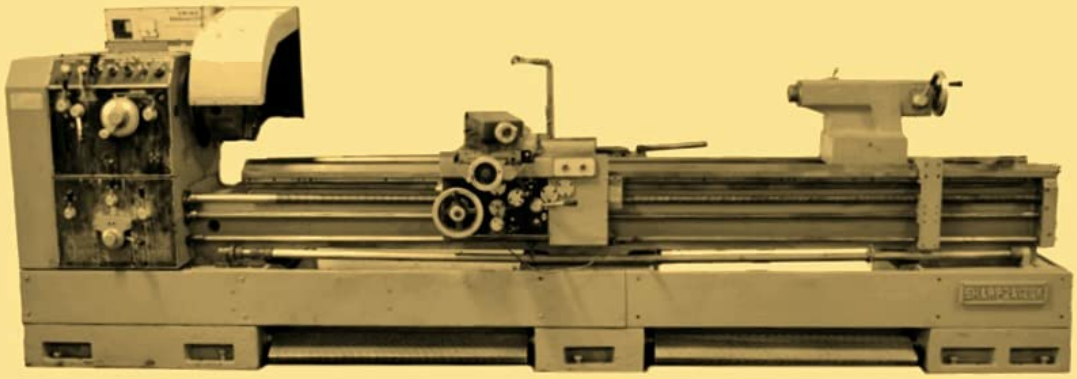
SHARP 24 Series, 24120K

SHARP

PRECISION MACHINE TOOLS

SHARP 24 SERIES

SERVICE MANUAL



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SHARP INDUSTRIES, INC.

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This image displays the cover of the SHARP 24 Series Service Manual, featuring the SHARP Precision Machine Tools logo, the manual title, and a detailed illustration of a metal lathe, indicating the manual's focus on the machinery.

SHARP 24 Series 24120K Metal Lathe Owner's and Service Manual

Comprehensive instructions for operation, maintenance, and parts for SHARP 24 Series metal lathes.

1. PREFACE

2 PREFACE

We give our best regard to whom it may concern to place this machine of practical High Speed Precision Lathe in Your production line. This machine, according to the Human Engineering, has been designed not only as high strength, high accuracy and high quality but also with easy of operation. We wish this volume of "Instruction Manual" would meet your demand and would be convenient to your operations.

All the instructions come from our long period of research and manufacturing experiences. Therefore, care should be taken in reading and understanding this operating manual before proceeding to fully assess the accuracy and efficiency of the machine. Proper maintenance will extend the life of the machine.

Here are the following precautions before start-up:

(1) Do not place machine under direct sunlight or beside the heater.

(2) Do not use unqualified and improper lubricating oil.

(3) Clean and oil machine after daily operation.

(4) Always keep machine, especially its slide ways, free from chips and other foreign particles.

(5) Do not move carriage along slide ways, if surface of slide way has any indents caused by falling down hand tools, etc, on it.

This image shows the preface section of the manual, which includes an introduction to the SHARP High Speed Precision Lathe and important safety precautions for its use.

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2. Installation

Proper installation is crucial for the safe and efficient operation of your SHARP 24 Series metal lathe. This section outlines the necessary steps for moving, foundation work, initial cleanup, and leveling.

2.1 Moving and Lifting

Refer to the original manual for detailed instructions on safe moving and lifting procedures, including recommended lifting points and equipment.

2.2 Foundation Work

A stable and level foundation is essential. Consult the manual for specifications regarding foundation requirements and anchoring procedures.

2.3 Clean Up

Before operation, thoroughly clean the machine to remove any protective coatings, packing materials, or debris from manufacturing and shipping.

2.4 Levelling

Accurate leveling of the lathe is critical for precision work. Follow the manual's instructions for using a precision level and adjusting the machine's feet.

3. Electrical Wiring

Correct electrical connection is vital for safety and functionality. Always ensure power is disconnected before performing any wiring tasks.

3.1 Power Source Wiring

Connect the lathe to an appropriate power source as specified in the wiring diagram. Ensure all connections comply with local electrical codes.

3.2 Caution

Always observe electrical safety precautions. If you are not qualified, consult a licensed electrician for all wiring procedures. The manual includes a detailed wiring diagram for reference.

4. Lubrication

Regular and proper lubrication is essential for the longevity and performance of your SHARP metal lathe. Use only the recommended lubricants as specified in the manual.
Refer to the lubrication chart in the original manual for specific lubrication points, types of oil, and frequency of application.

5. Operation and Use

7 OPERATION AND USE

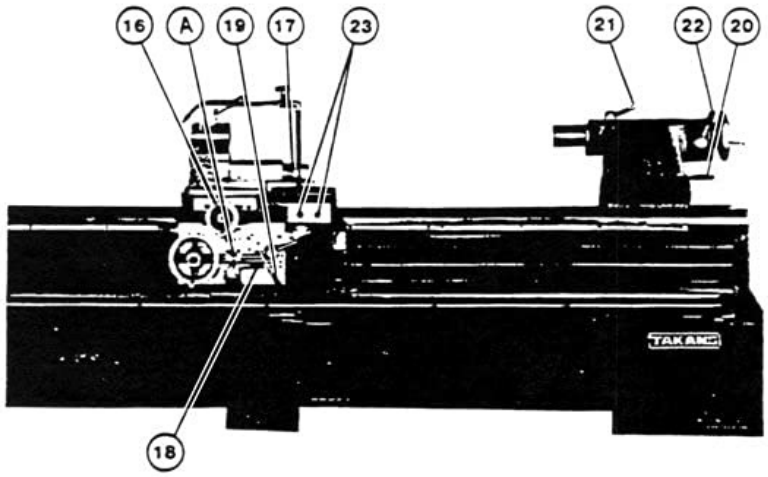
7-5 CARRIAGE AND APRON

Carriage moves along the bed by hand or by power feed and supports the cross slide, compound rest, tool post and cutting tools. The cross slide handle (16) and tool post slide handle (17) move the cross slide and tool post slide in and out.

The apron, anchored to front of carriage, contains the power longitudinal and cross feed controls. The engaging and disengaging of longitudinal and cross feeds is accomplished by lever (18) (drop worm system). lever (19) determines the engaging for the power longitudinal and cross feedl press it down is for cross feed, and pull it up is for longitudinal feed, and there is a neutral position between press down and pull up positions.

The interlocking device is equipped so that the longitudinal feed and the half-nut engaging can not work together. There are on overload safety device by means of cone clutch which can be easily adjusted by a screw (A).

The bottoms 23 are for "quick speed moving carriage."



7-6 TAILSTOCK

Diameter of tailstock is 77mm dia (3") and strong enough to withstand heavy cutting.

Clamping of Tailstok is done by easy to operate push-pull clamping lever (20) and clamping bolt; Clamping of the spindle of tailstock is done by clampIng lever (21)

The tailstock is equipped with Dual spindle feed rate 1:1 and 1:¼ which select by lever (22) for heavy drilling work by the tailstock.

This image illustrates the carriage and apron section of the lathe, highlighting various components with numerical labels for identification and operational reference.

5.1 Designation for Symbols

Familiarize yourself with all symbols and markings on the machine and in the manual for safe and correct operation.

5.2 Starting and Stopping

Follow the prescribed sequence for safely starting and stopping the lathe, including emergency stop procedures.

5.3 Selection of Spindle Speeds

Consult the threading charts and speed selection guidelines to choose the appropriate spindle speed for your machining task.

5.4 Feeds and Threads

Understand how to set the feed rates and engage the threading mechanism for various threading operations. Refer to the threading charts provided in the manual.

5.5 Carriage and Apron

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6. Maintenance and Adjustment

Regular maintenance and precise adjustments ensure the accuracy and longevity of your lathe.

6.1 Adjustment of Bearing on Main Spindle

Refer to the manual for detailed procedures on adjusting the main spindle bearings to maintain precision and minimize runout.

6.2 Adjustment of Taper Gib

Instructions for adjusting the taper gibs on various slides to eliminate play and ensure smooth movement.

6.3 Eliminating Back-lash for Cross and Tool Slide

Procedures for adjusting components to remove backlash from the cross slide and tool slide, critical for accurate

machining.

6.4 Carriage Gibs Adjustment

Guidelines for adjusting the gibs on the carriage to ensure proper fit and movement along the lathe bed.

6.5 Adjustment of Overload Protection Device

Instructions for setting and testing the overload protection device to prevent damage to the machine during operation.

6.6 Adjustment of Half-nut Supporter

Details on how to adjust the half-nut supporter for optimal engagement during threading operations.

6.7 Adjustment of Camlock Studs

Procedures for adjusting camlock studs to ensure secure mounting of chucks and faceplates.

6.8 Trouble Shooting Chart

Consult the troubleshooting chart in the original manual for common issues, their probable causes, and recommended solutions.

7. Specifications

This section provides key technical specifications for the SHARP 24 Series metal lathes.

- **ASIN:** B093BGCK2B
- **Publisher:** Ozark Tool Manuals & Books
- **Publication date:** January 1, 1900
- **Language:** English
- **Item Weight:** 5 ounces

For detailed machine specifications, including dimensions, motor power, and capacity, please refer to the original manual.

8. Parts List and Diagrams

The original manual includes cross-sectional view diagrams of all parts with a comprehensive parts list for the SHARP 24 Series metal lathes. This resource is invaluable for identifying components and ordering replacements. Please refer to the dedicated sections in the manual for detailed exploded views and corresponding part numbers.

9. Threading Charts and Wiring Diagram

The manual contains all necessary threading charts for various thread types and pitches, along with a complete wiring diagram for electrical maintenance and troubleshooting.
These diagrams and charts are critical for advanced operations and electrical servicing.