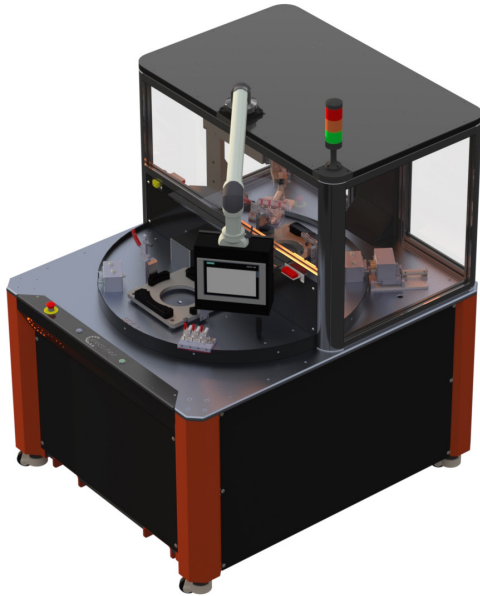


## TECHNICAL SPECIFICATION



**Equipment Dimensions:** H: 2100mm W: 1360mm D: 1360mm Weight: 700Kg - Approx.

### Product info

For improved cycle times the machine has a motor undertest whilst the previous motor is unload and the next motor inline is then loaded. This reduces process times compared to typical inline test equipment which can cause a manufacturing bottleneck.

### Electrical connections

Electrical connecting/disconnecting are automated during the testing to improve cycle time and safety, including:

- Phase cables to 3 terminal connections
- Earthing /ground circuit
- Encoder connections
- Temperature sensor connections

### Fixture

Future proof design with changeable fixtures. Quick product change and easy set-up.

### Ergonomics

The system ergonomics aid fast product load and unload. Industrial manipulator arms can be used to lift product on and off.

The loading of a stator onto the fixture is at ergonomic height (operator standing).

Quick release mechanical, electrical and encoder connections to achieve the best possible takt time.

### Guarding

The system is in two halves. One is the test area, which has full guarding and safety interlocks to ensure operator safety. The other is a deliberately open load / unload area to give rapid unrestricted access for ease of loading motors on to the rig. The loading area also allows for future automated loading of products or gantry systems to be easily integrated into the manufacturing line.

## TECHNICAL SPECIFICATION

### Air decay tests

This test gives measurable confirmation of any sealed cavities within the motor. It checks the main cavity and cooling system, or any combination of the two can be programmed. It also checks all the required components are in the cavities, such as O-rings or seals

A pass / fail criteria can be programmed for different products. Test results are recorded against product serial numbers for traceability and analysis.

### Motor characterisation

Back EMF, short circuit current, encoder offset, sine and cosine min & max voltages, delay compensation.

Temperature rises are captured within this test using 2x temp sensors.

A pass/fail criteria can be set by the customer, again all this information is logged.

### Visual examination

Visual inspection pass/fail can be recorded by the operator to capture any non performance issues.

### Insulation test

Safety testing of fully built motor will be carried out with AC Hipot insulation test. This will be a standalone AC flash tester that is integrated into EOL test system.

### Temp sensor test

Simple continuity or resistance check that can identify issues and stop poor product.

### Spin test

Motor to be powered by test controller in speed mode from 0rpm to full speed. – This is a shake down test which put the motor through it's first ever dynamic testing before it's released to customers.

### Drag test

A drag test performed after a spin test, measuring coast down time from set speed to 0rpm. The test can be performed in both directions.

A pass/fail criteria ensures repeatable product is produced.

### Vibration test

Vibration pass/fail criteria.

The motor and fixture are mechanically isolated from the test rig to capture a true vibration profile for the product under test.

### Services required

Power: 230VAC/50Hz/1ph+N+E – 16A total kVA for system = 4.6kVA

Air supply: Clean dry compressed air at 6Bar minimum to standard quality class 5.4.3 or better according to DIN ISO 8573-1.

Environment: Normal, clean, factory environment temperature 10-30°C, humidity 45-95% RH

### Safety

UKCA Certified (which includes Low Voltage Directive (2014/35/EU) and EMC Directive (Directive 2014/30/EU)).

PUWER assessed.

Meets Machinery Directive 2006/42/EC requirements.

Guarding is fitted with interlocks to ensure user safety.

## TECHNICAL SPECIFICATION

### Data logging

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All process parameters for each moulding test cycle can be stored locally or sent to a central database.

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Local memory storage on device with port capability for removing data (SD card or USB or ethernet).

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### Data label

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A serial number can be generated from the EOL test machine as required and printed onto a label.

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The label format can be customised and changed to suit a range of motors.

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### Communication

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ProfiNet.

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### Modes

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Semi-automated only.

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### Control system

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SIEMENS safety PLC with 10" HMI.

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