Bond heads & Thermode options

For Heat-Seal Bonding, Reflow soldering, ACF Laminating and Heat-Staking applications

Bond Heads options

C-Tech Systems pneumatic bonding heads are designed for Hot Bar Reflow Soldering, ACF Laminating, Heat Seal Bonding and Heat Staking processes. Each bond head is adapted to serve a specific force range, to match the precise requirements these applications demand. The bond head's extreme fast heating and cooling cycles reduce process cycle times. Using forced air-cooling after heating minimizes the total bonding process times even more. The rigid design ensures a stable environment for fine- pitch applications that need high accuracy. Because of its compact design the head needs little space and can be integrated as process equipment in automated production line configurations. Using C-Tech Systems first- class bond heads will secure the quality, reliability and repeatability of the production output and an accurate and constant process control.

CH-0100	Bond head low force	5 - 100 N
CH-0250	Bond head mid force	20 - 250 N
CH-0700	Bond head high force	50 - 700 N

For power and digital programming the bond head needs to be connected to a C-Flow power supply unit. The C-Flow also offers the possibility to log all process parameters and results.

Hot Bar Process Quality Options

Process Quality Control

UO-5000	Z-Displacement sensor. The sensor measures miniscule (µm) vertical displacements of the thermode.
UO-5220	Programmable Automated Force Control, ideal if different forces are needed in one process cycle.

Optical Aligment & Quality Check

High precision part alignment and/or quality check of bonded or soldered joints.

UO-5300	Optical Alignment, one camera
UO-5310	Optical Alignment, two cameras

Bonding/Soldering Head

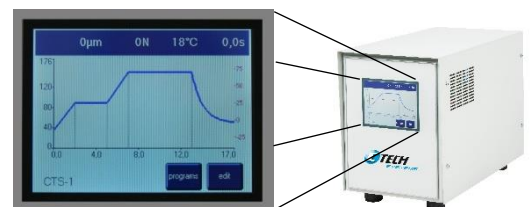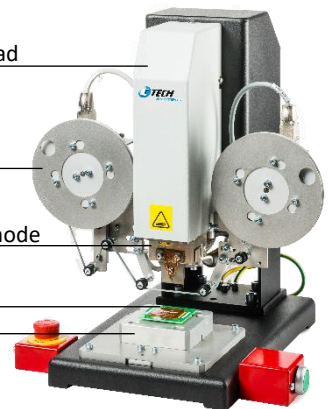Interposer Module

Mounting block Thermode

Substrate
Fixture/jig

Thermodes

Each application has its own specific process requirements and will need a suitable thermode. C-Tech Systems experience in design and development of thermodes is extensive. This experience is used to build our innovative standard thermodes and to develop custom-specific tools for special applications. You can choose from a range of different thermodes for various applications. In 2D models, the current flows from left to right. If you need a high force and/or want to avoid any voltage differences that can damage parts during soldering the 3D models are advised. With these models the current flows from the front to the back and the design makes the thermodes highly resistant to the high forces and big temperature differences that are applied during the bonding and soldering processes. C-Tech Systems also supplies special thermodes for wire-soldering and heat staking processes, shaped and build to the specific processes requirements.

3D Thermode with thermocouple

3D Thermode

PT-xxxyy	3D-Pulsed Heat Thermode 5-50mm (Small)
PT-xxxyy	3D-Pulsed Heat Thermode 51-100mm (Medium)
PT-xxxyy	3D-Pulsed Heat Thermode 101-130mm (Large)
PT-xxxyy	2D-Pulsed Heat Thermode 5-50mm
PT-xxxyy	Heat Staking Thermode

UO-3200	3D-Connect Block, 50mm (Small)
UO-3202	3D-Connect Block, 100mm (Medium)
UO-3203	3D-Connect Block, 130mm (Large)
UO-3220	2D-Connect Block, 50mm

2D Thermode with thermocouple

2D Thermode

Heat stake thermode with thermocouple

Example contact block

Jig (fixture) options

Spec-Eng Level 1	Engineering costs for Jig Level 1
Spec-Jig Level 1	Level 1 product fixture, where products are put into nests and positioned over two reference pins, no alignment adjustment
Spec-Eng Level 2	Engineering costs for Jig Level 2
Spec-Jig Level 2	Level 2 product fixture, where products are put into nests and aligned by one manual adjusted linear slide
Spec-Eng + Jig	Custom specific product fixture with multiple alignment, product clamping, complex products, etc.
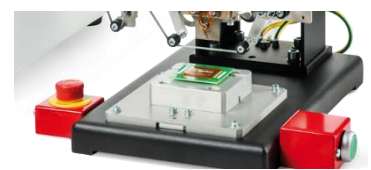
Example spec-jig Level 1

Example spec-eng + jig