

Tensile Tester Kit (EDC-TTKA-515)

SPECIFICATIONS:

- Includes a force measuring unit with a force gauge and air damper to minimize measurement fluctuations.
- Comes with three friction plates and two friction bodies for diverse friction experiments.
- Normal force can be adjusted using additional weights.
- Friction body remains stationary, while the friction plate moves on a carriage.
- Carriage is driven by a cable pulley system and motor.
- Two different driving velocities available for experimentation.
- Height-adjustable force measuring unit for flexible positioning.

DESCRIPTION:

This mechanical friction testing apparatus is designed to study the interaction of friction between two solid bodies under controlled conditions. The experimental unit ensures that the lines of action of friction and tensile forces remain parallel, enabling accurate and repeatable results. The system features a force gauge equipped with an air damper, which helps in reducing measurement spikes caused by slip/stick effects, thereby allowing for stable force readings. It includes three friction plates and two friction bodies, each offering different surface characteristics to analyze variations in frictional resistance. The normal force acting on the system can be modified by adding or removing weights, making it highly versatile for various testing scenarios. 2 driving velocities via a graduated cable drum.

The apparatus is driven by a synchronous motor and a cable pulley system, allowing users to choose between two different driving velocities (23.5 cm/min and 47 cm/min). The friction body remains stationary, while the friction plate moves on a guided carriage, simulating real-world frictional interactions. Additionally, the air damper can be adjusted to either measure the mean friction force (with damping) or analyze slip/stick effects (without damping). The unit is supplied with a comprehensive storage system, ensuring all components are securely stored when not in use.



TECHNICAL DATA:

- **Mechanical friction setup:**

- Friction body stationary, friction plate moves on carriage.
- Carriage movement driven by cable pulley and motor.

- **Friction components:**

- 2 friction bodies with 2 different surfaces each.
- 3 friction plates with a total of 4 different surfaces.

- **Driving mechanism:**

- Synchronous motor drive.
- Speed: 100min
- Two driving velocities: 23.5 cm/min and 47 cm/min.

- **Force measuring unit:**

- Force gauge with adjustable air damper.
- Height-adjustable for flexible positioning.

- **Material specifications:**

- Friction plates: Min. $175 \times 80 \times 6$ mm (L \times W \times H), made of aluminum, PVC/felt, glass.
- Friction body: Min. 50×40 mm,
 - Smooth/rough aluminum (h = 20 mm).
 - Brass/felt (h = 5 mm).

- **Weight system:**

- Dead-weight force: Min. 1N.
- Weights: 8×0.5 N.

- **Measuring range:**

- 0 – 2N, graduation: 0.05N.

- **Storage system:**

- Size: Min. $720 \times 480 \times 178$ mm (L \times W \times H).
- Weight: Min. 10 kg.

- **Supplied Items:**

- 1 experimental unit.
- 1 set of weights.
- 2 friction bodies.
- 3 friction plates.
- 1 storage system with foam inlay.
- 1 set of instructional material.