General:

The RMP 210 multilayerpress was designed for use in PCB labs. It allows quick prototyping of multilayer PCBs of 4 or more layers according to industry standards. A compact and floor standing aluminium rack contains the pressure supply and heated press plates, covered by a big door with security switch.

The unit is controlled by two digital thermostats, one digital timer and a pressure valve with meter. Two strong air ventilators are activated automatically during cooling cycle.

Technical Data

Board size	gross 250 x 350 mm
net	210 x 300 mm
Pressure	> 12 t
Temperature.	175 °C (adjust.)
Heat up time	approx. 30 min.
Press time	approx. 60 min.
Cool-down time	approx.90-120min.
Size (W x D x H)	65 x 65 x 130 cm
Weight approx.	130 kg
compressor	0-15 bar included
El. supply 230 V 50 Hz 16 A	

Technical details are subject to change without notice.

1. Set-Up

The machine is supplied in a special packing of wood. Check the condition of packing immediately at reception. Goods delivered by a carrier and signed as "Received in good condition" will be impossible to be returned as "Damaged in transit". If you recognize any damage after unpacking you need to declare this transport damage to the shipping agent immediately in written and verbal. In this case please also notify us.

To unpack, remove the cardboard cover and the lateral carton / wood package. On the pallet you will then see a piece of wood with screws. Remove this piece to get the wheels free that the machine is sitting on. Due to the weight and to avoid any risk of damage do not just roll the unit off the pallet. It is unavoidable to use a fork lift to take the unit off the pallet and place it on even ground. From then on the machine may be moved on it's rollers.

The installation location of the machine is of special importance. You should choose a mostly dust free room with non corrosive atmosphere.

2. Usage

2.1 Buttons

There is a red mains (and emergency stop) button on the right front. Push this button in case of emergency and to cut the machine from the main supply. Start the machine by pressing that red button.

This will activate the compressor.

To turn on the upper and lower heating, you must first of all adjust the thermostat as described later.

There is integral timer that controls the heating/cooling procedure. See below for adjustment.

2.2.1 pressure

The machine is equipped with a integral compressor. That is stored in the rear of the machine. Unscrew door in the rear bottom to have access to the compressor.

When switching the MAINS bottom, the compressor will automatically start and stop after approximately 1 minute when basic pressure is installed.

Whenever the PRESSURE switch is activated, machine will close the pressplates. As that requires compressed air, the compressor will start running again (for about 2 minutes depending on the pressure preset).

NOTE: while compressor is running, it is not allowed to

switch off the machine or

open the door of the press-room.

If because of power failure, compressor should be switched off while running, open rear bottom door and switch off compressor manually. This procedure is necessary to allow deaerating of the pressure chamber and to allow easy restart. Without that procedure, there is a risk of overloading the compressor motor which may lead to severe damage.

2.2.2 pressure adjustment

pressure adjustment is done with the turning valve in the front panel underneath the manometer read out. Normally, for board size 250x350mm², pressure is set to 12 tons = 12 bars.

2.3 Timer adjustment

The timer is controlling the heat-up/cool down sequence of RMP 210. The preset time is the total heating time. After that, the cooling ventilation is started and the heaters are switched off while pressure is still adjusted.

2.3.1 bottom (PROG)

this switch is used to select the digit to be adjusted. Press it once to change hours. Press again to change minutes. Press again to change seconds and once again to come back to timer mode. Note: timer setting can not be varied while timer is controlling a press cycle.

2.3.2 bottom (+)

This bottom is to increase the value of the blinking digit.

2.3.2 bottom (-)

This bottom is to decrease the value of the blinking digit.

2.3.3 reset

This bottom is used to reset the time to adjusted time.

The timer has a auto-reset function at the end of the count-down.

2.3.4. (Start/Stop)

that will start and stop the time

2.3.5. System reset

to cancel the adjusted process time, press all three bottoms for a second. Count-down time is now at zero.

To reset timer completely, press all three bottoms for at least 4 seconds.

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2.4 Heater adjustment

the upper and lower pressure plates have separate heater adjustment facilities. Both heaters are preset to 175°C (which is standard for most application) and both will operate with 6 °C/min heat-up speed.

The thermostat has two displays and four buttons. The upper display shows the actual temperature, the lower one shows the set value. Press the mode button once and use the up and down arrow keys to set the desired temperature. Finally press the mode button again. The out/off button serves to turn the heaters off, but is not used in normal operation. The OUT LED right to the upper display shows if the heaters are actually on or off.

The thermostat has a soft heat-up function that prevents over-temperature. After each initial start the lower display will show increasing temperature values until the set value is reached. Temperature setting proposals are about 175 °C for normal and fresh prepregs.You must determine the best setting for your application. If the temperature is too lowor heating time too short, the laminate will have delamination problems or air-bubbles inside. Both will damage the multilayer board.

2.5 Door security switch

Caution:

There is a door security switch that will deactivate the pressure bottom when door is opened during operation. THAT MAY DESTROY YOUR MULTILAYER but it is an important security feature of the machine.

3. Operation sequence:

Operation details are related to prepregs and inner layers specifications. As a matter of fact, these settings may change depending on the type of prepregs.

choose your basic design for reference pins and drill the press boards accordingly
all future PCBs must be pinned in the same pattern !!
PCB stack is inserted into press plates
pressure is adjusted according to board surface. For boards 210x300mm²: 12 bar
heater temperature is selected (according to condition and type of prepregs normal range: 175°C)
heater is activated
heating-up procedure + press sequence at preset temperature (normally 90-120 minutes)
(time depending on temperature preset + on room temperature according to condition /type of prepregs)
cooling down under pressure to 50° C or lower (about 30 -45min)
PCB stack is taken out of the machine.
boards are depinned.

The sequence will take all at all approx. 3 hours. Gross size of the PCBs is 250x350 mm which will result in PCB net size of 210x300mm².

4. Warranty

Warranty for units delivered into countries of the EC is granted up to the extent given by European legislation. Units supplied into third countries have 6 months warranty on material and labour. In any case, exceptions from this warranty are lamps, fuses, break of glass or damage to the polyester foil, normal wear, as well as misuse or failure to follow the instructions above. We fulfil this warranty by either exchanging parts or by repairing the unit in our facilities.

We deny any expressive or implied liability for the exposure results and for any direct or indirect damage or commercial failure resulting from the use or from the impossibility of use of this machine.

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