Enco 111-1445, 111-1450, 111-1638, 111-1650, 111-1658, 111-1838, 111-1850, 111-1858, 111-3924, 111-3940, 111-3320

Enco Metal Lathes Instruction and Parts Manual

Models Covered: 111-1445, 111-1450, 111-1638, 111-1650, 111-1658, 111-1838, 111-1850, 111-1858, 111-3924, 111-3940, 111-3320 and various size configurations (e.g., 14x40, 16x40, 16x60, 20x60, 20x80, 24x60, 24x80)

1. Introduction and Important Notes

This manual provides comprehensive instructions for the operation, maintenance, and parts identification of Enco Metal Lathes. It is designed to assist users in understanding the machine's functions, ensuring safe operation, and performing necessary adjustments and repairs.

Important: Upon arrival of the machine, a thorough check for any transport damage is essential. Verify that all standard and additional equipment is complete. In case of damage or missing components, contact the transport agency immediately to file a claim. The Chinese version of all technical documents, alongside the English version, is considered final for interpretation.

1. Machine Profile

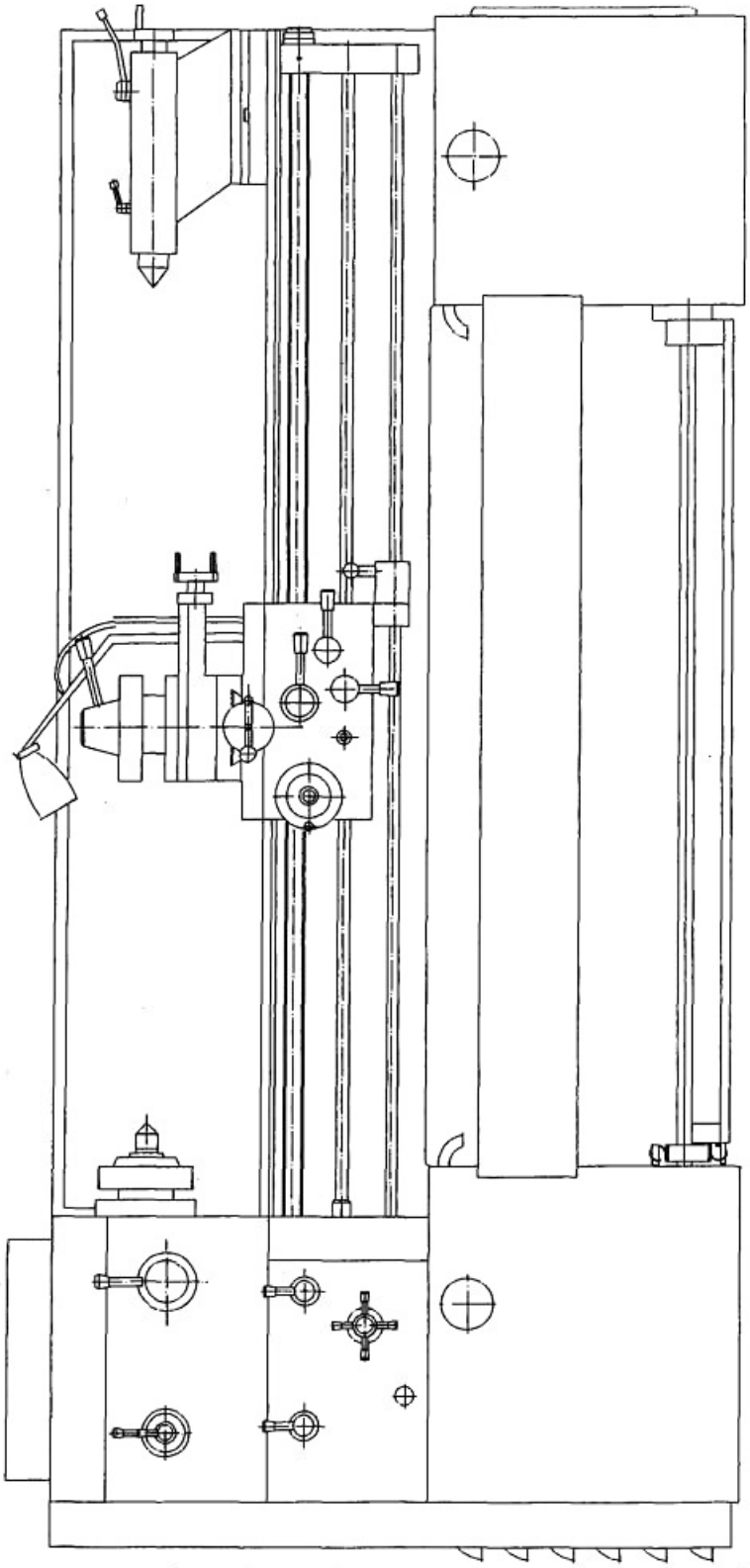


Fig.1-1 Machine Profile

Figure 1: Manual Cover Page and Index. This image displays the cover page of the operation manual, including a detailed index of its contents, such as Machine Profile, Electrical System, Main Uses, Technical Data, Drive System, Cooling System, Lubricating System, Hoisting and Installing, Structure and Feature, Adjustment and Operation, Maintenance and Troubleshooting, Accessories,

and Basic Wear Parts.

2. Machine Profile

This section provides an overview of the Enco Metal Lathe's general structure and components. Understanding the machine's profile is fundamental for proper operation and maintenance.

INDEX

Immediately after the arrival of the machine a check should be made for eventual damages due to transport. Furthermore,please check whether the standard equipment or additional equipment is complete! If any damage or deflciency is found. please contact us by returnlamage resulting from the trasport should be claimed immediately at the transport agency.
Chinese version of all technical documents in Chinese and English languages is regarded as final

Figure 2: Detailed Machine Profile. This diagram illustrates the overall layout and key components of the Enco Metal Lathe, providing a visual reference for the machine's structure.

3. Main Uses and Scope of Use

Enco Metal Lathes are designed for precision machining operations on various materials. Their primary uses include turning, facing, drilling, boring, threading, and knurling. The scope of use covers a wide range of applications in workshops, manufacturing, and educational settings, suitable for both general-purpose and specific metalworking tasks.

4. Main Technical Data

This section details the principal technical specifications of the Enco Metal Lathes. Specific data such as swing over bed, distance between centers, spindle bore, motor power, and speed ranges vary by model and size. Refer to the specific model documentation for precise figures.

5. Hoisting and Installation

Proper hoisting and installation are critical for the safe and stable operation of the lathe. Ensure the machine is placed on a level, solid foundation capable of supporting its weight. Use appropriate lifting equipment and follow all safety guidelines during transport and positioning. Secure the machine firmly to prevent movement during operation.

6. Structure and Features

The Enco Metal Lathes feature a robust cast iron construction for stability and vibration dampening. Key structural components include the headstock, gearbox, carriage, cross slide, compound rest, tailstock, and bed. Each component is designed for precision and durability, contributing to the machine's overall performance.

7. Drive System

The drive system typically consists of an electric motor, V-belts, and a gearbox that transmits power to the spindle. The gearbox allows for various spindle speeds, which are essential for machining different materials and operations. Always ensure belts are properly tensioned and the gearbox is adequately lubricated.

8. Cooling System

The cooling system, often a coolant pump and reservoir, is designed to deliver cutting fluid to the workpiece and cutting tool. This helps to dissipate heat, lubricate the cutting action, and flush away chips, thereby extending tool life and improving surface finish. Regularly check coolant levels and ensure the system is free from blockages.

9. Lubricating System

Proper lubrication is vital for the longevity and smooth operation of the lathe. The lubricating system ensures that all moving parts, such as gears, bearings, and slides, receive adequate lubrication. Follow the lubrication schedule provided in this manual, using the recommended types of oils and greases for each point.

10. Adjustment and Operation

This section covers the procedures for adjusting and operating the Enco Metal Lathe. It includes instructions for setting up the workpiece, selecting appropriate cutting tools, adjusting spindle speeds and feed rates, and performing various machining operations. Detailed threading diagrams are also provided to assist in cutting precise threads.

Operating Procedures:

- **Pre-Operation Checks:** Verify all safety guards are in place, lubrication levels are adequate, and the workpiece is securely mounted.
- **Speed and Feed Selection:** Choose appropriate spindle speeds and feed rates based on material, tool type, and desired finish.
- **Tool Setup:** Mount cutting tools correctly in the tool post, ensuring proper height and rigidity.
- **Machining Operations:** Follow established procedures for turning, facing, drilling, and threading.
- **Threading Diagrams:** Consult the provided diagrams for gear settings and lever positions required for specific thread pitches.

11. Maintenance and Troubleshooting

Regular maintenance is essential to keep your Enco Metal Lathe in optimal working condition. This includes routine cleaning, lubrication, and inspection of components. The troubleshooting guide helps identify and resolve common operational issues.

Maintenance Schedule:

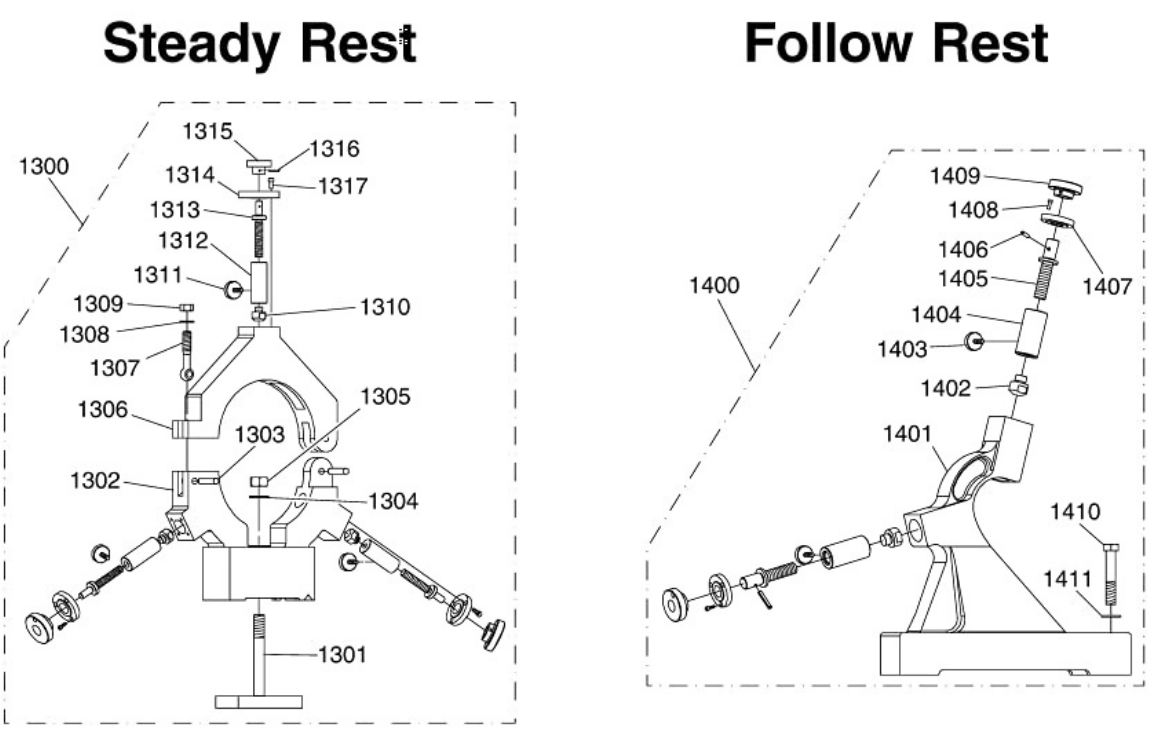
- **Daily:** Clean chips, wipe down machine, check coolant level.
- **Weekly:** Lubricate all designated points, inspect belts for wear, check gib adjustments.
- **Monthly:** Clean and inspect electrical components, check motor brushes (if applicable), drain and replace coolant.
- **Annually:** Comprehensive inspection of all mechanical and electrical systems, professional servicing recommended.

Troubleshooting Common Issues:

- **Machine not starting:** Check power supply, emergency stop button, circuit breakers.
- **Excessive vibration:** Inspect workpiece mounting, tool rigidity, spindle bearings, and machine leveling.
- **Poor surface finish:** Verify tool sharpness, correct speed/feed, proper coolant application, and machine rigidity.
- **Inaccurate cuts:** Check gib adjustments, backlash in lead screws, and tool deflection.

12. Parts List and Diagrams

This section provides detailed explosive view diagrams and corresponding parts lists to assist in identifying and ordering replacement components. Specific diagrams for accessories like the Steady Rest and Follow Rest are included.



REF	DESCRIPTION
1300	STEADY REST ASSEMBLY
1301	BEDWAY CLAMP
1302	LOWER STEADY REST CASTING
1303	DOWEL PIN 6 X 55
1304	FLAT WASHER 24MM
1305	HEX NUT M24-3
1306	UPPER STEADY REST CASTING
1307	EYE BOLT M16-2 X 75
1308	FLAT WASHER 16MM
1309	HEX NUT M16-2
1310	BRASS FINGER Ozarktoolmanuals.com
1311	THUMB SCREW M8-1.25 X 25
1312	THREADED SLEEVE
1313	SHOULDER STUD M12-1.75 X 90 125L
1314	SHOULDER STUD RETAINER CAP
1315	THUMB KNOB
1316	ROLL PIN 4 X 25
1317	CAP SCREW M6-1 X 12

REF	DESCRIPTION
1400	FOLLOW REST ASSEMBLY
1401	FOLLOW REST CASTING
1402	BRASS FINGER
1403	THUMB SCREW M8-1.25 X 25
1404	THREADED SLEEVE
1405	SHOULDER STUD M12-1.75 X 90 125L
1406	ROLL PIN 5 X 32
1407	SHOULDER STUD RETAINER CAP
1408	CAP SCREW M4-.7 X 12
1409	THUMB KNOB
1410	HEX BOLT M16-2 X 60
1411	FLAT WASHER 16MM

Figure 3: Steady Rest and Follow Rest Diagrams with Parts Lists. This image displays detailed exploded views of both the Steady Rest and Follow Rest assemblies, accompanied by numbered parts lists for easy identification of individual components and their descriptions.

Steady Rest Parts List (Refer to Figure 3):

REF	DESCRIPTION

REF	DESCRIPTION
1300	STEADY REST ASSEMBLY
1301	BEDWAY CLAMP
1302	LOWER STEADY REST CASTING
1303	DOWEL PIN 6 X 55
1304	FLAT WASHER 16MM
1305	HEX NUT M24-3
1306	UPPER STEADY REST CASTING
1307	EYE BOLT M16-2 X 75
1308	FLAT WASHER 16MM
1309	HEX NUT M16-2
1310	BRASS FINGER Ozarktoolmanuals.com
1311	THUMB SCREW M6-1.25 X 25
1312	THREADED SLEEVE
1313	SHOULDER STUD M12-1.75 X 90 125L
1314	SHOULDER STUD RETAINER CAP
1315	THUMB KNOB
1316	ROLL PIN 5 X 25
1317	CAP SCREW M6-1 X 12

Follow Rest Parts List (Refer to Figure 3):

REF	DESCRIPTION
1400	FOLLOW REST ASSEMBLY
1401	FOLLOW REST CASTING
1402	BRASS FINGER
1403	THUMB SCREW M6-1.25 X 25
1404	THREADED SLEEVE
1405	SHOULDER STUD M12-1.75 X 90 125L
1406	ROLL PIN 5 X 32
1407	SHOULDER STUD RETAINER CAP
1408	CAP SCREW M4-.7 X 12
1409	THUMB KNOB
1410	HEX BOLT M16-2 X 60

REF	DESCRIPTION
1411	FLAT WASHER 16MM

13. Accessories

This section lists common accessories that can be used with Enco Metal Lathes to enhance their functionality and versatility. These may include chucks, faceplates, centers, tool holders, and other specialized attachments. Refer to the specific accessory documentation for installation and usage instructions.

14. Basic Wear Parts

Certain components of the lathe are subject to wear during normal operation and may require periodic replacement. This section identifies basic wear parts such as belts, fuses, certain bearings, and cutting tool inserts. Regular inspection of these parts is recommended to prevent unexpected downtime.

15. Electrical System

The electrical system of the Enco Metal Lathe includes the motor, control panel, wiring, and safety interlocks. This section provides an overview of the electrical components, including wiring diagrams and schematics, to aid in troubleshooting and maintenance. All electrical work should be performed by qualified personnel following local electrical codes and safety standards.

16. Specifications

For detailed specifications, please refer to the 'Main Technical Data' section (Section 4) and the specific model documentation. General specifications for this manual's reproduction are as follows:

- **Number of Pages:** 60
- **Language:** English
- **Item Weight:** Approximately 5 ounces

17. Warranty and Support Information

This instruction and parts manual does not contain specific warranty information for the Enco Metal Lathes. For details regarding product warranty, technical support, or service, please contact the original manufacturer or your authorized dealer directly. Ensure you have your machine's model number and serial number available when seeking support.