DCHOUSE BS-0

DCHOUSE BS-0 Milling Machine Dividing Head User Manual

Precision Tool for Machining Operations

1. Introduction

This user manual provides comprehensive instructions for the safe and effective operation, setup, and maintenance of your DCHOUSE BS-0 Milling Machine Dividing Head. This precision accessory is designed for use with milling machines, drilling machines, and grinders, enabling accurate division and indexing for various machining tasks.

Figure 1.1: DCHOUSE BS-0 Dividing Head with included accessories, showcasing the main unit, 3-jaw chuck, tailstock, and various indexing plates and tools.

2. Product Overview and Components

The DCHOUSE BS-0 Dividing Head is a robust and precise tool. Understanding its components is crucial for proper use.

2.1 Components Included

- Dividing Head Set
- Tailstock
- 125mm 3 Jaw Chuck
- Indexing Plates (Set of 3)
- Wrench and various mounting hardware

Figure 2.1: A detailed view of the main dividing head unit, tailstock, 3-jaw chuck, and the various accessories and tools supplied with the product.

3. Technical Specifications

Below are the key technical specifications for the DCHOUSE BS-0 Dividing Head:

Feature	Specification
Swing	6-1/2" (168 mm)
Center Height	3-15/16" (100 mm)
Gear Ratio	1:40
Direct Index Plate	24 holes (Divisions: 2, 3, 4, 6, 8, 12, 24)

Feature	Specification
Headstock Angle Adjustment	0° - 90° (Horizontal to Vertical)
Material	High-strength FC30 Cast Iron (Body), Super Steel (Shaft, Spindle, Worm Gear)
Chuck Diameter	125 mm
Compatible Devices	Milling Machine, Drilling Machine, Grinding Machine
Product Dimensions (Packaging)	41.6 x 24.8 x 22.9 cm
Product Weight	21.86 kg

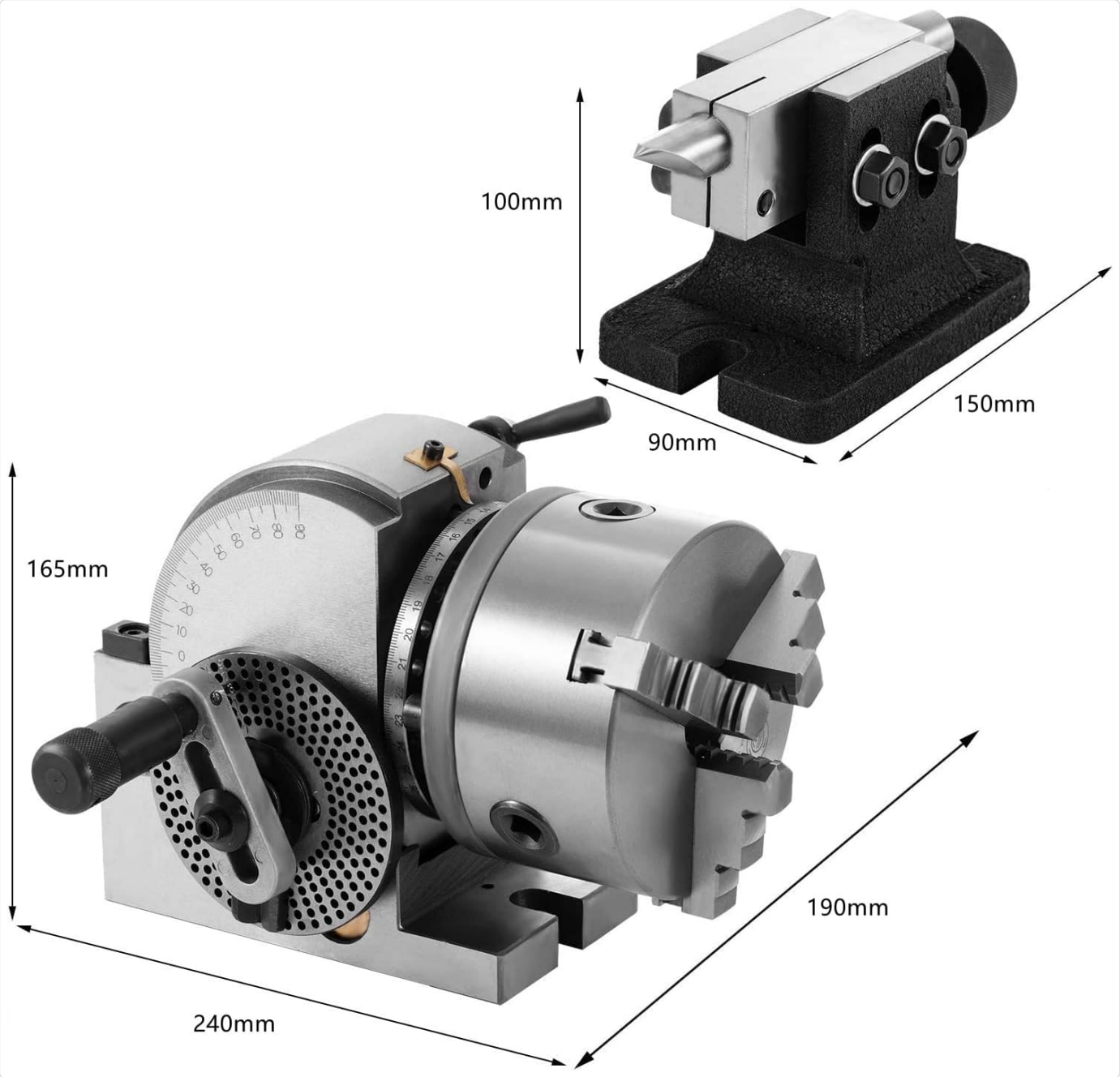

Figure 3.1: Key dimensions of the dividing head and tailstock, illustrating the overall size and center height.

4. Setup Instructions

4.1 Unpacking and Inspection

Carefully unpack all components from the packaging. Inspect each part for any signs of damage during transit. Ensure all listed components in Section 2.1 are present. Keep the original packaging for future storage or transport.

4.2 Mounting the Dividing Head

The dividing head is designed to be mounted securely on the table of your milling machine, drilling machine, or grinder. Use appropriate T-nuts and bolts (not included, typically supplied with your machine tool) to fasten the dividing head to the machine table. Ensure the mounting surface is clean and flat for stable operation.

Figure 4.1: The robust construction of the dividing head, made from high-strength FC30 cast iron, ensures stability during machining operations.

4.3 Attaching the 3-Jaw Chuck

Attach the 125mm 3-jaw chuck to the spindle of the dividing head using the provided mounting screws. Ensure the chuck is seated correctly and all screws are tightened securely to prevent any wobble or misalignment during operation.

4.4 Positioning the Tailstock

The tailstock provides additional support for longer workpieces. Position the tailstock on the machine table, aligning its center with the center of the dividing head's chuck. Secure the tailstock using T-nuts and bolts. Adjust the tailstock's height and position to firmly support the workpiece without introducing undue stress.

5. Operating Instructions

5.1 Adjusting the Headstock Angle

The dividing head can be tilted from 0° (horizontal) to 90° (vertical) to accommodate various machining angles. Loosen the locking hex nuts on the side of the headstock, adjust to the desired angle using the clear tilt scale, and then securely tighten the nuts to lock the headstock in position.

Figure 5.1: The headstock can be adjusted from horizontal (0°) to vertical (90°), allowing for versatile machining operations. Locking hex nuts ensure stability at the chosen angle.

5.2 Indexing and Division

The dividing head uses a 1:40 gear ratio, meaning 40 turns of the hand crank rotate the chuck one full revolution. Precision indexing is achieved using the direct index plate or the included indexing plates.

5.2.1 Direct Indexing

The direct index plate has 24 holes, allowing for quick division into 2, 3, 4, 6, 8, 12, and 24 equal parts. To use, disengage the worm gear, align the desired hole on the direct index plate with the plunger, and engage the plunger to lock the position.

Figure 5.2: The clear scale allows for precise 360-degree rotation, with a fine scale providing 1-degree divisions for accurate positioning.

5.2.2 Indirect Indexing (Using Indexing Plates)

For divisions not possible with direct indexing, use the provided indexing plates. Each plate has different hole circles. The formula for calculating turns and holes is 40/N, where N is the number of divisions required. Select the appropriate hole circle on an indexing plate, and use the sector arms to mark the required number of holes for each division. Rotate the hand crank the calculated number of turns and holes for each division.

Figure 5.3: The dividing head features fast indexing with 24 equally spaced holes (15° apart) and supports nesting plate positioning for complex divisions using the formula 9°/Number of holes.

6. Maintenance and Care

Regular maintenance ensures the longevity and precision of your DCHOUSE BS-0 Dividing Head.

- **Cleaning:** After each use, clean the dividing head and all accessories to remove chips, dust, and coolant residue. Use a soft cloth and a suitable cleaning agent.
- **Lubrication:** Periodically apply a thin layer of machine oil to all moving parts, including the worm gear, spindle, and indexing mechanisms, to ensure smooth operation and prevent corrosion.
- **Storage:** When not in use, store the dividing head in a clean, dry environment, preferably in its original packaging or a protective cover, to prevent dust accumulation and damage.

- **Inspection:** Regularly inspect for any signs of wear, damage, or loose components. Address any issues promptly to maintain accuracy and safety.

7. Troubleshooting Guide

This section addresses common issues you might encounter with your dividing head.

Problem	Possible Cause	Solution
Inaccurate indexing	Incorrect calculation; Loose locking mechanism; Worn worm gear.	Double-check calculations; Ensure all locking mechanisms are tight; Inspect and replace worn parts if necessary.
Stiff operation of hand crank	Lack of lubrication; Dirt or debris in mechanism.	Apply machine oil to moving parts; Clean thoroughly to remove debris.
Chuck not holding workpiece securely	Jaws are worn; Chuck not properly tightened.	Inspect chuck jaws for wear and replace if needed; Ensure workpiece is properly seated and chuck is tightened with the chuck key.
Headstock angle slips	Locking hex nuts not tightened sufficiently.	Ensure locking hex nuts are fully tightened after angle adjustment.

8. Applications

The DCHOUSE BS-0 Dividing Head is a versatile tool suitable for a wide range of machining applications requiring precise angular division. Its primary uses include:

- **Gear Cutting:** Creating precise teeth on gears and splines.
- **Fluting:** Machining flutes on reamers, taps, and other cutting tools.
- **Indexing Holes:** Drilling or boring equally spaced holes on a circular pattern.
- **Milling Polygons:** Machining hexagonal, square, or other polygonal shapes on workpieces.
- **Angular Machining:** Performing operations at specific angles relative to the workpiece axis.

Figure 8.1: The dividing head is compatible with a variety of machine tools, including different types of milling machines and drilling machines, expanding its utility in workshops.

9. Customer Support

For any questions, technical assistance, or warranty inquiries regarding your DCHOUSE BS-0 Dividing Head, please contact DCHOUSE customer support through the retailer's platform or the official DCHOUSE website. Please have your product model number (BS-0) and purchase details ready when contacting support.

For more information, you may visit theDCHOUSE Store on Amazon.