TECHNICAL DATA SHEET

SK1PR

Pneumatic press

► DESCRIPTION

An ergonomic and functional press dedicated to laboratories and research centers. The press is designed for heating and pressure application on flat surface 600X600 mm for plaques 400X400 mm (Mould size 500X500 mm) .

It is also possible with optional equipment to cool the platens.

It is also possible to furnish based on same principle press 1000 X1000 mm. For such size an extension rail trolley is needed.

► HEATED PLATENS

The press is equipped with 2 platens. Platens are in steel with special treatment on steel surfaces.
One upper platen position on the upper structure of the press is a fixed platen. This platen is heated and the surface is 600x600 mm.

The heating systems is with oil heating circulation in platens.

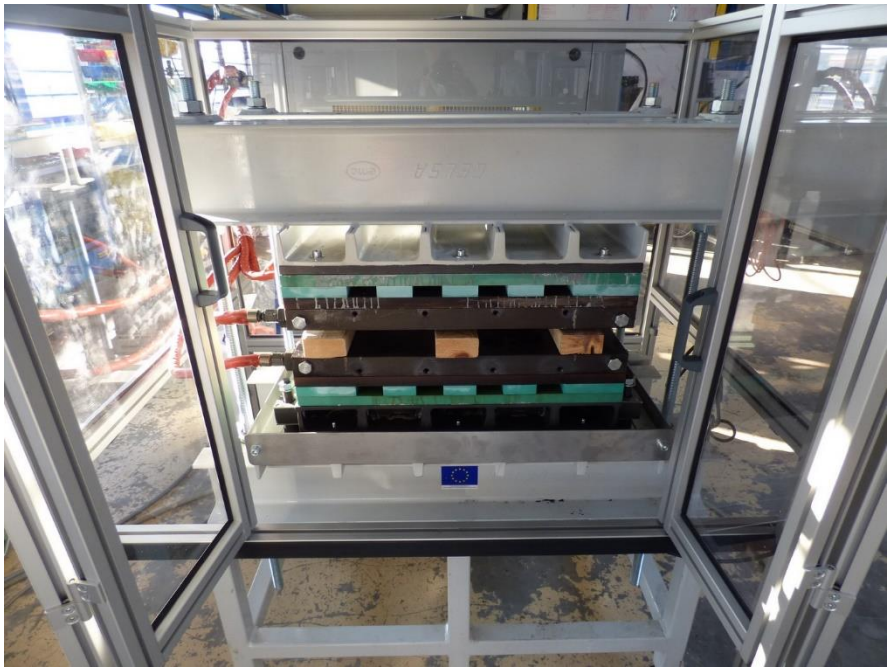
The lower platen is in fixed position. This platen is also heated and the surface is 600X600mm.
The mould need to be positioned manually under the press.

The electric power for each platen is approx. 16 Kwatts under 400V Three phasis (other voltages possible).
Oil circulation for heating AND cooling cycles.
The temperature on the surface of platen is approx +/- 4 to 5°C

Temperature of heating up to 250°C.

One regulation probe is connected in the platen. This probe is connected to the heating regulator and this regulator manage the heating cycle of each platen. Regulation with proportional approach (PID)

Each platen is insulated with insulation plaque to be sure there's no problem with transmission of temperature to the structure.



► STRUCTURE OF THE PRESS:

The elements of the structure are U or I profiles welded.

Lower structure consists in the structure for supporting all the press on the floor and the elements for the pressure of the platens. This structure is painted.

The upper structure is positioned over the lower structure with rods and nuts. It is possible to move the upper platen, by hand, with the bolts.

It is possible to adjust the gap between the platens to the thickness of the mold from 0 to 200 mm.

► CLOSING OF THE PRESS:

The closing of the press is realized by inflatable bags.
There's hoses positioned between the lower platen and the lower structure of the press.
When mold is positioned the hoses, inflated presses on the surface of the platens and the mold. This force is directly related with the pressure installed in the hoses.

This clamping force can be adjustable by a manometer and with air compressed pressure from 0 to 10 bars.
This corresponds on the 0,60 x 0,60 m surface of a clamping pressure of 35 Tons. (clamping force is 100 Tons for 1000*1000 press)

The inflatable bags are inflated with air compressed so, the limitation of the clamping force is the pressure applied by the air circuit.

In the offer we will include a suppressor for pressure clamping up to 10 bars (from air circuit 6 bars).
The clamping stroke is maximum 40 mm (this is due to the size of hoses placed for clamping).
Generally the stroke is approx. 10 mm.

It is possible to move out of press the lower platen. This platen can be placed out of press then it is totally accessible. The flat surface 600X600 mm can be heated and it is possible to place on the platen plaques with prepreg fabrics on it under vacuum membranes for curing under vacuum. Cycle of heating can be programmed by heat regulator.
See the schema joined to the offer.

► CONTROL BOX:

An electric control box is positioned over the press and groups all the elements:
- main circuit breaker
- air inlet for the inflatable hoses with safety electro valve
- Emergency stop
- Regulator for the upper platen
- Regulator for the lower platen
- Closing press Switches
- Pressure adjustment of the press (manometer).

The regulators of heating are PID regulators including possibility of 4 programs and 8 sections in each program.

The sections can be ramping, stabilization, different heating set points. The target is to realize a profile of curve for heating.

It is possible to connect different elements to a recorder or a supervisor.

The following information can be recorded
- temperature upper platen
- temperature lower platen
- pressure in the hoses

► PLATEN HEATED AND COOLED (OIL CIRCULATION HEATING AND COOLING):

Heated platens are with oil inside.

In this case it is possible to heat and to cool the oil of the platens. The heating is realized by an oil circulation provided from a central oil heater we furnish with the press.

This heater is regulated by PID regulator and it is possible to create an heating profile and cooling. This oil circulation system needs to be connected to a water line (the cooling is realized with an heat/cool exchanger).

The cooling is realized by circulation of water from your water line.

The platens are adapted to the oil circulation. It will be not possible to move the lower platen externally, so we place the lower platen in fixed position. The mold is position on a flat aluminum plaque and with a trolley and wheels for positioning under the press.

Power is 18 kwatts, possible to heat with ramping (2 to 3°C/min) and possible cooling at 2 °C /min.

► MOLD

It is possible to provide with the press a plaque mold for plaques realization. Can be filled with dry or prepreg fibers. Can be adapted to SQRTM technology. The mould can received standard coupons 400X400 mm. In case of prepreg application prepreg can be pressed during the curing with calibrated plaques in mold

Externally the mould is 500X500 mm and the plaque will be net shape 400X400 mm.
Two plaques in aluminum. Thickness of the upper plaque = 20 mm
Thickness of the lower plaque = 35 mm.

On the plaques we place two peripheral seals for no leakage during vacuum or pressure.
One inlet port for resin
One outlet port for the vacuum/vent

8 intermediate plaques in Stainless steel with 2, 4, 6, 8,10,12,15,20 mm thickness.

Surface of mold is polished

Lower and upper plaques positioned with positioning system.
50 m of seal for the mould included

One trolley is furnished to move the mould under the press.

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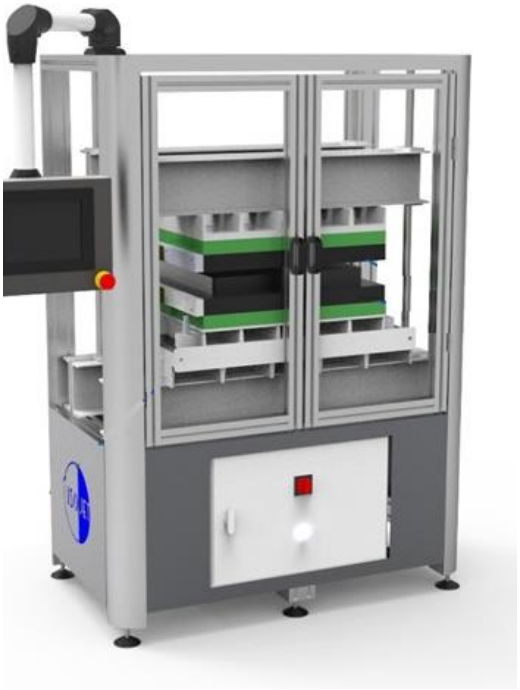
► SOFTWARE

- Possibility to change some machine parameters
- Temperature program management / Heating profile
- 3 access level:
  - Production
  - Administrator
  - Maintenance
- Alarms
- Saving and report generation «xls»



► NOTE

Please contact us for more detailed information as well as for system development according to your technical specification.

Standard warranty period: 12 months.