# Mechanics Kit Panel Type

## ESP59745

Junior High School | Senior High School

Physics

- Quick and easy to assemble with magnetic mounting system.
- Comprehensive – from vector to balance concept, and simple devices.
- 14 static mechanics experiments are designed for students in order to understand the following concepts easier:
  - Force
  - Object balance
  - Torque moment and its application
  - Simple machine
  - Simple harmonic motion

**Component List** — Consisting of 18 components, packed in a plastic injection moulding box. Dimension: 66 × 62 × 15 cm. Weight: 12 kg.

| | Cat. code | Component | Description | Qty |
|---|---|---|---|---|
| a | ESP 360 01 | **Experiment Board** | Dual face; one with white painted metal surface and the other is functioned as a white board; the experiment board is mounted on experiment board's legs (PMK 360 13). | 1 pc |
| b | ESP 360 02 | **Dynamometer 5 N** | Graduation: 0 – 5 N × 0.1 N and 0 – 500 g, mounted on magnetic holder. | 1 pc |
| c | ESP 360 09 | **Rolling Load** | Rolling mass is mounted on a hooked frame. It is used to understand the object working force and normal force. | 1 pc |
| d | ESP 360 07 | **Inclined Plane with Plumb Bob** | Equipped with degree graduation and a plum-bob to indicate the plane obliqueness. It has magnetic holder. | 1 pc |
| e | ESP 360 06 | **Disc with Degree Scale** | It is used as an angle measuring tool and as a reference of a ring-shaped object position. It has magnetic holder. | 1 pc |
| f | ESP 360 08 | **Torque Wheel** | A disc with 3 blades and milimeter circular graduation, equipped with ball bearing and magnetic holder. It is used to simplify the understanding of force moment concept (torque) on an equilibrium. | 1 pc |
| g | ESP 41/02 | **Pulley Block** | 40 and 60 mm diameter pulleys are mounted on a frame. It is used to understand the simple device on pulley system. | 1 pc |
| h | ESP 360 11 | **Pulley 40 mm** | 40 mm pulley with magnet, it is used in force, force equilibrium, and simple device experiment. | 2 pcs |
| i | ESP 360 12 | **Pulley 60 mm** | 60 mm pulley with magnet, it is used in force, force equilibrium, and simple device experiment. | 1 pc |
| j | ESP 360 10 | **Plannar Object** | An irregular pentagonal object which is used to understand the object's center of mass concept. | 1 pc |
| k | ESP 325 01 | **Friction Block** | A block with 4 different surfaces, rubber, wood, plastic and glass. Detachable hook. | 1 pc |
| l | ESP 27.01 | **Slotted Load and Hanger 250 g (6 loads, 1 hanger)** | Loads with gaps and nickel plated brass hanger. | 3 sets |
| m | ESP 51.26/39 | **Helical Spring** | One end is ring shaped and the other end is hook shaped, material is spring steel. | 1 pc |
| n | ESP 51.08/09 | **Cord on Reel** | Nylon twisted thread on plastic reel. | 1 pc |

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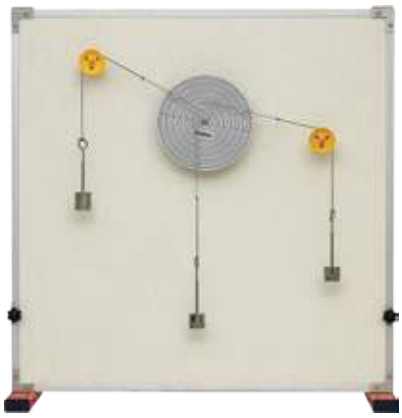
| | Cat. code | Component | Description | Qty |
|---|---|---|---|---|
| o | ESP 360 04 | **Pivot Mount** | Function as pivoting axle or fulcrum for the Lever Beam; with magnetic base. | 1 pc |
| p | ESP 360 03 | **Lever Beam** | Alumunium lever beam to function as object acted on by forces and as a lever. It is included with 3 “retainers” to hook string through which the force is acting. | 1 pc |
| q | ESP 360 05 | **Ring** | A ring functions as an object on to which forces are applied. | 3 pcs |
| r | ESP 15/305 | **Steel Ruler 50 cm** | Made of stainless steel; length 50 cm. Scale with centimeter and milimeter unit. | 1 pc |


## Magnetic Mounting System

The dimension of the experiment panel board is 600 × 600 mm, large enough space for experiment. Components are equipped with neodymium magnet, so they can be placed onto the experiment board. This system makes component positioning easier.

## Experiment Topics

| | |
|---|---|
| P 12 05 | Hook's Law and the Measurement of Force |
| P 12 08 | Equilibrant and Resultant Forces |
| P 12 09 | Resolving a Force |
| P 12 10 1 | Torques for Parallel Forces |
| P 12 10 2 | Torques for Non-Parallel Forces (Part 1) |
| P 12 10 3 | Torques for Non-Parallel Forces (Part 2) |
| P 12 11 | Center of Gravity and Center of Mass |
| P 12 12 | Equilibrium of Extended Body |
| P 12 06 1 | Simple Machines: The Inclined Plane |
| P 12 01 3 | Simple Machines: The Lever |
| P 12 02 4 | Simple Machines: The Pulley |
| P 12 03 1 | Sliding Friction |
| P 14 04 1 | Simple Harmonic Motion: Oscillation of Mass Hanging on a Spring |
| P 14 03 3 | Simple Harmonic Motion: The Simple Pendulum |



P 12 10 3 Torques for Non-Parallel Forces (Part 2)

P 12 06 1 Simple Machines: The Inclined Plane

📖 Mechanics Kit - Panel Type experiment guide in English (LPM 124E).