RS-DP-03A3 High-Precision Semi-Automatic Drop Test Machine

The RS-DP-03A3 drop test machine evaluates product performance after accidental drops during normal use. This equipment provides controlled drop testing for consumer electronics with adjustable height settings and multi-axis positioning capability.

Applications

Designed for drop testing of small consumer electronic products:

- Mobile phones and smartphones
- Tablet computers and e-readers
- Telephones and electronic dictionaries
- Batteries and charging devices
- Headphones and remote controls
- Other portable electronic devices up to 2kg

Technical Specifications

Parameter	Specification
Model	RS-DP-03A3
Drop Height Range	300 - 2000 mm
Maximum Load Capacity	2 kg
Minimum Release Height	300 mm
Drop Counter	0 - 999,999 cycles (programmable)
Height Adjustment System	Panasonic servo motor with synchronous belt
Control System	MCGS color LCD touchscreen + Mitsubishi PLC
Sample Holding	SMC vacuum suction cup with θ-axis and β-axis rotation
Drop Surface Options	Marble, wood, steel plate
Air Supply Requirement	≥0.5 MPa
Power Supply	AC 220V, 50Hz, 3A
Dimensions (W×D×H)	900 × 1200 × 2360 mm
Weight	Approximately 420 kg

Compliance Standards

- **IEC 60068-2-32** - Environmental testing for electrotechnical products - Free fall
- **GB/T 2423.8** - Environmental testing for electric and electronic products - Test Ed: Free fall
- **YD/T 1539-2006** - Reliability requirements and test methods for mobile communication handsets

Key Features

Height Control System

The machine uses a Panasonic servo motor with synchronous belt drive for precise height adjustment. Drop height is set via touchscreen interface, with automatic stopping at the programmed height. The system includes power-off memory function to retain settings.

Control Interface

MCGS color LCD touchscreen paired with Mitsubishi PLC provides centralized control for all operations including height setting, sample positioning, cycle counting, and drop velocity monitoring. Bilingual interface available in English and Chinese.

Sample Positioning

SMC vacuum suction system holds test samples securely. The θ-axis and β-axis rotation mechanisms enable testing of edges, corners, and flat surfaces. The system automatically compensates for height variations based on drop orientation.

Drop Angle Accuracy

When released from 300mm height, the test sample maintains the programmed drop angle within acceptable tolerance. Drop angle can be verified using high-speed camera systems.

Safety Features

Equipped with safety door protection system to prevent operation during door access. Machine stops automatically if safety door is opened during test cycle.

Test Surface Options

Three drop surface materials available to meet different international testing requirements:

- Marble plate for hard surface testing
- Wood plate for moderate impact testing
- Steel plate for maximum impact testing

Operation Parameters

TEST HEIGHT RANGE

300-2000mm

HEIGHT RESOLUTION

Display via touchscreen

MAXIMUM CYCLES

999,999

POSITIONING METHOD

Vacuum suction

Maintenance Requirements

Regular maintenance ensures consistent test results:

- Check air supply pressure weekly (maintain ≥0.5 MPa)
- Inspect vacuum suction cup condition monthly
- Verify servo motor belt tension quarterly
- Clean drop surface plates after each test series
- Calibrate height measurement system annually

Installation Requirements

Space Requirements

Minimum clearance needed:

- Floor space: 900mm × 1200mm
- Height clearance: 2360mm
- Additional working space: 500mm on all sides for operation and maintenance

Environmental Conditions

- Operating temperature: 15-35°C
- Relative humidity: 30-80% RH (non-condensing)
- Level floor surface required
- Compressed air supply with filter and pressure regulator

Note: Machine weight is approximately 420kg. Ensure floor loading capacity is adequate before installation. Professional installation recommended.

Technical Support

For technical inquiries regarding machine operation, calibration procedures, or compliance verification, contact your regional distributor or service center. Training programs available for laboratory personnel.