CREWORKS SXMLM-0714-GY

CREWORKS 7" x 14" Mini Metal Lathe Machine 550W Instruction Manual

Model: SXMLM-0714-GY

1. Introduction

This manual provides essential instructions for the safe operation, maintenance, and troubleshooting of your CREWORKS 7" x 14" Mini Metal Lathe Machine 550W. Please read this manual thoroughly before operating the machine to ensure proper use and to prevent injury or damage.
The CREWORKS mini metal lathe is designed for precision metalworking tasks, offering a 7-inch swing over bed and a 14-inch distance between centers. It features a 550W DC motor with variable speed control from 50 to 2250 RPM.

2. Safety Instructions

WARNING: Failure to follow these safety instructions may result in serious injury or death.

- Always wear appropriate personal protective equipment (PPE), including safety glasses, hearing protection, and sturdy footwear.
- Do not wear loose clothing, gloves, neckties, or jewelry that could become entangled in moving parts.
- Ensure the machine is properly grounded before operation.
- Keep the work area clean and well-lit. Cluttered areas invite accidents.
- Never leave the machine unattended while it is running.
- Disconnect power before performing any maintenance, adjustments, or cleaning.
- Ensure all guards and safety devices are in place and functioning correctly before operation.
- Do not operate the machine under the influence of drugs, alcohol, or medication.
- Read and understand the entire manual before operating the lathe.

3. Product Overview and Components

Familiarize yourself with the main components of your mini metal lathe.

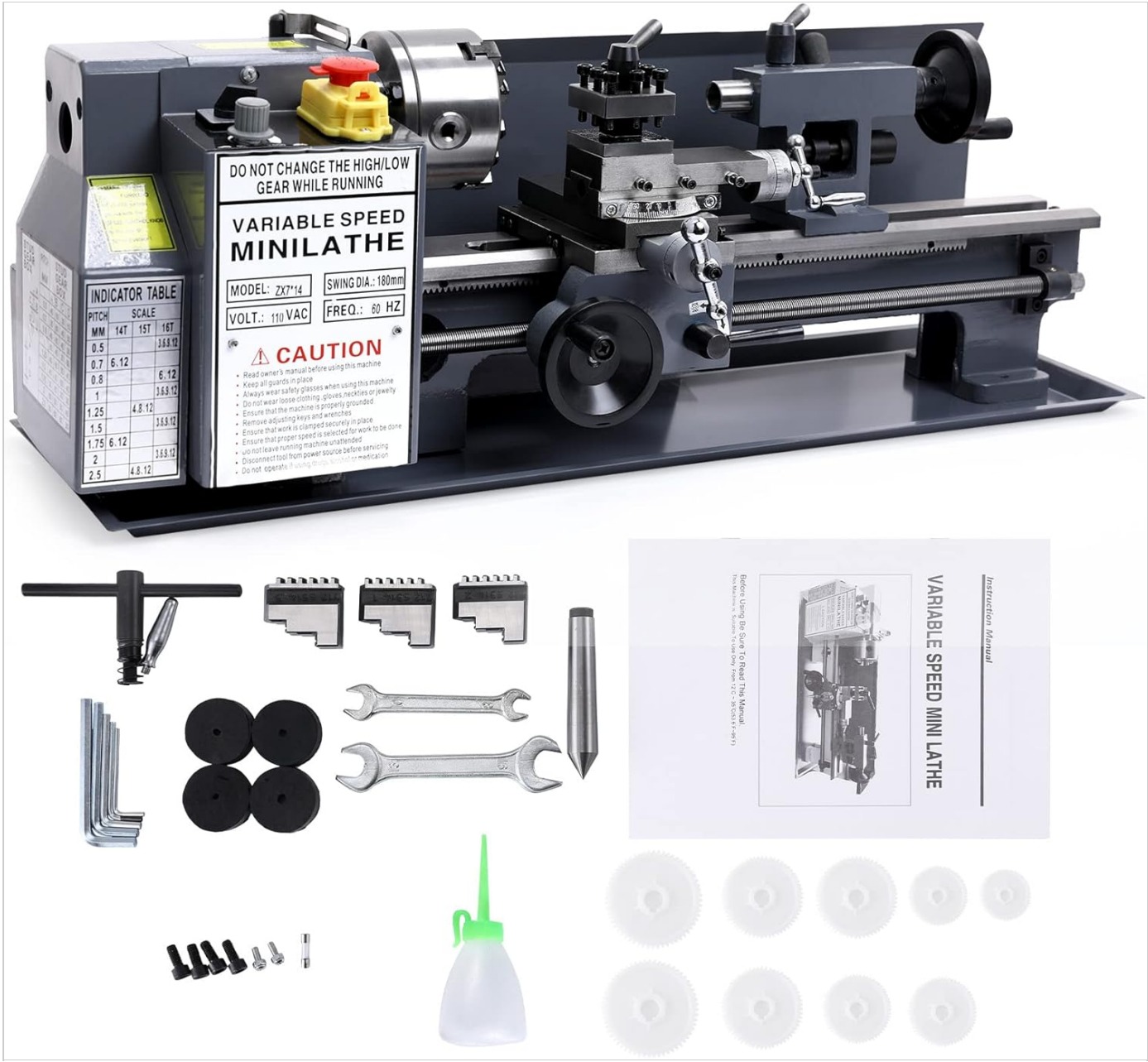

Figure 3.1: Overall view of the CREWORKS 7" x 14" Mini Metal Lathe Machine and included accessories. This image shows the main body of the lathe, including the headstock, tailstock, carriage, and various tools and gears.

- **Headstock:** Contains the main spindle, chuck, and gear train for speed control.
- **Chuck:** A 3-jaw self-centering chuck for holding workpieces.
- **Tailstock:** Supports the other end of the workpiece, often used for drilling or supporting long work.
- **Carriage:** Moves along the bed, carrying the cross slide and tool post.
- **Cross Slide:** Moves perpendicular to the bed, allowing for facing operations.
- **Tool Post:** Holds the cutting tools. This model features a 4-way tool post.
- **Bed:** The main frame of the lathe, providing a stable base for all components.
- **Lead Screw:** Used for automatic feeding and threading operations.
- **Control Panel:** Includes power switch, speed control knob, and emergency stop button.

4. Setup

4.1 Unpacking and Inspection

Carefully remove the lathe from its packaging. Inspect all components for any signs of damage during transit. Report any damage immediately to your supplier.

4.2 Placement

Place the lathe on a sturdy, level workbench capable of supporting its weight (approximately 91.4 lbs or 41.4 kg). Ensure there is adequate space around the machine for safe operation and maintenance.

4.3 Power Connection

Connect the lathe to a grounded 110 VAC, 60 Hz power outlet. Verify that the power supply matches the machine's requirements as indicated on the label.

4.4 Initial Checks

- Ensure all fasteners are tight.
- Lubricate all moving parts as indicated in the Maintenance section.
- Check that the chuck rotates freely and the jaws operate smoothly.
- Verify that the emergency stop button functions correctly.

5. Operating Instructions

5.1 Basic Controls

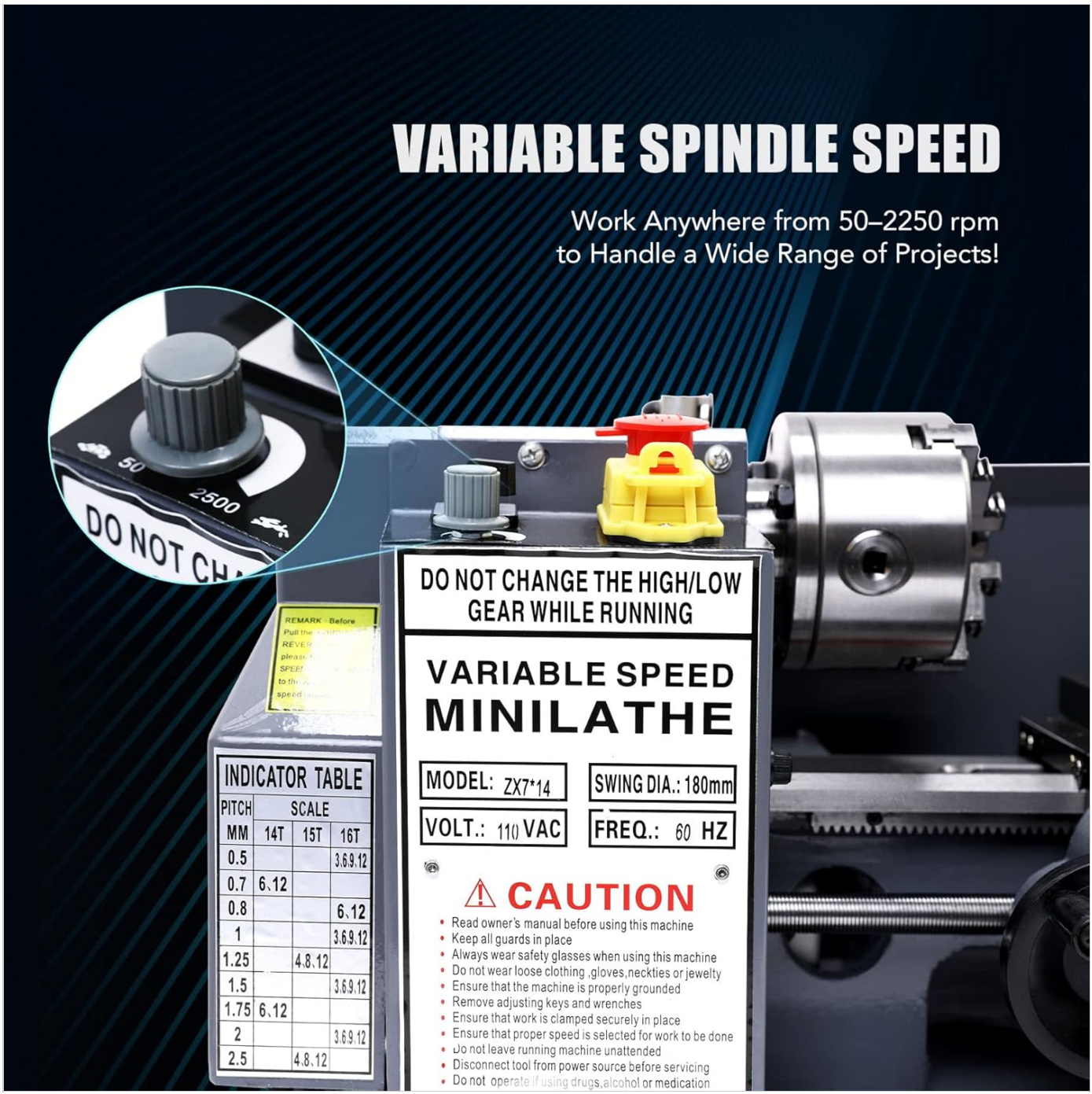

Figure 5.1: Variable spindle speed control knob and caution label. The knob allows adjustment of spindle speed from 50 to 2250 RPM. The label warns against changing high/low gear while running.

- **Power On/Off:** Use the main power switch. The emergency stop button (red mushroom head) will immediately cut power.
- **Spindle Speed Control:** Adjust the rotary knob to set the desired RPM (50-2250 RPM).*Do not change the high/low gear while the machine is running.*
- **Chuck Operation:** Use the chuck key to tighten or loosen the jaws. Always remove the chuck key before starting the lathe.
- **Tool Post:** Loosen the locking handle to rotate the 4-way tool post. Securely clamp the cutting tool in place.

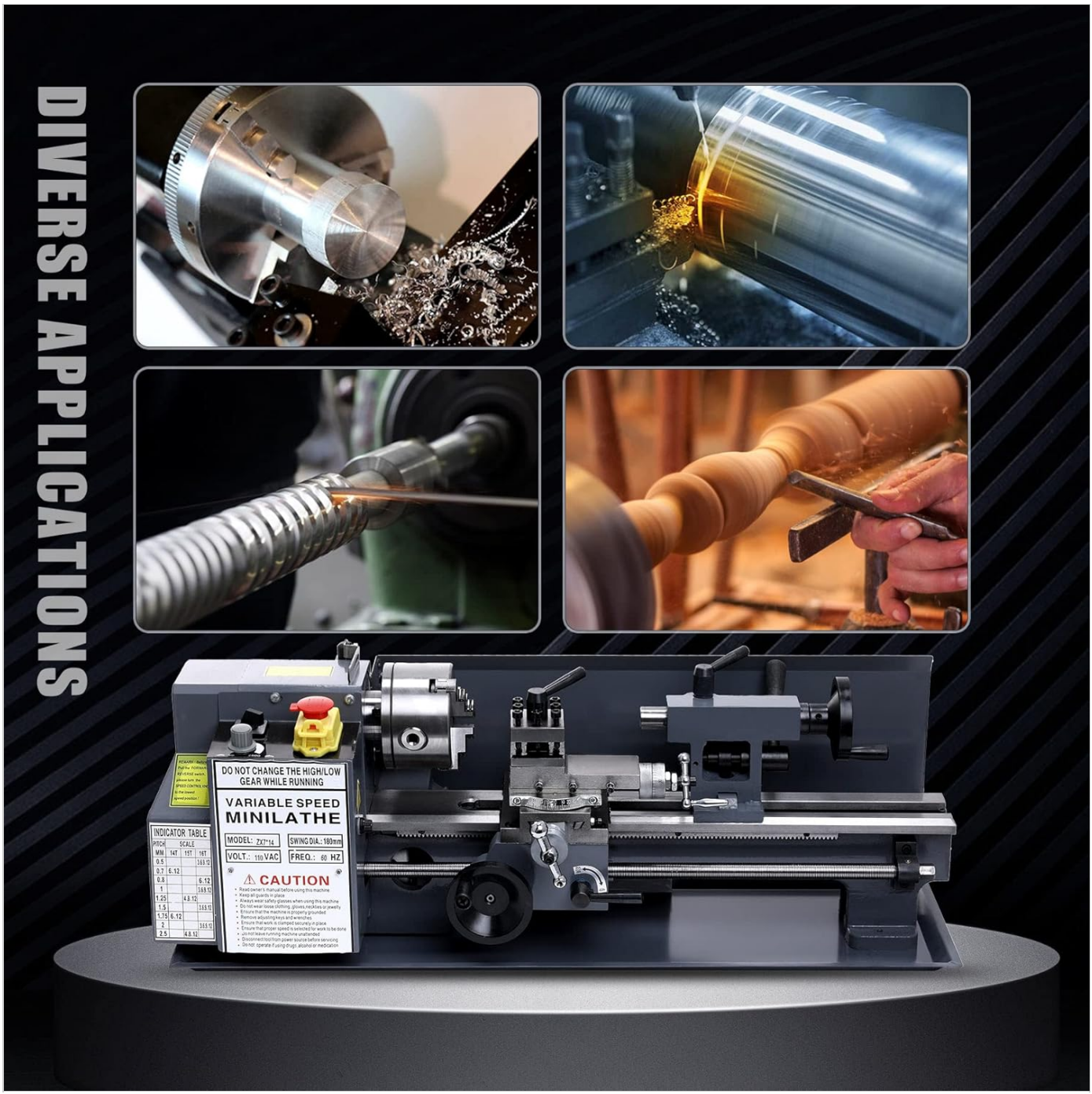

Figure 5.2: The 4-way tool post. This component allows for quick changes and precise positioning of cutting tools for various operations.

5.2 Workpiece Mounting

- Clean the workpiece and chuck jaws.
- Insert the workpiece into the chuck, ensuring it is centered and extends only as far as necessary.
- Tighten the chuck jaws firmly using the chuck key. Remove the key immediately.
- For longer workpieces, use the tailstock center for additional support.

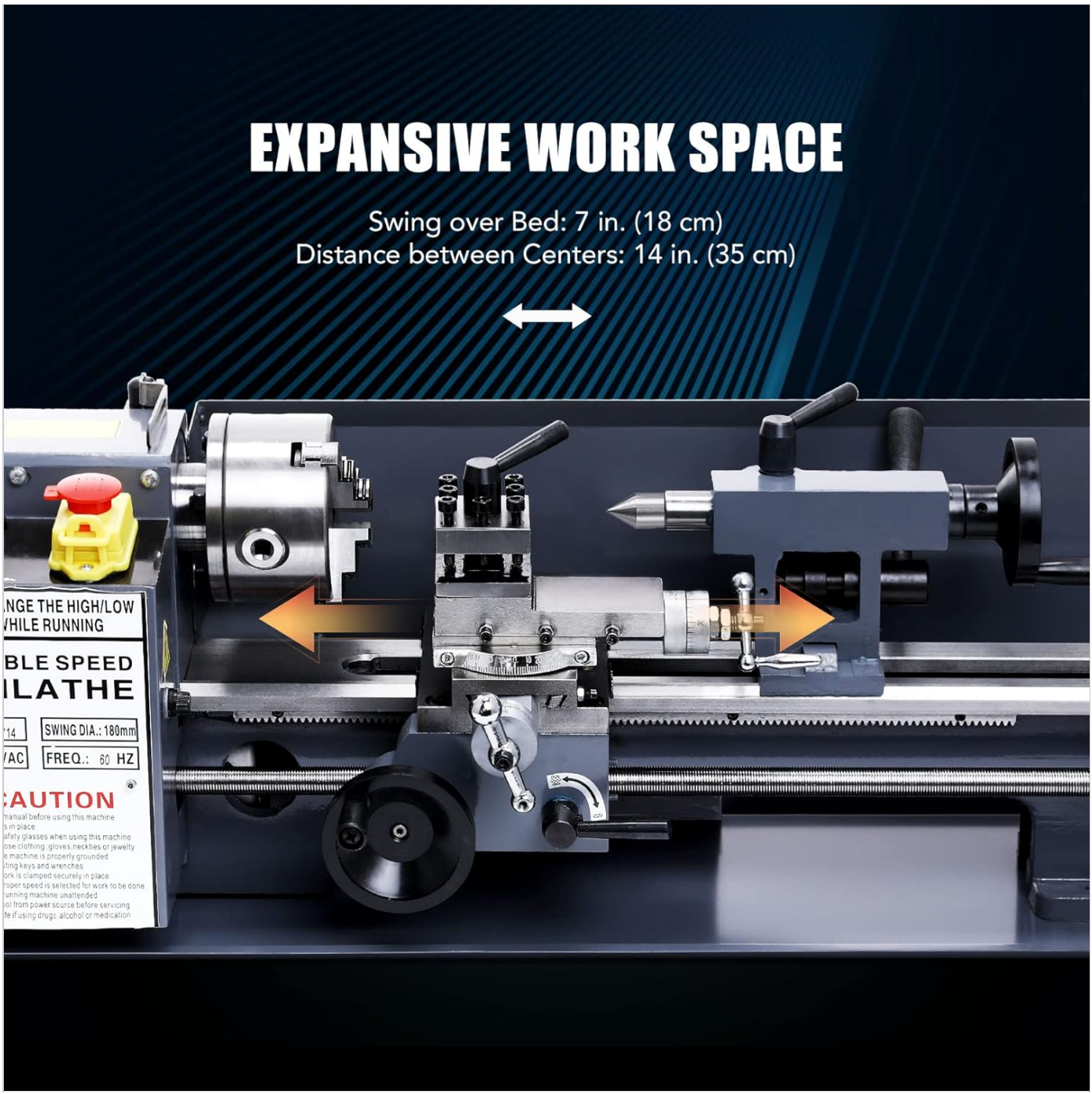

Figure 5.3: Illustration of the expansive work space, highlighting the 7-inch swing over bed and 14-inch distance between centers, indicating the maximum workpiece dimensions.

5.3 Cutting Operations

This lathe is capable of various operations including turning, facing, threading, and drilling. Always ensure the cutting tool is sharp and correctly positioned.

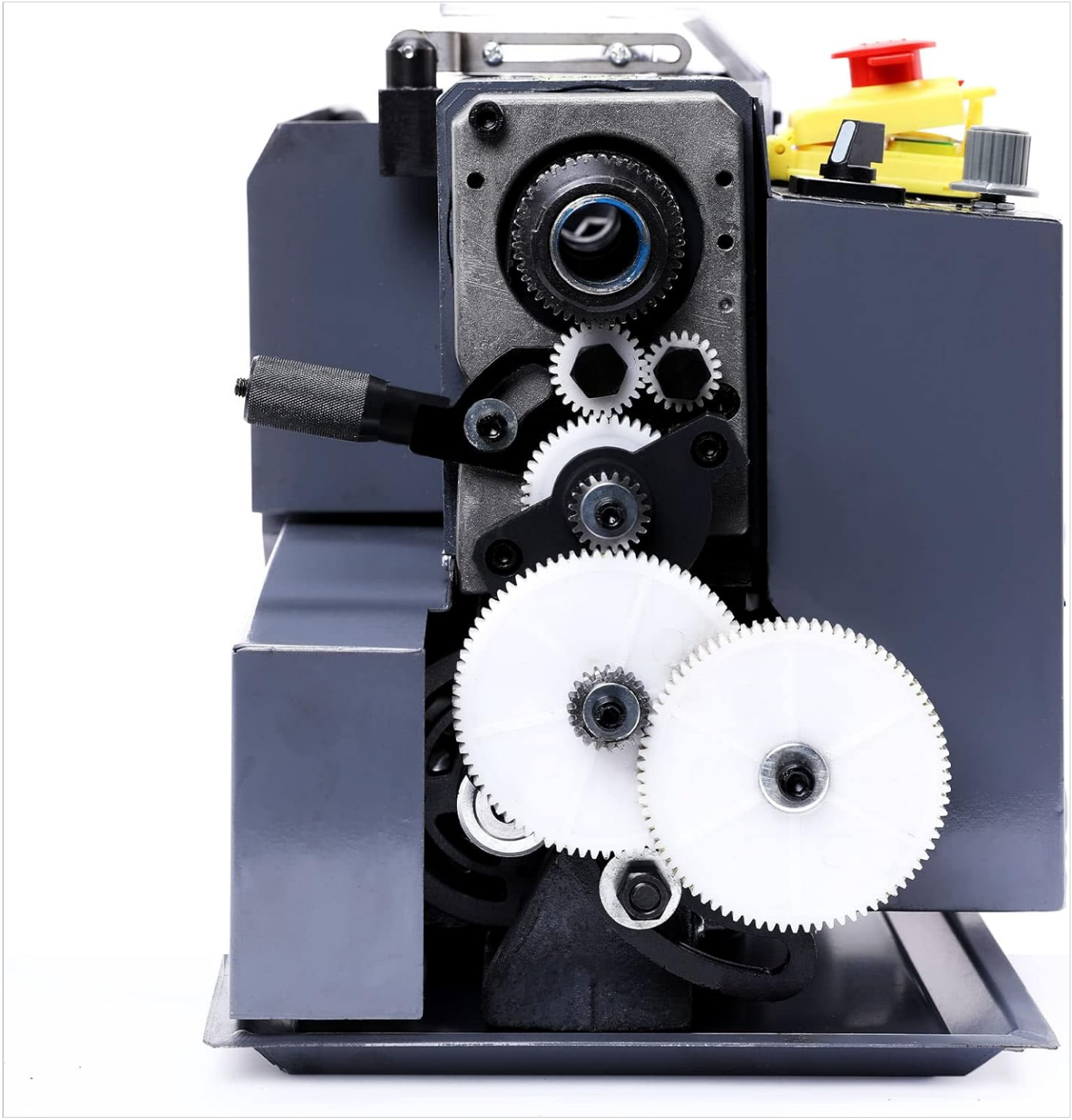

Figure 5.4: Examples of diverse applications possible with the mini metal lathe, such as turning, drilling, and threading metal workpieces.

- **Turning:** Feed the cutting tool along the length of the workpiece to reduce its diameter.
- **Facing:** Feed the cutting tool perpendicular to the workpiece axis to create a flat surface.
- **Threading:** Use the lead screw and appropriate change gears to cut threads. Refer to the indicator table on the machine for gear settings.
- **Drilling:** Mount a drill bit in the tailstock and feed it into the center of the workpiece.

6. Maintenance

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

6.1 Cleaning

- After each use, clean the machine thoroughly, removing all chips and debris.
- Use a brush or vacuum cleaner; *do not use compressed air as it can embed chips into moving parts.*
- Wipe down all exposed metal surfaces with a light coat of oil to prevent rust.

6.2 Lubrication

- Regularly lubricate the lead screw, carriage ways, and other moving parts with machine oil.
- Check the gearbox oil level periodically and refill if necessary.

6.3 Adjustments

- **Gib Adjustments:** Periodically check and adjust the gibs on the cross slide and compound rest to eliminate play.
- **Belt Tension:** Ensure the drive belt has proper tension. Adjust if it slips or is too tight.

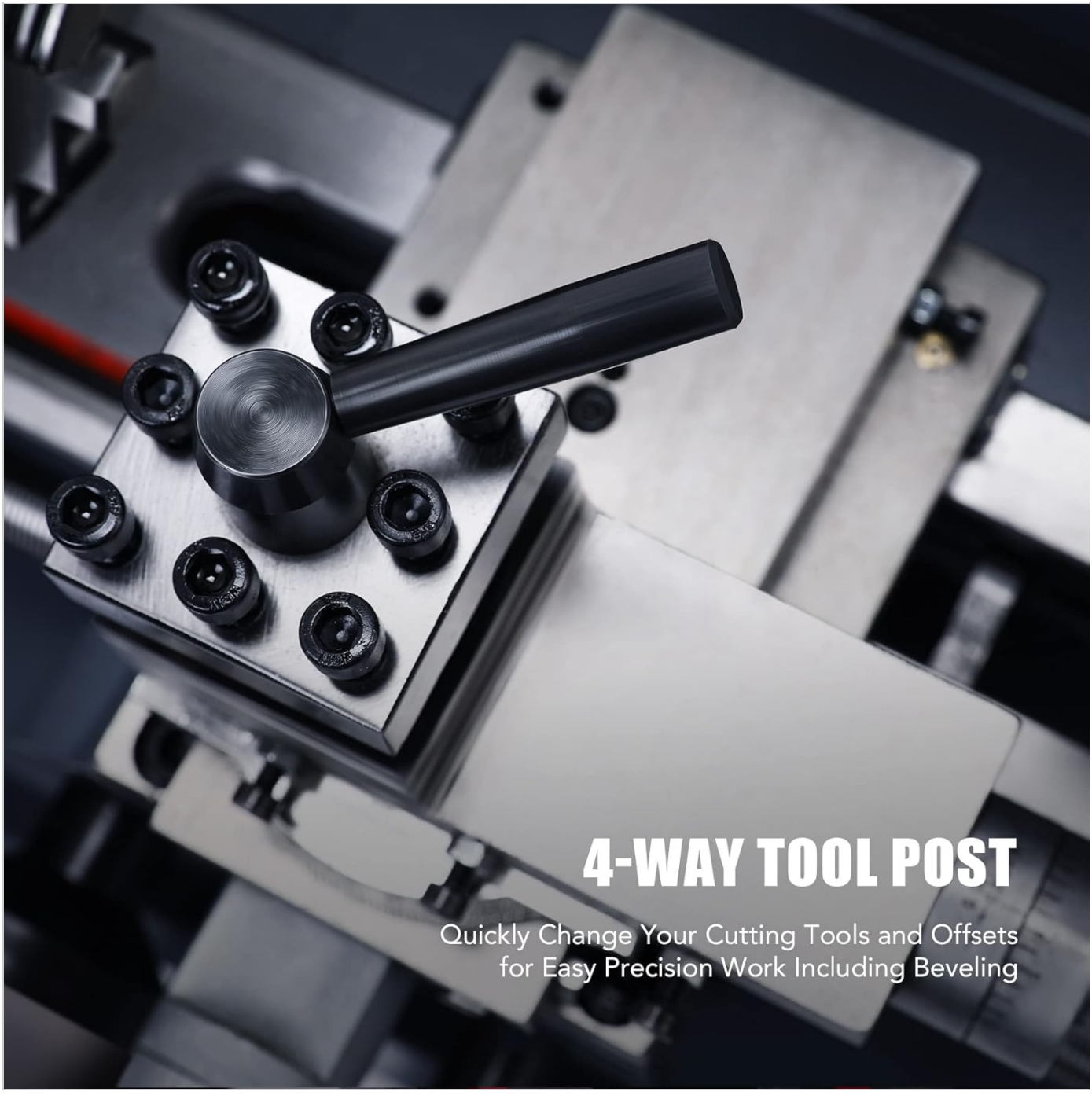

Figure 6.1: Internal view of the gear train. This area requires periodic inspection and lubrication, and gears may need to be changed for threading operations.

7. Troubleshooting

Problem	Possible Cause	Solution
Machine does not start	No power, emergency stop engaged, faulty switch	Check power connection, disengage emergency stop, inspect switches
Excessive vibration	Unbalanced workpiece, loose mounting, dull cutting tool	Balance workpiece, tighten mounting, sharpen or replace tool
Poor surface finish	Dull tool, incorrect speed/feed, excessive tool overhang, machine play	Sharpen tool, adjust speed/feed, reduce overhang, adjust gibs
Spindle not rotating	Motor issue, belt broken/slipped, gear train problem	Inspect motor, check/replace belt, inspect gears

8. Specifications

Feature	Specification
Model Number	SXMLM-0714-GY
Swing Over Bed	7 inches (180 mm)
Distance Between Centers	14 inches (350 mm)
Spindle Bore	0.8 inches (21 mm)
Motor Power	550W (0.75 HP)
Spindle Speed Range	50-2250 RPM (Variable)
Chuck Diameter	4 inches (100 mm) 3-jaw self-centering
Power Supply	110 VAC, 60 Hz
Item Weight	91.4 lbs (41.4 kg)
Package Dimensions	34.25 x 16.93 x 13.78 inches

9. Warranty and Support

CREWORKS products are designed for quality and durability. For specific warranty information regarding your 7" x 14" Mini Metal Lathe Machine, please refer to the warranty card included with your purchase or visit the official CREWORKS website.

For technical support, replacement parts, or any questions regarding the operation of your machine, please contact CREWORKS customer service. Contact details can typically be found on the product packaging, the official website, or through your retailer.

You can visit the CREWORKS Store on Amazon for more information.