cedal DIVISION

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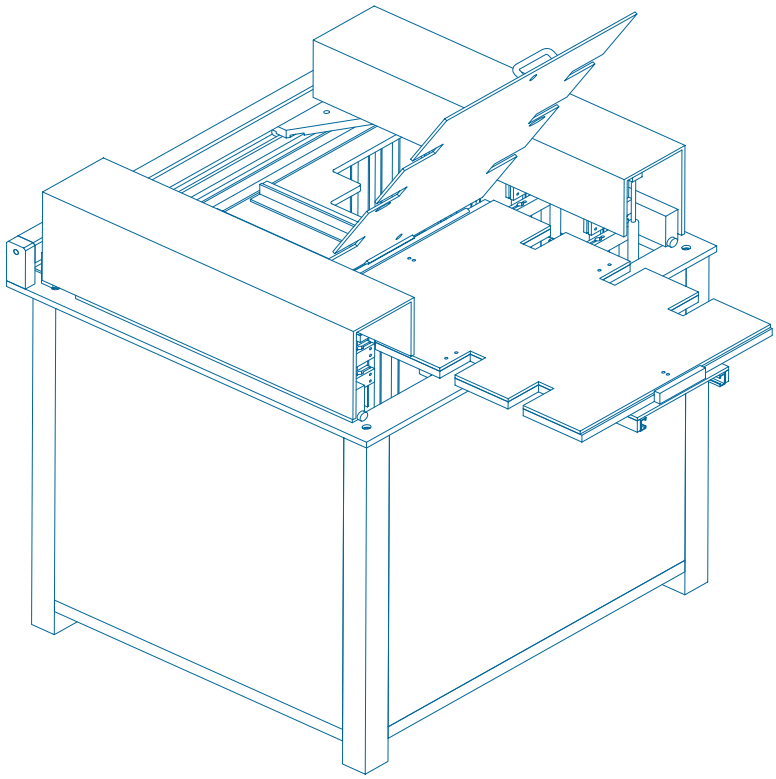
REGISTRATION BONDING MACHINE
mod. RBM IMF



PREMISE:

The last generation of bonding machine develop by cedal is based on the new concept, not to apply pressure to transfer the heat thus avoiding any signs nor piks on the core sandwich.

The new concept is worl-wide patented inductive-magnetic- flow (**imf**) based, granting the proper temperature both in **vertical and horizontal gradient**.

The new system allows a reduction of the total **bonding time to 50%.**

The power requested is strictly limited to the magnetic flow time**,** thus **saving 70% of the operative cost.**

GENERAL DESCRIPTION:

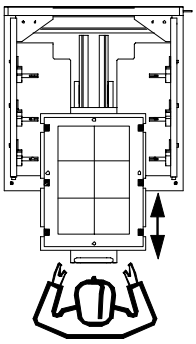
The RBM IMF makes the coupling of the various layers to be processed in the Adara Hot Press. It uses a template where the layers are held in a precise positions by pins. The layers will be stuck together by 4 pairs of hot welder heads acting like pliers to grip the layers and fuse the resin in small peripheral areas of prepreg while they are pressing.
The bonding area of the cores (4 locations) must be provided on each layer with a suggested copper pattern optimising the bonding of the sandwich: drawing of the pattern is supplied with the RBM.

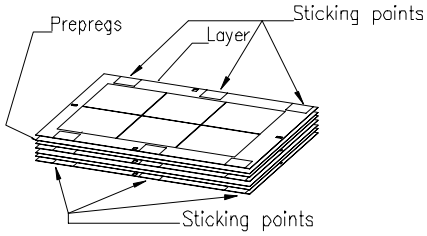
OPERATION SYSTEM :

The inner-layers require the registration-tooling holes \ slots, which are typically made by either a punching, such as a Post Etch Punch, or a drilling machine. The prepreg has the same dimensions of the inner-layer to be bonded but it requires holes allowing the registration pins passing. The prepreg can be also sized to stay within the pin distances, but in such a case they must cover the 4 bonding areas of the inner-layers.
Temperature rising test is done by a digital thermometer
The procedure of bonding operation has the following two steps:
1:the book preparation and
2:the sticking action.
The set up operation includes the selection of :
a: the bonding time,
b: the bonding cycle and
c: the gripping force.

BOOK PREPARATION

1. The operator lifts the template cover when it is out of the machine.
2. He holds the first innerlayer on the template by using the pins for precise positioning.
3. The operator puts the prepreg sheets and the second innerlayer on the layer as the first one.
4. The operator repeats step no.3 until the book is completed.
5. The operator closes the template cover, and then the trolley moves into the machine automatically.





STICKING ACTION:

1. The template, once arrived in the sticking area, activates a micro-switch for cycle starting.
2. The 4 pairs of pliers close the book applying light pressure and uniform heat.
3. At the time out, the grippers open and the trolley with the template moves back automatically.
4. The operator opens the template cover, and the template lifts automatically for book expelling.
5. After having removed the stuck book, the template is lowered down for a new book assembling.

The distances among the two welders in lengthways are adjustable by moving the arms on which the pliers are held on.

PERFORMANCES

• Layer size:	W 280 ÷ 650; L 370 ÷ 720 mm
	W 11" ÷ 25"; L 14" ÷ 28"
• Height of working table:	1000 ÷ 1070 mm (39" ÷ 42")
• Power Supply:	220 V/50-60 Hz 1 F +GND, 2 KVA
• Compressed air:	Pressure = 6 bar
	Consumption = 20 NL / min

• Dimensions:		L 1900; W 1050; H 1180÷1250 (mm)
		L 75"; W 41"; H 46"÷49"
• Net weight of machine:		285 Kg (628 lb)
• Pliers parameters:	Maximum temperature:	300°C* (572°F)
	Typical bonding time:	15 ÷ 20sec*
	Maximum pressure each:	4 bar
	Bonding Area:	1,5 to 1,8 cm^2
Temperature and time are mainly depending on layers and prepregs		
Performances		

BASE MACHINE COMPOSITION

The base machine includes:

1) Registration Bonding Machine mod. IMF
2) four bonding points
3) Dedicated template dime according to Customer requirements (details to be specified in the purchase order)

Additional bonding points (S5 Option)

An additional couple of bonding points is available on request thus reaching the 3+3 bonding points maximum.

Additional template (S6 Option)

An additional template dime is available.