Laboratory Press

Laboratory press for the compression moulding of plates and specimens for laboratory tests

The laboratory press is an important tool for the preparing of samples with reproducible characteristics. Uniform temperature distribution over the platen surface, mechanical solidity to ensure constant thickness of the sample and consistent closure force are basic elements to ensure this result.

Instrument Characteristics

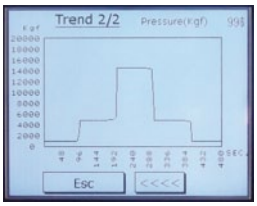
The complete design of Gibitre press has been specifically developed to get the best possible results:
Mechanical structure with 4 columns (60 mm diameter) and sliding plate driven by self-lubricating bushing
Hydraulic system with 20 tons closure force (which ensures 5 MPa pressure over 200x200 mm mould surface)
250x250 mm chrome plated steel platens with 40 mm thickness to ensure minimal deflection even at high pressing forces.
Specifically designed flat heating elements to ensure uniform temperature distribution over the platen surface (+- 2°C)
According to the needs of the customer, the press may be equipped with Automatic Press Control, Cooling system and Closure Force Control

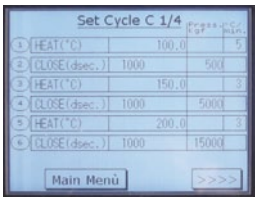
Automatic Press Control

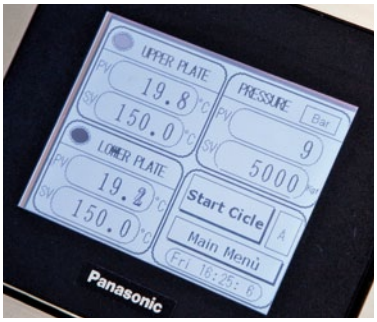
The PLC controller for the press is provided with a user-friendly Touch Screen Display and permits the free definition of the moulding cycle by setting:
the displacements of the moving plate of the press,
the thermal cycle (different temperatures of the platens and thermal gradients can be set within a moulding cycle)
the pressure cycle (with the force control option installed).
Three Moulding cycles can be stored. Each cycle includes 24 moulding steps (including displacements, temperatures setups and pressure setups)

Cooling system

Cooling is required for moulding of thermoplastics because the moulded part must be brought to solidification temperature before opening the mould.
The cooling is performed by means of integrated cooling platens and requires the connection to a water source or a chiller.
The Automatic Press Controller automatically regulates the cooling system according to the temperature and cooling rate set in the moulding cycle.
When the set final temperature has been reached, the platens may be automatically opened for the extraction of the moulded part.







Laboratory instruments for rubber and plastic testing

Closure Force Control

The Digital pressure regulation system is designed for applications that require an accurate control of closure force.
A specific 2-stage hydraulic circuit, which includes proportional regulation valves and continuous fine regulation pumping system, has been designed to ensure accurate pressure control. The results is a smooth and consistent force control which permit to set the closure force between 6 kN – 20 kN with 100 N set force regulation steps.
The control of the closing force is performed using the Automatic Press Control that must be installed in combination with the Closure Force Control option. The Automatic Press Control device permits to set multiple pressure regulation steps within the moulding cycle.

Accessories:

Moulds

Moulds for producing plates and different types of samples according to international standards are available. Fixing rails with sliding system permit easily handling of the moulds.
Mould produced upon customer design and company logo engraving are available on request

Gibitre Press Logger

The Automatic Press Control device is fitted with a USB port which permits the connection to a Pc. The Gibitre Press Logger program permits the continuous recording of the press conditions (temperature, pressure, moving platen position, cycle step). Both graphical and numerical recording is provided with automatic generation of daily storage files. The program is compatible with Windows XP, Vista and 7 (64 bits).

Max platen stroke	200 mm
Max useable platen surface	250 mm x 250 mm
Max closure force	20 Tons
Temperatures	From 20 °C to 250 °C (300°C optional)
Platen temperature control	Independent temperature control of the plates by means of PID controllers Maximum Temperature difference in the 200x200 mm central area: ±2°C
Gibitre Press Control (option)	PLC with touch-screen display that permits to define the control cycle by setting: - the displacements of the moving plate of the press, - the thermal cycle (different temperatures of the platens and thermal grandients can be set within a moulding cycle) - the pressure cycle (with the force control option installed). Three Moulding cycles can be stored. Each cycle includes 24 moulding steps (including displacements, temperatures setups and pressure setups) A beeper warns when the moulding cycle is finished
Closure Force regulation (option)	Special hydraulic system for continuous force regulation during the closure of the platens. The closure force can be set between 6 kN - 20 kN with 100 N set force regulation steps.
Platen cooling (optional)	Press platens with integrated cooling circuit. The connection to a water source or a chiller is required.
Power supply	380 VAC ±10%,50 Hz ±3, 10 A, three-phase - Other on request
Electrical power	6 KW
Dimensions	(W x D x H) 1100 x 550 x 1650 mm
Weight	520 Kg