

Delta 46-460

Delta Industrial 46-460 12-1/2-inch Variable-Speed MIDI Lathe User Manual

Comprehensive instructions for the safe and effective operation, maintenance, and troubleshooting of your Delta 46-460 MIDI Lathe.

1. IMPORTANT SAFETY INSTRUCTIONS

Always observe basic safety precautions to reduce the risk of fire, electric shock, and personal injury when operating power tools. Read and understand all instructions before operating this machine.

- **Read the Manual:** Familiarize yourself with the machine's controls and operation.
- **Wear Eye Protection:** Always wear safety glasses or a face shield.
- **Secure Workpiece:** Ensure the workpiece is properly mounted and secured before starting the lathe.
- **Clear Work Area:** Keep the work area clean, well-lit, and free from clutter.
- **Avoid Loose Clothing:** Do not wear loose clothing, gloves, neckties, or jewelry that can become entangled in moving parts.
- **Disconnect Power:** Always disconnect the power supply before making adjustments, changing accessories, or performing maintenance.
- **Proper Grounding:** Ensure the lathe is properly grounded according to local electrical codes.
- **Maintain Tools:** Keep cutting tools sharp and clean for optimal performance and safety.

2. PRODUCT OVERVIEW

The Delta 46-460 Industrial 12-1/2-inch Variable-Speed MIDI Lathe is designed for various turning operations, offering variable speed for consistent and controlled results. It features robust construction and user-friendly controls.

Key Features:

- Powered by a 1-horsepower motor for robust performance.
- 12-1/2-inch swing capacity, providing ample space for various projects.

- Variable speed with three pulley-speed ranges (250-700 RPM, 600-1,800 RPM, and 1,350-4,000 RPM).
- Patented belt-tensioning system for quick speed changes and optimal power transfer.
- Forward and reverse functions for enhanced sanding and finishing.
- All cast-iron construction for stability and durability.
- Onboard storage for adjustment tools.

Components Included:

- Delta Industrial 46-460 12-1/2-Inch Variable-Speed Midi Lathe
- 6-inch tool rest
- 10-inch tool rest
- Chrome 3-inch face plate
- Tool rest base
- Knockout bar
- Live center
- Wrenches
- Manual

3. SETUP AND ASSEMBLY

Carefully unpack all components and inspect for any shipping damage. Ensure all listed parts are present before proceeding with assembly.

3.1 Unpacking and Inspection

Remove the lathe and all accessories from the packaging. Verify that no parts are missing or damaged. Retain packaging for future transport or storage.

3.2 Mounting the Lathe

The lathe should be securely mounted to a sturdy workbench or an optional stand. Use appropriate fasteners to prevent movement during operation. The cast-iron construction provides inherent stability, but proper mounting is essential for safety and precision.

3.3 Component Identification and Installation

Identify the headstock, tailstock, bed, and motor assembly. Install the tool rest base and desired tool rest (6-inch or 10-inch) into the bed. The 3-inch face plate can be threaded onto the headstock spindle for specific turning applications.



Image 1: The Delta 46-460 MIDI Lathe, showcasing its main components including the headstock, tailstock, and tool rest. This image illustrates the overall structure of the machine ready for operation.

3.4 Power Connection

Connect the lathe to a standard 110V, 60Hz grounded electrical outlet. Ensure the power switch is in the OFF position before plugging in the unit.

4. OPERATING INSTRUCTIONS

Understanding the controls and functions of your lathe is crucial for effective and safe operation.

4.1 Variable Speed Control

The Delta 46-460 features electronic variable speed control across three pulley ranges, eliminating the need to change belt positions for most speed adjustments. The three ranges are:

- Low Range: 250-700 RPM
- Medium Range: 600-1,800 RPM
- High Range: 1,350-4,000 RPM

Select the appropriate pulley range for your turning task, then use the electronic speed dial to fine-tune the RPM within that range. Always start at a lower speed and gradually increase as needed.

4.2 Forward and Reverse Function

The lathe includes a forward and reverse switch. This feature is particularly useful for sanding operations. Sanding a workpiece in both directions helps to lay down wood fibers smoothly, resulting in a finer finish without the need to remount the workpiece.

4.3 Belt Tensioning System

The patented belt-tensioning system facilitates quick and easy speed range changes. It automatically sets the belt to the correct tension, ensuring maximum power transfer from the motor to the spindle and extending belt life. Access the belt compartment from the front and side panels.

4.4 Using Tool Rests and Face Plate

The included 6-inch and 10-inch tool rests provide support for your turning tools. Position the tool rest as close as possible to the workpiece without interfering with its rotation. The 3-inch face plate is used for mounting workpieces that cannot be held between centers, such as bowls or platters.



Image 2: The Delta 46-460 MIDI Lathe positioned on a workbench in a workshop environment, demonstrating its operational context. This view highlights the machine's compact size and readiness for woodworking tasks.

5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your Delta 46-460 MIDI Lathe.

5.1 General Cleaning

After each use, clean wood dust and debris from the lathe bed, headstock, tailstock, and motor area. Use a brush or compressed air. Avoid using solvents that may damage painted surfaces or electrical components.

5.2 Belt Inspection and Replacement

Periodically inspect the drive belt for wear, cracks, or stretching. A worn belt can lead to reduced power transfer and inconsistent speeds. Replace the belt if any signs of damage are observed. Refer to the manual for specific belt replacement procedures.

5.3 Lubrication

Apply a light coat of machine oil to the tailstock quill and other non-painted sliding surfaces to ensure smooth movement. Do not over-lubricate, as excess oil can attract dust.

6. TROUBLESHOOTING

This section addresses common issues you might encounter during the operation of your lathe.

Problem	Possible Cause	Solution
Motor does not start or rotate.	Power cord not plugged in; circuit breaker tripped; indexing pin engaged; motor overload.	Check power connection; reset circuit breaker; ensure indexing pin is fully disengaged; allow motor to cool and press reset button if present.
Forward/Reverse switch operates incorrectly (e.g., reverse is forward).	Wiring error in the control box.	(For qualified technicians only) Disconnect power. Open the control box and verify the M+/M- wires on the logic board are correctly connected. If reversed, swap them. Consult Delta customer support if unsure.
Excessive vibration during operation.	Workpiece imbalance; loose mounting; worn or improperly tensioned belt; dull cutting tools.	Rebalance workpiece; ensure lathe is securely mounted; check and adjust belt tension; sharpen or replace cutting tools.
Inconsistent speed or loss of power.	Worn or slipping drive belt; motor issues.	Inspect and replace drive belt if necessary; ensure belt tension is correct. If problem persists, contact customer support.

7. SPECIFICATIONS

Technical specifications for the Delta Industrial 46-460 MIDI Lathe.

Specification	Value
Brand	Delta
Model Number	46-460
Product Dimensions (L x W x H)	36" x 11" x 17.75"
Item Weight	95.8 pounds
Voltage	110 Volts
Power Source	Corded Electric
AC Adapter Current	12 Amps
Motor Horsepower	1 HP
Maximum Rotational Speed	4000 RPM
Swing Over Bed	12-1/2 inches
Swing Over Base	9-9/16 inches
Distance Between Centers	16-1/2 inches (42 inches with optional extension)
Drive Spindle	1 inch 8 RH TPI Thread

Specification	Value
Head and Tailstock Taper	#2 MT
Tailstock Spindle Travel	2-1/4 inches
Drive Spindle Through Hole	15/32 inches (Self-ejecting)
UPC	847962000026

8. WARRANTY INFORMATION

The Delta Industrial 46-460 12-1/2-inch Variable-Speed MIDI Lathe is backed by a **Five-Year Limited Warranty**. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims. For full details regarding warranty terms and conditions, refer to the documentation included with your product or contact Delta customer support.

9. CUSTOMER SUPPORT

For technical assistance, parts, or service inquiries, please contact Delta customer support. Have your model number (46-460) and serial number ready when contacting support to expedite assistance. You can typically find contact information on the Delta official website or in the product documentation.

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.

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