

NaRiKa

Instruction Manual

Spring Stand

S-IW

Cat No. C15-4408-W0



**Thank you very much for purchasing Spring Stand.
Read all these instructions before use.
The Spring Stand is specially designed for student experiments in school.**

Safety Precautions

- ⊘ Do not disassemble, repair and remodel this product. This product might stop working and warranty will be void.
- ⊘ Do not use the product for an experiment on an uneven surface.
- ⊘ Do not let students to conduct experiments without the presence of teacher or trainer.
- ⚠ Teacher or trainer must instruct students about the safe ways of conducting experiments with this product before conducting experiments.
- ⚠ When you find that something is broken, please do not repair the product by yourself.

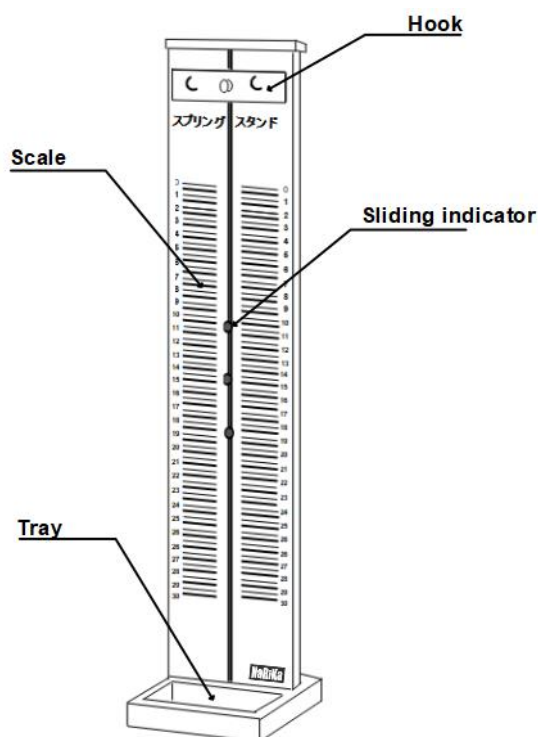
Introduction

This Spring Stand is designed for students experiments of Hooke's law. Usually students must measure lengths of linear springs with different masses during the experiment of Hooke's law. The measurement of spring lengths is difficult because it is measured with masses on a retort stand by a ruler which results in errors in the measurement.

The main body of Spring Stand is equipped with specially designed measuring scales and hooks to solve the inconvenience in the experiment and includes indicators with a reference line to make easier measuring length of the spring.

Another feature of the product is the ability to compare two different kinds of springs together on two hooks at the same time.

Contents and Specification



Size 110 × 120 × 495mm

Accessories:

Two kinds of Spring 2pcs each

Weight: 20g x 10 pcs

Indicator weight: 2 pcs

Hook: Equips with two hooks on a plate which can be slide up and down to adjust Zero point.

Scale: Read lengths of the springs depending on number of weights from it.

Tray: The tray is for accessories during the experiment.

Sliding indicator: The sliding indicator can be used several ways based on your purpose or purpose of the experiment.

For example, let students predict length of the spring with the indicator depending on weights and so on.

Example of Experiment

1. Hook one of springs on one of the hooks on the top.
2. Hook the weight indicator onto the bottom of the spring.
3. Read and note down its scale (a) which is shown by the weight indicator (see Fig. 1 below). The reading value will be a zero point. If the indicator is outside of any line of scale, adjust it to be in the scale and on some line by sliding the plate.
4. Hang one weight onto the spring, and read the scale (b), which is indicated by the indicator, write it down too.
5. Calculate difference by subtraction $(b) - (a)$ and write it in a cell of a table 1 below.
6. Add weight one by one and read the scales every time. Calculate difference by subtraction of every weight and fill the value in the cells of the table below.
7. Furthermore, change the spring, and repeat the experiment to see if there is difference.

Fig. 1

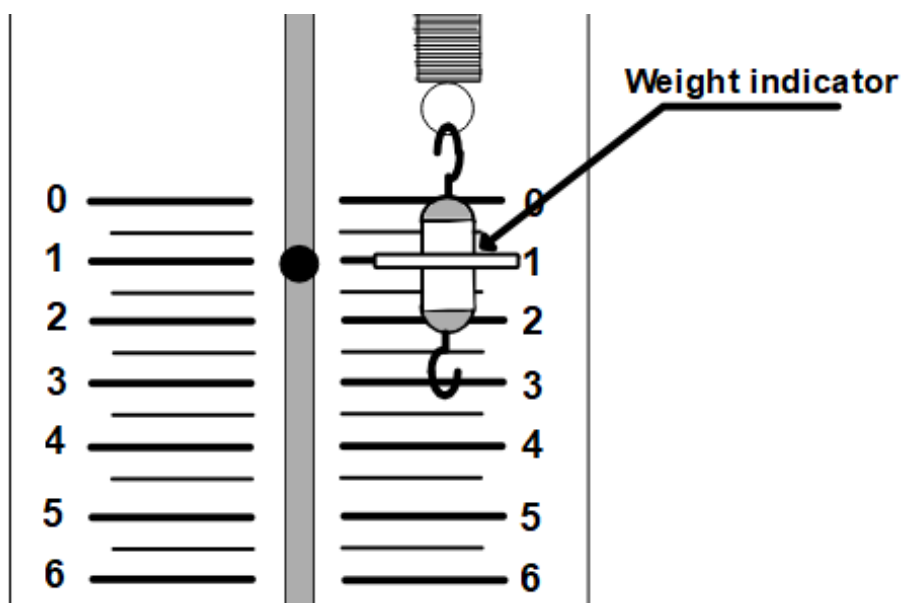


Table 1, Result of the experiments

Number of Weight	1	2	3	4	5
Mass (g)	20	40	60	80	100
Spring A length [cm]					
Spring B length [cm]					

After use, put springs and weights into the enclosed box for storage and to avoid any loss of equipment.