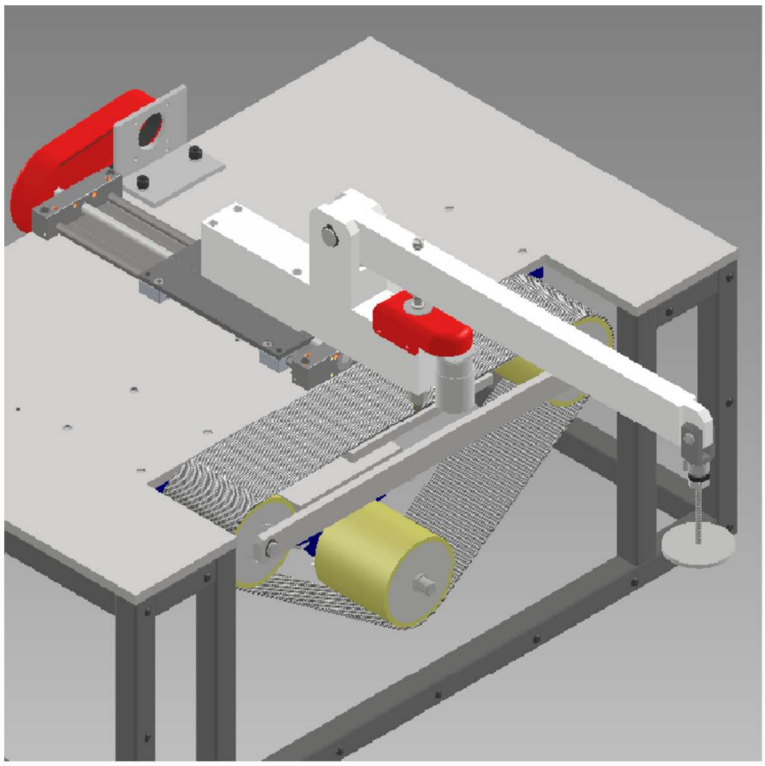
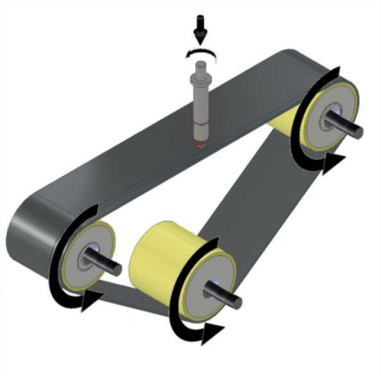
ST–BA BELT ABRASION TESTER





Description

The ST-BA Belt Abrasion Tester utilizes a rotating pin-on-rotating-belt approach to assess the abrasive wear resistance of materials. In this setup, the rotating pin is pressed against a moving abrasive belt under a controlled normal load applied via a dead weight, ensuring consistent and repeatable wear testing. A motorised linear slide mechanism ensures the pin progressively moves over fresh abrasive material along a prescribed wear track length, closely mimicking real-world wear conditions.

To maintain accurate test conditions, the drive system regulates the rotational speed of both the pin and the belt. The indexing slide guides the rotating pin along the belt, ensuring consistent wear distribution. Successive wear passes are positioned to avoid overlap, allowing the reference pin to be tested on an unused abrasive path parallel to the test pin’s track.

This setup provides a precise and standardized method for comparing material wear performance. It is ideal for testing metals, ceramics, polymers, and coatings in research, quality control, and industrial applications, fully compliant with the ASTM G132 standard.

Features

- Belt-driven three-roller disc for abrasive testing with a low-power motor.
- Low-cogging servo motor ensures precise test pin tracking.
- PLC-controlled test configuration for accuracy and automation.

Standard Tests

- ASTM G132 Standard Test Method for Pin Abrasion Testing

Technical Specifications

Pin:	2 - 10 mm diameter
Pin Rotational Speed:	15 - 50 rpm
Maximum Load:	200 N (dead-weight)
Nominal Contact Pressure:	1 - 2.5 MPa
Sliding Speed:	10 - 100 ms^{-1}
Wear Path Length:	4 - 10 m
Belt Width:	100 mm
Belt Length:	1200 - 2000 mm
Abrasive:	150 grit garnet
Alternative Abrasives:	80 - 220 grit
Belt Drive:	d.c. geared motor
Pin Drive:	d.c. geared motor
Indexing Drive:	a.c. servo-motor
Temperature:	Ambient
Control and Automation:	Touch-screen PLC & Interface

Automatically Controlled Parameters

Pin Rotational Speed
Sliding Speed
Test Duration

Manually Controlled Parameters

Load

Post -Test Analysis

Material Wear Loss
Wear Rate
Wear Track Profile
Comparative Material Performance

Services

Electricity:

Belt Drive:	24 VDC, 17.2 A, 10 Nm, 102 W
Pin Drive:	12 VDC, 10 Ncm
Indexing Drive:	230 V, 1.1 A, 3.4 Nm (peak)