

Student Experiments

Manual

MECHANICS 1

P9160-4B



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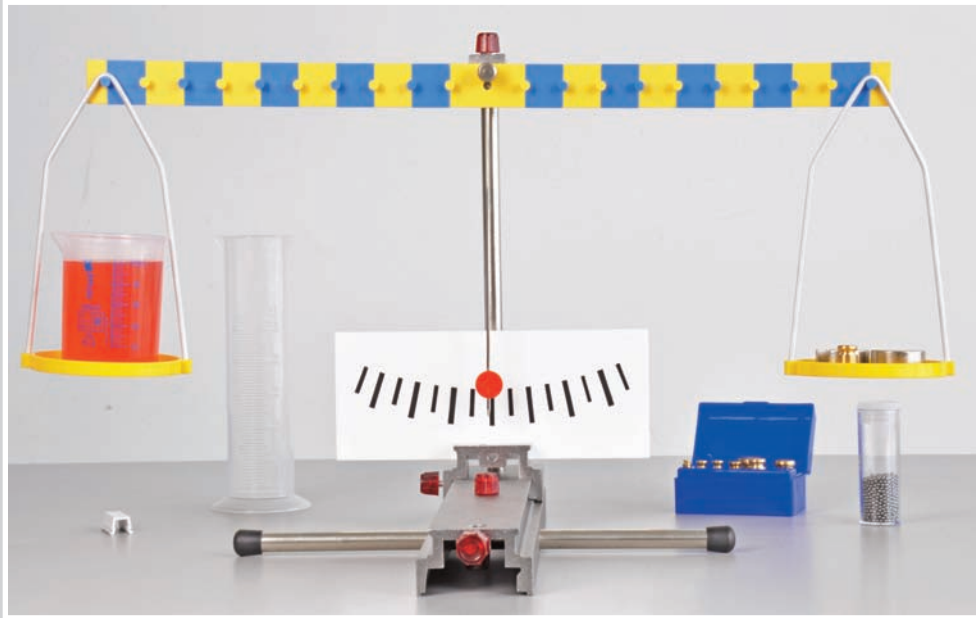
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Required Kit:

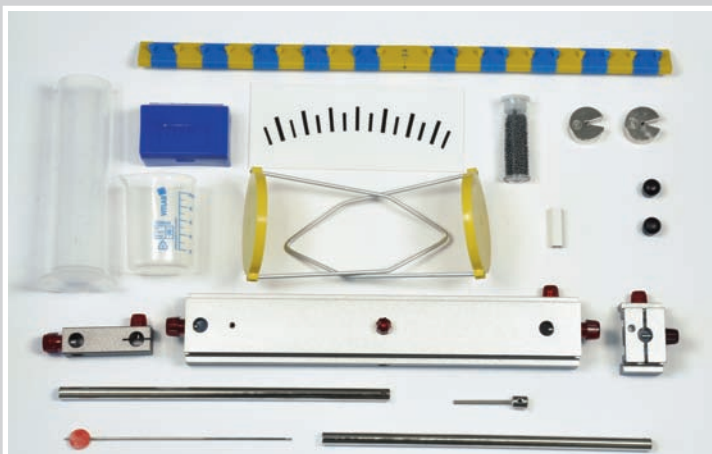
P9901-4A Rail stand material

P9901-4B Mechanics 1



Material:

- | | |
|---|---------------------------------------|
| 1x Bearing pin | 1x Scale with graduation |
| 1x Stand rail 300mm | 1x Sliding saddle for lever rod |
| 1x Bosshead universal | 1x Lead (tare) shot 50g |
| 1x Slider for screens, springs and pointers | 1x Beaker plastics 100 ml |
| 2x Support rod 250 mm | 1x Graduated cylinder plastics 100 ml |
| 2x End-cap for rods | 2x Slotted weight, 50 g |
| 2x Scale pan with suspension | 1x Balance weights set |
| 1x Pointer for lever rod | 1x Lever rod for balance |



When we go to a shop and buy 1 kg of sugar, we get a certain „mass“ of sugar.
1 kg is the unit of the physical quantity mass.

Preparation:

Arrange the apparatus according to the illustration. A 25 cm rod is pushed through the cross hole of the stand rail. The rod is fixed by means of the knurled screw. The caps for the rods are fixed at both ends. The second 25 cm rod is fixed vertically in the stand rail. The universal bosshead is clamped to the vertical rod.

The lever balance is fixed to the universal bosshead in the upper hole by means of the bearing pin. The pointer is screwed in the middle of the lever balance. The scale is attached to the stand rail in front of the vertical rod by means of the sliding saddle with slot.

The two scale pans are fixed at both ends of the lever balance.

The pointer must point exactly to the median line of the scale.

The lever balance can be brought into that position by means of the sliding saddle for lever balance.

Experiment:



The beaker is put on the left scale pan. The scale pan is held by hand until balance is reached by putting masses and tare shots onto the right scale pan („taring“).

2 slotted masses of 50 g are put onto the right scale pan. Water (from the measuring cylinder) is poured into the beaker on the left scale pan until counterbalance is reached again.

Then the water is filled into the empty measuring cylinder and its volume is defined.

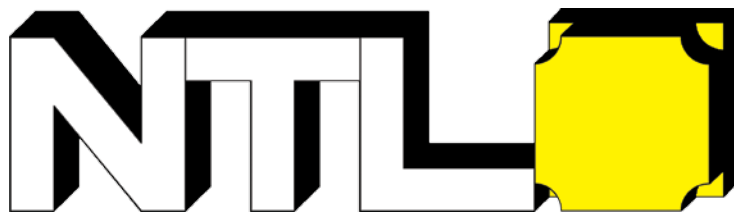


Conclusions:

1. Masses are compared by means of scales.
2. The mass of 1 ml of water is 1 g, the mass of 1 l of water is 1 kg.

Result: The mass of 100 ml of water is 100 g.





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