

# B10-3735-W0 Magnetic Field Observation Box MB-Y

## I Precautions

1. Handle the acrylic observation box with much care. If dropped or given a strong shock, it may be damaged causing a leak of solution.
2. Avoid wiping the box with benzene or thinner.



## II Purpose

This apparatus enabled the stereoscopic observation of magnetic field (magnetic lines of force) which has been seen only on a plane by inserting a bar magnet in the box.

The fine iron powder and silicone oil solution are enclosed in the transparent box. Handling is so easy that anyone can understand what magnetic lines of force are.

## III Specifications

Observation box: Transparent acrylic resin with transparent screw.

O.D. 105x 65x 65mm

Magnet hole: 9  $\phi$  x 80mm

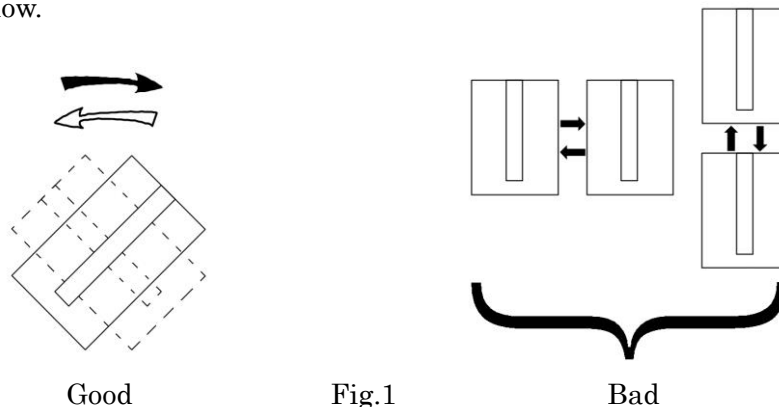
Enclosed material Silicone Oil solution, Iron powder

Weight : 360g

Accessories : Alnico magnet 9  $\phi$  x 35mm

## IV Operation

1. Before experiment, scatter the iron powder by rotating the box as the figure shows.



- When the iron powder is scattered uniformly, insert the supplied bar magnet slowly. Do not insert it with force, otherwise the box may be damaged.

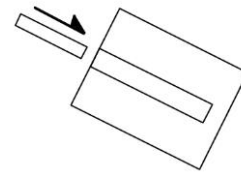


Fig.2

- Lay the box down at the insertion of bar magnet, the iron powder is magnetized to form magnetic lines of force. When the bar magnet is down out, the iron powder drops slowly. Scatter the iron powder again.

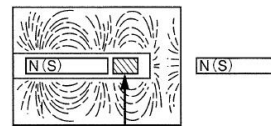


Fig.3

- Bring another magnet close to the box and insert the bar magnet in the hole. The iron powder is magnetized in two areas showing attraction and repulsion of magnetic forces.



Fig.4



Spacer

Fig.5

(Reference)

- In the step 4, try to put some spacer such as iron screw, iron nail wooden ship, etc before inserting the bar magnet. Different kinds of magnetic fields can be observed.
- As this box is made of transparent plastic an overhead projector can be used for two dimensional observation.