

5.16 Technical Specifications A 2 /16

Size

Width with / without monitor: 2.25 m/1.50 m 98"/59"
 Depth (shuttle open / closed): 3.15 m/2.30 m 124"/91"
 Height: 1.80 m 71"

System Configuration

Probes: Up to 16 flying probes
 (8 top side, 8 bottom side)
 Alignment system: CCD B/W cameras for both product sides
 Board fixing: Manual loading with shuttle suitable for multi-samples
 automation available September 1998

Positioning control for flying probes

Positioning accuracy: $< \pm 20 \mu\text{m}$
 Repetition accuracy: $\pm 5 \mu\text{m}$
 Resolution measurement systems: $5 \mu\text{m}$
 Minimal test point diameter: $50 \mu\text{m}$
 Contacting distance: $> 0,15 \text{ mm}$ (6 mil)
 Stroke z-axis (programmable): $0,25 \text{ mm} - 10 \text{ mm}$,
 Contacting pressure
 on whole test area: $10 \text{ g} - 100 \text{ g} \pm 6 \text{ g}$, programmable and controlled

Camera system

Measuring of board position and shift
 Resolution: $18 \mu\text{m}/\text{Pixel}$, (option $10 \mu\text{m}/\text{pixel}$)
 Lighting: Adjustable to all PCB surfaces

Products

Max. product size: $670 \text{ mm} \times 650 \text{ mm}$
 ($670 \text{ mm} \times 850 \text{ mm}$ option)
 Max. test area: $620 \text{ mm} \times 600 \text{ mm}$
 ($620 \text{ mm} \times 800 \text{ mm}$ option)
 Board thickness: max. 10 mm
 Allowed bend: 2 mm caused by a force of 8 N

Test field size

$310 \text{ mm} \times 600 \text{ mm}$ (A 2/8 with 8 probes)
 $465 \text{ mm} \times 600 \text{ mm}$ (A 2/12 with 12 probes)
 $620 \text{ mm} \times 600 \text{ mm}$ (A 2/16 with 16 probes)
 $620 \text{ mm} \times 800 \text{ mm}$ (A 2/16L)

Test data:

ATF-data (+EPC-data), IPC-D-356A, IPC-D-356 (+EPC-data)

Test parameters

Test current: $3 \text{ mA} - 30 \text{ mA}$
 Test voltage: 10 V High-voltage measurement up to 500 V (option)
 Continuity test: $1 \text{ Ohm} - 1 \text{ KOhm}$
 Short circuit test: $500 \text{ kOhm} - 10 \text{ MOhm}$, option 100 MOhm selective

Measurement methods

Isolation test: 100% test by Field Measuring method, this means shorts test between all layers (no adjacency required!). No comparison measurement – therefore short test time

Continuity test: 2-point measurement, test range from min. 1 Ohm

Test speed: 100 % test of board with 4000 TP / 1000 nets in approx. 3.5 min. (depends on board) when using all probes (with software version V1.4.0; permanent increase of test speed by new software releases)

Features

- 100% isolation test (Standard: test without adjacency), if required test with adjacency in different variations
- Continuity test (min. 1 Ohm)
- Adjustable and controlled pressure of probes and z-axis speed
- Multi panel test, Multi sample test
- Independent optical scanning of both product sides
- Shrinkage compensation
- Component test (resistance test)
- High voltage measurement with HV500-card
- LA test of conduction (option)
- Interface to external measurement devices
- Automatic self diagnosis
- Simultaneous data preparation (dps) of a new product during test
(external data preparation optional)
- Comfortable user interface under Windows NT 4.0

Environmental conditions

Temperature: 19° C - 27° C
(21° C ±2 K for highest accuracy)

Relative humidity: 40 % - 60 %

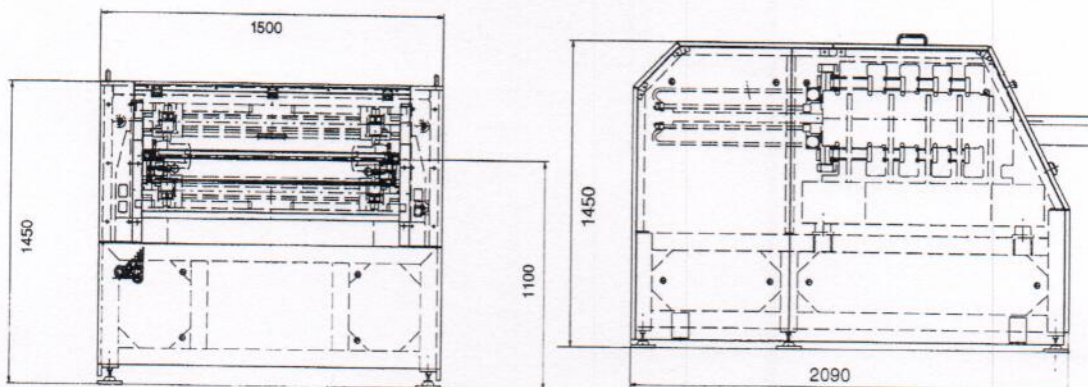
Energy requirements

Power: 230 V, 50 Hz
115 V, 60 Hz (option)

Compressed air: 6 bar, approx. 90 psi, filtered

Weight

A 2/8 approx.1600 kg
A 2/12 approx.1700 kg
A 2/16 approx. 1800 kg



1.2 General View of the Test System

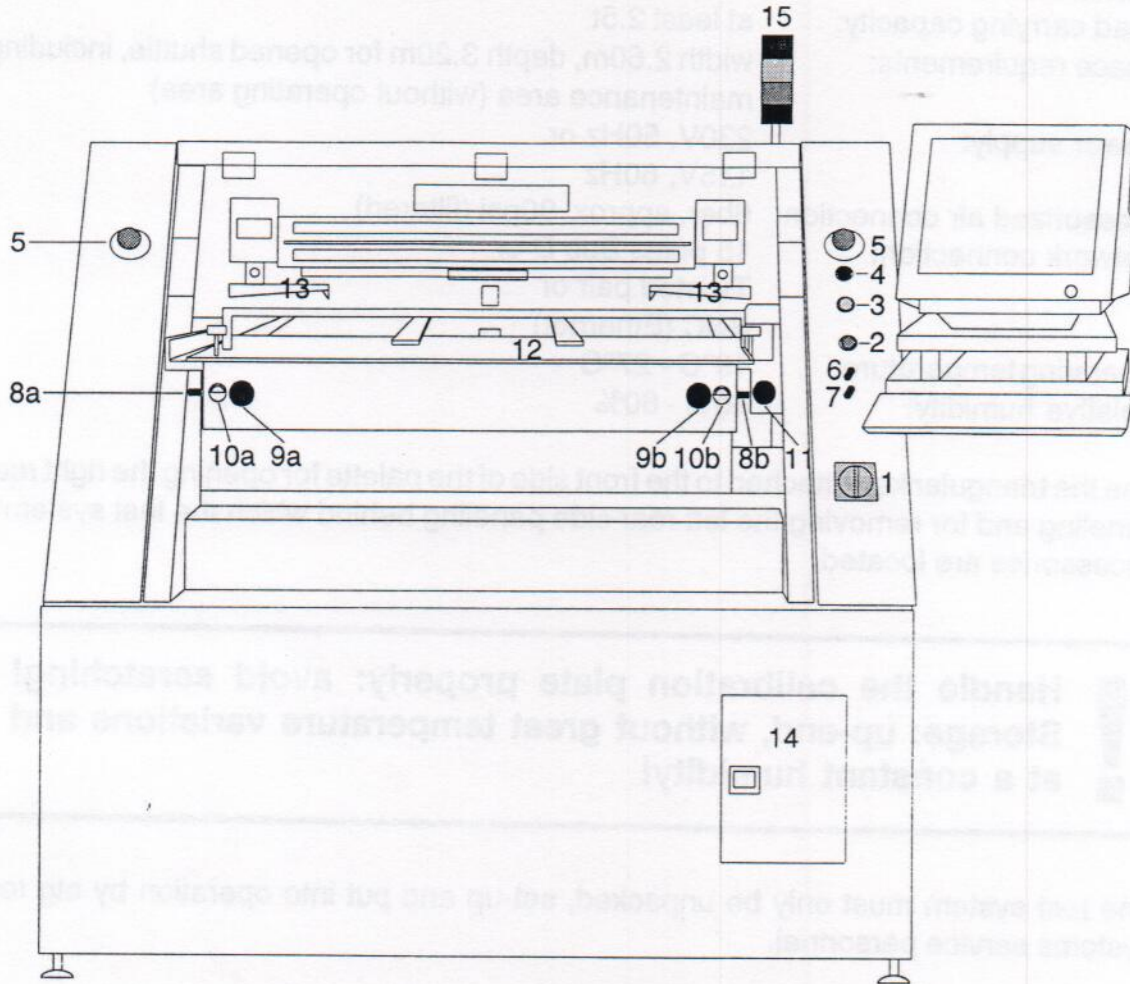


Fig. 1: General view of the A2 test system

Position	Description/Function
1	Main Power Switch (gray rotary switch) Machine On/Off
2	Control Off (red push button) Machine Control Off
3	Control On (green push button) Machine Control On
4	Shuttle Release Releases the shuttle fine alignment for rotary switch No. 11
5	Emergency Off Machine Stop
6	Illumination Controller Top Camera
7	Illumination Controller Bottom Camera
8a	Miniature Pressure Controller Pneumatics (left) Adjusts the pressure of the front product holder
8b	Miniature Pressure Controller Pneumatics (right) Adjusts the pressure of the lateral product holder
9a	Two-Hands-Push Key left
9b	Two-Hands-Push Key right Simultaneous application of the two-hands push keys opens or closes the product holder. Caution! Bruising risk!
10a	Pressure Gage Pressure display of the front product holder
10b	Pressure Gage Pressure display of the lateral product holders
11	Shuttle Fine Alignment Simultaneous pressing of the push key No. 4 (Shuttle release) enables the alignment of the board position in Y-direction
12	Shuttle Ejectable board holding device
13	Parallelograms with Test Probes
14	Control Computer The control PC is located behind this flap.
15	Signal Light Indicates the machine status