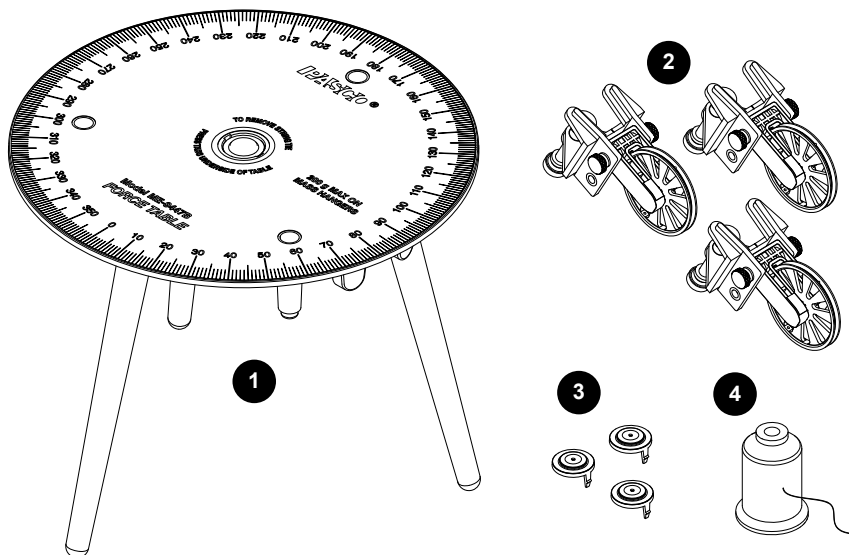


# Super Pulley Force Table

ME-9447B

## Product Description

The Super Pulley Force Table is used to explore the addition of vectors using the concept of forces in equilibrium. The vectors are forces supplied by the weight of masses that hang over pulleys. Two masses hanging over pulleys placed at given angles are balanced by a third mass over a pulley at another angle.



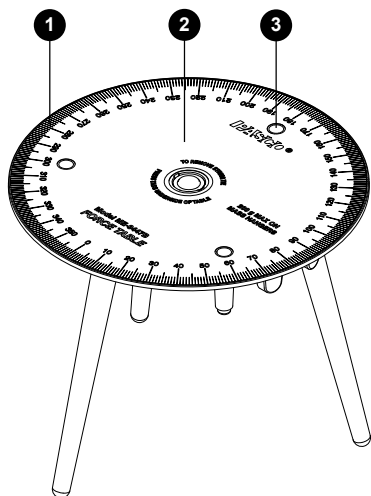
## What's Included

- 1 Force Table Assembly**  
Includes three detachable legs that can be stored in the leg holders and clips on the underside of the table.
- 2 3× Super Pulley with Clamp**  
For attaching to the edge of the force table.
- 3 3× String Tie**  
Install one String Tie in the center recess of the Force Table. Two spares are included.
- 4 Spool of Thread**  
For attaching masses to the String Tie.

## Recommended Accessories

- Mass and Hanger Set (ME-8979)

## Force Table Features




### 1 Scale

For measuring the angles of the force vectors.

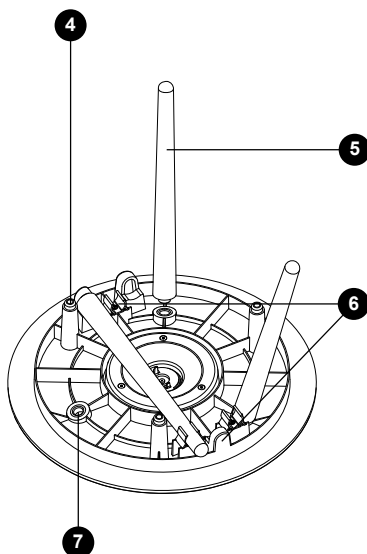
### 2 Laminated top

Draw vectors directly onto the table using a dry erase marker. Use a cleaning spray to erase the markings.

 **NOTE:** Test the marker by drawing and erasing a small dot.

### 3 Storage recess

Insert the stacking pegs into each recess to stack multiple Force Tables for storage.



### 4 Stacking peg

For inserting into the recess holes on the top of the force table to stack multiple Force Tables.

### 5 Table Leg

Three removable legs that can be placed beneath the table for storage.

### 6 Leg holder and storage clip

For securing the table legs for storage.

### 7 Threaded hole

For attaching the table legs to the Force Table.

## Install the String Tie

The String Tie is used to indicate when forces are in equilibrium. Forces pulling on the movable clear disk are balanced when the disk is centered in the String Tie ring. The String Tie needs to be installed in the Force Table before first use.

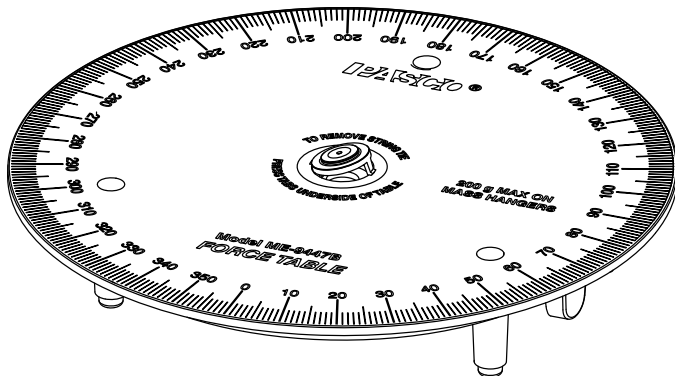


Figure 1. A String Tie partially inserted into the circular recess of the Force Table.

1. Align the tabs of the String Tie with the notches in the circular recess of the Force Table.
2. Insert one tab into one of the rectangular holes and press down until it snaps in place.
3. Press down firmly on the other side of the String Tie until the other tab snaps into place.

When the String Tie is correctly inserted, the top surface of the clear plastic disk will be flush with the surface of the Force Table. You do not need to remove the String Tie after installing it.

## Replace the String Tie

Two additional String Ties are included with the Force Table as spares. Use one of the spares to replace a damaged String Tie.

1. Turn the Force Table upside down.
2. Press the two tabs of the String Tie inward toward each other. Push out the String Tie to release it from the Force Table.
3. Install a new String Tie as described above.

## Assemble the Force Table

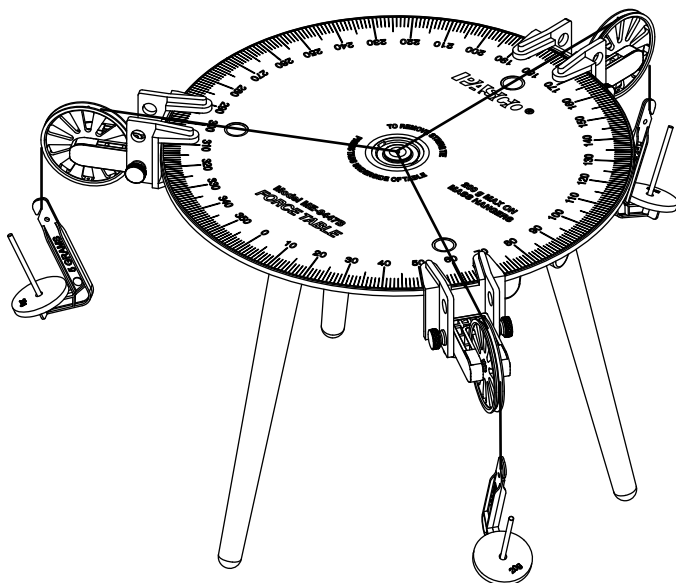


Figure 2. The Force Table completely assembled.

### Install the Legs

1. Turn the Force Table upside down. Remove a leg from its storage clip and holder.
2. Line up the leg screw with a threaded hole in the underside of the Force Table.
3. Turn the leg clockwise until it is firmly attached to the table.

**NOTE:** Do not tighten the legs more than finger tight so that they can be removed later for storage.

4. Repeat for the other legs.
5. Turn the Force Table right side up.


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## Attach the Pulleys

1. Move the pulley yoke to the lower position on the clamp:
  - a. Unscrew the thumbscrews on both sides of the clamp.
  - b. Align the holes in the yoke with the lower clamp holes.
  - c. Insert the and turn each thumbscrew until finger tight.
2. Place the pulley at the end of the table. Gently turn the clamp thumbscrew to secure the pulley.
3. Repeat for the other two pulleys.

## Attach the Threads

1. Cut three 30 cm pieces of thread.
2. Insert each thread individually through the String Tie hole. Pull the ends of each string through the hole.
3. Tie the ends of the threads together with an overhand knot so that the threads cannot be pulled back through the hole.
4. Attach a mass to one thread and run the thread over a pulley. Repeat for the other two threads.

 **NOTE:** Do not attach more than 200 g to each thread.

5. Adjust the height of each pulley so that the thread is parallel with the table.

## Storage

The Force Table may be stored with or without the Super Pulleys attached. Disassembled force tables can be stacked on top of each other.



*Figure 3. Two Force Tables stacked for storage.*

1. Remove the legs by unscrewing them from the table.
2. Place each leg in the leg holders and storage clips on the underside of the table.
3. Stack multiple Force Tables by inserting the stacking pegs of one table into the storage recesses of another table.

## Experiments

Print-ready experiment worksheets for this product are available to download from the PASCO website. Go to [www.pasco.com/freelabs](http://www.pasco.com/freelabs) and enter **ME-9447B** to access all experiments related to this product.

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# Appendix

## Technical Support

Contact PASCO Technical Support for assistance with this or any other PASCO product.

|         |                                                                       |
|---------|-----------------------------------------------------------------------|
| Address | PASCO scientific<br>10101 Foothills Blvd.<br>Roseville, CA 95747-7100 |
| Phone   | 1-800-772-8700 (USA)<br>1-916-462-8384 (International)                |
| Chat    | <a href="http://www.pasco.com">www.pasco.com</a>                      |
| email   | <a href="mailto:support@pasco.com">support@pasco.com</a>              |

## Warranty, Copyright, and Trademarks

### Limited Warranty

For a description of the product warranty, see the Warranty and Returns page at [www.pasco.com/legal](http://www.pasco.com/legal).

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