



The MRT-2000L is a computer-controlled test system designed specifically for evaluating the quality of magnetic roller sleeves. The MRT-2000L uses a non-contact surface potential measurement technique to evaluate the electrical properties critical to the performance of the magnetic roller sleeve. Developed primarily for quality control in toner cartridge manufacturing, the system also plays an important role in research and development.

Overview

A standard MRT-2000L system consists of a scanner and electrostatic voltmeter; a user-supplied computer runs the Microsoft Windows®-based control software and houses the data acquisition and control hardware. Scanning is axial or helical, single or multi-track. The system supports a wide variety of roller types and sizes. Typical cycle time is 60 seconds.

MRT-2000L test functions are software-controlled, and the key test parameters, such as charging level, scan type, scanning speed, and pass/fail criteria, are specified by the user. In a typical test session, the operator loads a roller into the scanner, sets the test parameters, and activates the test with the control software. The system performs the scan, gives a pass/fail reading based on the user-specified parameters, and reports the results, saving the scan data for further review and analysis.

Built-in Test Functions

- Surface potential and charging current measurements
- Charge decay measurements
- Charge accumulation measurements
- Charge relaxation measurements
- Axial and helical scans
- Single- and multi-track scans with mapping capability
- Pass/fail indicator controlled by user-specified criteria

Typical Applications

- Product development
 - Development of magnetic roller sleeves
 - Development of coating materials
 - Development of reconditioning techniques
 - Optimization of remanufactured cartridges
- Production quality control
- Acceptance testing
- Assessing recycled rollers for reuse



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Test Functions

- Surface potential scans
- Charging current scans
- Charge accumulation measurement
- Charge relaxation measurement
- Axial and helical scans
- Single and multiple track scans
- Surface potential mapping
- User-selectable pass/fail criteria

Cycle Time

- Typical cycle time is 60 seconds

System Hardware

- Scanner unit
- Electrostatic voltmeter
- Instrumentation; data acquisition and control hardware
- All necessary interface electronics, cables, and connectors
- Charge roller test option available (Standard model MRT-2000LC, short model MRT-2000C)

Roller Dimensions

Standard model (MRT-2000L)

- Maximum roller length 360 mm
- Maximum roller diameter 60 mm
- Minimum roller diameter 12 mm

Short model (MRT-2000)

- Maximum roller length 260 mm
- Maximum roller diameter 60 mm
- Minimum roller diameter 12 mm

Control Software

- Software provides all motion control, measurement, data acquisition, and data analysis functions, including basic statistical functions (minimum, maximum, and mean voltages and standard deviation)

Computer Configuration (customer-supplied)

- Pentium PC
- Two free ISA slots for interface cards
- Two free slots for connector brackets (adjacent to ISA slots)
- Microsoft Windows® 95 or 98
- Microsoft Excel® 7.0 or higher

Electrical Requirements

- 110 VAC±10% @ 50/60 Hz or 230 VAC±10% @ 50 Hz

Maintenance and Operating Environment

- Requires good maintenance practices typical for laboratory equipment
- Temperature
 - Operating: 10° to 32° C (50° to 90° F)
 - Storage: 0° to 35° C (32° to 95° F)
- Relative humidity
 - Operating: 20% to 80%
 - Storage: 10% to 95% (non-condensing)

Dimensions and Shipping Weight

Standard model—packaged dimensions

- Main unit: 64 cm x 84 cm x 38 cm (25" x 33" x 15")
- Voltmeter: 46 cm x 30 cm x 18 cm (18" x 12" x 7")
- Accessories: 46 cm x 30 cm x 18 cm (18" x 12" x 7")
- Approximate shipping weight: 27 kg (60 lb)

Short model—packaged dimensions

- Main Unit: 74 cm x 76 cm x 41 cm (29" x 30" x 16")
- Voltmeter: 46 cm x 30 cm x 18 cm (18" x 12" x 7")
- Accessories: 46 cm x 30 cm x 18 cm (18" x 12" x 7")
- Approximate shipping weight: 31 kg (68 lb)

Documentation

- User's Guide