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

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

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 .......................... 0.5" (12.7 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

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Other specifications required by customer are possible.
All specifications subject to change without notice.
4124 Universal Ball Bonder 8992

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Haifa, Israel
Tokyo, Japan

Manufacturing
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