

Mechanical Wave Machine

1001004

1 Product Information

The mechanical wave model is used to demonstrate the propagation, reflection, diffraction and interference of waves.

A chain of double pendulums is threaded on a bifilar torsion string. The set also includes extra weights to alter the moment of inertia. Two handles for either end allow you to excite waves by hand.

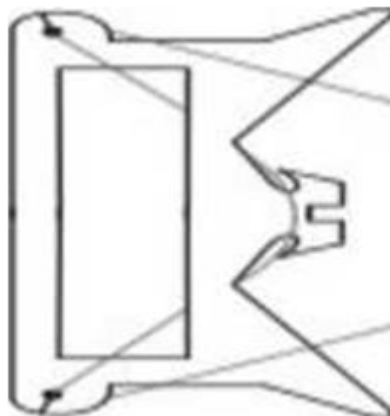
1.1 Specification

- Length: 3m
- Torsion string: 6.5 m length
- Number of double pendulums: 79
- Weight: 0.8 kg approx.

2 Operation

2.1 Assembly

1. Fold the torsion string in half so that both halves are the same length.
2. Thread handle 1 into the loop of the string, as shown in Fig. 1.
3. Attach the pendulum bars by threading one end of the string through one of their two holes and the other end through the other hole.
4. Between each of the pendulum bars, run both ends of the string through spacer tubes.
5. Once all the bars are threaded onto the string, tie the free ends onto handle 2.



2.2 Experiment

1. Clamp one handle of the apparatus in place or request someone to hold it tight. If the apparatus can be firmly fixed at one end, reflection, interference or standing waves can be induced. If the apparatus is held loose by another person at its opposite end, the wave simply trails away.
2. Hold the torsion string taut.
3. Make a turning motion by hand at the free end. Continue to hold the torsion band taut.
4. Turn the handle faster or slower to produce the desired effect.

