



# NH-4000A

## Constant Heat ACF Laminating System

AMADA WELD TECH's NH-4000A series ACF Laminating/Pre-Bonding system is designed specifically for connecting displays to PCB using Anisotropic Conductive Adhesive (ACA) and flex foils. The ACF laminating/pre-bonding process is the first step to apply the adhesive material to the part(s).

The NH-4000A systems utilize constant heat technology through the integrated system temperature controller, a pneumatic bond head and customized thermodes.

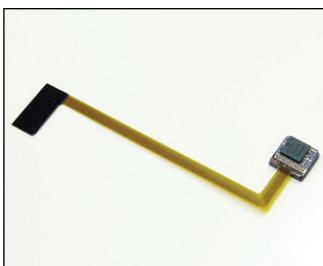
The NH-4000A product range includes various models with different product handling features such as linear slides and rotary tables. The systems are designed considering ergonomic standards offering maximized production output. All process parameters are embedded into the system, ensuring consistent process quality and operator independence.

The NH-4000A systems enable full automatic process control with manual loading and unloading of parts. Each system can be adapted to suit the customer's technical requirements with optional plug & play modules. All modules are mounted on a robust frame construction. The system offers the best stability supporting applications down to the finest pitch.

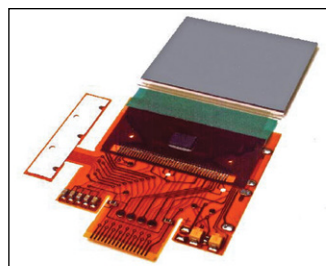
### KEY FEATURES

- Compact and flexible standard systems for high quality connections
- Ideal price-performance (throughput) ratio
- Robust frame construction
- User friendly system configuration including optional plug & play modules
- Constant heat process control proven technology through UF-4000A Power Supply
- Included in standard system configuration:
  - X-Y Hot Bar Planarity Adjustment
  - Electronic Temperature & System Control
  - Pneumatic Bond Head
  - Digital Bond Force Readout
- CE approved

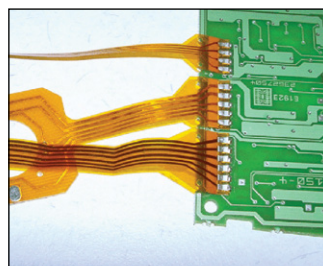
### TYPICAL APPLICATIONS



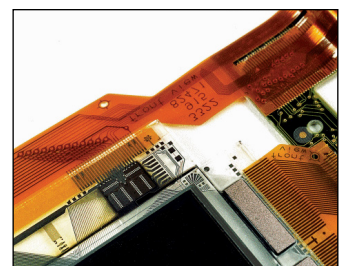
CCD camera



Multiple flex



Flex-PCB



LCD display

**TECHNICAL SPECIFICATIONS**

Power requirements	100 - 240 VAC / Single Phase / 50/60 Hz (16 Amps max)
Air supply	6 - 8 bar [ 87 - 116 psi ], clean dry & filtered air
Fixture assembly baseplate dimensions	5.9 in x 5.9 in (150 mm x 150 mm)
Fixture weight	1.0 kg max (per product fixture)
Heat hot bar size (length x width)	Min 0.11 x 0.4 in (3 x 1 mm) / Max 2.95 x 0.19 in (75 mm x 5 mm)
Starting operation	Two hand control
Start-up time	< 5 minutes
Operating temperature	15 - 40° C
Operating humidity	Max 93% @ 40° C
Certification	CE approved

**BONDING HEAD & TEMPERATURE CONTROLLER TECHNICAL SPECIFICATIONS**

Force range	8 – 80 N @ 6 bar / 60 – 750 N @ 6 bar		
Bond Head stroke (max)	1.77 in (45 mm)		
Bond level height	1.57 in (40 mm)		
Free Z space for components	0.78 in (20 mm)		
Temperature range			
Idle	25 to 300° C	Heat	60 to 600° C
Baseheat	25 to 300° C	Heat extended range	60 to 999° C
Preheat	60 to 500° C	Postheat	25 to 999° C
Time period (in 0.1 sec increments)			
Base Heat	0 to 99.9 seconds	Rise to heat time	0 to 9.9 seconds
Rise to Preheat Time	0 to 9.9 seconds	Heat	0.1 to 99.9 seconds
Preheat	0 to 99.9 seconds or continuous	Postheat	0 to 99.9 seconds

**ACF LAMINATING MODULE TECHNICAL SPECIFICATIONS**

ACF tape configuration	2-layer
ACF tape width	0.4 - 0.16 in (1 - 4 mm)
ACF tape feeding indexing	Min 0.11 in (3 mm)   Max 2.95 in (75 mm)
ACF tape placement accuracy*	X-direction ± 0.5 mm / Y-direction ± 0.2 mm
Total cycle time incl. movement (excl. bond process time)*	Feeding cycle time@ 3 mm: < 4.8 sec Feeding cycle time@ 75 mm: < 8.0 sec
Laminating area (length x width)	Min 0.11 x 0.4 in (3 x 1 mm) / Max 2.95 x 0.16 in (75 x 4 mm)
Peeler mechanism	Pneumatic
ACF tape cutting method	Half-cut
Tape feeding	DC-motor (encoder controlled)
Tension control	Sensor controlled (closed loop)

\*Validated at 4 mm ACF tape width, x-direction is tape feeding direction, y-direction is perpendicular

**MODEL SPECIFICATIONS**

NH-4121A base	No movement
NH-4221A linear slide (manual 2-position front-rear slide)	Stroke between front and bonding position: 7.87 in (200 mm) fixed
NH-4321A rotary table (manual 2-position)	Turntable diameter: 14.96 in (380 mm)
NH-4421A automatic rotary table (pneumatic 2-position)	Turntable diameter: 14.96 in (380 mm) Turntable movement time: < 2 seconds

**WEIGHT & DIMENSIONS**

Dimensions (L x W x H)	27.36 in x 24.21 in x 25.59 in (695 mm x 615 mm x 650 mm)
Weight	132.27 lb (60 kg)

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