EISCO PH0300C

EISCO Labs Low Friction Force Table Clamp - 2 Inch Pulley Instruction Manual

Model: PH0300C

1. Introduction

The EISCO Labs Low Friction Force Table Clamp with a 2-inch pulley (Model PH0300C) is designed for educational and laboratory use, specifically for experiments involving forces and motion. This device allows for the smooth redirection of force in various physics setups, such as Atwood machines or force table experiments. Its robust construction ensures durability and consistent performance.

Figure 1: The EISCO Labs Low Friction Force Table Clamp with its 2-inch pulley and grey tightening knob.

2. Components

The EISCO Labs Low Friction Force Table Clamp consists of the following primary components:

- **Pulley:** A 2-inch diameter plastic pulley designed for low friction operation.
- **Clamp Body:** Constructed from hard plastic, forming the main structure that attaches to a table or surface.
- **Tightening Knob:** A grey hand knob used to secure the clamp firmly in place.
- **Clamp Screw:** A threaded screw mechanism operated by the tightening knob to adjust the clamp's opening.

Figure 2: Underside view of the clamp, illustrating the tightening knob and clamp screw mechanism.

3. Setup Instructions

1. **Select a Surface:** Choose a stable table or surface with an edge thickness no greater than 1.25 inches (3.175 cm).
2. **Position the Clamp:** Place the clamp body onto the edge of the table, ensuring the pulley extends beyond the edge.
3. **Tighten the Clamp:** Turn the grey hand knob clockwise to tighten the clamp screw against the underside of the table. Continue tightening until the clamp is securely fastened and does not move. Do not overtighten, as this may damage the clamp or the table surface.
4. **Verify Stability:** Gently pull on the clamp to ensure it is stable and will not shift during experiments.

4. Operation

Once the pulley clamp is securely mounted, it can be used to redirect forces in various physics experiments. Common applications include:

- **Atwood Machines:** Use two pulleys to study Newton's laws of motion with varying masses.
- **Force Tables:** Redirect strings from masses to the center of a force table to demonstrate vector addition of forces.
- **Inclined Planes:** Use the pulley to apply a force parallel to an inclined plane.

Ensure that the string or cord used with the pulley runs smoothly within the pulley's groove to minimize friction and ensure accurate experimental results.

5. Maintenance

To ensure the longevity and optimal performance of your EISCO Labs Low Friction Force Table Clamp, follow these maintenance guidelines:

- **Cleaning:** Wipe the plastic components with a soft, damp cloth. Avoid using abrasive cleaners or solvents, as these may damage the plastic.
- **Storage:** Store the clamp in a dry, cool place away from direct sunlight and extreme temperatures.
- **Inspection:** Periodically inspect the pulley for any signs of wear or damage. Ensure the pulley rotates freely. Check the clamp screw and knob for proper function.

6. Troubleshooting

Problem	Possible Cause	Solution
Pulley does not rotate smoothly.	Dust or debris in the axle, worn axle/pulley.	Clean the pulley and axle area. Ensure no string is caught. If wear is significant, replacement may be necessary.
Clamp does not secure firmly.	Table surface too thick, clamp screw damaged, insufficient tightening.	Ensure table thickness is within 1.25 inches. Tighten the knob firmly. Inspect the screw for damage.
Inconsistent experimental results.	Excessive friction, unstable setup, incorrect string alignment.	Ensure the pulley is clean and rotates freely. Verify the clamp is stable. Make sure the string runs centrally in the pulley groove.

7. Specifications

Brand	EISCO
Model Number	PH0300C
Material	Hard Plastic
Pulley Diameter	2 inches (approx. 5 cm)
Maximum Clamp Opening	1.25 inches (approx. 3.175 cm)
Color	Black (clamp body), Grey (knob), Blue (pulley)
Item Dimensions (L x W x H)	6 x 4 x 4 inches (approx. 15.24 x 10.16 x 10.16 cm)
Item Weight	2.46 ounces (approx. 0.07 kg)
UPC	849230059675

8. Support and Contact Information

For further assistance, technical support, or inquiries regarding the EISCO Labs Low Friction Force Table Clamp, please refer to the official EISCO Labs website or contact their customer service department.

Manufacturer: EISCO

For the most up-to-date contact information, please visit:EISCO Labs Store on Amazon