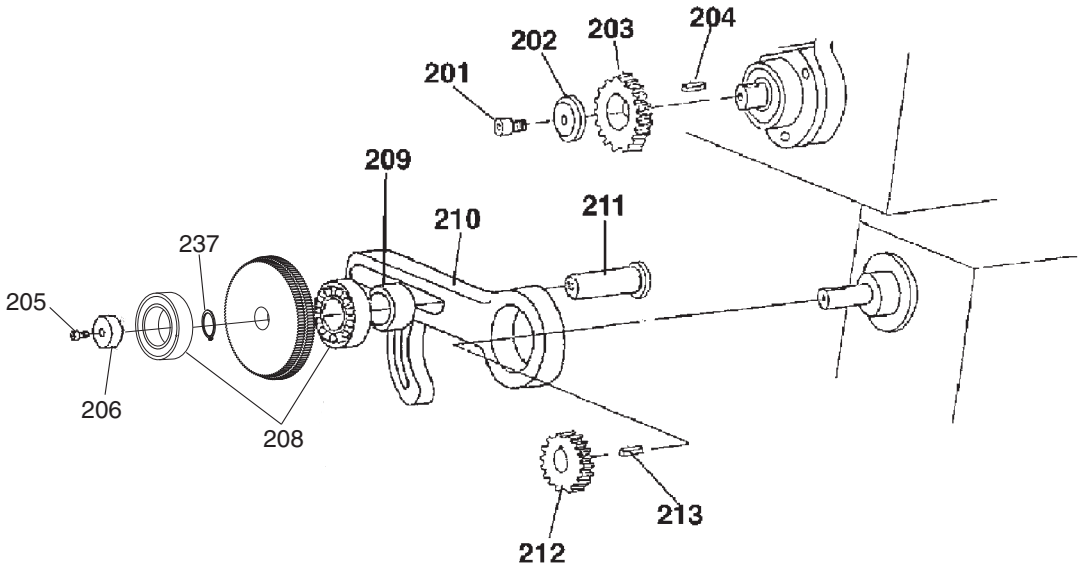
REF	PART #	DESCRIPTION
154	P4003154	WASHER
155	P4003155	GEAR 40T
156	P4003156	KEY CS X 8
157	P4003157	OIL SEAL 25 X 40 X 10 V1.10.96
158	P4003158	EXT RETAINING RING 20MM
159	P4003159	INT RETAINING RING 40MM
160	P4003160	BALL BEARING 6004 OPEN
161	P4003161	CAP SCREW M6-1 X 12
162	P4003162	OIL SEAL
163	P4003163	COVER
164	P4003164	COLLAR
165	P4003165	SHAFT 117MM
166	P4003166	KEY 5 X 5 X 20
167	P4003167	GEAR
168	P4003168	SHAFT
169	P4003169	OIL SEAL 17 X 2.65
170	P4003170	SET SCREW M8-1.25 X 6
171	P4003171	C-CLIP
172	P4003172	INT RETAINING RING 47MM
173	P4003173	BALL BEARING 6204 OPEN
174	P4003174	GEAR 38T/45T
175	P4003175	LOCK PIN
176	P4003176	SPRING 6 X 4 X 22
177	P4003177	CAP SCREW M8-1.25 X 16
178	P4003178	ECCENTRIC SHAFT
179	P4003179	GEAR
180	P4003180	SET SCREW M8-1.25 X 10
181	P4003181	ROLL PIN 6 X 5
182	P4003182	SHAFT
183	P4003183	OIL SEAL
184	P4003184	SHAFT ARM
185	P4003185	C-CLIP
186	P4003186	CAP SCREW M8-1.25 X 16
187	P4003187	HEX NUT M8-1.25
188	P4003188	SIGN BOARD
189	P4003189	SET SCREW M8-1.25 X 8
190	P4003190	COMPRESSIONSPRING 1.2 X 48 X 27
191	P4003191	STEEL BALL 6MM
192	P4003192	SET SCREW M6-1 X 20
193V2	P4003193V2	COVER 10-3/8" V2.01.03
194	P4003194	SCREW
195	P4003195	CAP SCREW M6-1 X 25
196V2	P4003196V2	OIL SEAL V2.09.05
197V2	P4003197V2	HEADSTOCK V2.01.03
198	P4003198	SHAFT
199	P4003199	COLLAR
1100	P40031100	SHIFTER ARM
1101	P40031101	SHIFTER
1102	P40031102	STEEL FLUTED RIVET 2 X 5MM
1103	P40031103	NAME PLATE
1104	P40031104	OIL WINDOW 12MM
1104B	P40031104B	O-RING 15 X 2.65
1105	P40031105	CAP SCREW M8-1.25 X 30

Headstock Parts List (Cont.)

REF	PART #	DESCRIPTION
1106	P40031106	OIL SEAL 9.5 X 2.65
1107	P40031107	CAP SCREW M8-1.25 X 30
1108	P40031108	HEX BOLT M8-1.25 X 40
1109	P40031109	HANDLE
1110	P40031110	BOSS
1111	P40031111	KEY 5 X 5 X 15

REF	PART #	DESCRIPTION
1112	P40031112	GEAR
1113	P40031113	CAP SCREW M6-1 X 8
1114	P40031114	CAP SCREW M6-1 X 8
1115	P40031115	BOSS
1116	P40031116	SHIFTER
1117	P40031117	COLLAR

Change Gear Train

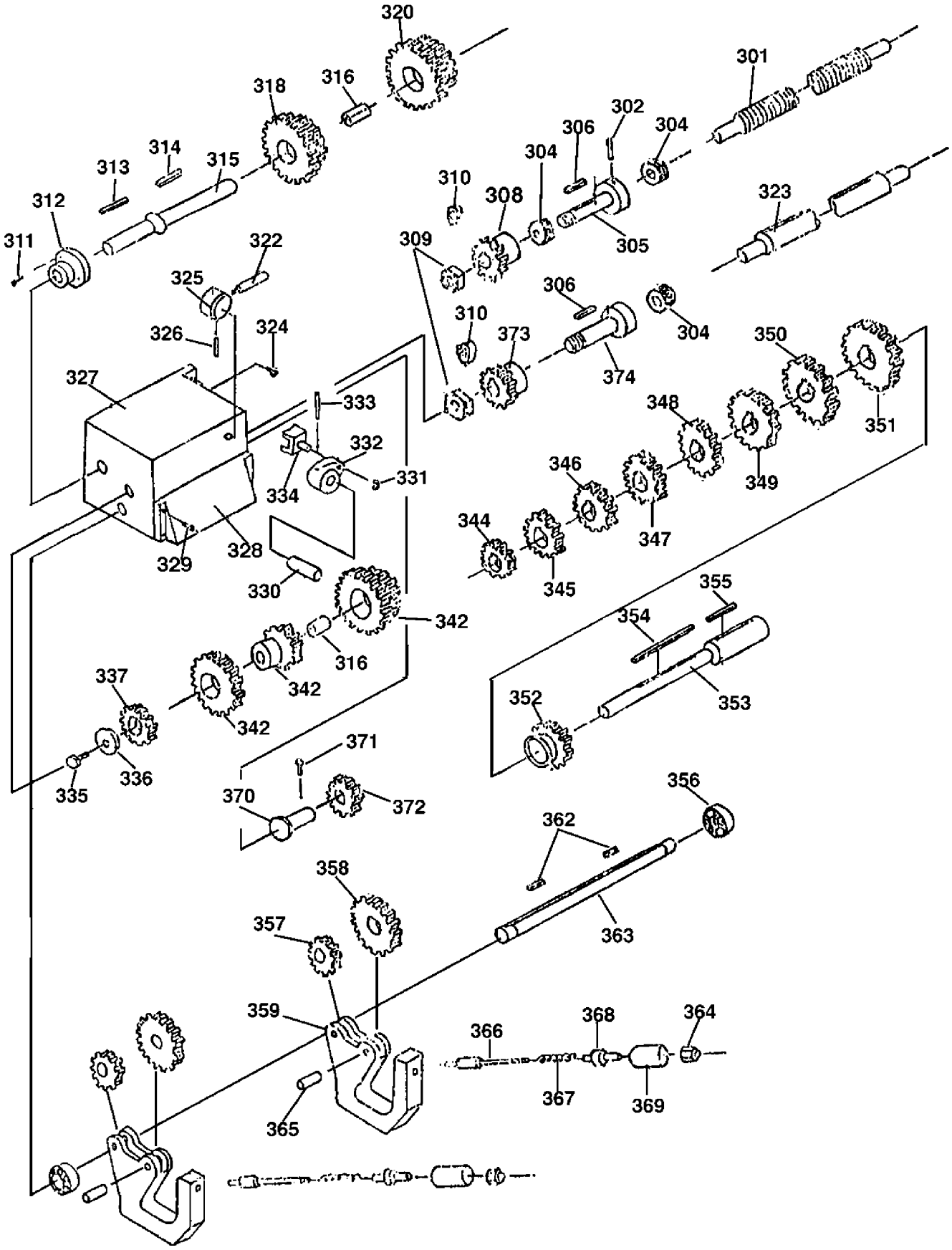


(Alternate gears: 938V2, 945)

REF	PART #	DESCRIPTION
201	P4003201	CAP SCREW M6-1 X 12
202	P4003202	WASHER
203	P4003203	GEAR
204	P4003204	KEY 5 X 5 X 30
205	P4003205	CAP SCREW M6-1 X 12
206	P4003206	WASHER
208	P4003208	BALL BEARING 6003-2RS
209	P4003209	SPACER

REF	PART #	DESCRIPTION
210	P4003210	QUADRANT
211	P4003211	SHAFT
212	P4003212	GEAR 40T
213	P4003213	KEY 5 X 5 X 30
237	P4003237	EXT RETAINING RING 35MM
938V2	P4003938V2	GEAR 35T V2.08.05
945	P4003945	GEAR 36T

Quick Change Gearbox

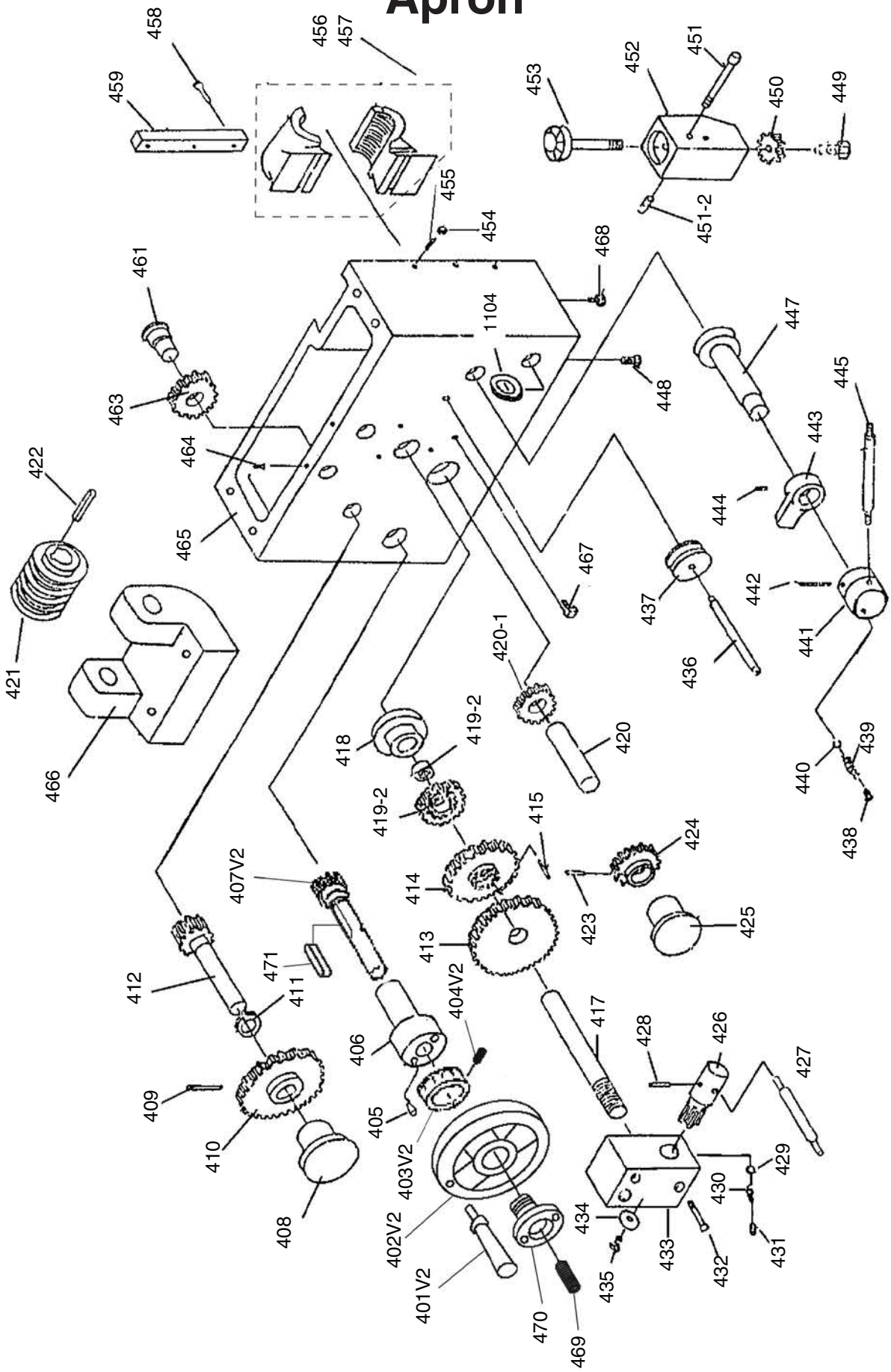


Quick Change Gearbox Parts List

REF	PART #	DESCRIPTION
301	P4003301	LEADSCREW
302	P4003302	ROLL PIN 5 X 36
304	P4003304	THRUST BEARING 8103
305	P4003305	SHAFT
306	P4003306	KEY 5 X 5 X 14
308	P4003308	GEAR
309	P4003309	HEX NUT M12-1.75
310	P4003310	WASHER
311	P4003311	CAP SCREW M6-1 X 16
312	P4003312	COVER
313	P4003313	KEY 5 X 5 X 30
314	P4003314	KEY 5 X 5 X 10
315	P4003315	SHAFT
316	P4003316	BUSHING
318	P4003318	GEAR 16T/32T
320	P4003320	GEAR 16T/32T
322	P4003322	LEVER
323	P4003323	FEED ROD
324	P4003324	HEX BOLT M10-1.5 X 30
325	P4003325	BOSS
326	P4003326	ROLL PIN 5 X 40
327	P4003327	GEAR BOX
328	P4003328	PLATE
329	P4003329	CAP SCREW M6-1 X 16
330	P4003330	SHAFT
331	P4003331	E-CLIP 13MM
332	P4003332	SHIFT PIVOT
333	P4003333	PIN 4 X 30
334	P4003334	SHIFT YOKE
335	P4003335	CAP SCREW M6-1 X 12
336	P4003336	WASHER

REF	PART #	DESCRIPTION
337	P4003337	GEAR 16T
342	P4003342	COMBO GEAR 3PC SET
344	P4003344	GEAR 16T
345	P4003345	GEAR 18T
346	P4003346	GEAR 19T
347	P4003347	GEAR 20T
348	P4003348	GEAR 22T
349	P4003349	GEAR 24T
350	P4003350	GEAR 26T
351	P4003351	GEAR 28T
352	P4003352	GEAR 24T
353	P4003353	SHAFT
354	P4003354	KEY 5 X 5 X 75
355	P4003355	KEY 5 X 5 X 40
356	P4003356	BEARING 7000102
357	P4003357	GEAR 16T
358	P4003358	GEAR 32T W/BUSHING
359	P4003359	SHIFT LEVER
362	P4003362	KEY
363	P4003363	SHAFT
364	P4003364	HEX NUT M6-1
365	P4003365	SHAFT 16MM X 32MM
366	P4003366	SHAFT
367	P4003367	COMPRESSION SPRING 1 X 8 X 47
368	P4003368	SLEEVE
369	P4003369	HOUSING
370	P4003370	SHAFT
371	P4003371	CAP SCREW M8-1.25 X 8
372	P4003372	GEAR 15T
373	P4003373	GEAR 24T
374	P4003374	SHAFT

Apron

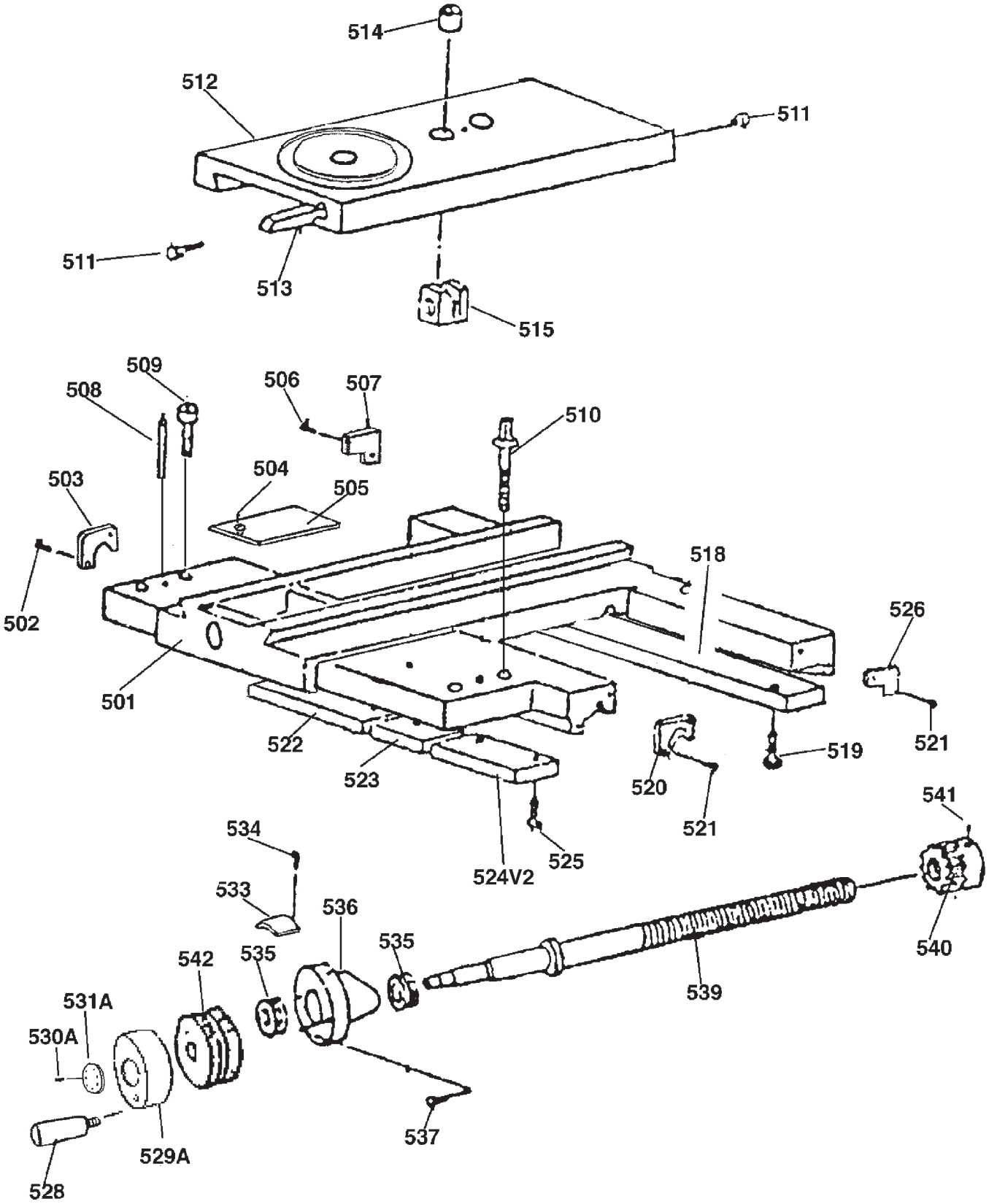


Apron Parts List

REF	PART #	DESCRIPTION
401V2	P4003401V2	HANDLE V2.08.12
402V2	P4003402V2	HANDWHEEL V2.08.12
403V2	P4003403V2	GRADUATED DIAL V2.08.12
404V2	PSS03M	SET SCREW M6-1 X 8
405	P4003405	CAP SCREW M6-1 X 20
406	P4002406	BRACKET
407V2	P4003407V2	GEAR SHAFT V2.08.12
408	P4003408	BUSHING
409	P4003409	ROLL PIN 5 X 30
410	P4003410	GEAR 50T
411	P4003411	EXT RETAINING RING 19MM
412	P4003412	GEAR SHAFT
413	P4003413	GEAR 46T
414	P4003414	GEAR 51T
415	P4003415	ROLL PIN 5 X 30
417	P4003417	SHAFT
418	P4003418	BUSHING
419-2	P4003419-2	GEAR W/BUSHING AND SPACER
420	P4003420	SHAFT
420-1	P4003420-1	WORM GEAR
421	P4003421	WORM
422	P4003422	KEY 5 X 5 X 45
423	P4003423	ROLL PIN 5 X 24
424	P4003424	GEAR 14T
425	P4003425	BUSHING
426	P4003426	GEAR SHAFT B5 X 36
427	P4003427	LEVER
428	P4003428	ROLL PIN 5 X 24
429	P4003429	STEEL BALL 6MM
430	P4003430	COMPRESSION SPRING 1 X 4.5 X 6
431	P4003431	SET SCREW M6-1 X 8
432	P4003432	CAP SCREW M6-1 X 45
433	P4003433	BOSS
434	P4003434	WASHER
435	P4003435	CAP SCREW M6-1 X 40

REF	PART #	DESCRIPTION
436	P4003436	SHAFT
437	P4003437	SAFETY SHIFTER
438	P4003438	CAP SCREW M8-1.25 X 6
439	P4003439	COMPRESSION SPRING 1 X 4.5 X 6
440	P4003440	STEEL BALL 6MM
441	P4003441	BOSS
442	P4003442	ROLL PIN 6 X 40
443	P4003443	DOG
444	P4003444	CAP SCREW M8-1.25 X 30
445	P4003445	LEVER
447	P4003447	SHAFT
448	P4003448	CAP SCREW M6-1 X 65
449	P4003449	CAP SCREW M6-1 X 15
450	P4003450	GEAR 16T
451	P4003451	CAP SCREW M6-1 X 60
451-2	P4003451-2	SPACER
452	P4003452	HOUSING
453	P4003453	THREAD DIAL
454	P4003454	HEX NUT M6-1
455	P4003455	HEX BOLT M6-1 X 16
456	P4003456	HALF NUT 2 PC
457	P4003457	HALF NUT HOUSING 2 PC
458	P4003458	CAP SCREW M6-1 X 25
459	P4003459	GIB
461	P4003461	SHAFT
463	P4003463	GEAR 25T
464	P4003464	SET SCREW M6-1 X 6
465	P4003465	APRON CASE
466	P4003466	WORM BRACKET
467	P4003467	LIMIT BLOCK
468	P4003468	OIL PLUG M10-1.5 X 20
469	P4003469	SET SCREW M6-1 X 20
470	P4003470	SPANNER CAP SCREW
471	P4003471	KEY 5 X 5 X 20
1104	P40031104	OIL WINDOW 12MM

Saddle

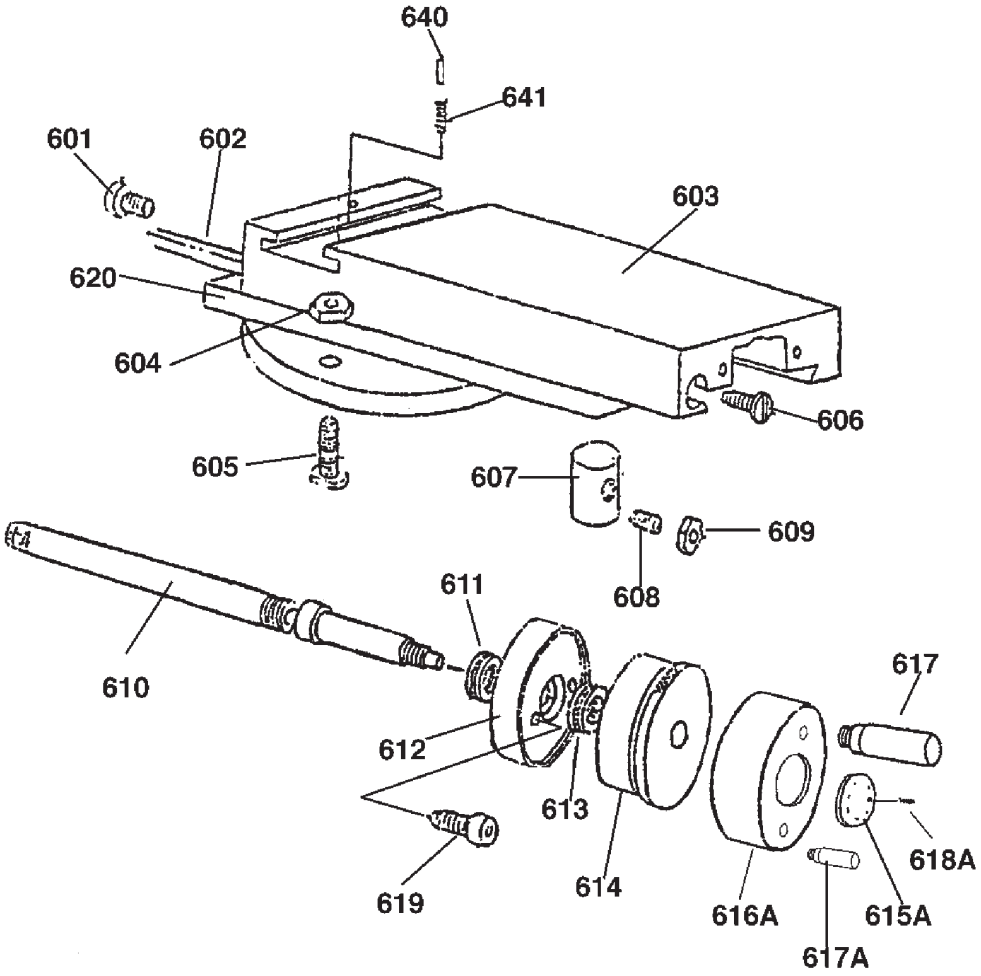


Saddle Parts List

REF	PART #	DESCRIPTION
501	P4003501	SADDLE
502	P4003502	PHLP HD SCR M3-.5 X 14
503	P4003503	WIPER
504	P4003504	PHLP HD SCR 8-32 X 3/8
505	P4003505	COVER
506	P4003506	CAP SCREW M5-.8 X 14
507	P4003507	WIPER
508	P4003508	ROLL PIN 5 X 45
509	P4003509	CAP SCREW M8-1.25 X 35
510	P4003510	SCREW
511	P4003511	SCREW
512	P4003512	CROSS SLIDE
513	P4003513	GIB
514	P4003514	BUSHING
515	P4003515	CROSS SLIDE NUT M8-1.25, BRASS
518	P4003518	SLIDE PLATE
519	P4003519	CAP SCREW M8-1.25 X 25
520	P4003520	WIPER
521	P4003521	SCREW

REF	PART #	DESCRIPTION
522	P4003522	SLIDE PLATE
523	P4003523	SLIDE PLATE
524V2	P4003524V2	SLIDE PLATE 3 HOLES V2.01.09
525	P4003525	HEX BOLT M8-1.25 X 24
526	P4003526	WIPER
528	P4003528	HANDLE
529A	P4003529A	BRACKET
530A	P4003530A	SET SCREW
531A	P4003531A	SPANNER NUT
533	P4003533	SIGN BOARD
534	P4003534	RIVET 2 X 3MM STEEL
535	P4003535	THRUST BEARING 51102
536	P4003536	BRACKET
537	P4003537	CAP SCREW M6-1 X 25
539	P4003539	CROSS SLIDE LEADSCREW
540	P4003540	GEAR 13T
541	P4003541	CAP SCREW M6-1 X 8
542	P4003542	DIAL

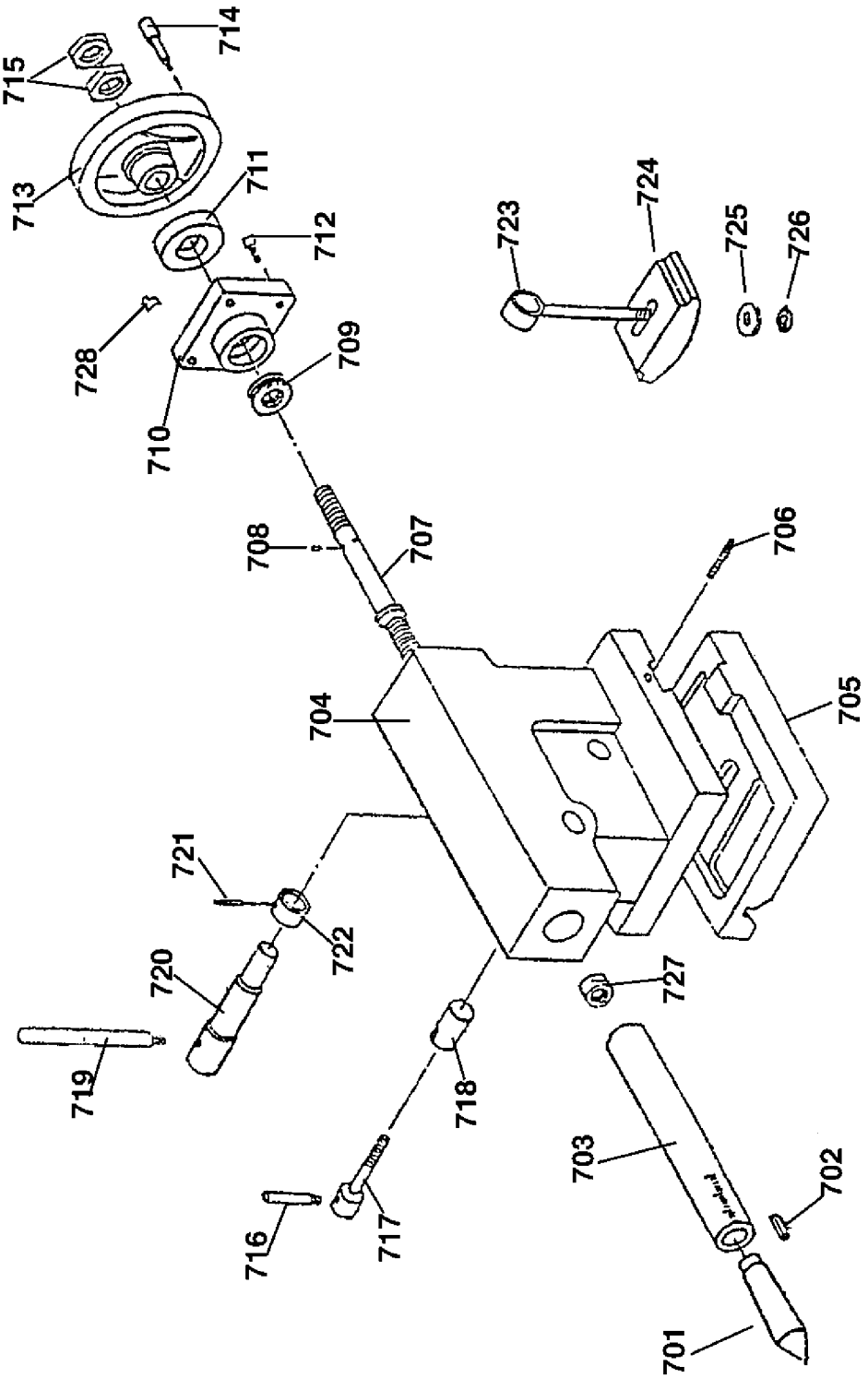
Compound Rest



REF	PART #	DESCRIPTION
601	P4003601	SCREW
602	P4003602	GIB
603	P4003603	COMPOUND SLIDE
604	P4003604	HEX NUT M8-1.25
605	P4003605	COMPOUND T-BOLT
606	P4003606	COMPOUND GIB BOLT
607	P4003607	LEAD SCREW NUT
608	P4003608	SET SCREW M6-1 X 8
609	P4003609	HEX NUT M6-1
610	P4003610	COMPOUND REST LEADSCREW
611	P4003611	THRUST BEARING 8101
612	P4003612	BRACKET

REF	PART #	DESCRIPTION
613	P4003613	THRUST BEARING 8101
614	P4003614	INDEX RING
615A	P4003615A	SPANNER NUT
616A	P4003616A	BRACKET
617A	P4003617A	SHORT HANDLE
617	P4003617	LONG HANDLE W/SCREW
618A	P4003618A	SET SCREW M5-.8 X 5
619	P4003619	CAP SCREW M6-1 X 15
620	P4003620	COMPOUND REST
640	P4003640	PIN
641	P4003641	COMPRESSION SPRING 1 X 5 X 12

Tailstock

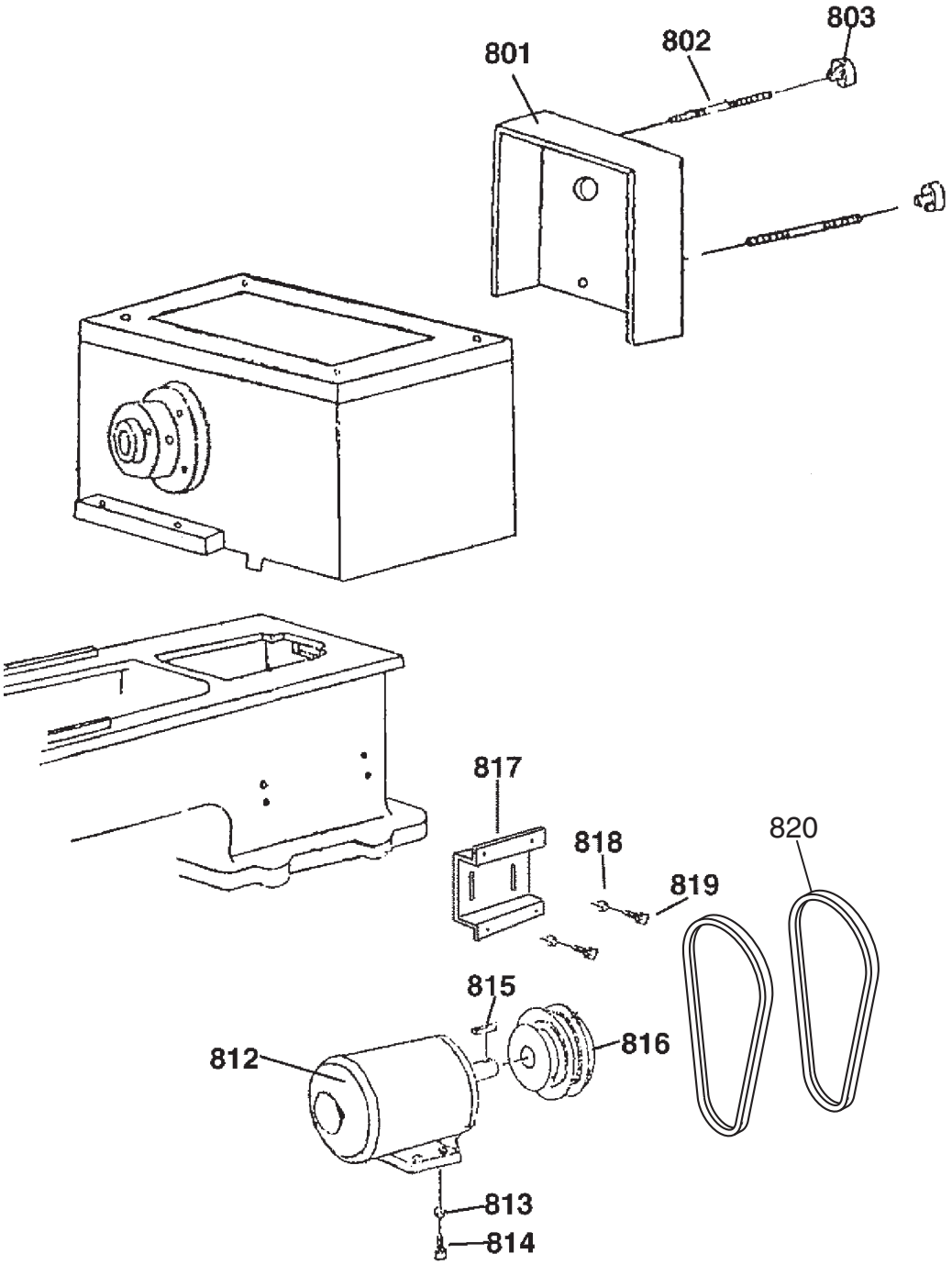


Tailstock Parts List

REF	PART #	DESCRIPTION
701	P4003701	CENTER
702	P4003702	KEY 8 X 30
703	P4003703	QUILL
704	P4003704	TAIL STOCK
705	P4003705	BASE
706	P4003706	CAP SCREW M10-1.5 X 50
707	P4003707	SCREW
708	P4003708	PIN B4 X 8
709	P4003709	THRUST BEARING 8101
710	P4003710	BRACKET
711	P4003711	INDEX RING
712	P4003712	CAP SCREW M6-1 X 20
713	P4003713	HAND WHEEL
714	P4003714	HANDLE

REF	PART #	DESCRIPTION
715	P4003715	HEX NUT M12-1.75
716	P4003716	HANDLE
717	P4003717	LOCK SCREW
718	P4003718	LOCK SHAFT
719	P4003719	HANDLE
720	P4003720	SHAFT
721	P4003721	ROLL PIN 5 X 30
722	P4003722	COLLAR
723	P4003723	SHAFT
724	P4003724	BASE SHOE BLOCK
725	P4003725	FLAT WASHER 12MM
726	P4003726	HEX NUT M12-1.75
727	P4003727	NUT
728	P4003728	INDEX

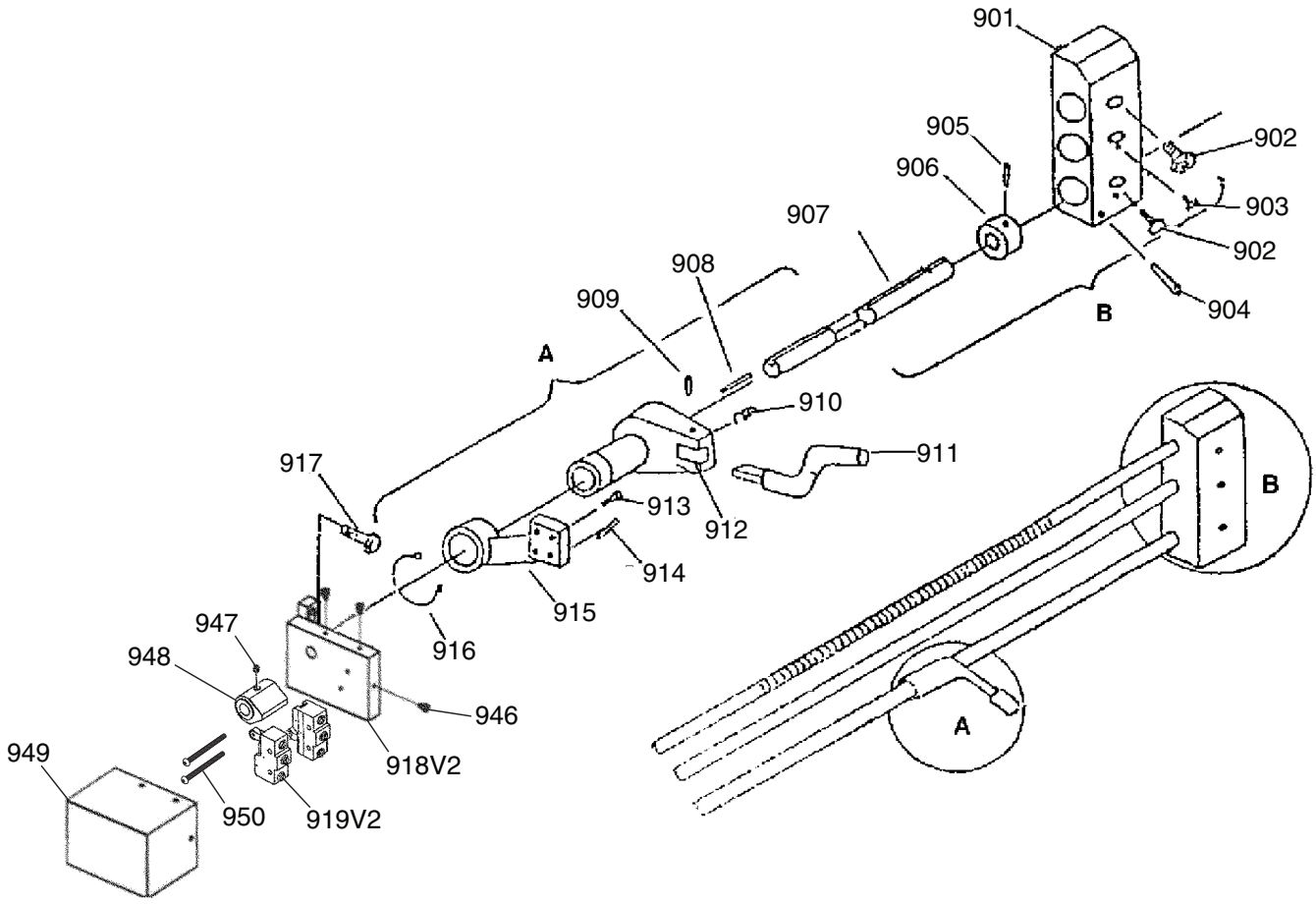
Motor Assembly



REF	PART #	DESCRIPTION
801	P4003801	COVER
802	P4003802	SCREW
803	P4003803	NUT
812	P4003812	MOTOR 2 HP 1.1KW V2.12.97
813	P4003813	FLAT WASHER 10MM
814	P4003814	HEX BOLT M10-1.5 X 30

REF	PART #	DESCRIPTION
815	P4003815	KEY
816	P4003816	PULLEY
817	P4003817	MOTOR MOUNT BRACKET
818	P4003818	FLAT WASHER 12MM
819	P4003819	HEX BOLT M10-1.5 X 30
820	P4003820	V-BELT A29

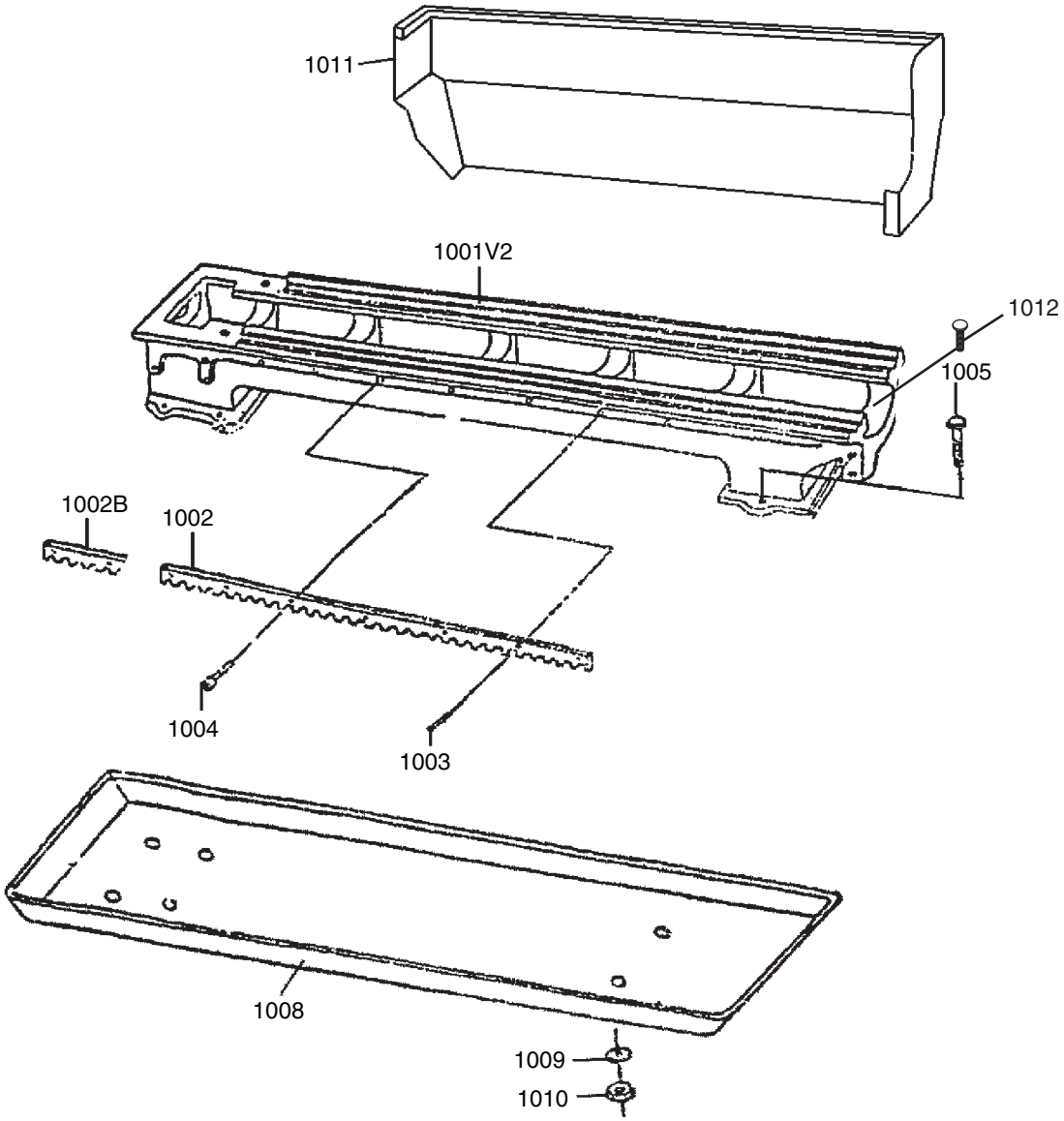
Feed Rod Leadscrew



REF	PART #	DESCRIPTION
901	P4003901	BRACKET
902	P4003902	CAP SCREW M6-1 X 11
903	P4003903	OIL CAP 6MM
904	P4003904	ROLL PIN 6 X 55
905	P4003905	SET SCREW M6-1 X 6
906	P4003906	COLLAR
907	P4003907	SPINDLE ROD
908	P4003908	KEY
909	P4003909	ROLL PIN 4 X 20
910	P4003910	COMPRESSION SPRING 7020
911	P4003911	HANDLE
912	P4003912	BRACKET

REF	PART #	DESCRIPTION
913	P4003913	CAP SCREW M6-1 X 14
914	P4003914	ROLL PIN 5 X 25
915	P4003915	BRACKET
916	P4003916	EXT RETAINING RING 30MM
917	P4003917	CAP SCREW M8-1.25 X 25
918V2	P4003918V2	CONNECTION BRACKET V2.12.14
919V2	P4003919V2	SPINDLE ON/OFF SWITCH V2.12.14
946	P4003946	CAP SCREW M4-.7 X 6
947	P4003947	SET SCREW M6-1 X 8
948	P4003948	SPINDLE SWITCH ARM
949	P4003949	SPINDLE SWITCH BOX
950	P4003950	BUTTON HD CAP SCR M4-.7 X 45

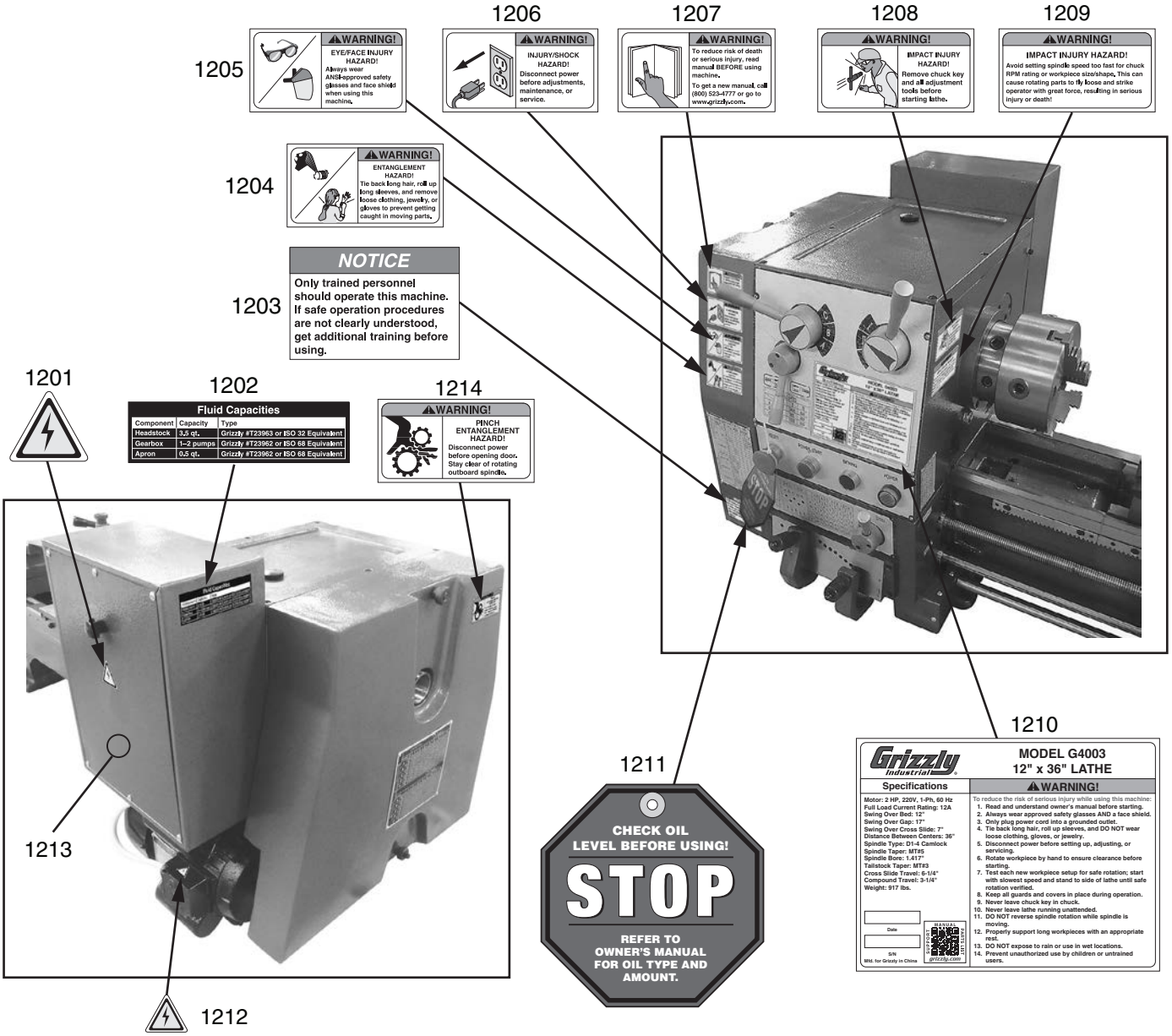
Bed



REF	PART #	DESCRIPTION
1001V2	P40031001V2	LATHE BED V2.06.20
1002	P40031002	RACK
1002B	P40031002B	RACK 6-1/8" SHORT
1003	P40031003	ROLL PIN 5 X 24
1004	P40031004	CAP SCREW M6-1 X 14
1005	P40031005	CAP SCREW M12-1.75 X 40

REF	PART #	DESCRIPTION
1008	P40031008	CHIP PAN 19" X 61"
1009	P40031009	FLAT WASHER 12MM
1010	P40031010	HEX NUT M12-1.75
1011	P40031011	SPLASH GUARD 46"
1012	P40031012	TAILSTOCK STOP BOLT M12-1.75 X 50

Labels & Cosmetics



REF	PART #	DESCRIPTION
1201	P40031201	ELECTRICITY LABEL LARGE
1202	P40031202	FLUID CAPACITY LABEL
1203	P40031203	TRAINED OPERATORS NOTICE LABEL
1204	P40031204	ENTANGLEMENT HAZARD LABEL
1205	P40031205	FACE SHIELD & SAFETY GLASSES LABEL
1206	P40031206	DISCONNECT POWER LABEL
1207	P40031207	READ MANUAL LABEL

REF	PART #	DESCRIPTION
1208	P40031208	IMPACT INJURY HAZARD LABEL
1209	P40031209	SPINDLE SPEED HAZARD LABEL
1210	P40031210	STOP OIL FILL TAG
1211	P40031211	MACHINE ID LABEL
1212	P40031212	ELECTRICITY LABEL SMALL
1213	P40031213	TOUCH-UP PAINT, GRIZZLY GREEN
1214	P40031214	PINCH ENTANGLEMENT HAZARD LABEL

⚠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.

To take advantage of this warranty, you must register it at **https://www.grizzly.com/forms/warranty**, or you can scan the QR code below to be automatically directed to our warranty registration page. Enter all applicable information for the product.