



KULICKE and SOFFA
Industries, Inc.

**For microwave, hybrid,
or IC applications**



Model 4123 Universal Wedge Bonder

for use with aluminum, gold or ribbon wire

- dc servo/LVDT-controlled bonding head
- built in, phase-locked loop U/S generator, with high Q transducer
- front panel electronic setting of bonding parameters
- optional chessman/manual Z dual operating modes
- individual 1st and 2nd bond forces
- optional spotlight targeting
- stitch bonding
- optional 3rd Channel Kit

The Model 4123 is an aluminum or gold wire wedge bonder that is versatile enough to bond simple ICs and discrete devices, or complex hybrids with height variations up to 200 mils.

Extremely accurate loop and force control, individual bond forces and a wide range of wire sizes make it ideal for telecommunications and microwave applications where wire diameters are critical.

An optional feature that provides great flexibility is a 2-in-1 operating mode that allows either machine-controlled bonding using the chessman positioner, or complete manual Z control for hybrid height variations.

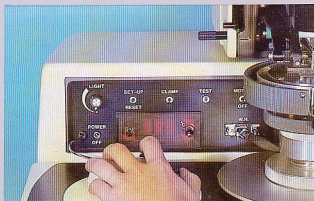
- Bonding head - 30° and 45° standard.
- Linear Variable Differential Transformer (LVDT)/dc servo-controlled displacement system provides maximum repeatability.
- Freely-rotating table moves through 360° without restriction.
- Controlled-impact bonding head minimizes vibration and produces higher-quality bonds.
- Stitch bonding capability enables operator to make several consecutive 2nd bonds very quickly.
- Built-in, phase-locked loop ultrasonic generator, with high Q transducer provides for a more efficient transfer of ultrasonic energy.
- Other features include clamp opener, 60° bonding head (optional) and illumination light dimmer.

The K&S Model 4123

**designed in
cooperation with
our customers.**



Dual operation mode allows either chessman or manual Z control (optional) for precise bond placement and more flexibility in multiple-bonding-height devices.

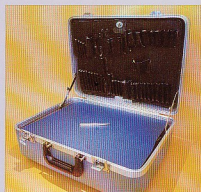
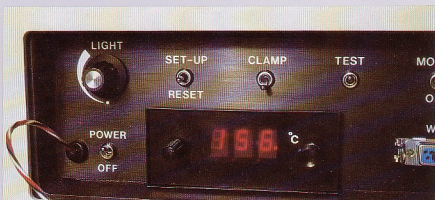


Spotlight option ensures precise bond targeting, reduces operator fatigue. Light is positioned at the target area. Machine automatically bonds at center of light spot.



Accessories and options let you custom-tailor the Model 4123 to your application.

Digital temperature control option for heated workholders provides for precise setting and control of workholder temperature. Cold-junction reference compensation, body temperature differences correction (zero offset), graduated approach to set-point level (proportional band).



Quick changeover from one type of device to another - no special tools required.

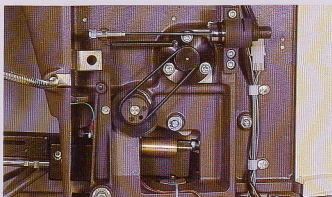
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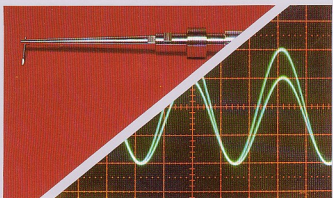
LVDT/DC servo closed-loop control of bonding head for smooth precise operation.
Electronically controlled dual bond forces.



Fine individual control of wire feed and wire tear ensures uniform tail separation for variable wire diameters and elongations.



Complete electromechanical and electronic control of all parameters ensures high-quality, consistent results... regardless of wire diameter, package design, or complexity.



Built-in ultrasonic generator with phase-locked-loop and high-Q transducer for close frequency tracking and optimum bonding efficiency.



Individual dial setting of 5 parameters for 1st bond and 2nd bond : bonding time, bonding power, bonding force, search height, and loop height.

Model 4123 Specifications

Wire

| | |
|----------------|-------------------------------|
| diameter range | |
| gold | .05 to 3.0 mil (12-75 micron) |
| aluminum | .10 to 3.0 mil (25-75 micron) |
| spool size | TC-1 0.5" (12.7 mm) diameter |

Performance specifications

| | |
|------------------------|---------------------------------------|
| cycle time | .850 msec (includes 100 ms bond time) |
| bond force | .10 to 160 grams |
| bond time | .10 to 100 ms |
| ultrasonic power (max) | |
| low | 1.3 W |
| high | 2.0 W |

Machine specifications

| | |
|---------------------|-----------------------------------|
| throat depth | 5.5" (140 mm) |
| wire trajectory | 30°/45° standard 60° optional |
| reset-to-overtravel | .200 mil (5.1 mm) |
| search/loop | 0.015" (0.38 mm) under reset to |
| height range | 0.015" (0.38 mm) above overtravel |

table motion

| | |
|----------------|--|
| gross | 6.5" (165 mm) diameter |
| fine | 0.5" (12.7 mm) diameter |
| bonding area | 3.75" x 3.75" (95 mm x 95 mm) |
| chessman ratio | .6:1 |
| tail length | adjustable |
| optics | B&L or Wild stereo zoom microscope, top mounted |

Options

spotlight targeting
rotatable, heated workholder
2" spool holder
all standard K&S cold manual workholders
digital temperature controller
manual Z system
3rd channel kit

Electrical requirements

100/120/220/240 V \pm 10%, 50/60 Hz, 70 VA max.

Physical dimensions

26" (660 mm) H x 23.5" (597 mm) W
x 26" (660 mm) D

Weight (without accessories)

shipping .110 lb (50 kg)
net .64 lb (29 kg)

Specifications subject to change without notice.

Regional Sales Offices & Sales/Service/Locations

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Tokyo, Japan

MANUFACTURING

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Haifa, Israel

Other specifications required by customer are possible.
All specifications subject to change without notice.
4123 Universal Wedge Bonder B993