

WEN LA3421

WEN Mini Benchtop Wood Lathe LA3421 User Manual

Model: LA3421 | Brand: WEN

1. INTRODUCTION AND PRODUCT OVERVIEW

The WEN 8-Inch by 13-Inch Variable Speed Mini Wood Lathe is designed for precision turning of small workpieces such as pens, bowls, cups, and chess pieces. This benchtop model offers variable speed control and essential features for both novice and experienced woodturners.

- **Versatile Use:** Perfect for turning pens, bowls, cups, chess pieces, and other small workpieces.
- **Compact Design:** Features an 8-inch swing over the bed and a 13-inch distance between centers, ideal for smaller projects and workshops.
- **Soft-Start Motor:** Equipped with a 3.2-amp soft-start motor that begins gradually to prevent damage and enhance safety during operation.
- **Variable Speed Control:** Adjust the rotational speed anywhere from 750 to 3200 RPM to suit various materials and turning requirements.
- **Included Accessories:** Comes with a 2.3-inch face plate, an MT1 spindle and tailstock taper, and two interchangeable tool rests for comprehensive functionality.



Figure 1: Overview of the WEN Mini Benchtop Wood Lathe LA3421.

2. SETUP AND ASSEMBLY

Before operating the lathe, ensure it is properly set up and all components are securely assembled. Refer to the detailed instructions below for safe and effective installation.

2.1 Unpacking and Inspection

- Carefully remove all components from the packaging.
- Inspect the lathe and all accessories for any signs of damage during transit. Report any damage immediately to the retailer.
- Verify that all listed components are present: main lathe unit, 2.3-inch face plate, MT1 spur center, MT1 live center (cup center), knockout rod, two tool rests (4.5-inch and 7-inch), and flat wrench.

2.2 Mounting the Lathe

- Choose a stable, level workbench or stand capable of supporting the lathe's weight (approximately 45.9 pounds) and the forces generated during operation.
- Secure the lathe to the workbench using appropriate bolts and washers through the mounting holes in the base. This prevents movement and ensures stability during use.

2.3 Installing Components

- **Tool Rests:** Insert the desired tool rest into the tool rest base and secure it with the lever clamping system. Ensure it is at the correct height and distance from the workpiece.
- **Spur Center (Headstock):** Insert the MT1 spur center into the headstock spindle.
- **Live Center (Tailstock):** Insert the MT1 live center into the tailstock quill.
- **Face Plate:** For non-spindle workpieces, thread the 2.3-inch face plate onto the headstock spindle.

***2.3-INCH FACE PLATE, MT1 SPINDLE & TAILSTOCK
TAPER, & TWO INTERCHANGEABLE TOOL RESTS***



Figure 2: Key components including the face plate, MT1 spindle, and tailstock taper.

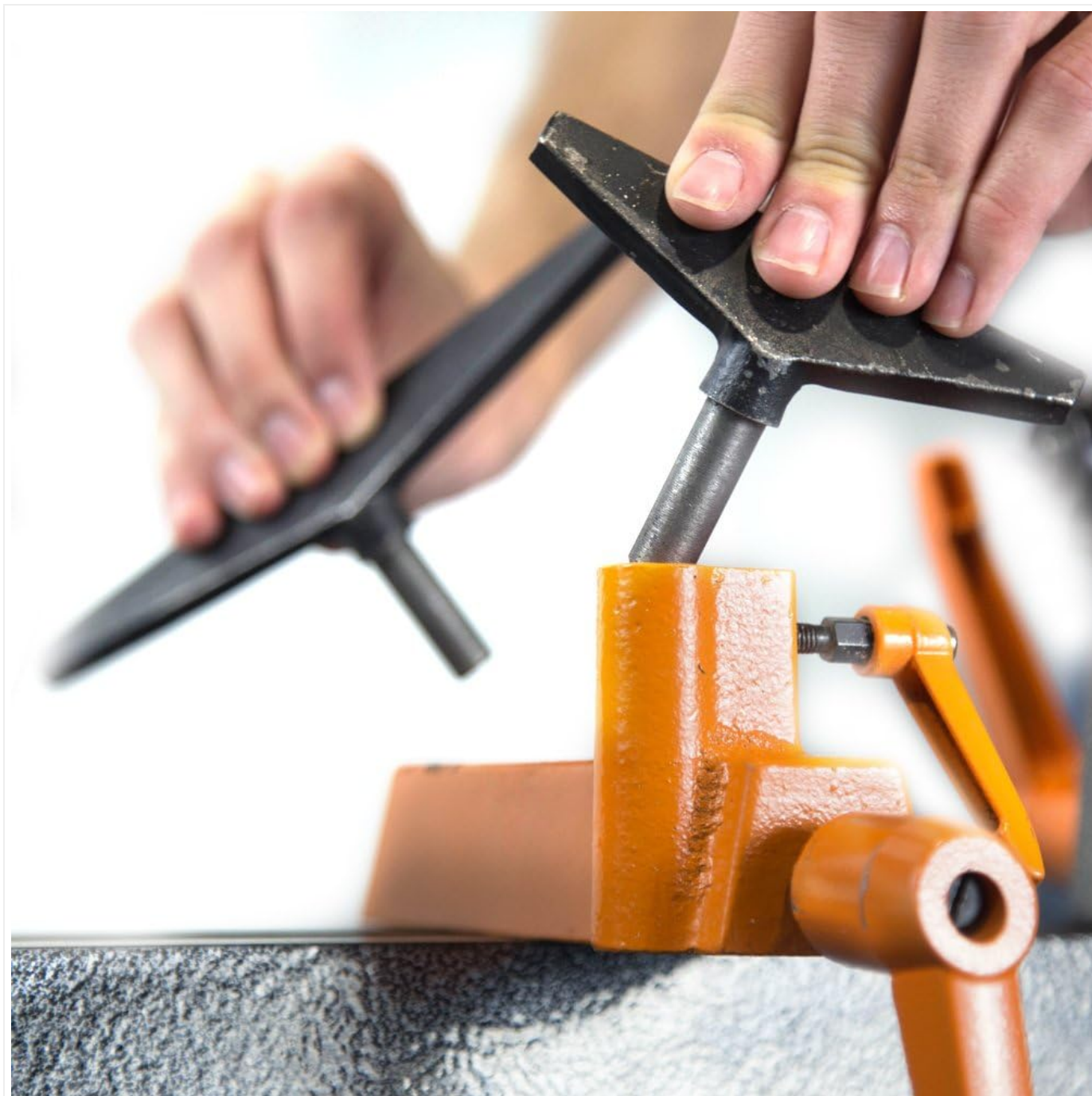


Figure 3: Adjusting the tool rest for optimal workpiece support.

3. OPERATING INSTRUCTIONS

Follow these steps for safe and effective operation of your WEN Mini Benchtop Wood Lathe.

3.1 Preparing the Workpiece

- Select appropriate wood for your project. Ensure it is free of knots, cracks, or foreign objects.
- Mount the workpiece securely between the headstock spur center and the tailstock live center, or attach it to the face plate. Ensure it is centered and held firmly.
- Adjust the tailstock to apply sufficient pressure to hold the workpiece without deforming it. Lock the tailstock in place.

3.2 Adjusting Speed

The lathe features variable speed control, allowing you to adjust the RPM from 750 to 3200. The optimal speed depends on the workpiece size, material, and the type of cut being made.

- Turn the variable speed dial to select the desired RPM. Start with a lower speed for larger or unbalanced workpieces and gradually increase as needed.
- For roughing cuts or unbalanced pieces, use lower speeds. For finishing cuts or smaller, balanced pieces, higher speeds can be used.



Figure 4: Variable speed control dial for adjusting RPM.

3.3 Turning the Workpiece

- Ensure the power switch is in the "OFF" position before plugging in the lathe.
- Plug the lathe into a suitable power outlet.
- Turn the power switch to the "ON" position. The soft-start motor will gradually bring the spindle up to the set speed.
- Position the tool rest close to the workpiece, ensuring it does not interfere with rotation.
- Using appropriate turning chisels, begin shaping the workpiece. Always maintain a firm grip on your tools and keep them sharp.
- Periodically check the workpiece for stability and adjust the tool rest as the diameter changes.

***PERFECT FOR TURNING PENS, BOWLS, CUPS,
CHESS PIECES, & OTHER SMALL WORKPIECES***



Figure 5: Example of woodturning in progress, demonstrating the lathe's capability for small workpieces.



Figure 6: Diagram illustrating the 8-inch swing over the bed and 13-inch distance between centers.

3.2-AMP SOFT-START MOTOR

**PREVENTS DAMAGE
& MAXIMIZES SAFETY**



Figure 7: The 3.2-amp soft-start motor, designed for smooth operation and safety.

4. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your lathe.

- **Cleaning:** After each use, disconnect the power and thoroughly clean wood chips and dust from the lathe bed, headstock, tailstock, and motor housing. Use a brush or compressed air.
- **Lubrication:** Periodically apply a light machine oil to moving parts such as the tailstock quill and lead screw to ensure smooth operation.
- **Belt Inspection:** Check the drive belt for wear, cracks, or stretching. Replace if necessary.
- **Component Check:** Regularly inspect all nuts, bolts, and fasteners to ensure they are tight. Tighten any loose connections.
- **Storage:** Store the lathe in a clean, dry environment when not in use to prevent rust and damage.

5. TROUBLESHOOTING

This section provides solutions to common issues you might encounter with your lathe.

Problem	Possible Cause	Solution
Lathe does not start.	No power, power switch off, motor overload.	Check power connection. Ensure switch is ON. Allow motor to cool if overloaded.
Workpiece wobbles or vibrates excessively.	Workpiece not centered, loose mounting, unbalanced wood, incorrect speed.	Re-center and re-mount workpiece. Tighten all clamps. Reduce speed for unbalanced pieces.
Motor slows down or stops under load.	Overload, dull tools, too aggressive cut.	Reduce cutting pressure. Sharpen tools. Take lighter cuts.
Tailstock does not hold workpiece securely.	Tailstock not locked, quill not extended enough, worn live center.	Ensure tailstock lever is fully engaged. Extend quill further. Inspect and replace live center if worn.

If you encounter issues not listed here or require further assistance, please contact WEN customer support.

6. SPECIFICATIONS

Detailed technical specifications for the WEN Mini Benchtop Wood Lathe LA3421.

- Model:** LA3421
- Motor:** 3.2 Amp
- Swing Over Bed:** 8 inches
- Distance Between Centers:** 13 inches
- Variable Speed Range:** 750 - 3200 RPM
- Spindle Taper:** MT1
- Tailstock Taper:** MT1
- Face Plate Diameter:** 2.3 inches
- Item Weight:** Approximately 45.9 pounds
- Power Source:** AC
- Included Components:** Variable Speed Mini Benchtop Wood Lathe, 2.3-inch face plate, MT1 spindle and tailstock taper, two interchangeable tool rests.

7. WARRANTY AND SUPPORT

The WEN Mini Benchtop Wood Lathe LA3421 comes with a comprehensive warranty and dedicated customer support.

- **Warranty:** This product is backed by a two-year warranty. Please retain your proof of purchase for warranty claims.
- **Customer Support:** For technical assistance, parts, or warranty inquiries, please contact WEN's friendly customer help line. A nationwide network of skilled service technicians is available to assist you.
- For more information, visit the official WEN website or refer to the contact details provided in your product packaging.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question