

Mach ***630up/760up***



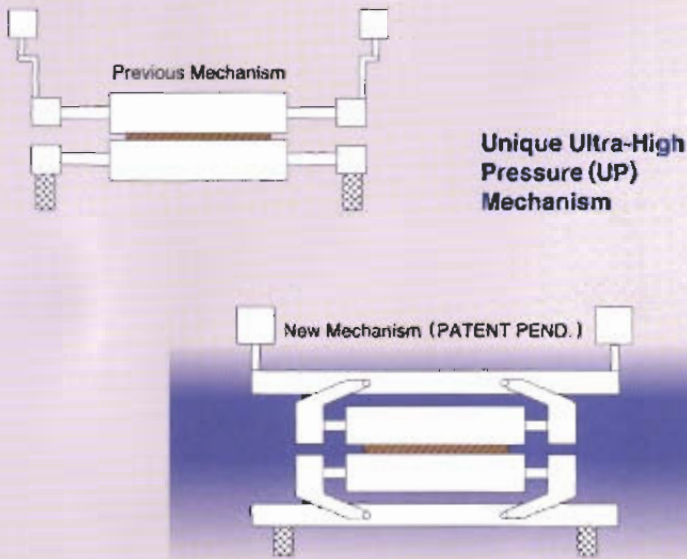
DRY FILM AUTO CUTTING LAMINATOR

Mach
630up/
760up

The best-selling MACH series laminator is
It is designed to out-perform the rest, living

Advanced High-Pressure Lamination

The roll pressure mechanism has been completely redesigned for increased adhesion and pressure uniformity, creating a whole new standard for dry film lamination. Force is transmitted via pivots from arm bars and bearings to the center part of the newly designed rolls, focusing a greater total pressure onto a tighter roll footprint, thus providing high-quality lamination even at speeds as high as 5.5 m/min.



The 1.5kW roll heater has separately controlled circuits for the outer and middle parts of the roll, with radiation heat type sensors monitoring each. The laminating roll cores are thicker and the rubber is thinner than on previous models. Together these changes allow the rolls to recover more quickly and with a more uniform temperature distribution when heat is transferred to panels during lamination.

Ultra-Thin Panel Option Thickness: 0.06 to 1.0mm

Capable of handling thinner panels than previous models, this option includes:

- Longer guide plates to support and feed thin boards
- Support plates between conveyor rolls
- Special support system immediately after the lamination.



Front Conveyor



5.5m/min. High Speed Lamination

The combination of high-quality adhesion of the UP mechanism with throughput of up to 5.5 m/min often doubles productivity when compared to previous models. The front and rear conveyors are also synchronized with the laminating rolls, simplifying speed adjustments.

Dust / Contamination Prevention

- The entire machine is coated with matte powder aluminum, stainless steel and anti-static acrylic to maintain the best possible clean room conditions.
- Most moving parts have been moved away from the lamination area and shielded to minimize potential debris.
- Panels are protected throughout lamination.

now a more efficient and higher quality machine.
 living up to its reputation as the best in the world.

Mach 760up A Large Format Model for Tough Back Panels

Designed especially to handle large panel size and the wide range of panel thickness needed for back panel manufacturing. A thin panel option is available to further expand inner layer capabilities, as is an extra-wide 8-roll preheater to improve outer layer performance.

- 770mm panel width
- 820mm panel length
- 0.10~12.0mm thickness

Touch Screen Controls

A new touch screen control panel puts all the displays and controls including manual operation, in one place. Indicators include temperatures, speeds, panel size, panel count, remaining DF length, alarm description, and alarm history, among others.



Removable DF Cartridge System (Option)

The already popular DF Cartridge System has been improved so that Mylar cover film can be easily removed from the take-up roll without the use of a knife. Dry film is installed into the cartridge off-line, then the cartridges quickly exchanged, minimizing down-time.



Upper Unit

Additional Features

- Easy Set Up & Maintenance
- DF vacuum tension system
- DF pre-heater (option)
- Laminating rolls rise and fall automatically as boards pass through
- Remaining DF indicator and alarm
- DF anti-static bar
- Timing belt drive system (option)
- PWB centering
- Numerous alarms and interlocks



Mach 630up
 (with Ultra-Thin Panel Option)

Improved DF Cutter System

Re-designed DF cutting system cuts more quickly and effectively, prolonging blade life and increasing throughput. A new belt drive stepping motor system to maintain the ideal blade rotation speed, full covers for blades and drive rails, and a DF chips vacuuming system minimize DF contaminants.



Full Line of Peripheral Equipment

Hakuto has a complete line of equipment designed especially to complement the Mach series laminators and further enhance their high performance. Please contact Hakuto for additional information and for a consultation on how to create the ideal lamination line for the tough new demands of the PWB market.



Hot-Roll Preheater



Panel Cleaner



Panel Cooling System

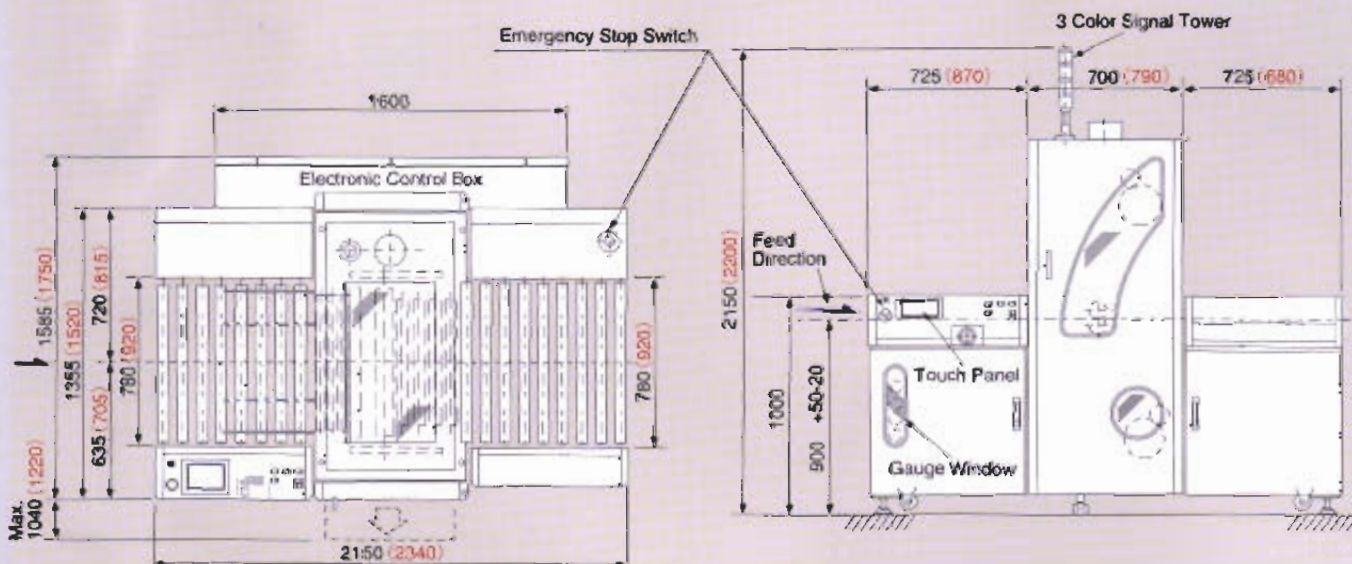
Specifications

		<i>Mach-630up</i>	<i>Mach-760up</i>
Lamination	Laminating Roll	Max. 150°C, 2 rolls, silicon rubber 70° Durometer (Anti-Solvent Rubber Optional)	
	Roll Pressure	Ultra-High Pressure Mechanism (Pat. Pending)	
DF Cutter		Non-Contaminating Disk Cutter	
Anti-Contamination	DF Anti-Static Bar	Eliminates charge that might attract dust particles	
	Covers	All mechanical parts are protected for operator safety Made of stainless steel, aluminum and anti-static acrylic	
Panel Dimensions	Size	MIN. 250mm(W)×250mm(L) MAX. 640mm(W)× 640mm(L)	MIN. 400mm(W)×400mm(L) MAX. 770mm(W)× 820mm(L)
	Thickness (incl. Copper foil)	0.10 - 6.0mm (0.06 -1.0mm with Ultra Thin Panel Option)	0.10 - 12.0mm (0.06 -2.0mm with Ultra Thin Panel Option)
Conveyor	Width	640mm	770mm
	Speed	1.0 -5.5m/min. (variable)	
Dry Film	Width	250 - 630mm(W)	400 -760mm(W)
	DF. Roll Diameter (Max.)	φ 300mm (φ 200mm with DF Cartridge Option)	φ 250mm (No DF Cartridge available)
	Bobbin Diameter	φ 75.6mm Optional Sizes : φ 76.0, φ 76.2, φ 76.9, φ 132.0, φ 132.4	
Film Placement	Front-Back Accuracy	±1.0mm	
	Side-Side Accuracy	±1.0mm	

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Utilities	Power	3-phase 200/220V, 50/60Hz, 10kW	3-phase 200/220V, 50/60Hz, 12kW
	Air	0.5M Pa, 15L/min, φ 1/4"	
	Exhaust	9.5m ³ /min, φ 150mm	11m ³ /min, φ 150mm
Conveyor	Height	900mm+50/- 20	900mm+50/- 20
Dimensions		2150(W)× 1585(D)× 2150(H)mm (Lamination Section Pull-Out:1040mm)	2340(W)× 1750(D)× 2200(H)mm (Lamination Section Pull-Out : 1220mm)
Weight		1300kg(380kg/m ²)	1400kg (380kg/m ²)

Important Notice: The above specifications only apply to the lamination of printed circuit boards that meet certain quality requirements including but not limited to materials, warp, rigidity, and surface topography. All specifications are subject to change without prior notice. Please contact Hakuto for more information.

Mach 630up / 760up Dimensions (L to R)



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