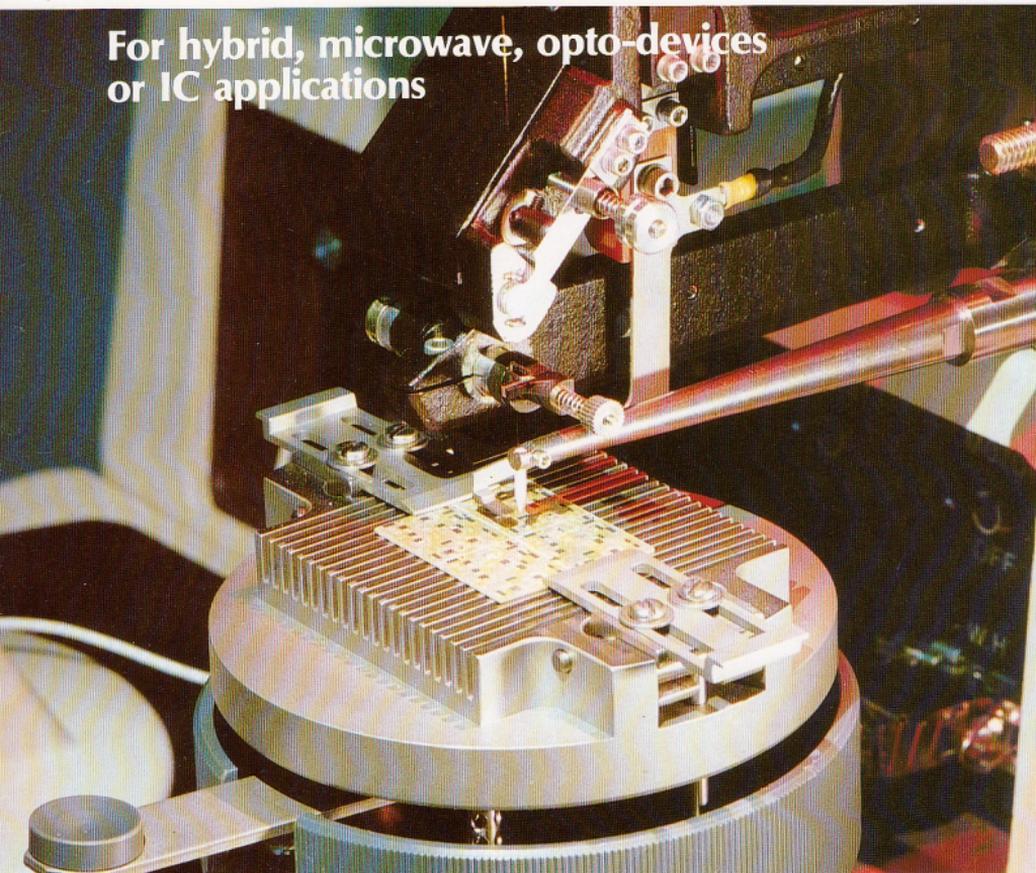




**Kulicke and Soffa  
Industries Inc.**

**For hybrid, microwave, opto-devices  
or IC applications**



## **Model 4124 Universal Ball Bonder**

- ★ optional chessman/manual dual operating modes
- ★ front panel electronic setting of parameters
- ★ individual parameters for 1st and 2nd bond
- ★ constant tail system, electronically controlled
- ★ built-in phase-locked-loop U/S generator with high-Q transducer
- ★ dc servo / LVDT-controlled bonding head
- ★ E.F.O. unit for ball formation
- ★ optional spotlight targeting

The Model 4124 is a gold wire ball bonder that is versatile enough to bond simple ICs and discrete devices, or complex hybrids with height variations up to 300 mil. Accurate loop and force control, individual bond forces and a wide range of wire sizes make it ideal for a variety of applications.

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 height variations in hybrid devices.

- ★ Linear variable differential transformer (LVDT)/dc servo-controlled displacement provides maximum repeatability.
- ★ Electronic flame-off with ball size adjusting dial.
- ★ Electronically-controlled tail length.
- ★ Controlled-impact bonding head minimizes vibration and produces higher-quality bonds.
- ★ Stitch bonding capability enables operator to make several consecutive 2nd bonds easily and quickly.
- ★ Built-in, phase-locked loop ultrasonic generator with high-Q transducer provides for a more efficient transfer of ultrasonic energy.
- ★ Other features include wire drag system, clamp opener and illumination light dimmer.

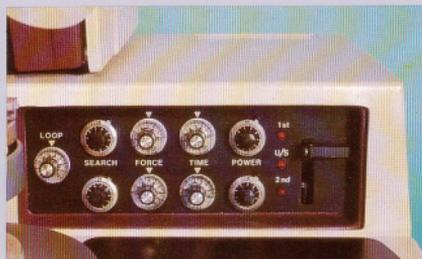
**The K&S  
Model 4124  
designed in  
cooperation with  
our customers.**





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

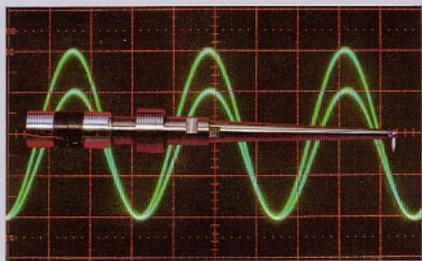
**High-quality, consistent results regardless of wire diameter, package design or device complexity - by complete electromechanical and electronic control of all bonding parameters.**



Individual dial settings: bonding time, bonding power, bonding force, search height, loop height - for the 1st and for the 2nd bond in separate.



Electronic flame-off system offers handy adjustment of ball size and clean harmless ball formation, covering the entire wire size range.



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



Quick changeover from one type of device to another - with just one tool...

## Model 4124 Specifications

**Wire**  
diameter range .....0.7 to 3.0 mil (18-76 microns)  
spool .....TC-3, 2" (50.8 mm) dia. single flange

**Performance specifications**  
cycle time .....900 ms (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" (127 mm)  
reset to overtravel .....330 mil (8.38 mm)  
search/loop range .....0.02" (0.51 mm) under reset  
to 0.02" (0.51 mm) above lowest  
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 .....constant

**Optics**  
optics .....B&L or Wild stereo zoom  
microscope, top mounted

**Options**  
spotlight targeting  
adjustable height, heated workholders  
motorized workholders  
manual Z system  
heated capillary kit

**Electrical requirements**  
100/120/220/240 V±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

### CORPORATE HEADQUARTERS

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**Technology Center**  
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(81)3-3450-7607 fax  
Kyushu

### TECHNOLOGY CENTERS

Willow Grove, PA, USA  
Haifa, Israel  
Tokyo, Japan

### MANUFACTURING

Willow Grove, PA, USA  
Haifa, Israel

Other specifications required by customer are possible.  
All specifications subject to change without notice.  
4124 Universal Ball Bonder B993