MULTILAYER PRESS PLANT, Type Workcell

for the manufacturing of multilayer printed circuit boards.

Consisting of the following plant parts:

PRESS

Hydraulic Multilayer Vacuum Press Model LAMV 125, Thermal Oil Heated and Cooled

Technical Data:

Press surface..... 750 x 600 mm 29,5´´ x 23,6´´
Pressure range..... 40 - 1250 kN
Pressure accuracy (± 1 bar / ± 14,5 psi..... ± 4 kN
Specific pressure onto a surface
of 700 x 550 mm / 27,6´´ x 21,6´´ ..... 325 N/cm²
Diameter of piston..... 225 mm
Number of daylights..... 4
Stroke ..... 300 mm
Distance between daylights ..... 75 mm
Number of heating/cooling platens.....5
Thickness of platens .....35 mm
Flatness of each individual heating platen surface
according to DIN-ISO 1101.....0,05 mm
Parallelism of each individual heating platen
according to DIN-ISO 1101.....0,05 mm
Surface roughness Rz .....6,3 µm
Max. operating temperature.....260 °C
Temperature accuracy onto a surface
of 700 x 550 mm / 27,6´´ x 21,6´´ at 180 °C / 356 ° F.....± 1,5 °C
Heating power.....96 kW
Average heating speed from 40°C / 104 °F
up to 180 °C / 356 °F without material..... .....8,0 °C/min
Cooling power.....103 kW
Average cooling speed from 180 °C / 356 °F
down to 40 °C / 104 °F without material ....8,0 °C/min

Vacuum final pressure approx. .....< 10 mbar
Evacuating time to 30 mbar approx. .....3 minutes
Closing speed approx. .....10,0 mm/sec
Pressing speed max. .....0,5 mm/sec
Connecting power hydraulic.....2,2 kW
Connecting power vacuum.....1,5 kW

Description of the press:

Press frame
- Bolted frame construction with form-fit connection of the upper part, bottom part and side parts.
- Temperature resistant elastomer sealing between the upper part, bottom part, and side parts for vacuum operation.

Hydraulic cylinder with frictionless polyurethane sealing suitable for vacuum operation without any leakages.

Steel heating/cooling platens with a channel system for thermal oil.
- A platen thickness of 35 mm / 1,4´´ grants min. heating power and operation costs.
- Installed spring supported sliding rails with frictionless sliding surface.

Guidance of press table and intermediate platens by means of frictionless prismatic guidance; a special geometry grants constant guidance relations independent on the operation temperature.

Heat insulation of the heating/cooling platens by means of pressure solid and asbestos-free insulation platen on resin basis (thickness: 24 mm / 0,94´´).

Uniform heating and cooling by means of thermal oil which is led through metal hoses and collecting pipes.

Vacuum chamber at the front with a vertical door for automatic closing and opening in dependence on the sequence of programme.

Vacuum equipment consisting of:
- vacuum pump with high compatibility of water steam
- vacuum valves for suction and ventilation
- digital vacuum indication 1000-0 mbar in connection with the PC

Hydraulic drive in a compact structure with valve block and all necessary safety and maintenance devices.

Sequence of operation

1. Heating up the press or cold start.
2. Manual loading of the press.
3. Closing of the vacuum door.
4. Control of the hot/cold press:

- Evacuating when the press is open.
- When reaching an adjustable limit value an adjustable evacuating time begins whilst evacuating continues.
- Automatic closing of the press after expiry of the evacuating time with way-dependent switching over from fast closing to pressing speed.
- Pressure build-up in several steps.
- Control of temperature in several steps.
- Opening of the press after expiry of the cooling temperature or after expiry of the pressing time.

5. Opening of the door.
6. Manual unloading of the press.

The times required for control of pressure and temperature as well as actual values of pressure, temperature, and vacuum can be input at the PC-terminal at the central operating desk.

Product Measuring

6 connections for product measuring. The product temperatures will be displayed on the screen. One of the temperatures can be used for temperature stepping.