

BRAKING ROLLER



Non contractual photo

**SERVICE : PC MICROCOMPUTER, 200 MHZ
SET OF MASSES: 50 X 1 KG (TYPE CAST
IRON DISC)
DIMENSIONS : 1 500 X 550 X 500 MM**

WEIGHT : 45KG

REFERENCE : EX1100

A braking roller is an industrial product that fits into a dynamic storage chain. The product is used to brake the pallets before their blocking at the end of the race. The test bench, EX1100, makes it possible to highlight the characteristics of this mechanism according to different configurations. Emphasis is placed on dynamic and energetic studies. A software simulation makes it possible to compare the model with the real mechanism. A spare wheel is also available in a case to carry out an independent technological study.

Educational Objectives :

The manipulations on the test bench make it possible to :

- Experimentally verify the performance of an industrial product.
- Perform an energy balance.
- Perform a functional analysis.
- Perform kinematic and dynamic modeling
- Study the kinematic conditions of the roller / pallet contact
- Validate the model by experimenting on the real.
- Quantify the influence of external and internal parameters
- Study industrial components.

Technical specifications :

The device consists of a section of storage corridor (1300 mm length) consisting of two roller rails, and equipped with a braking roller. The slope of the corridor is adjustable from 0 to 6 °. A pallet that can be loaded with masses (up to 50 kg) moves in this storage corridor. The study consists in analyzing the behavior of the pallet / braking roller torque as a function of the evolution of various parameters (distance of release of the pallet with respect to the roller, projection of the braking roller with respect to the conveying plane, total mass of the pallet, inclination of the corridor, ...). Various sensors instrument this test bench to perform recording and data processing via a capture card and dedicated software.

The measured quantities are :

- The position of the pallet to calculate its linear velocity
- The angular position of the braking roller to calculate its rotational speed
- The normal force and the tangential force exerted by the pallet on the roller.

The pallet is stopped at the end of the race by a hydraulic damper but it is imperative that this test bench is fixed on a robust bench.

OPTIONS :

An educational bag containing a braking roller in spare parts and a suit: EX1110