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.
# Table of Contents

INTRODUCTION ........................................... 2  
Machine Description ................................ 2  
Contact Info ........................................... 2  
Manual Accuracy ........................................ 2  
G4002 Machine Data Sheet ......................... 3  
G4003 Machine Data Sheet ......................... 6  

SECTION 1: SAFETY ..................................... 9  
Safety Instructions for Machinery ................. 9  
Additional Safety for Metal Lathes ............... 11  
Additional Chuck Safety ............................. 12  

SECTION 2: POWER SUPPLY ......................... 13  
Availability ........................................... 13  
Full-Load Current Rating ............................ 13  
Circuit Requirements for 220V ..................... 13  
Grounding Instructions ................................ 14  
Extension Cords ....................................... 14  
Power Connection ..................................... 15  
Connecting Power Cord .............................. 15  
Connecting Power ..................................... 15  
Disconnecting Power .................................. 15  
Unpacking .............................................. 16  
Needed for Setup ..................................... 16  
Piece Inventory ....................................... 16  
Cleanup ................................................ 17  
Site Considerations ................................... 18  

SECTION 3: ASSEMBLY & SETUP ..................... 19  
Mounting ............................................... 19  
Lubricating Lathe .................................... 19  
Chucks .................................................. 19  
Live Center .......................................... 21  
Steady Rest .......................................... 21  
Follow Rest .......................................... 22  
4-Jaw Chuck .......................................... 22  

SECTION 4: CONTROLS ................................. 23  
Spindle Speeds ........................................ 23  
Feed Direction ....................................... 24  
Selecting the Feed Rod .............................. 24  
Quick Change Selection ............................ 24  
Feed Rate Chart ...................................... 25  
Thread Selection ...................................... 26  
Carriage Controls .................................... 29  
Tool Post & Holder ................................... 30  
Tailstock Controls ................................... 31  
Test Run .............................................. 31  

SECTION 5: ADJUSTMENTS ......................... 32  
Gibs .................................................... 32  
Steady/Follow Rest .................................. 33  
Tailstock ............................................... 34  

SECTION 6: MAINTENANCE ......................... 36  
Lubrication ............................................ 36  
Bearing Preload ....................................... 37  

SECTION 7: CLOSURE ................................. 38  

SECTION 8: WIRING ................................. 39  
Wiring Safety Instructions ......................... 39  
Electrical Cabinet Wiring Diagram ............. 40  
Motor & Control Panel Wiring Diagram ....... 41  

SECTION 9: PARTS ................................. 42  
Electrical ............................................. 42  
Headstock ............................................ 43  
Headstock Parts List ............................... 44  
Change Gear Train .................................. 46  
Quick Change Gearbox ............................. 47  
Quick Change Gearbox Parts List ............... 48  
Apron ................................................... 49  
Apron Parts List ..................................... 50  
Saddle .................................................. 51  
Saddle Parts List .................................... 52  
Compound Rest ....................................... 53  
Tailstock .............................................. 54  
Tailstock Parts List .................................. 55  
Motor Assembly ...................................... 56  
Feed Rod Leadscrew .................................. 57  
Bed ..................................................... 58  

WARRANTY & RETURNS ......................... 61
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 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. This information is required for us to provide proper tech support, and it helps us determine if updated documentation is available for your machine.

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 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.
MODEL G4002 12" X 24" GEAR-HEAD, CAM LOCK SPINDLE, GAP BED LATHE

Product Dimensions:
- Weight................................................................. 913 lbs.
- Width (side-to-side) x Depth (front-to-back) x Height........................ 53 x 26 x 23 in.
- Footprint (Length x Width)................................................. 53 x 23 in.

Shipping Dimensions:
- Type................................................................. Wood Crate
- Content............................................................... Machine
- Weight................................................................. 1004 lbs.
- Length x Width x Height.................................................. 59 x 30 x 28 in.
- Must Ship Upright........................................................... Yes

Electrical:
- Power Requirement................................................. 220V, Single-Phase, 60 Hz
- Prewired Voltage....................................................... 220V
- Full-Load Current Rating............................................ 8.5A
- 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

Main Specifications:
Operation Info
- Swing Over Bed......................................................... 12 in.
- Distance Between Centers......................................... 24 in.
- Swing Over Cross Slide............................................... 7 in.
- Swing Over Saddle..................................................... 7 in.
- Swing Over Gap........................................................ 17 in.
- Maximum Tool Bit Size............................................ 5/8 in.
- Compound Travel..................................................... 3-1/4 in.
- Carriage Travel.......................................................... 18-1/2 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............................................... 1.563 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............................................... 36 in.
Steady Rest Capacity...................................................... 2 in.
Follow Rest Capacity..................................................... 1 in.
Faceplate Size............................................................. 10 in.
Feed Rod Diameter....................................................... 3/4 in.

Other

Optional Stand............................................................. G4004

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
Warranty .................................................................................. 1 Year
Approximate Assembly & Setup Time ................................................... 1 Hour
Serial Number Location .......................................................... ID Label on Middle of Headstock
ISO 9001 Factory ................................................................. No
Certified by a Nationally Recognized Testing Laboratory (NRTL) ................. No

Features:
Carriage-Mounted On/Off Control Lever
Easy To Use Lever Controls
Full Length Splash Guard
Hardened and Ground Cast-Iron Bed
Removable Gap Bed Allows Turning up to 17” in Diameter
Threading Dial

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

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.
Swing Over Gap............................................................................................................. 17 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 Length: 16 in.
- Spindle Length with 3-Jaw Chuck: 20-3/4 in.
- Spindle Length with 4-Jaw Chuck: 20-3/8 in.
- Spindle Bearings: Tapered Roller

Gearbox Info

- Gearbox Fluid Type: ISO 68 (SB1365, Grizzly T23962, Mobil Vactra 2)
- Gearbox Capacity: 1 – 2 Pumps

Headstock Info

- Headstock Fluid Type: ISO 32 (eg. Grizzly T23963, Mobil DTE Light)
- Headstock Capacity: 3.5 qt.
- Headstock Paint Type/Finish: Epoxy
- Headstock Body: Cast Iron
- Bed: Induction-Hardened, Precision-Ground Cast Iron
- End Gears: Flame Hardened Steel

Paint Type/Finish

- Paint Type/Finish: Epoxy
- Body: Cast Iron

Bed Width

- 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.

Tailstock Info

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

Thread Capacity

- 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: 29
- Range of Inch Threads: 4 – 112 TPI
- Range of Metric Threads: 0.2 – 4.5 mm

Dimensions

- Machine Length: 7-1/4 in.
- X-Axis: 7-1/4 in.
- Y-Axis: 24 in.
- Z-Axis: 48 in.
- Spindle Length: 20-3/8 in.
- Spindle Bore: 1.417 in.
- Spindle Taper: MT#5
- Spindle Type: D1-4 Camlock
- Spindle Bearings: Tapered Roller
- Spindle Speeds: 70 – 1400 RPM
- Spindle Feed: 0.0004 – 0.0105 in./rev

Other

- Optional Stand: G4005

Construction

- Base: Cast Iron
- Headstock: Cast Iron
- Bed: Induction-Hardened, Precision-Ground Cast Iron

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
Warranty ........................................................................................................................................................... 1 Year
Approximate Assembly & Setup Time .............................................................................................................. 1 Hour
Serial Number Location .................................................................................................................................. ID Label
ISO 9001 Factory .................................................................................................................................................... No
Certified by a Nationally Recognized Testing Laboratory (NRTL) ................................................................. No

Features:

Carriage-Mounted On/Off Control Lever
Easy To Use Lever Controls
Full Length Splash Guard
Hardened and Ground Cast-Iron Bed
Removable Gap Bed Allows Turning up to 17" in Diameter
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
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
This symbol is used to alert the user to useful information about proper operation of the machine.

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.

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

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.

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

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.

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.

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.

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

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.

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.

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.

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.

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.

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

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.
SECTION 2: POWER SUPPLY

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

WARNING
Electrocution, fire, 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).

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.

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.
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 13.

**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).

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.

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional People</td>
<td>1</td>
</tr>
<tr>
<td>Safety Glasses</td>
<td>1</td>
</tr>
<tr>
<td>Cleaner/Degreaser (Page 17)</td>
<td></td>
</tr>
<tr>
<td>Quality Metal Protectant</td>
<td></td>
</tr>
<tr>
<td>Disposable Shop Rags</td>
<td></td>
</tr>
<tr>
<td>Precision Level</td>
<td></td>
</tr>
<tr>
<td>Lifting Straps (rated for at least 1300 lbs.)</td>
<td>2</td>
</tr>
<tr>
<td>Forklift/Power Lifting Device (rated for at least 1300 lbs.)</td>
<td></td>
</tr>
<tr>
<td>Bench or Stand Mounting Hardware</td>
<td></td>
</tr>
</tbody>
</table>

⚠️ WARNING
SUFFOCATION HAZARD!
Keep children and pets away from plastic bags or packing materials shipped with this machine. Discard immediately.

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.

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lathe</td>
<td>1</td>
</tr>
<tr>
<td>6&quot; 3-Jaw Chuck with 2 Sets of Jaws</td>
<td>1</td>
</tr>
<tr>
<td>8&quot; 4-Jaw Chuck with Reversible Jaws</td>
<td>1</td>
</tr>
<tr>
<td>10&quot; Faceplate</td>
<td>1</td>
</tr>
<tr>
<td>Steady Rest</td>
<td>1</td>
</tr>
<tr>
<td>Follow Rest</td>
<td>1</td>
</tr>
<tr>
<td>Quick Change Tool Post with Holder</td>
<td>1</td>
</tr>
<tr>
<td>4-Piece Insert Tool Holder Set</td>
<td>1</td>
</tr>
<tr>
<td>Change Gear Set(–26T, 27T, 35T, 36T, 45T, 50T, 60T)</td>
<td>7</td>
</tr>
<tr>
<td>Open-End Wrench Set(–9/11, 10/12, 12/14, 17/19mm)</td>
<td>4</td>
</tr>
<tr>
<td>Hex Wrench Set(–2.5, 3, 4, 5, 6, 8, 10mm)</td>
<td>6</td>
</tr>
<tr>
<td>Flat Screwdriver #2</td>
<td>1</td>
</tr>
<tr>
<td>Phillips Screwdriver #2</td>
<td>1</td>
</tr>
<tr>
<td>Lathe Chuck Key</td>
<td>1</td>
</tr>
<tr>
<td>Dead Center MT#3 HSS Tip</td>
<td>1</td>
</tr>
<tr>
<td>Dead Center MT#3 Carbide Tip</td>
<td>1</td>
</tr>
<tr>
<td>Live Center MT#3</td>
<td>1</td>
</tr>
<tr>
<td>½&quot; Drill Chuck with MT#3 Arbor</td>
<td>1</td>
</tr>
<tr>
<td>Spindle Sleeve MT#5/MT#3</td>
<td>1</td>
</tr>
<tr>
<td>Oil Can</td>
<td>1</td>
</tr>
<tr>
<td>Toolbox</td>
<td>1</td>
</tr>
<tr>
<td>Hardware Bag</td>
<td>1</td>
</tr>
<tr>
<td>–Hex Bolt M12-1.75 x 40</td>
<td>6</td>
</tr>
<tr>
<td>–Flat Washer 12mm</td>
<td>6</td>
</tr>
<tr>
<td>–Cap Screw M6-1 x 8</td>
<td>8</td>
</tr>
<tr>
<td>–Flat Washer 6mm</td>
<td>8</td>
</tr>
<tr>
<td>–Hex Nut M6-1</td>
<td>8</td>
</tr>
</tbody>
</table>

-16-
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.

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

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

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.
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.

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.

![Illustration Not To Scale](image)

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

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.

Chucks

The Model G4002/3 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.

Lubricating Lathe

GEARBOXES MUST BE FILLED WITH OIL!

STOP NO OIL SHIPPED WITH MACHINE!

Refer to the Lubrication Section in this Manual for Recommended Oil Type.

The Model G4002/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 36. 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.

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.

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.

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.

---

**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.

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

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.

Figure 9. Live center installed in tailstock.

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 G4002/3 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 1/8" 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 3/8"-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.](image)

<table>
<thead>
<tr>
<th>Spindle Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
</tbody>
</table>

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”.

![Figure 13. Speed chart.](image)
Feed Direction

Never move selection levers while machine is running.

The G4002/3 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.](image)

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.](image)

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.
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.
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.

While other thread pitches may be achieved, the G4002/3 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”.

![Figure 19. Selector positioned for threads.](image1)

<table>
<thead>
<tr>
<th>POSITION</th>
<th>THREAD PER INCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>B</td>
<td>6 7 8</td>
</tr>
<tr>
<td>C</td>
<td>6 6(\frac{1}{2}) 7</td>
</tr>
<tr>
<td>D</td>
<td>12 13 14</td>
</tr>
<tr>
<td>E</td>
<td>24 26 28</td>
</tr>
<tr>
<td></td>
<td>48 52 56</td>
</tr>
<tr>
<td></td>
<td>96 104 112</td>
</tr>
</tbody>
</table>

![Figure 20. Thread pitch chart.](image2)
**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.
Metric thread selection:

The chart in Figure 23 lists 30 metric threads that can be cut on the G4002/3. 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 24.

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.

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. 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 23. Metric thread chart.

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.

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 25. Gear placement.

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 G4002/3. *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.

---

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.

---

**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.
Gibs

There are three main gib adjustments for the Model G4002/3. 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 setscrew 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.

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.
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.

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.
Tailstock

The tailstock on the Model G4002/3 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.

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.

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.

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.

---

---

---
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.

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 38.** Adjusting for tailstock end taper.

**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.

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.

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 40. Headstock sight glass and drain plug.

Figure 41. Gearbox lubrication points.

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 sight 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.

**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.

**Figure 44.** Lead screw, feed rod and switch rod.
SECTION 7: CLOSURE

The following pages contain wiring, parts diagram, parts lists and Warranty/Return information for your Model G4002/3.

If you need parts or help in assembling your machine, or if you need operational information, we encourage you to call our Service Department. Our trained service technicians will be glad to help you. If you have comments dealing specifically with this manual, please write to our Bellingham, Washington location using the address in the Introduction section of this manual.

The specifications, drawings, and photographs illustrated in this manual represent the Model G4002/3 as supplied when the manual was prepared. However, due to Grizzly’s policy of continuous improvement, changes may be made at any time with no obligation on the part of Grizzly. Whenever possible, though, we send manual updates to all owners of a particular tool or machine. Should you receive one, add the new information to this manual and keep it for reference.

We have included some important safety measures that are essential to this machine’s operation. While most safety measures are generally universal, Grizzly reminds you that each work shop is different and safety rules should be considered as they apply to your specific situation.

We recommend you keep a copy of our current catalog for complete information regarding Grizzly’s warranty and return policy. If you need additional technical information relating to this machine, or if you need general assistance or replacement parts, please contact the Service Department listed in the General Information.

This machine is designed for highly-skilled individuals who have an understanding of metal-working. We realize there are numerous kinds of cutters and specialized techniques used to turn metals. To list all of the techniques necessary to operate a metal lathe correctly for specific applications would require many volumes. Additional information sources are necessary to realize the full potential of this machine. Trade journals, metalworking magazines, and your local library are good places to start.

⚠️ WARNING
As with all power tools, there is danger associated with the Model G4002/3. 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 G4002/3 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 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.
### SECTION 9: PARTS

#### Electrical

<table>
<thead>
<tr>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>P4002001</td>
<td>START BUTTON</td>
</tr>
<tr>
<td>2</td>
<td>P4002002</td>
<td>INDICATOR LIGHT</td>
</tr>
<tr>
<td>3</td>
<td>P4002003</td>
<td>JOG BUTTON</td>
</tr>
<tr>
<td>4</td>
<td>P4002004</td>
<td>RESET BUTTON</td>
</tr>
<tr>
<td>50</td>
<td>P4002050</td>
<td>THERMAL PROT. BLOCK</td>
</tr>
<tr>
<td>51</td>
<td>P4002051</td>
<td>TRANSFORMER</td>
</tr>
<tr>
<td>52</td>
<td>P4002052</td>
<td>CONTACTOR GSC1CJX4-D 110V</td>
</tr>
<tr>
<td>53</td>
<td>P4002053</td>
<td>CONTACTOR JZC3-40D 110V</td>
</tr>
<tr>
<td>54</td>
<td>P4002054</td>
<td>FUSE HOLDER</td>
</tr>
<tr>
<td>55V2</td>
<td>P4002055A</td>
<td>CONTROL PANEL PLATE V2.03.07</td>
</tr>
<tr>
<td>933</td>
<td>P4002933</td>
<td>FUSE 2 AMP</td>
</tr>
</tbody>
</table>
## Headstock Parts List

<table>
<thead>
<tr>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>P4002101</td>
<td>CAP SCREW M6-1 X 25</td>
</tr>
<tr>
<td>102</td>
<td>P4002102</td>
<td>COVER</td>
</tr>
<tr>
<td>103</td>
<td>P4002103</td>
<td>OIL SEAL</td>
</tr>
<tr>
<td>104</td>
<td>P4002104</td>
<td>SPINDLE 16&quot;</td>
</tr>
<tr>
<td>105</td>
<td>P4002105</td>
<td>BEARING D-7212</td>
</tr>
<tr>
<td>106</td>
<td>P4002106</td>
<td>KEY 8 X 8 X 80</td>
</tr>
<tr>
<td>107</td>
<td>P4002107</td>
<td>KEY</td>
</tr>
<tr>
<td>108</td>
<td>P4002108</td>
<td>CAP SCREW M3-.5 X 8</td>
</tr>
<tr>
<td>109</td>
<td>P4002109</td>
<td>GEAR 37T/74T</td>
</tr>
<tr>
<td>110</td>
<td>P4002110</td>
<td>GEAR 46T</td>
</tr>
<tr>
<td>111</td>
<td>P4002111</td>
<td>GEAR 59T</td>
</tr>
<tr>
<td>112</td>
<td>P4002112</td>
<td>NUT 58OD</td>
</tr>
<tr>
<td>113</td>
<td>P4002113</td>
<td>CAP SCREW M8-1.25 X 10</td>
</tr>
<tr>
<td>114</td>
<td>P4002114</td>
<td>ROLL PIN 5 X 40</td>
</tr>
<tr>
<td>115</td>
<td>P4002115</td>
<td>COLLAR</td>
</tr>
<tr>
<td>116</td>
<td>P4002116</td>
<td>CAP SCREW M3-.5 X 8</td>
</tr>
<tr>
<td>117</td>
<td>P4002117</td>
<td>GEAR</td>
</tr>
<tr>
<td>118</td>
<td>P4002118</td>
<td>BEARING D-7211</td>
</tr>
<tr>
<td>119</td>
<td>P4002119</td>
<td>NUT</td>
</tr>
<tr>
<td>120</td>
<td>P4002120</td>
<td>OIL SEAL</td>
</tr>
<tr>
<td>121</td>
<td>P4002121</td>
<td>COVER</td>
</tr>
<tr>
<td>122</td>
<td>P4002122</td>
<td>CAP SCREW M8-1.25 X 20</td>
</tr>
<tr>
<td>123</td>
<td>P4002123</td>
<td>CAP SCREW M6-1 X 12</td>
</tr>
<tr>
<td>124</td>
<td>P4002124</td>
<td>COVER</td>
</tr>
<tr>
<td>125</td>
<td>P4002125</td>
<td>OIL SEAL</td>
</tr>
<tr>
<td>126</td>
<td>P4002126</td>
<td>BALL BEARING 6304 ZZ</td>
</tr>
<tr>
<td>127</td>
<td>P4002127V2</td>
<td>SHAFT 219MM V2.01.03</td>
</tr>
<tr>
<td>128</td>
<td>P4002128</td>
<td>KEY 8 X 180</td>
</tr>
<tr>
<td>129</td>
<td>P4002129</td>
<td>CAP SCREW M3-.5 X 8</td>
</tr>
<tr>
<td>130</td>
<td>P4002130</td>
<td>GEAR</td>
</tr>
<tr>
<td>131</td>
<td>P4002131</td>
<td>GEAR</td>
</tr>
<tr>
<td>132</td>
<td>P4002132</td>
<td>GEAR</td>
</tr>
<tr>
<td>133</td>
<td>P4002133</td>
<td>INT RETAINING RING 15MM</td>
</tr>
<tr>
<td>134</td>
<td>P4002134</td>
<td>GEAR</td>
</tr>
<tr>
<td>135</td>
<td>P4002135</td>
<td>GEAR</td>
</tr>
<tr>
<td>136</td>
<td>P4002136</td>
<td>GEAR</td>
</tr>
<tr>
<td>137</td>
<td>P4002137</td>
<td>BALL BEARING 6004 OPEN</td>
</tr>
<tr>
<td>138</td>
<td>P4002138</td>
<td>OIL SEAL</td>
</tr>
<tr>
<td>139</td>
<td>P4002139V2</td>
<td>COVER 45MM V2.01.03</td>
</tr>
<tr>
<td>140</td>
<td>P4002140</td>
<td>CAP SCREW M8-1.25 X 20</td>
</tr>
<tr>
<td>141</td>
<td>P4002141</td>
<td>WASHER</td>
</tr>
<tr>
<td>142</td>
<td>P4002142</td>
<td>PULLEY</td>
</tr>
<tr>
<td>143</td>
<td>P4002143</td>
<td>CAP SCREW M6-1 X 12</td>
</tr>
<tr>
<td>144</td>
<td>P4002144</td>
<td>COVER</td>
</tr>
<tr>
<td>145</td>
<td>P4002145</td>
<td>OIL SEAL</td>
</tr>
<tr>
<td>146</td>
<td>P4002146</td>
<td>GEAR</td>
</tr>
<tr>
<td>147</td>
<td>P4002147</td>
<td>GEAR</td>
</tr>
<tr>
<td>148</td>
<td>P4002148</td>
<td>GEAR</td>
</tr>
<tr>
<td>149</td>
<td>P4002149V2</td>
<td>SHAFT 178MM V2.01.03</td>
</tr>
<tr>
<td>150</td>
<td>P4002150</td>
<td>KEY CS X 80</td>
</tr>
<tr>
<td>151</td>
<td>P4002151</td>
<td>KEY 5 X 5 X 80</td>
</tr>
<tr>
<td>152</td>
<td>P4002152</td>
<td>BALL BEARING 6004 OPEN</td>
</tr>
<tr>
<td>153</td>
<td>P4002153</td>
<td>CAP SCREW M6-1 X 12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>154</td>
<td>P4002154</td>
<td>WASHER</td>
</tr>
<tr>
<td>155</td>
<td>P4002155</td>
<td>GEAR 40T</td>
</tr>
<tr>
<td>156</td>
<td>P4002156</td>
<td>KEY CS X 8</td>
</tr>
<tr>
<td>157</td>
<td>P4002157</td>
<td>OIL SEAL 25 X 40 X 10 V1.10.96</td>
</tr>
<tr>
<td>158</td>
<td>P4002158</td>
<td>EXT RETAINING RING 20MM</td>
</tr>
<tr>
<td>159</td>
<td>P4002159</td>
<td>INT RETAINING RING 40MM</td>
</tr>
<tr>
<td>160</td>
<td>P4002160</td>
<td>BALL BEARING 6004 OPEN</td>
</tr>
<tr>
<td>161</td>
<td>P4002161</td>
<td>CAP SCREW M6-1 X 12</td>
</tr>
<tr>
<td>162</td>
<td>P4002162</td>
<td>OIL SEAL</td>
</tr>
<tr>
<td>163</td>
<td>P4002163</td>
<td>COVER</td>
</tr>
<tr>
<td>164</td>
<td>P4002164</td>
<td>COLLAR</td>
</tr>
<tr>
<td>165</td>
<td>P4002165</td>
<td>SHAFT 117MM</td>
</tr>
<tr>
<td>166</td>
<td>P4002166</td>
<td>KEY 5 X 5 X 20</td>
</tr>
<tr>
<td>167</td>
<td>P4002167</td>
<td>GEAR</td>
</tr>
<tr>
<td>168</td>
<td>P4002168</td>
<td>SHAFT</td>
</tr>
<tr>
<td>169</td>
<td>P4002169</td>
<td>OIL SEAL 17 X 2.65</td>
</tr>
<tr>
<td>170</td>
<td>P4002170</td>
<td>SET SCREW M8-1.25 X 6</td>
</tr>
<tr>
<td>171</td>
<td>P4002171</td>
<td>C-CLIP</td>
</tr>
<tr>
<td>172</td>
<td>P4002172</td>
<td>INT RETAINING RING 47MM</td>
</tr>
<tr>
<td>173</td>
<td>P4002173</td>
<td>BALL BEARING 6204 OPEN</td>
</tr>
<tr>
<td>174</td>
<td>P4002174</td>
<td>GEAR 38T/45T</td>
</tr>
<tr>
<td>175</td>
<td>P4002175</td>
<td>LOCK PIN</td>
</tr>
<tr>
<td>176</td>
<td>P4002176</td>
<td>SPRING 6 X 4 X 22</td>
</tr>
<tr>
<td>177</td>
<td>P4002177</td>
<td>CAP SCREW M8-1.25 X 16</td>
</tr>
<tr>
<td>178</td>
<td>P4002178</td>
<td>ECCENTRIC SHAFT</td>
</tr>
<tr>
<td>179</td>
<td>P4002179</td>
<td>GEAR</td>
</tr>
<tr>
<td>180</td>
<td>P4002180</td>
<td>SET SCREW M8-1.25 X 10</td>
</tr>
<tr>
<td>181</td>
<td>P4002181</td>
<td>ROLL PIN 6 X 5</td>
</tr>
<tr>
<td>182</td>
<td>P4002182</td>
<td>SHAFT</td>
</tr>
<tr>
<td>183</td>
<td>P4002183</td>
<td>OIL SEAL</td>
</tr>
<tr>
<td>184</td>
<td>P4002184</td>
<td>SHAFT ARM</td>
</tr>
<tr>
<td>185</td>
<td>P4002185</td>
<td>C-CLIP</td>
</tr>
<tr>
<td>186</td>
<td>P4002186</td>
<td>CAP SCREW M8-1.25 X 16</td>
</tr>
<tr>
<td>187</td>
<td>P4002187</td>
<td>HEX NUT M8-1.25</td>
</tr>
<tr>
<td>188</td>
<td>P4002188</td>
<td>SIGN BOARD</td>
</tr>
<tr>
<td>189</td>
<td>P4002189</td>
<td>SET SCREW M8-1.25 X 8</td>
</tr>
<tr>
<td>190</td>
<td>P4002190</td>
<td>COMPRESSIONSPRING 1.2 X 48 X 27</td>
</tr>
<tr>
<td>191</td>
<td>P4002191</td>
<td>STEEL BALL 6MM</td>
</tr>
<tr>
<td>192</td>
<td>P4002192</td>
<td>SET SCREW M6-1 X 20</td>
</tr>
<tr>
<td>193</td>
<td>P4002193V2</td>
<td>COVER 10-3/8&quot; V2.01.03</td>
</tr>
<tr>
<td>194</td>
<td>P4002194</td>
<td>SCREW</td>
</tr>
<tr>
<td>195</td>
<td>P4002195</td>
<td>CAP SCREW M6-1 X 25</td>
</tr>
<tr>
<td>196</td>
<td>P4002196V2</td>
<td>OIL SEAL V2.09.05</td>
</tr>
<tr>
<td>197</td>
<td>P4002197V2</td>
<td>HEADSTOCK V2.01.03</td>
</tr>
<tr>
<td>198</td>
<td>P4002198</td>
<td>SHAFT</td>
</tr>
<tr>
<td>199</td>
<td>P4002199</td>
<td>COLLAR</td>
</tr>
<tr>
<td>200</td>
<td>P40022100</td>
<td>SHIFTER ARM</td>
</tr>
<tr>
<td>201</td>
<td>P40022101</td>
<td>SHIFTER</td>
</tr>
<tr>
<td>202</td>
<td>P40022102</td>
<td>STEEL FLUTED RIVET 2 X 5MM</td>
</tr>
<tr>
<td>203</td>
<td>P40022103</td>
<td>NAME PLATE</td>
</tr>
<tr>
<td>204</td>
<td>P40022104</td>
<td>OIL WINDOW 12MM</td>
</tr>
<tr>
<td>205</td>
<td>P40022104B</td>
<td>O-RING 15 X 2.65</td>
</tr>
<tr>
<td>206</td>
<td>P40022105</td>
<td>CAP SCREW M8-1.25 X 30</td>
</tr>
<tr>
<td>REF</td>
<td>PART #</td>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>------</td>
<td>-----------</td>
<td>------------------------</td>
</tr>
<tr>
<td>1106</td>
<td>P40021106</td>
<td>OIL SEAL 9.5 X 2.65</td>
</tr>
<tr>
<td>1107</td>
<td>P40021107</td>
<td>CAP SCREW M8-1.25 X 30</td>
</tr>
<tr>
<td>1108</td>
<td>P40021108</td>
<td>HEX BOLT M8-1.25 X 40</td>
</tr>
<tr>
<td>1109</td>
<td>P40021109</td>
<td>HANDLE</td>
</tr>
<tr>
<td>1110</td>
<td>P40021110</td>
<td>BOSS</td>
</tr>
<tr>
<td>1111</td>
<td>P40021111</td>
<td>KEY 5 X 5 X 15</td>
</tr>
</tbody>
</table>
Change Gear Train

(Alternate gears: 938V2, 945)

<table>
<thead>
<tr>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>P4002201</td>
<td>CAP SCREW M6-1 X 12</td>
<td>209</td>
<td>P4002209</td>
<td>SPACER</td>
</tr>
<tr>
<td>202</td>
<td>P4002202</td>
<td>WASHER</td>
<td>210</td>
<td>P4002210</td>
<td>QUADRANT</td>
</tr>
<tr>
<td>203</td>
<td>P4002203</td>
<td>GEAR</td>
<td>211</td>
<td>P4002211</td>
<td>SHAFT</td>
</tr>
<tr>
<td>204</td>
<td>P4002204</td>
<td>KEY 5 X 5 X 30</td>
<td>212</td>
<td>P4002212</td>
<td>GEAR 40T</td>
</tr>
<tr>
<td>205</td>
<td>P4002205</td>
<td>CAP SCREW M6-1 X 12</td>
<td>213</td>
<td>P4002213</td>
<td>KEY 5 X 5 X 30</td>
</tr>
<tr>
<td>206</td>
<td>P4002206</td>
<td>WASHER</td>
<td>237</td>
<td>P4002237</td>
<td>EXT RETAINING RING 35MM</td>
</tr>
<tr>
<td>207B</td>
<td>P4002207B</td>
<td>GEAR 86T/91T V3.08.05</td>
<td>938V2</td>
<td>P4003938V2</td>
<td>GEAR 35T V2.08.05</td>
</tr>
<tr>
<td>208</td>
<td>P4002208</td>
<td>BALL BEARING 6003-2RS</td>
<td>945</td>
<td>P4003945</td>
<td>GEAR 36T</td>
</tr>
</tbody>
</table>
Quick Change Gearbox
## Quick Change Gearbox Parts List

<table>
<thead>
<tr>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>301</td>
<td>P4002301</td>
<td>LEADSCREW (G4002)</td>
<td>336</td>
<td>P4002336</td>
<td>WASHER</td>
</tr>
<tr>
<td>301</td>
<td>P4003301</td>
<td>LEADSCREW (G4003)</td>
<td>337</td>
<td>P4002337</td>
<td>GEAR 16T</td>
</tr>
<tr>
<td>302</td>
<td>P4002302</td>
<td>ROLL PIN 5 X 36</td>
<td>342</td>
<td>P4002342</td>
<td>COMBO GEAR 3PC SET</td>
</tr>
<tr>
<td>304</td>
<td>P4002304</td>
<td>THRUST BEARING 8103</td>
<td>344</td>
<td>P4002344</td>
<td>GEAR 16T</td>
</tr>
<tr>
<td>305</td>
<td>P4002305</td>
<td>SHAFT</td>
<td>345</td>
<td>P4002345</td>
<td>GEAR 18T</td>
</tr>
<tr>
<td>306</td>
<td>P4002306</td>
<td>KEY 5 X 5 X 14</td>
<td>346</td>
<td>P4002346</td>
<td>GEAR 19T</td>
</tr>
<tr>
<td>308</td>
<td>P4002308</td>
<td>GEAR</td>
<td>347</td>
<td>P4002347</td>
<td>GEAR 20T</td>
</tr>
<tr>
<td>309</td>
<td>P4002309</td>
<td>HEX NUT M12-1.75</td>
<td>348</td>
<td>P4002348</td>
<td>GEAR 22T</td>
</tr>
<tr>
<td>310</td>
<td>P4002310</td>
<td>WASHER</td>
<td>349</td>
<td>P4002349</td>
<td>GEAR 24T</td>
</tr>
<tr>
<td>311</td>
<td>P4002311</td>
<td>CAP SCREW M6-1 X 16</td>
<td>350</td>
<td>P4002350</td>
<td>GEAR 26T</td>
</tr>
<tr>
<td>312</td>
<td>P4002312</td>
<td>COVER</td>
<td>351</td>
<td>P4002351</td>
<td>GEAR 28T</td>
</tr>
<tr>
<td>313</td>
<td>P4002313</td>
<td>KEY 5 X 5 X 30</td>
<td>352</td>
<td>P4002352</td>
<td>GEAR 24T</td>
</tr>
<tr>
<td>314</td>
<td>P4002314</td>
<td>KEY 5 X 5 X 10</td>
<td>353</td>
<td>P4002353</td>
<td>SHAFT</td>
</tr>
<tr>
<td>315</td>
<td>P4002315</td>
<td>SHAFT</td>
<td>354</td>
<td>P4002354</td>
<td>KEY 5 X 5 X 75</td>
</tr>
<tr>
<td>316</td>
<td>P4002316</td>
<td>BUSHING</td>
<td>355</td>
<td>P4002355</td>
<td>KEY 5 X 5 X 40</td>
</tr>
<tr>
<td>318</td>
<td>P4002318</td>
<td>GEAR 16T/32T</td>
<td>356</td>
<td>P4002356</td>
<td>BEARING 7000102</td>
</tr>
<tr>
<td>320</td>
<td>P4002320</td>
<td>GEAR 16T/32T</td>
<td>357</td>
<td>P4002357</td>
<td>GEAR 16T</td>
</tr>
<tr>
<td>322</td>
<td>P4002322</td>
<td>LEVER</td>
<td>358</td>
<td>P4002358</td>
<td>GEAR 32T W/BUSHING</td>
</tr>
<tr>
<td>323</td>
<td>P4002323</td>
<td>FEED ROD (G4002)</td>
<td>359</td>
<td>P4002359</td>
<td>SHIFT LEVER</td>
</tr>
<tr>
<td>323</td>
<td>P4003323</td>
<td>FEED ROD (G4003)</td>
<td>362</td>
<td>P4002362</td>
<td>KEY</td>
</tr>
<tr>
<td>324</td>
<td>P4002324</td>
<td>HEX BOLT M10-1.5 X 30</td>
<td>363</td>
<td>P4002363</td>
<td>SHAFT</td>
</tr>
<tr>
<td>325</td>
<td>P4002325</td>
<td>BOSS</td>
<td>364</td>
<td>P4002364</td>
<td>HEX NUT M6-1</td>
</tr>
<tr>
<td>326</td>
<td>P4002326</td>
<td>ROLL PIN 5 X 40</td>
<td>365</td>
<td>P4002365</td>
<td>SHAFT 16MM X 32MM</td>
</tr>
<tr>
<td>327</td>
<td>P4002327</td>
<td>GEAR BOX</td>
<td>366</td>
<td>P4002366</td>
<td>SHAFT</td>
</tr>
<tr>
<td>328</td>
<td>P4002328</td>
<td>PLATE</td>
<td>367</td>
<td>P4002367</td>
<td>COMPRESSION SPRING 1 X 8 X 47</td>
</tr>
<tr>
<td>329</td>
<td>P4002329</td>
<td>CAP SCREW M6-1 X 16</td>
<td>368</td>
<td>P4002368</td>
<td>SLEEVE</td>
</tr>
<tr>
<td>330</td>
<td>P4002330</td>
<td>SHAFT</td>
<td>369</td>
<td>P4002369</td>
<td>HOUSING</td>
</tr>
<tr>
<td>331</td>
<td>P4002331</td>
<td>E-CLIP 13MM</td>
<td>370</td>
<td>P4002370</td>
<td>SHAFT</td>
</tr>
<tr>
<td>332</td>
<td>P4002332</td>
<td>SHIFT PIVOT</td>
<td>371</td>
<td>P4002371</td>
<td>CAP SCREW M8-1.25 X 8</td>
</tr>
<tr>
<td>333</td>
<td>P4002333</td>
<td>PIN 4 X 30</td>
<td>372</td>
<td>P4002372</td>
<td>GEAR 15T</td>
</tr>
<tr>
<td>334</td>
<td>P4002334</td>
<td>SHIFT YOKE</td>
<td>373</td>
<td>P4002373</td>
<td>GEAR 24T</td>
</tr>
<tr>
<td>335</td>
<td>P4002335</td>
<td>CAP SCREW M6-1 X 12</td>
<td>374</td>
<td>P4002374</td>
<td>SHAFT</td>
</tr>
</tbody>
</table>
## Apron Parts List

<table>
<thead>
<tr>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>401V2</td>
<td>P4002401V2</td>
<td>HANDLE V2.08.12</td>
<td>437</td>
<td>P4002437</td>
<td>SAFETY SHIFTER</td>
</tr>
<tr>
<td>402V2</td>
<td>P4002402V2</td>
<td>HANDWHEEL V2.08.12</td>
<td>438</td>
<td>P4002438</td>
<td>CAP SCREW M8-1.25 X 6</td>
</tr>
<tr>
<td>403V2</td>
<td>P4002403V2</td>
<td>GRADUATED DIAL V2.08.12</td>
<td>439</td>
<td>P4002439</td>
<td>COMPRESSION SPRING 1 X 4.5 X 6</td>
</tr>
<tr>
<td>404V2</td>
<td>P4002404V2</td>
<td>SET SCREW M6-1 X 8</td>
<td>440</td>
<td>P4002440</td>
<td>STEEL BALL 6MM</td>
</tr>
<tr>
<td>405</td>
<td>P4002405</td>
<td>CAP SCREW M6-1 X 20</td>
<td>441</td>
<td>P4002441</td>
<td>BOSS</td>
</tr>
<tr>
<td>406</td>
<td>P4002406</td>
<td>BRACKET</td>
<td>442</td>
<td>P4002442</td>
<td>ROLL PIN 6 X 40</td>
</tr>
<tr>
<td>407V2</td>
<td>P4002407V2</td>
<td>GEAR SHAFT V2.08.12</td>
<td>443</td>
<td>P4002443</td>
<td>DOG</td>
</tr>
<tr>
<td>408</td>
<td>P4002408</td>
<td>BUSHING</td>
<td>444</td>
<td>P4002444</td>
<td>CAP SCREW M8-1.25 X 30</td>
</tr>
<tr>
<td>409</td>
<td>P4002409</td>
<td>ROLL PIN 5 X 30</td>
<td>445</td>
<td>P4002445</td>
<td>LEVER</td>
</tr>
<tr>
<td>410</td>
<td>P4002410</td>
<td>GEAR 50T</td>
<td>447</td>
<td>P4002447</td>
<td>SHAFT</td>
</tr>
<tr>
<td>411</td>
<td>P4002411</td>
<td>EXT RETAINING RING 19MM</td>
<td>448</td>
<td>P4002448</td>
<td>CAP SCREW M6-1 X 65</td>
</tr>
<tr>
<td>412</td>
<td>P4002412</td>
<td>GEAR SHAFT</td>
<td>449</td>
<td>P4002449</td>
<td>CAP SCREW M6-1 X 15</td>
</tr>
<tr>
<td>413</td>
<td>P4002413</td>
<td>GEAR 46T</td>
<td>450</td>
<td>P4002450</td>
<td>GEAR 16T</td>
</tr>
<tr>
<td>414</td>
<td>P4002414</td>
<td>GEAR 51T</td>
<td>451</td>
<td>P4002451</td>
<td>CAP SCREW M6-1 X 60</td>
</tr>
<tr>
<td>415</td>
<td>P4002415</td>
<td>ROLL PIN 5 X 30</td>
<td>451-2</td>
<td>P4002451-2</td>
<td>SPACER</td>
</tr>
<tr>
<td>417</td>
<td>P4002417</td>
<td>SHAFT</td>
<td>452</td>
<td>P4002452</td>
<td>HOUSING</td>
</tr>
<tr>
<td>418</td>
<td>P4002418</td>
<td>BUSHING</td>
<td>453</td>
<td>P4002453</td>
<td>THREAD DIAL</td>
</tr>
<tr>
<td>419-2</td>
<td>P4002419-2</td>
<td>GEAR W/BUSHING AND SPACER</td>
<td>454</td>
<td>P4002454</td>
<td>HEX NUT M6-1</td>
</tr>
<tr>
<td>420</td>
<td>P4002420</td>
<td>SHAFT</td>
<td>455</td>
<td>P4002455</td>
<td>HEX BOLT M6-1 X 16</td>
</tr>
<tr>
<td>421</td>
<td>P4002421</td>
<td>WORM</td>
<td>456</td>
<td>P4002456</td>
<td>HALF NUT 2 PC</td>
</tr>
<tr>
<td>422</td>
<td>P4002422</td>
<td>KEY 5 X 5 X 45</td>
<td>457</td>
<td>P4002457</td>
<td>HALF NUT HOUSING 2 PC</td>
</tr>
<tr>
<td>423</td>
<td>P4002423</td>
<td>ROLL PIN 5 X 24</td>
<td>458</td>
<td>P4002458</td>
<td>CAP SCREW M6-1 X 25</td>
</tr>
<tr>
<td>424</td>
<td>P4002424</td>
<td>GEAR 14T</td>
<td>459</td>
<td>P4002459</td>
<td>GIB</td>
</tr>
<tr>
<td>425</td>
<td>P4002425</td>
<td>BUSHING</td>
<td>461</td>
<td>P4002461</td>
<td>SHAFT</td>
</tr>
<tr>
<td>426</td>
<td>P4002426</td>
<td>GEAR SHAFT B5 X 36</td>
<td>463</td>
<td>P4002463</td>
<td>GEAR 25T</td>
</tr>
<tr>
<td>427</td>
<td>P4002427</td>
<td>LEVER</td>
<td>464</td>
<td>P4002464</td>
<td>SET SCREW M6-1 X 6</td>
</tr>
<tr>
<td>428</td>
<td>P4002428</td>
<td>ROLL PIN 5 X 24</td>
<td>465</td>
<td>P4002465</td>
<td>APRON CASE</td>
</tr>
<tr>
<td>429</td>
<td>P4002429</td>
<td>STEEL BALL 6MM</td>
<td>466</td>
<td>P4002466</td>
<td>WORM BRACKET</td>
</tr>
<tr>
<td>430</td>
<td>P4002430</td>
<td>COMPRESSION SPRING 1 X 4.5 X 6</td>
<td>467</td>
<td>P4002467</td>
<td>LIMIT BLOCK</td>
</tr>
<tr>
<td>431</td>
<td>P4002431</td>
<td>SET SCREW M6-1 X 8</td>
<td>468</td>
<td>P4002468</td>
<td>OIL PLUG M10-1.5 X 20</td>
</tr>
<tr>
<td>432</td>
<td>P4002432</td>
<td>CAP SCREW M6-1 X 45</td>
<td>469</td>
<td>P4002469</td>
<td>SET SCREW M6-1 X 20</td>
</tr>
<tr>
<td>433</td>
<td>P4002433</td>
<td>BOSS</td>
<td>470</td>
<td>P4002470</td>
<td>SPANNER CAP SCREW</td>
</tr>
<tr>
<td>434</td>
<td>P4002434</td>
<td>WASHER</td>
<td>471</td>
<td>P4002471</td>
<td>KEY 5 X 5 X 20</td>
</tr>
<tr>
<td>435</td>
<td>P4002435</td>
<td>CAP SCREW M6-1 X 40</td>
<td>1104</td>
<td>P40021104</td>
<td>OIL WINDOW 12MM</td>
</tr>
</tbody>
</table>
# Saddle Parts List

<table>
<thead>
<tr>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>501</td>
<td>P4002501</td>
<td>SADDLE</td>
<td>522</td>
<td>P4002522</td>
<td>SLIDE PLATE</td>
</tr>
<tr>
<td>502</td>
<td>P4002502</td>
<td>PHLP HD SCR M3-.5 X 14</td>
<td>523</td>
<td>P4002523</td>
<td>SLIDE PLATE</td>
</tr>
<tr>
<td>503</td>
<td>P4002503</td>
<td>WIPER</td>
<td>524V2</td>
<td>P4002524V2</td>
<td>SLIDE PLATE 3 HOLES V2.01.09</td>
</tr>
<tr>
<td>504</td>
<td>P4002504</td>
<td>PHLP HD SCR 8-32 X 3/8</td>
<td>525</td>
<td>P4002525</td>
<td>HEX BOLT M8-1.25 X 24</td>
</tr>
<tr>
<td>505</td>
<td>P4002505</td>
<td>COVER</td>
<td>526</td>
<td>P4002526</td>
<td>WIPER</td>
</tr>
<tr>
<td>506</td>
<td>P4002506</td>
<td>CAP SCREW M5-.8 X 14</td>
<td>528</td>
<td>P4002528</td>
<td>HANDLE</td>
</tr>
<tr>
<td>507</td>
<td>P4002507</td>
<td>WIPER</td>
<td>529A</td>
<td>P4002529A</td>
<td>BRACKET</td>
</tr>
<tr>
<td>508</td>
<td>P4002508</td>
<td>ROLL PIN 5 X 45</td>
<td>530A</td>
<td>P4002530A</td>
<td>SET SCREW</td>
</tr>
<tr>
<td>509</td>
<td>P4002509</td>
<td>CAP SCREW M8-1.25 X 35</td>
<td>531A</td>
<td>P4002531A</td>
<td>SPANNER NUT</td>
</tr>
<tr>
<td>510</td>
<td>P4002510</td>
<td>SCREW</td>
<td>533</td>
<td>P4002533</td>
<td>SIGN BOARD</td>
</tr>
<tr>
<td>511</td>
<td>P4002511</td>
<td>SCREW</td>
<td>534</td>
<td>P4002534</td>
<td>RIVET 2 X 3MM STEEL</td>
</tr>
<tr>
<td>512</td>
<td>P4002512</td>
<td>CROSS SLIDE</td>
<td>535</td>
<td>P4002535</td>
<td>THRUST BEARING 51102</td>
</tr>
<tr>
<td>513</td>
<td>P4002513</td>
<td>GIB</td>
<td>536</td>
<td>P4002536</td>
<td>BRACKET</td>
</tr>
<tr>
<td>514</td>
<td>P4002514</td>
<td>BUSHING</td>
<td>537</td>
<td>P4002537</td>
<td>CAP SCREW M6-1 X 25</td>
</tr>
<tr>
<td>515</td>
<td>P4002515</td>
<td>CROSS SLIDE NUT M8-1.25, BRASS</td>
<td>539</td>
<td>P4002539</td>
<td>CROSS SLIDE LEADSCREW</td>
</tr>
<tr>
<td>518</td>
<td>P4002518</td>
<td>SLIDE PLATE</td>
<td>540</td>
<td>P4002540</td>
<td>GEAR 13T</td>
</tr>
<tr>
<td>519</td>
<td>P4002519</td>
<td>CAP SCREW M8-1.25 X 25</td>
<td>541</td>
<td>P4002541</td>
<td>CAP SCREW M6-1 X 8</td>
</tr>
<tr>
<td>520</td>
<td>P4002520</td>
<td>WIPER</td>
<td>542</td>
<td>P4002542</td>
<td>DIAL</td>
</tr>
<tr>
<td>521</td>
<td>P4002521</td>
<td>SCREW</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>REF</td>
<td>PART #</td>
<td>DESCRIPTION</td>
<td>REF</td>
<td>PART #</td>
<td>DESCRIPTION</td>
</tr>
<tr>
<td>-----</td>
<td>-----------</td>
<td>----------------------------------</td>
<td>-----</td>
<td>-----------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>601</td>
<td>P4002601</td>
<td>SCREW</td>
<td>613</td>
<td>P4002613</td>
<td>THRUST BEARING 8101</td>
</tr>
<tr>
<td>602</td>
<td>P4002602</td>
<td>GIB</td>
<td>614</td>
<td>P4002614</td>
<td>INDEX RING</td>
</tr>
<tr>
<td>603</td>
<td>P4002603</td>
<td>COMPOUND SLIDE</td>
<td>615</td>
<td>P4002615A</td>
<td>SPANNER NUT</td>
</tr>
<tr>
<td>604</td>
<td>P4002604</td>
<td>HEX NUT M8-1.25</td>
<td>616</td>
<td>P4002616A</td>
<td>BRACKET</td>
</tr>
<tr>
<td>605</td>
<td>P4002605</td>
<td>COMPOUND T-BOLT</td>
<td>617</td>
<td>P4002617A</td>
<td>SHORT HANDLE</td>
</tr>
<tr>
<td>606</td>
<td>P4002606</td>
<td>COMPOUND GIB BOLT</td>
<td>617A</td>
<td>P4002617A</td>
<td>SHORT HANDLE</td>
</tr>
<tr>
<td>607</td>
<td>P4002607</td>
<td>LEAD SCREW NUT</td>
<td>617A</td>
<td>P4002617A</td>
<td>SHORT HANDLE</td>
</tr>
<tr>
<td>608</td>
<td>P4002608</td>
<td>SET SCREW M6-1 X 8</td>
<td>619</td>
<td>P4002619</td>
<td>CAP SCREW M6-1 X 15</td>
</tr>
<tr>
<td>609</td>
<td>P4002609</td>
<td>HEX NUT M6-1</td>
<td>620</td>
<td>P4002620</td>
<td>COMPOUND REST</td>
</tr>
<tr>
<td>610</td>
<td>P4002610</td>
<td>COMPOUND REST LEADCORE</td>
<td>640</td>
<td>P4002640</td>
<td>PIN</td>
</tr>
<tr>
<td>611</td>
<td>P4002611</td>
<td>THRUST BEARING 8101</td>
<td>641</td>
<td>P4002641</td>
<td>COMPRESSION SPRING 1 X 5 X 12</td>
</tr>
<tr>
<td>612</td>
<td>P4002612</td>
<td>BRACKET</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Tailstock Parts List

<table>
<thead>
<tr>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>701</td>
<td>P4002701</td>
<td>CENTER</td>
<td>715</td>
<td>P4002715</td>
<td>HEX NUT M12-1.75</td>
</tr>
<tr>
<td>702</td>
<td>P4002702</td>
<td>KEY 8 X 30</td>
<td>716</td>
<td>P4002716</td>
<td>HANDLE</td>
</tr>
<tr>
<td>703</td>
<td>P4002703</td>
<td>QUILL</td>
<td>717</td>
<td>P4002717</td>
<td>LOCK SCREW</td>
</tr>
<tr>
<td>704</td>
<td>P4002704</td>
<td>TAIL STOCK</td>
<td>718</td>
<td>P4002718</td>
<td>LOCK SHAFT</td>
</tr>
<tr>
<td>705</td>
<td>P4002705</td>
<td>BASE</td>
<td>719</td>
<td>P4002719</td>
<td>HANDLE</td>
</tr>
<tr>
<td>706</td>
<td>P4002706</td>
<td>CAP SCREW M10-1.5 X 50</td>
<td>720</td>
<td>P4002720</td>
<td>SHAFT</td>
</tr>
<tr>
<td>707</td>
<td>P4002707</td>
<td>SCREW</td>
<td>721</td>
<td>P4002721</td>
<td>ROLL PIN 5 X 30</td>
</tr>
<tr>
<td>708</td>
<td>P4002708</td>
<td>PIN B4 X 8</td>
<td>722</td>
<td>P4002722</td>
<td>COLLAR</td>
</tr>
<tr>
<td>709</td>
<td>P4002709</td>
<td>THRUST BEARING 8101</td>
<td>723</td>
<td>P4002723</td>
<td>SHAFT</td>
</tr>
<tr>
<td>710</td>
<td>P4002710</td>
<td>BRACKET</td>
<td>724</td>
<td>P4002724</td>
<td>BASE SHOE BLOCK</td>
</tr>
<tr>
<td>711</td>
<td>P4002711</td>
<td>INDEX RING</td>
<td>725</td>
<td>P4002725</td>
<td>FLAT WASHER 12MM</td>
</tr>
<tr>
<td>712</td>
<td>P4002712</td>
<td>CAP SCREW M6-1 X 20</td>
<td>726</td>
<td>P4002726</td>
<td>HEX NUT M12-1.75</td>
</tr>
<tr>
<td>713</td>
<td>P4002713</td>
<td>HAND WHEEL</td>
<td>727</td>
<td>P4002727</td>
<td>NUT</td>
</tr>
<tr>
<td>714</td>
<td>P4002714</td>
<td>HANDLE</td>
<td>728</td>
<td>P4002728</td>
<td>INDEX</td>
</tr>
</tbody>
</table>
# Motor Assembly

## REF PART # DESCRIPTION

<table>
<thead>
<tr>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>801</td>
<td>P4002801 COVER</td>
</tr>
<tr>
<td></td>
<td>802</td>
<td>P4002802 SCREW</td>
</tr>
<tr>
<td></td>
<td>803</td>
<td>P4002803 NUT</td>
</tr>
<tr>
<td></td>
<td>812</td>
<td>P4002812 MOTOR 2 HP 1.1KW V2.12.97</td>
</tr>
<tr>
<td></td>
<td>813</td>
<td>P4002813 FLAT WASHER 10MM</td>
</tr>
<tr>
<td></td>
<td>814</td>
<td>P4002814 HEX BOLT M10-1.5 X 30</td>
</tr>
<tr>
<td></td>
<td>815</td>
<td>P4002815 KEY</td>
</tr>
<tr>
<td></td>
<td>816</td>
<td>P4002816 PULLEY</td>
</tr>
<tr>
<td></td>
<td>817</td>
<td>P4002817 MOTOR MOUNT BRACKET</td>
</tr>
<tr>
<td></td>
<td>818</td>
<td>P4002818 FLAT WASHER 12MM</td>
</tr>
<tr>
<td></td>
<td>819</td>
<td>P4002819 HEX BOLT M10-1.5 X 30</td>
</tr>
<tr>
<td></td>
<td>820</td>
<td>P4002820 V-BELT A29</td>
</tr>
</tbody>
</table>
## Feed Rod Leadscrew

<table>
<thead>
<tr>
<th>PART</th>
<th>DESCRIPTION</th>
<th>PART</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>901</td>
<td>P4002901 BRACKET</td>
<td>913</td>
<td>P4002913 CAP SCREW M6-1 X 14</td>
</tr>
<tr>
<td>902</td>
<td>P4002902 CAP SCREW M6-1 X 11</td>
<td>914</td>
<td>P4002914 ROLL PIN 5 X 25</td>
</tr>
<tr>
<td>903</td>
<td>P4002903 OIL CAP 6MM</td>
<td>915</td>
<td>P4002915 BRACKET</td>
</tr>
<tr>
<td>904</td>
<td>P4002904 ROLL PIN 6 X 55</td>
<td>916</td>
<td>P4002916 EXT RETAINING RING 30MM</td>
</tr>
<tr>
<td>905</td>
<td>P4002905 SET SCREW M6-1 X 6</td>
<td>917</td>
<td>P4002917 CAP SCREW M8-1.25 X 25</td>
</tr>
<tr>
<td>906</td>
<td>P4002906 COLLAR</td>
<td>918</td>
<td>P4002918V2 CONNECTION BRACKET V2.12.14</td>
</tr>
<tr>
<td>907V2</td>
<td>P4002907V2 SPINDLE ROD V2.12.14 (G4002)</td>
<td>919V2</td>
<td>P4002919V2 SPINDLE ON/OFF SWITCH V2.12.14</td>
</tr>
<tr>
<td>907</td>
<td>P4003907 SPINDLE ROD (G4003)</td>
<td>946</td>
<td>P4002946 CAP SCREW M4-.7 X 6</td>
</tr>
<tr>
<td>908</td>
<td>P4002908 KEY</td>
<td>947</td>
<td>P4002947 SET SCREW M6-1 X 8</td>
</tr>
<tr>
<td>909</td>
<td>P4002909 ROLL PIN 4 X 20</td>
<td>948</td>
<td>P4002948 SPINDLE SWITCH ARM</td>
</tr>
<tr>
<td>910</td>
<td>P4002910 COMPRESSION SPRING 7020</td>
<td>949</td>
<td>P4002949 SPINDLE SWITCH BOX</td>
</tr>
<tr>
<td>911</td>
<td>P4002911 HANDLE</td>
<td>950</td>
<td>P4002950 BUTTON HD CAP SCR M4-.7 X 45</td>
</tr>
<tr>
<td>912</td>
<td>P4002912 BRACKET</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

![Diagram of Feed Rod Leadscrew](image-url)
Bed

<table>
<thead>
<tr>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
<th>REF</th>
<th>PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001</td>
<td>P40021001</td>
<td>LATHE BED (G4002)</td>
<td>1005</td>
<td>P40021005</td>
<td>CAP SCREW M12-1.75 X 40</td>
</tr>
<tr>
<td>1001</td>
<td>P40031001</td>
<td>LATHE BED (G4003)</td>
<td>1008</td>
<td>P40021008</td>
<td>CHIP PAN 18&quot; x 53&quot; (G4002)</td>
</tr>
<tr>
<td>1002</td>
<td>P40021002</td>
<td>RACK 16-1/2&quot; LONG (G4002)</td>
<td>1008</td>
<td>P40031008</td>
<td>CHIP PAN 19&quot; X 61&quot; (G4003)</td>
</tr>
<tr>
<td>1002B</td>
<td>P40021002B</td>
<td>RACK 6-1/8&quot; SHORT (G4003)</td>
<td>1009</td>
<td>P40021009</td>
<td>FLAT WASHER 12MM</td>
</tr>
<tr>
<td>1003</td>
<td>P40021003</td>
<td>ROLL PIN 5 X 24</td>
<td>1010</td>
<td>P40021010</td>
<td>HEX NUT M12-1.75</td>
</tr>
<tr>
<td>1004</td>
<td>P40021004</td>
<td>CAP SCREW M6-1 X 14</td>
<td>1011</td>
<td>P40031011</td>
<td>SPLASH GUARD 38&quot; (G4002)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SPLASH GUARD 46&quot; (G4003)</td>
</tr>
</tbody>
</table>
The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. Of course, all information is strictly confidential.

1. How did you learn about us?
   - Advertisement
   - Friend
   - Catalog
   - Card Deck
   - Website
   - Other:

2. Which of the following magazines do you subscribe to?
   - Cabinetmaker & FDM
   - Popular Science
   - Wooden Boat
   - Family Handyman
   - Popular woodworking
   - Woodshop News
   - Hand Loader
   - Precision Shooter
   - Woodsmith
   - Handy
   - Projects in Metal
   - Woodwork
   - Home Shop Machinist
   - RC Modeler
   - Woodworker West
   - Journal of Light Cont.
   - Rifle
   - Woodworker’s Journal
   - Live Steam
   - Shop Notes
   - Other:
   - Model Airplane News
   - Shotgun News
   - Old House Journal
   - Today’s Homeowner
   - Popular Mechanics
   - Wood

3. What is your annual household income?
   - $20,000-$29,000
   - $30,000-$39,000
   - $40,000-$49,000
   - $50,000-$59,000
   - $60,000-$69,000
   - $70,000+

4. What is your age group?
   - 20-29
   - 30-39
   - 40-49
   - 50-59
   - 60-69
   - 70+

5. How long have you been a woodworker/metalworker?
   - 0-2 Years
   - 2-8 Years
   - 8-20 Years
   - 20+ Years

6. How many of your machines or tools are Grizzly?
   - 0-2
   - 3-5
   - 6-9
   - 10+

7. Do you think your machine represents a good value?  Yes  No

8. Would you recommend Grizzly Industrial to a friend?  Yes  No

9. Would you allow us to use your name as a reference for Grizzly customers in your area?
   Note: We never use names more than 3 times.  Yes  No

10. Comments:
WARRANTY & RETURNS

Grizzly Industrial, Inc. warrants every product it sells for a period of 1 year to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a “Return Number,'' which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.
Visit Our Website Today For Current Specials!

ORDER
24 HOURS A DAY!
1-800-523-4777