

Bondjet BJ820

Fine Wire Wedge Bonder

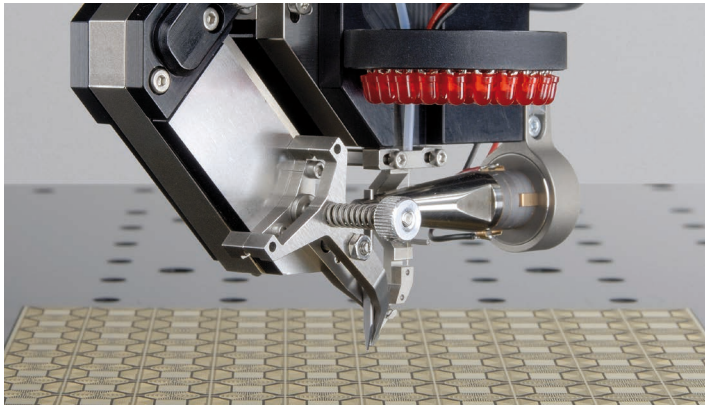


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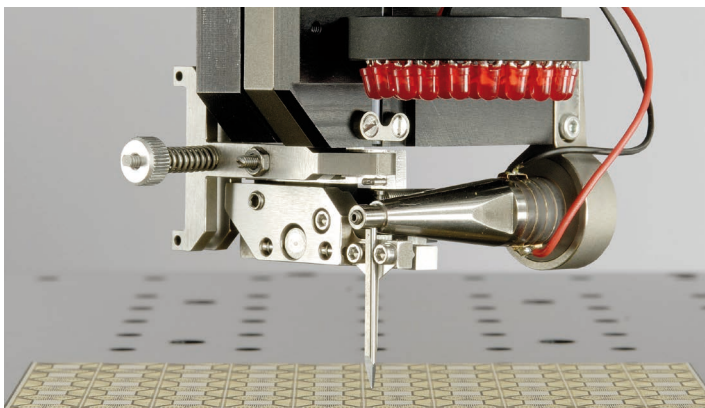
High Speed Fully Automatic Fine Wire Wedge Bonder

The Bondjet BJ820 is world's leading fully automated fine wire wedge wedge bonder. The BJ820 is ready for all wire bonding challenges on a single platform, using wires and ribbons made of aluminium, copper and gold. Typical applications are components in the HF and RF technology, COB, MCM and hybrids, opto and automotive electronics. The BJ820 defines the latest state of technological development compared to the competition and is benchmark for:

- The highest bonding speed in the industry
- The largest working area of fast running fine wire bonders
- The greatest axis accuracy



BK04 Fine Wire Bondhead 45°



DA04 Deep Access Bondhead 90°

Your benefits in the spotlight

Advanced features and process advantages

- High precision touchdown detection without time delay, e.g. for bonding on very thin substrates
- Precise bondforce control (static and dynamic)
- E-Box: patented solution for optimized tool change and programmable alignment marks for wedge and wire clamp

Flexibility

- Working area : 305 mm x 410 mm (12" x 16")
- Can serve two or more smaller bonding stations for efficient handling of smaller products or substrates, elimination indexing time and maximization of throughput (with indexers as well as manual loading)
- Universal software interface for indexer control
- Enables intelligent automation of extra large products

Speed

- Up to 7 wires per second, application-dependent, e.g. with 25 µm wire, 1 mm loop length, metallized wafer

Quality

- Continuous real time monitoring of wire deformation, transducer current, frequency and impedance within programmable control limits
- Piezo bondhead with low maintenance
- Process integrated Quality Control PiQC - integrated in Hesse Mechatronics' Workbench: detection of further parameters by additional sensor system (e.g. friction) for 100% quality monitoring in real time (patented)
- PBS200 – server for central data management, for up to 20 Hesse wire bonders
- BDE, traceability – in PBS200 integrated XML interface or customized implementation
- SECS/GEM – in PBS200 integrated standardized server connection for automation and communication
- MES – interface to Manufacturing Execution Systems, integrated or in PBS200 realized, customized implementation

Piezo bondheads

- BK04 Bondhead 45°, DA04 Bondhead 90° (Deep Access)
- Wear-free and low maintenance components with Piezo-Technology
- Maintenance-free solid state joints
- Free programmable tail length, tear stroke and opening gap of wire clamp
- Low maintenance costs
- Precise bondforce control (static and dynamic), 15 cN - 150 cN programmable
- Bondheads can be exchanged in minutes



Technical data at a glance

Working area

- X: 305 mm (12"); Y: 410 mm (16"); Z: 30 mm (1.2")
- P-rotation: 420°

Mechatronic bondhead

- BK04 Bondhead 45°, BK04 Bondhead 60°
- DA04 Bondhead 90° (Deep Access) for ribbon

Frequency: 100 kHz (93,5 kHz); alternative frequencies can be realized by our own transducer construction

Wire

- Al, Au: 17.5 µm – 50 µm (0.7 mil - 2 mil), optional: 12.5 µm – 75 µm (0.5 mil - 3 mil) (after consultation)
- Cu: 17.5 µm - 50 µm (0.7 mil - 2 mil)

Ribbon

- Al, Au: 6 µm x 35 µm up to 25 µm x 250 µm (0.24 mil x 1.4 mil - 1.0 mil x 10 mil)

Process advantages

- Loop length: 70 µm up to 20 mm (2.8 mil - 800 mil), depending on wire diameter
- Various loop form functions
 - Constant wire length
 - Constant loop height
 - Individual loop shapes
- Fine pitch 40 µm inline, 25 µm staggered/dual line (depending on tool and loop)

Small footprint – high performance

- 722 mm x 1250 mm x 1800 mm (28.4" x 49.2" x 70.9") (W x D x H)
- Weight: approx. 1350 kg

Media connectivity

- RJ45 (2 x)
- Compressed air (high-purity)
- Vacuum
- 16A AC
- Digital IOs
- USB-Port
- SMEMA

Manual and fully automated operation

- Standard components or individually adapted solutions
 - Manual bonding station (with/without heating)
 - Indexer / transport system
 - Bonding station
 - Magazine lifts
 - Visualization
 - MES-Interface
- Integrated PLC controller
- Standard SMEMA input & output ports
- Profibus support

Options

- E-Box: visualisation system for control supported, reproducible adjustments of bondhead elements (patented)
- PiQC: Process integrated Quality Control by multi-dimensional signal analysis - integrated in Hesse Mechatronics' Workbench
- PBS200 – server for central data management, handling via Workbench
- BDE, traceability – in PBS200 integrated XML interface or customized implementation
- SECS/GEM – in PBS200 integrated standardized server connection for automation and communication, handling via Workbench
- MES – interface to Manufacturing Execution Systems, integrated or in PBS200 realized, customized implementation

HESSE

MECHATRONICS

Hesse GmbH - Your partner for ultrasonic and thermosonic wire bonders for all common wire dimensions as well as ultrasonic flipchip bonders in combination with standardized or customized automation solutions.

Hesse GmbH, founded in 1986 and based in Paderborn, Germany, develops and manufactures fully automatic ultrasonic and thermosonic wire bonders as well as ultrasonic flipchip bonders together with standard or customer-specific automation solutions for the semiconductor industry backend. Hesse GmbH is one of the world's leading producers of wire bonders using the ultrasonic wedge-wedge and the thermosonic ball-wedge technology and develops customer-specific production processes.

All relevant semiconductor manufacturers are among the worldwide clientele of Hesse GmbH. Distribution and service are performed from the headquarters or by subsidiaries in Hong Kong, the USA and Japan and together with partners in over 30 other countries.

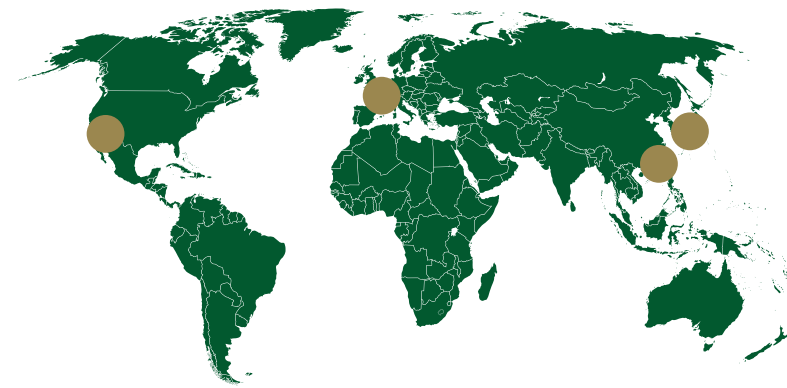
The core competencies of the company are mechatronic systems, ultrasonic technology, control engineering and the detailed understanding and knowledge of the processes and physical effects relevant in ultrasonic joining technology. In order to maintain and expand technological leadership, we conduct intensive research and development in all aforementioned areas.

Process support, development and consulting:

We support you in developing and implementing your individual process requirements. Our range of services includes:

- Sample-bonding
- Pre-production prototype
- Design validation builds
- Small series production
- Module production
- Process optimization

Worldwide. Near you.



Hesse GmbH

Lise-Meitner-Str. 5, 33104 Paderborn, Germany

Phone: +49 5251 1560-0

Fax: +49 5251 1560-290

Web: www.hesse-mechatronics.de

E-Mail: info@hesse-mechatronics.com

Hesse Mechatronics, Inc. (America)

213 Hammond Ave, Fremont, CA 94539, USA

Phone: +1 408 436-9300

Fax: +1 484 231-3232

E-Mail: info@hesse-mechatronics.us

Hesse Asia Ltd. (China/Hong Kong)

Unit 807, 8/F Westin Centre, 26 Hung To Road, Kwun Tong, Hong Kong

Phone: +852 2357-9410

Fax: +852 2357-4700

E-Mail: sales@hesse-mechatronics.com.hk

Hesse Mechatronics Japan Co., Ltd. (Japan)

Horidome General Bldg. 1F, 1-9-6 Nihonbashi Horidomecho, Chuo-ku, Tokyo 103-0012, Japan

Phone: +81-3-6264-8686

Fax: +81-3-6264-8688

E-mail: info@hesse-mechatronics.jp

The Bonding Experts.

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