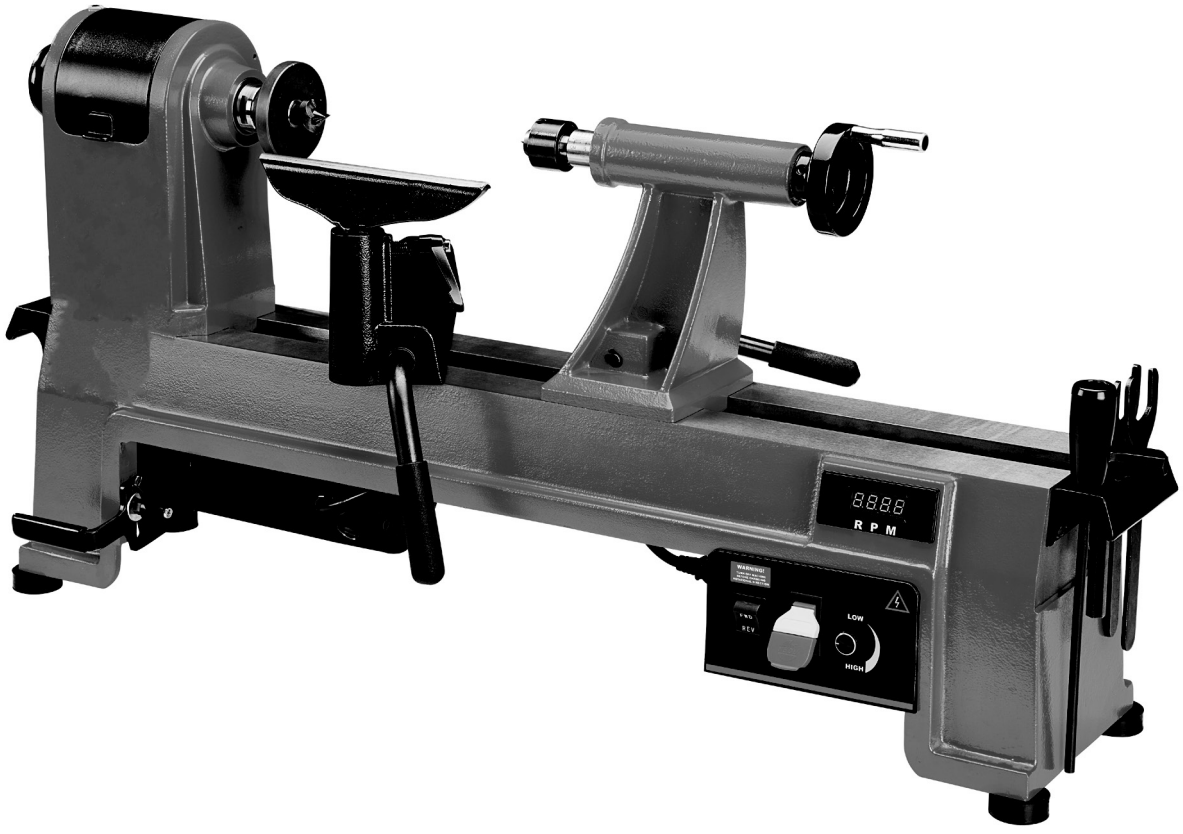
Owner's Manual & Safety Instructions

Save This Manual Keep this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures. Write the product's serial number in the back of the manual near the assembly diagram (or month and year of purchase if product has no number). Keep this manual and the receipt in a safe and dry place for future reference. 24k

Bauer™ 221531E-B

14" X 20"
EVS WOOD MIDI-LATHE



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Email our technical support at: productsupport@harborfreight.com

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When unpacking, make sure that the product is intact and undamaged. If any parts are missing or broken, please call 1-800-444-3353 as soon as possible.

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No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools.
Diagrams within this manual may not be drawn proportionally. Due to continuing improvements, actual product may differ slightly from the product described herein. Tools required for assembly and service may not be included.

⚠WARNING

Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.

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SAFETY

SETUP

OPERATION

MAINTENANCE

WARNING SYMBOLS AND DEFINITIONS	
⚠	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
⚠DANGER	Indicates a hazardous situation which, if not avoided, will result in death or serious injury.
⚠WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
⚠CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE CAUTION	Addresses practices not related to personal injury.

IMPORTANT SAFETY INFORMATION

General Tool Safety Warnings

⚠WARNING

Read all safety warnings and instructions.
Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.
Save all warnings and instructions for future reference.

1. KEEP GUARDS IN PLACE and in working order.
2. REMOVE ADJUSTING KEYS AND WRENCHES. Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
3. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.
4. DON'T USE IN DANGEROUS ENVIRONMENT. Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
5. KEEP CHILDREN AWAY. All visitors should be kept safe distance from work area.
6. MAKE WORKSHOP KID PROOF with padlocks, master switches, or by removing starter keys.
7. DON'T FORCE TOOL. It will do the job better and safer at the rate for which it was designed.
8. USE RIGHT TOOL. Don't force tool or attachment to do a job for which it was not designed.

Table A: RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS (120 VOLT)				
NAMEPLATE AMPERES (at full load)	**EXTENSION CORD LENGTH**			
	25′	**50′**	**100′**	**150′**
0 – 6	18	16	16	14
6.1 – 10	18	16	14	12
10.1 – 12	16	16	14	12
12.1 – 16	14	12	**Do not use.**	

9. USE PROPER EXTENSION CORD. Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table A shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.
10. WEAR PROPER APPAREL. Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
11. ALWAYS USE SAFETY GLASSES. Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
12. SECURE WORK. Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate tool.
13. DON'T OVERREACH. Keep proper footing and balance at all times.
14. MAINTAIN TOOLS WITH CARE. Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
15. DISCONNECT TOOLS before servicing; when changing accessories, such as blades, bits, cutters, and the like.
16. REDUCE THE RISK OF UNINTENTIONAL STARTING. Make sure switch is in off position before plugging in.
17. USE RECOMMENDED ACCESSORIES. Consult the owner's manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.
18. NEVER STAND ON TOOL. Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
19. CHECK DAMAGED PARTS. Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function – check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
20. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF. Don't leave tool until it comes to a complete stop.

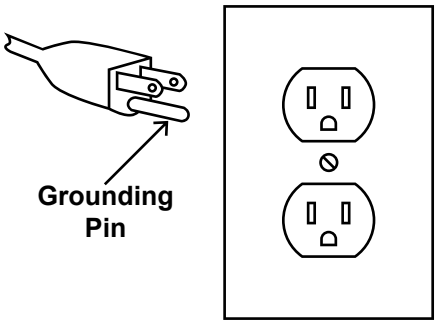
Grounding Instructions

⚠WARNING

TO PREVENT ELECTRIC SHOCK AND DEATH FROM INCORRECT GROUNDING WIRE CONNECTION READ AND FOLLOW THESE INSTRUCTIONS:

110-120 VAC Grounded Tools: Tools with Three Prong Plugs

1. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.
2. Do not modify the plug provided – if it will not fit the outlet, have the proper outlet installed by a qualified electrician.
3. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.
4. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
5. Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.
6. Repair or replace damaged or worn cord immediately.



125 VAC 3-Prong Plug and Outlet (for up to 125 VAC and up to 15 A)

7. This tool is intended for use on a circuit that has an outlet that looks like the one illustrated above in **125 VAC 3-Prong Plug and Outlet**. The tool has a grounding plug that looks like the plug illustrated above in **125 VAC 3-Prong Plug and Outlet**.
8. The outlet must be properly installed and grounded in accordance with all codes and ordinances.
9. Do not use an adapter to connect this tool to a different outlet.

Lathe Safety Warnings

For Your Own Safety Read Instruction Manual Before Operating Lathe

1. Wear eye protection.
2. Do not wear gloves, necktie, or loose clothing.
3. Tighten all locks before operating.
4. Rotate workpiece by hand before applying power.
5. Rough out workpiece before installing on faceplate.
6. Do not mount split workpiece or one containing knot.
7. Use lowest speed when starting new workpiece.
8. **DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED. Moving guards must move freely and close instantly.**
9. The use of accessories or attachments not recommended by the manufacturer may result in a risk of injury to persons.
10. When servicing use only identical replacement parts.
11. Do not depress the spindle lock when starting or during operation.
12. Remove the Safety Key after each use. Store the Safety Key separate from the tool and out of children's reach.
13. Only use safety equipment that has been approved by an appropriate standards agency. Unapproved safety equipment may not provide adequate protection. Eye protection must be ANSI-approved and breathing protection must be NIOSH-approved for the specific hazards in the work area.
14. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.
15. Industrial applications must follow OSHA guidelines.
16. Maintain labels and nameplates on the tool. These carry important safety information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
17. Avoid unintentional starting. Prepare to begin work before turning on the tool.
18. People with pacemakers should consult their physician(s) before use. Electromagnetic fields in close proximity to heart pacemaker could cause pacemaker interference or pacemaker failure.
19. The warnings, precautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Vibration Safety

This tool vibrates during use. Repeated or long-term exposure to vibration may cause temporary or permanent physical injury, particularly to the hands, arms and shoulders. To reduce the risk of vibration-related injury:

1. Anyone using vibrating tools regularly or for an extended period should first be examined by a doctor and then have regular medical check-ups to ensure medical problems are not being caused or worsened from use. Pregnant women or people who have impaired blood circulation to the hand, past hand injuries, nervous system disorders, diabetes, or Raynaud's Disease should not use this tool. If you feel any medical or physical symptoms related to vibration (such as tingling, numbness, and white or blue fingers), seek medical advice as soon as possible.
2. Do not smoke during use. Nicotine reduces the blood supply to the hands and fingers, increasing the risk of vibration-related injury.
3. Use tools with the lowest vibration when there is a choice between different processes.
4. Include vibration-free periods each day of work.
5. Grip workpiece as lightly as possible (while still keeping safe control of it). Let the tool do the work.
6. To reduce vibration, maintain the tool as explained in this manual. If any abnormal vibration occurs, stop use immediately.

SAVE THESE INSTRUCTIONS.

Specifications

Electrical Rating	120VAC / 60Hz / 6A
Spindle Speeds	60 - 3550 RPM
Spindle Thread Size	1″ x 8 TPI
Swing Over Bed	14″
Swing Over Tool Rest	10-1/2″
Distance Between Centers	20″ Maximum
Tailstock Taper	MT2
Tailstock Quill Travel	3.5″
Number Of Indexing Positions	24
Weight	105 lbs

Setup - Before Use:

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch of the tool off, remove the Safety Key, and unplug the tool from its electrical outlet before performing any procedure in this section.

Note: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram near the end of this manual.

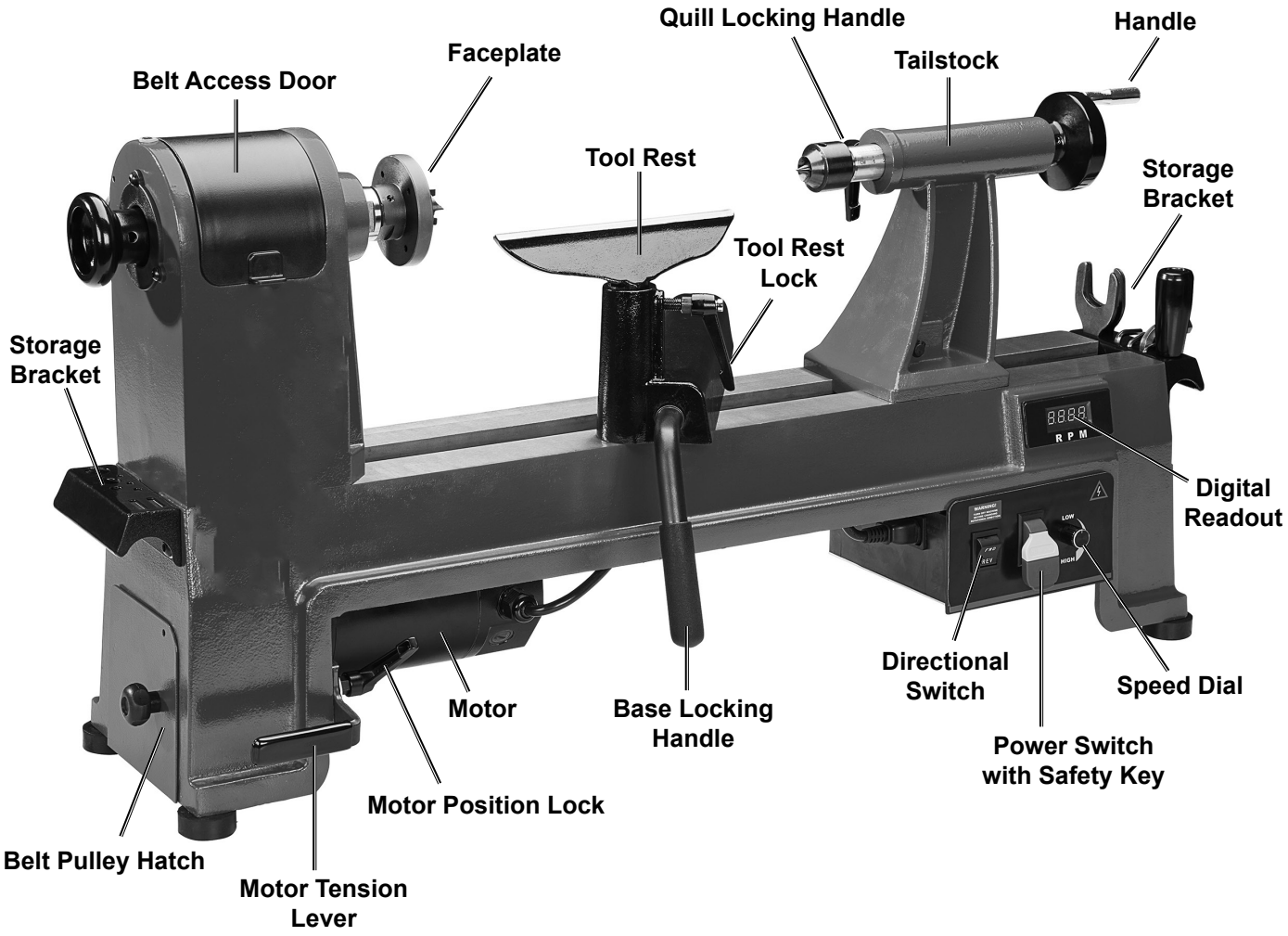
Assembly/Mounting

1. Screw 4 Rubber Feet (1) into the holes located at each corner of the tool. Make sure that tool sits evenly on the feet when finished.
2. Insert Power Cord (86) into outlet on the Control Box (200).

Installing Storage Brackets:

1. Using a screwdriver (not included), attach Storage Bracket (16) to the side of the lathe using 2 Washers (15) and 2 Screws (14).
2. Repeat the process on the other side to install the second Bracket.

Functions


Quill Locking Handle
Handle
Faceplate
Belt Access Door
Tailstock
Tool Rest
Storage Bracket
Tool Rest Lock
Storage Bracket
R P M
Digital Readout
Directional Switch
Speed Dial
Motor
Base Locking Handle
Power Switch with Safety Key
Motor Position Lock
Belt Pulley Hatch
Motor Tension Lever

Read the ENTIRE IMPORTANT SAFETY INFORMATION section at the beginning of this manual including all text under subheadings therein before set up or use of this product.

Tool Set Up

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch of the tool off, remove the Safety Key, and unplug the tool from its electrical outlet before performing any procedure in this section.

TO PREVENT SERIOUS INJURY:
DO NOT OPERATE WITH ANY GUARD DISABLED, DAMAGED, OR REMOVED.
Moving guards must move freely and close instantly.

Performing a Test Run

1. Place the Belt (205) into its lowest position. (For instructions on Belt movement, refer to Adjusting Speed on page 10.)
2. Pull out Indexing Pin Knob (21) and rotate so that Detent is seated on the Roll Pin.
3. Turn Speed Dial (200) fully counterclockwise.
4. Connect machine to power supply.
5. Set Directional Switch (200) to FOR (forward) position. Pull out on Power Switch (200) to start Spindle (33), and slowly turn Speed Dial clockwise. The Digital Readout (75) will light up, and Spindle will rotate down toward front of Lathe.
6. Turn Speed Dial fully counterclockwise.
7. Push in Power Switch to OFF position.
8. Set Directional Switch to REV (reverse) position, set Power Switch to ON position, then slowly turn Speed Dial clockwise.
9. When operating correctly, machine will run smoothly with little to no vibration or rubbing noises. Spindle should rotate up toward rear of Lathe.
10. Turn machine off.

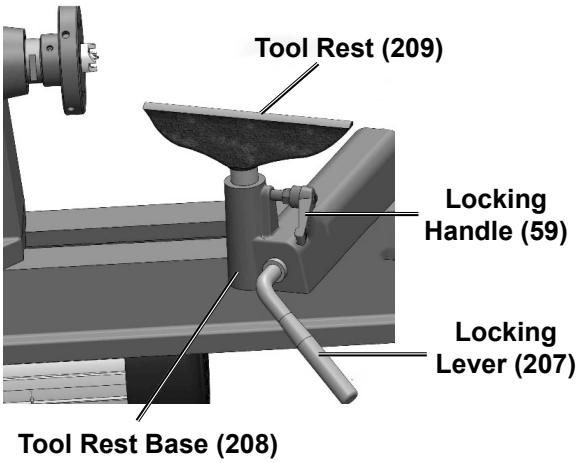
Tool Rest Adjustment

Note: Adjustments to the Tool Rest can be made based on the work being done.

1. The Tool Rest Locking Lever (207) locks Tool Rest Base (208) in position. Loosen the Lever to slide Tool Rest Base along lathe bed. Tighten Lever firmly when Tool Rest is properly positioned.

Note: There is a nut underneath the Tool Rest Base that should be tightened periodically to allow the Locking Lever to tighten properly.

2. Loosen the Tool Rest Locking Handle (59) to position Tool Rest at a desired angle or height. Tighten Handle firmly when Tool Rest is properly positioned.



Assembling Faceplate

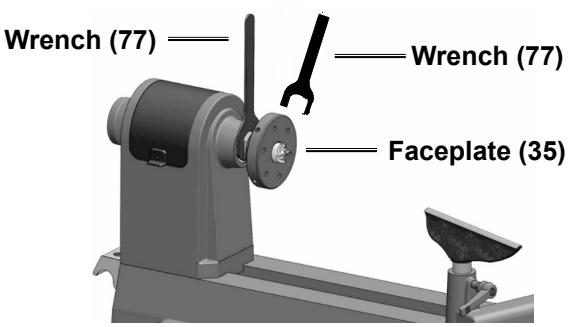
Note: The Faceplate is used for turning bowls and plates. When installing Faceplate, mount the workpiece onto Faceplate prior to installing Faceplate on the Headstock.

To Install Faceplate:

1. Thread Faceplate (35) onto Spindle by turning it clockwise.
2. Hold Spindle in place with Wrench (77). Place second Wrench (77) on flats of Faceplate and turn to tighten Faceplate.
3. Tighten two Set Screws (34) on Faceplate with Hex Wrench (78).

To Remove Faceplate:

1. Loosen the two Faceplate Set Screws.
2. Hold Spindle in place with Wrench (77), while loosening Faceplate with second Wrench (77).

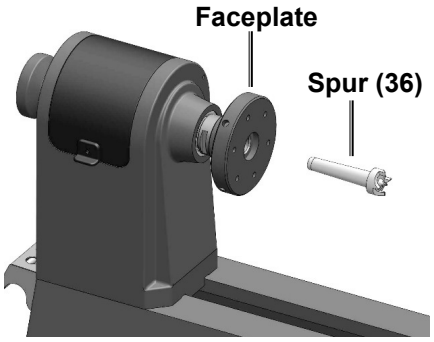


Installing/Removing Spur Center

Install Spur Center:

Note: Spur Center can be used with or without Faceplate mounted to spindle.

1. Make sure the mating surfaces of both the Spur Center (36) and Spindle are clean. Use an acetone-moistened cloth to remove any other debris, oil, etc.
2. Drive Spur Center into the workpiece, using a rubber mallet or a piece of scrap wood.
3. Push Spur Center into the Spindle.

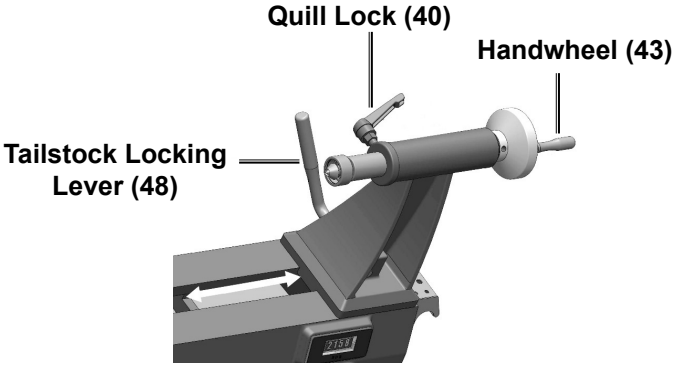


Remove Spur Center:

1. Hold Spur Center to prevent it from falling. Use a rag to protect your hand from the sharp edges.
2. Insert Knockout Rod through the spindle hole to tap out the Spur Center.

Tailstock Adjustment

1. Loosen the Tailstock Locking Lever (48) and slide Tailstock (39) along the lathe bed into the desired position. Retighten Locking Lever.
2. Loosen the Quill Lock (40) just enough to unlock the Quill (38). Turn Handwheel (43) clockwise to move Quill forward. Turn counterclockwise to retract Quill. Retighten Quill Lock.



Setting Up Tailstock Live Center

Install Live Center:

a. Rotate the Handwheel clockwise three times to move Quill forward.

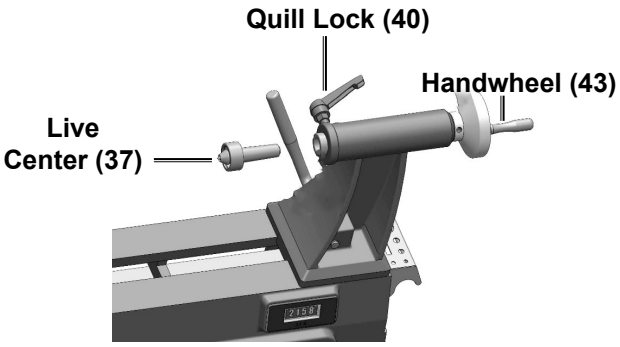
b. Make sure the mating surfaces are clean. Push the Live Center (37) into the Quill.

c. If the Quill becomes fully retracted when the Live Center is mounted, it will dismount the Live Center. This is normal. Remount Live Center by extending the Quill approximately 0.5 inch and pushing the Live Center in place.

Remove Live Center:

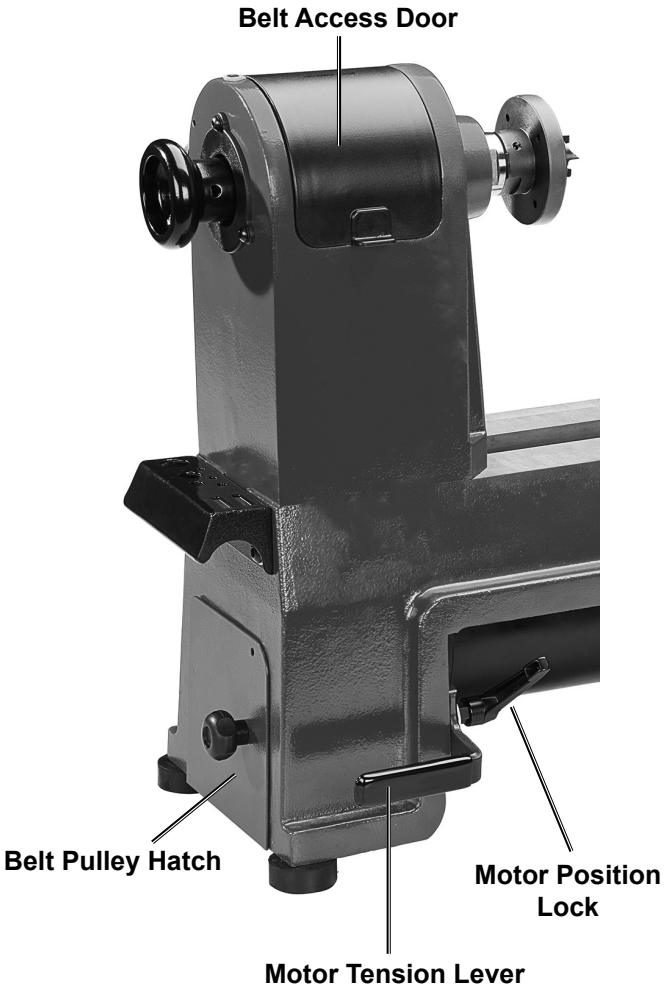
a. Hold the Live Center to prevent it from falling. Use a cloth to protect your hand from the sharp edges.

b. Rotate Handwheel counterclockwise to retract the Quill until the Live Center is released from the Quill.

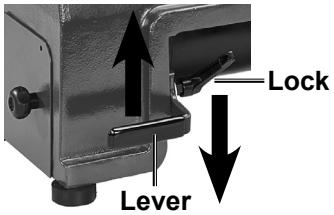


Adjusting Speed

Note: Start at slower speeds for rough cuts and larger workpieces. Use faster speeds for refined cuts and detailed work. Set the desired speed range by adjusting the Belt position. Change the speed within a speed range using the Speed Dial. Speed is displayed on the Digital Readout.



1. Always turn off and unplug machine before changing Belt position.
2. Open Belt Access Door (27).
3. Loosen Motor Position Lock (3). The Screw (9) at the center of the Lock can be loosened to rotate Handle to an optimal position.
4. Pull upwards on the Motor Tension Lever (202) to relieve tension on the Belt.

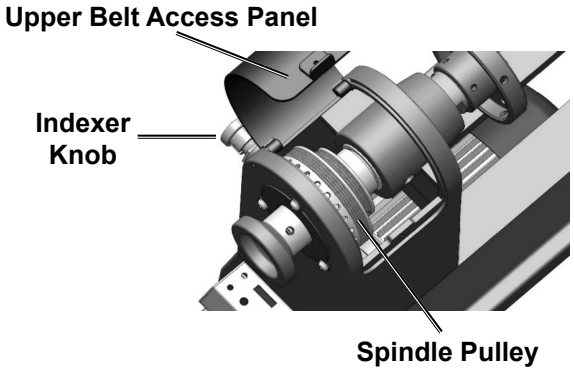


5. Tighten Motor Lock to hold position.
6. Pull Belt Pulley Hatch (223) open using its knob.
7. Adjust the Belt's position on both Spindle Pulley (204) and Motor Pulley (203) to the desired speed range setting. Ensure that the Belt is vertically aligned on both pulleys.
8. Loosen Motor Position Lock and lower the Tension Lever to its original position, then push down on the Tension Lever using 15 lbs of pressure until there is approximately 1/2″ deflection when pressing the Belt midway between pulleys.
9. Tighten the Motor Position Lock.
10. Close both the Belt Access Door and Belt Pulley Hatch.
11. Turn Speed Dial while spindle is moving to select speed within the established range.

Using the Indexer

Note: Indexing creates evenly spaced features around the circumference of the workpiece while keeping the Spindle locked. There are 24 index positions in the spindle Pulley, each 15° apart, to help rotate the workpiece evenly for accurately spaced features.

1. Turn off Lathe and disconnect from power.
2. Push in Indexer Knob and rotate Spindle by hand until Knob engages with hole on indexer pulley. Make sure the Spindle is locked before starting to Index.
3. Disengage Indexer Knob when done.



CAUTION! Always disengage the Indexer Knob before restarting the lathe.

Workpiece and Work Area Set Up

1. Designate a work area that is clean and well-lit. The work area must not allow access by children or pets to prevent distraction and injury.
2. Lathe must be located on a surface capable of bearing the combined weight of Lathe and intended workpiece. The surface must be able to withstand the vibration generated by Lathe during operation.
3. Lathe must be level, left-to-right and front-to-back, or spindle may rotate improperly and become damaged.
4. Route the power cord along a safe route to reach the work area without creating a tripping hazard or exposing the power cord to possible damage. The power cord must reach the work area with enough extra length to allow free movement while working.
5. There must not be objects, such as utility lines, nearby that will present a hazard while working.

General Operating Instructions

1. Make sure that the Switch is in the off-position, then plug in the tool.
2. Make sure the workpiece is suitable for turning. No extreme bows, knots, or cracks should exist.
3. Prepare and trim workpiece with a bandsaw or table saw to make it roughly concentric.
4. Install workpiece between centers, or attach it to faceplate or chuck.
5. Adjust tool rest according to type of operation, and set minimum clearance between workpiece and lip of tool rest to 1⁄4″ gap.
6. Rotate workpiece by hand to verify spindle and workpiece rotate freely throughout full range of motion.
7. Verify that pulley speed range is set for type of wood and size of workpiece installed.
8. Verify that Speed Dial is turned fully counterclockwise so that the Spindle does not start at an excessive speed.
9. Verify that Directional Switch is in the neutral position.
10. Put on safety glasses, face shield, and respirator.
11. Set Directional Switch to forward or reverse, start Spindle, adjust spindle's speed, and begin turning operation, keeping chisel against Tool Rest the entire time that it is cutting.
12. Turn Spindle OFF when cutting operation is complete.
13. Remove Safety Key and unplug tool from its electrical outlet. Clean, then store the tool indoors out of children's reach.

Spindle Turning

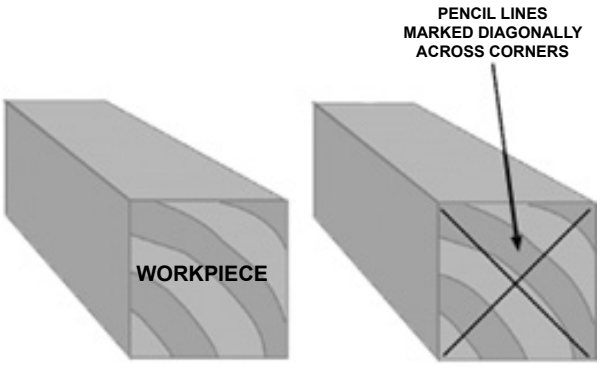
Spindle Turning is performed when a workpiece is mounted between centers. Bowls, table legs, tool handles, and candlesticks are typical Spindle Turning projects.

Spindle Turning Operation:

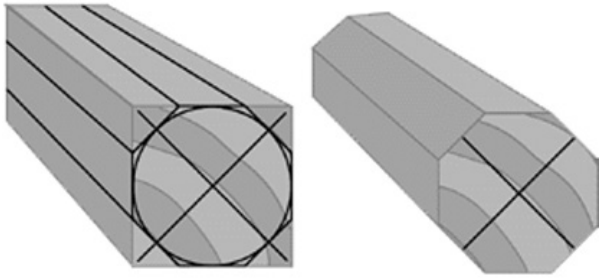
1. Mark both ends of the workpiece by drawing diagonal lines from corner to corner. The intersection point of these two lines will indicate the center of the workpiece.
2. Use a wood mallet and punch or nail to tap the point of the center of the workpiece so that it leaves a center mark.

CAUTION! Do not drive workpiece onto Spur Center while Spur Center is mounted in headstock.

3. Using a 1⁄4″ drill bit, drill a hole at center mark on end of the workpiece to be mounted on Spur Center.



4. To embed Spur Center into workpiece, cut 1⁄8″ saw kerfs in the Headstock-end of workpiece along the diagonal lines that were marked in Step 1.
5. If workpiece is over 2″ x 2″, cut corners off lengthwise to make turning safer and easier.



6. Drive Spur Center into end center mark with a wood mallet to embed it at least 1⁄4″ into workpiece.
7. With workpiece still attached, insert Spur Center into headstock spindle.

Note: Use Tool Rest to support opposite end of workpiece so that workpiece and Spur Center do not separate during installation.

8. Install Live Center into Tailstock Quill and tighten Quill-Lock Handle to lock Quill in position.
9. Slide Tailstock towards workpiece until the end of the Live Center touches the center mark of workpiece. Lock Tailstock in this position.
10. Loosen Quill Lock Handle and Rotate Tailstock HandWheel (43) to push Live Center into workpiece at least 1⁄4″.
11. Properly adjust Tool Rest to the workpiece.
12. Before beginning lathe operation, rotate workpiece by hand to ensure that there is safe clearance on all sides.

Spindle Turning Tips

1. When turning the lathe ON, stand out of the path of the spinning workpiece until the Spindle reaches full speed and workpiece is secured.
2. Use the slowest speed when starting or stopping the lathe.
3. Select the right speed for the size of workpiece that you are turning.
4. Keep the tool on the Tool Rest the entire time it is in contact with workpiece.
5. Learn the correct techniques for each tool you will use. If you are unsure about how to use the lathe tools, seek training from experienced and knowledgeable lathe users.
6. Practice on scrap material to become familiarized with the operation process and make the necessary adjustments before working on your work piece.

Bowl Turning

Mounting the workpiece onto the Faceplate:

1. For bowls or plates with a large diameter, mount to the Faceplate for the maximum amount of support.

Note: While Faceplates are the most reliable method for holding a larger block of wood for turning, a lathe chuck can also be used. A chuck is useful when working on more than one piece at a time, allowing the user to open the chuck and change workpieces instead of having to remove the mounting screws.

2. Select a stock that is at least .2 inches (51 mm) larger than each dimension of the finished work piece.

3. Remove any bark from the top of the wood stock (that will be later attached onto a Faceplate or in a chuck).

4. True one of the surfaces of the workpiece for mounting against the Faceplate. Using the Faceplate as a template, mark the location of the mounting holes on the workpiece and drill pilot holes of the appropriate size.

5. If the mounting screws on the Faceplate interfere with the workpiece, a waste block can be used. Shape the waste block so that it is of the same diameter as the Faceplate. Flatten the mating surfaces of the waste block and the workpiece. Use a high quality glue suitable for the particular workpiece to prevent the piece from falling off during operation. Glue waste block to the workpiece securely. If you plan to use a chuck, turn the waste block into a tenon of the appropriate length and diameter to fit your chuck.

Shaping the Inside Of a Bowl/Plate

1. Turn off machine and move Tailstock out of the way.

2. Mount workpiece onto Faceplate and attach Faceplate to Headstock.

3. Adjust the Tool Rest to be just below the centerline and at a right angle to the machine's turning axis.

4. Rotate workpiece by hand to check for proper seating and clearance.

5. Lightly shear across the top of the bowl from rim to center. Place a bowl gouge tool on the Tool Rest at center of the workpiece with the flute facing the top of the bowl. The tool handle should point toward the four o'clock position.

6. Control the cutting edge of the gouge with the left hand, while swinging Handle around towards your body with the right hand. The flute should start out facing the top of the workpiece, rotating it upwards as it moves deeper into the bowl to maintain a clean and even curve. As the tool goes deeper into the bowl, progressively work outward towards the rim of the bowl. Turn the Tool Rest into the piece as you get deeper into the bowl.

7. Develop the preferred wall thickness at the rim and maintain it as you work deeper into the bowl. When the interior is finished, move Tool Rest back to the exterior to re-define bottom of the bowl. Work the area around the Faceplate with a bowl gouge. Begin the separation with a parting tool, but do not cut all the way through.

Procedures not specifically explained in this manual must be performed only by a qualified technician.

⚠WARNING

TO PREVENT SERIOUS INJURY FROM ACCIDENTAL OPERATION:
Turn the Power Switch of the tool off, remove the Safety Key, and unplug the tool from its electrical outlet before performing any procedure in this section.

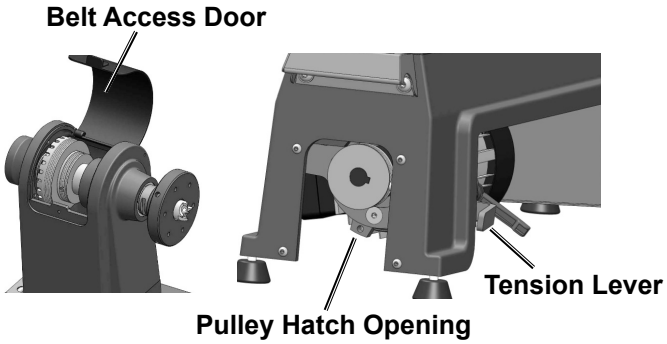
TO PREVENT SERIOUS INJURY FROM TOOL FAILURE:
Do not use damaged equipment. If abnormal noise or vibration occurs, have the problem corrected before further use.

Cleaning, Maintenance, and Lubrication

1. **BEFORE EACH USE,** inspect the general condition of the tool. Check for:
   - loose hardware,
   - misalignment or binding of moving parts,
   - cracked or broken parts,
   - damaged electrical wiring, and
   - any other condition that may affect its safe operation.
2. **AFTER USE,** wipe external surfaces of the tool with clean cloth.
3. Periodically, wear ANSI-approved safety goggles and NIOSH-approved breathing protection and blow dust out of the motor area using dry compressed air.
4. **⚠CAUTION! If power tool is damaged, it must be repaired only by a qualified service technician.**

Belt Replacement

1. Open Belt Access Door and Belt Pulley Hatch, then loosen Motor Position Lock and raise Motor Tension Lever in order to de-tension the Belt.



2. Move Belt into smallest Motor Pulley and largest Spindle Pulley.
3. While holding Spindle in place using the Spindle Wrench, remove Screw from the Handwheel and unthread Handwheel from Spindle.
4. Remove Belt by sliding it off of Motor Pulley and up past the edge of the Spindle Pulley.
5. Reverse the above process to install new belt.

Troubleshooting

Problem	Possible Causes	Likely Solutions
Tool will not start.	1. Cord not connected. 2. No power at outlet. 3. Tool's thermal reset breaker tripped (if equipped). 4. Internal damage or wear. (Carbon brushes or switch, for example.)	1. Check that cord is plugged in. 2. Check power at outlet. If outlet is unpowered, turn off tool and check circuit breaker. If breaker is tripped, make sure circuit is right capacity for tool and circuit has no other loads. 3. Turn off tool and allow to cool. Press reset button on tool. 4. Have technician service tool.
Tool operates slowly.	Extension cord too long or wire size too small.	Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See **Table A** on page 3.
Performance decreases over time.	1. Accessory dull or damaged. 2. Carbon brushes worn or damaged.	1. Keep cutting accessories sharp. Replace as needed. 2. Have qualified technician replace brushes.
Excessive noise or rattling.	1. Internal damage or wear. (Carbon brushes or bearings, for example.) 2. Belt too loose (slipping) or too tight (bearing damage).	1. Have technician service tool. 2. Properly tension belt.
Overheating.	1. Forcing machine to work too fast. 2. Accessory dull or damaged. 3. Blocked motor housing vents. 4. Motor being strained by long or small diameter extension cord.	1. Allow machine to work at its own rate. 2. Keep cutting accessories sharp. Replace as needed. 3. Wear ANSI-approved safety goggles and NIOSH-approved dust mask/respirator while blowing dust out of motor using compressed air. 4. Eliminate use of extension cord. If an extension cord is needed, use one with the proper diameter for its length and load. See **Table A** on page 3.

Follow all safety precautions whenever diagnosing or servicing the tool.
Disconnect power supply and remove the Safety Key before service.

Error Codes

Error Code	Description	Solution
F1	Low voltage protection (20% lower than standard)	Check voltage, then restart Lathe.
F2	High voltage protection (20% higher than standard)	Check voltage, then restart Lathe
F3	Incorrect operation of reverse	Turn off Main Switch. Restart Lathe after Digital Readout shows zero.

PLEASE READ THE FOLLOWING CAREFULLY

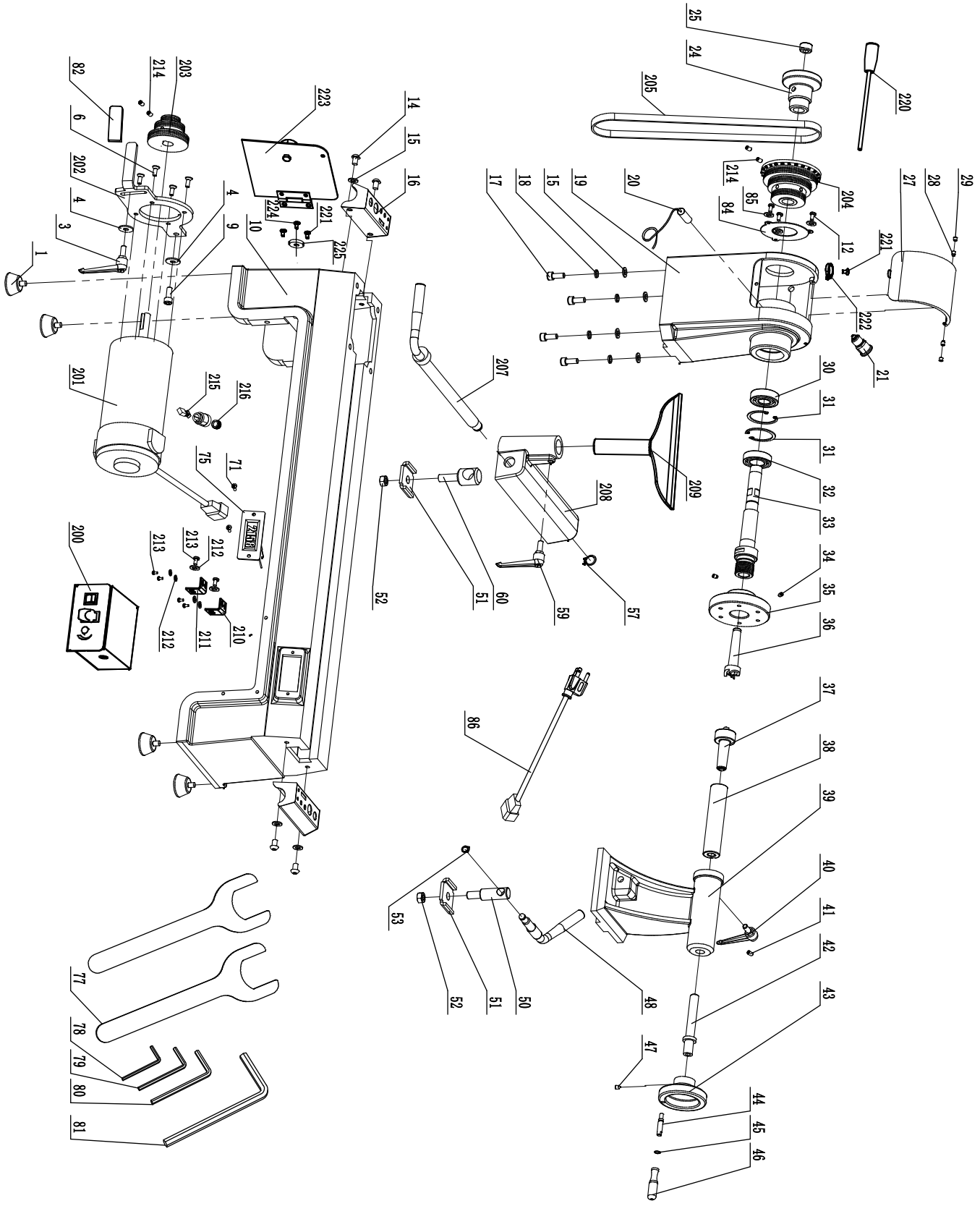
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Parts List

Part	Description	Qty
1	Foot	4
3	Motor Position Lock	1
4	Washer	2
6	Head Cap Screw	4
9	Cap Screw	1
10	Bed	1
12	Phillip Head Screw	3
14	Cap Screw	4
15	Washer	8
16	Storage Bracket	2
17	Cap Screw	4
18	Spring Washer	4
19	Headstock	1
20	Spindle Speed Sensor	1
21	Indexer/Spindle Lock	1
24	Headstock Handwheel	1
25	Locking Nut	1
27	Belt Access Door	1
28	Cap Screw	2
29	Set Screw	2
30	Bearing	1
31	Ring	2
32	Bearing	1
33	Spindle	1
34	Cap Screw	2
35	FacePlate	1
36	Spur Center	1
37	Live Center	1
38	Quill	1
39	Tailstock	1
40	Quill Lock Handle	1
41	Pin	1
42	Lead Screw	1
43	Tailstock Handwheel	1
44	Handwheel Axle	1
45	Washer	1
46	Handwheel Handle	1
47	Set Screw	1
48	Tailstock Locking Lever	1

Part	Description	Qty
50	Tailstock Clamp Bolt	1
51	Tailstock Clamp	2
52	Lock Nut	2
53	C-Ring	1
57	C-Ring	2
59	Tool Rest Lock Handle	1
60	Tool Rest Clamp Bolt	1
71	Phillips Screw	2
75	Digital Readout	1
77	Wrench	2
78	Hex Wrench 3mm	1
79	Hex Wrench 4mm	1
80	Hex Wrench 5mm	1
81	Hex Wrench 12mm	1
82	Handle Sleeve	1
84	Headstock Cover	1
86	Power Cord	1
200	Control Box Assembly	1
201	Motor	1
202	Motor Tension Lever	1
203	Motor Pulley	1
204	Spindle Pulley	1
205	Belt	1
207	Tool Rest Lock Lever	1
208	Tool Rest Base	1
209	8" Tool Rest	1
210	Control Box Bracket 2	1
211	Control Box Bracket 1	1
212	Washer	6
213	Screw	6
214	Screw	4
215	Carbon Brush	2
216	Carbon Brush Cap	2
220	Knockout Rod	1
221	Screw	3
222	Pointer	1
223	Belt Pulley Hatch	1
224	Screw	1
225	Magnet	1

Assembly Diagram



Record Product's Serial Number Here:_____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts. Specify UPC 193175476166 when ordering parts.

Limited 90 Day Warranty

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. 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 product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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