

## Bondjet BJ980

Solar and Battery Bonder



# Bondjet BJ980

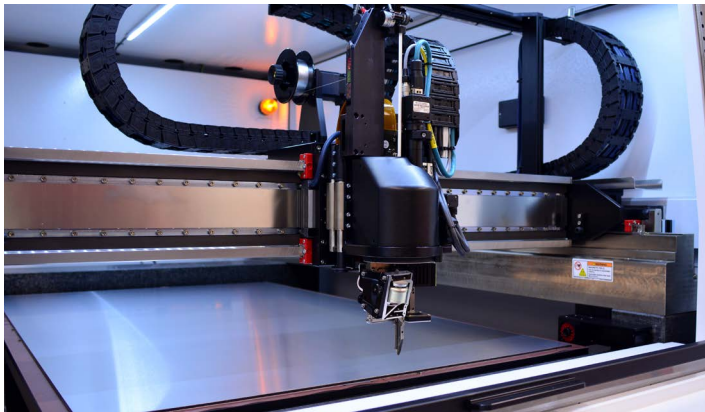
## Heavy Wire Wedge Bonder especially for solar and battery applications

The ultrasonic wedge-wedge bonder Bondjet BJ980 serves, with its most flexible and largest working area of 700 mm x 1132 mm, the growing demands for large-sized substrates, especially for solar and battery applications.

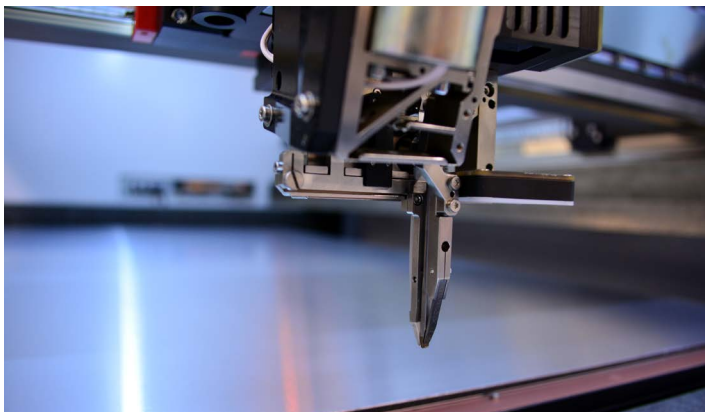
The Bondjet BJ980 can be used as a fully automatic machine or operated manually. Hesse offers the only available solution on the market of handling wires from 50  $\mu\text{m}$  up to 600  $\mu\text{m}^{**}$  with only one bondhead; Ribbons can be processed up to a size of 2000  $\mu\text{m}$  x 400  $\mu\text{m}^{**}$ .

Outstanding features are high speed and the largest bonding area in the industry. A change from aluminium to copper can be realized within minutes.

Hesse GmbH, as technology leader, has designed the only heavy wire bondhead with non-destructive pulltest and a unique transducer integrated sensor for 100% quality monitoring in real-time.



Bondjet BJ980 working area 700 mm x 1.132 mm



RBK Heavy wire bondhead for ribbon

## Heavy Wire Wedge Bonder

### Your benefits in the spotlight

#### Advanced features and process advantages

- Most flexible and largest working area in the industry: 700 mm x 1132 mm
- 50  $\mu\text{m}$  – 600  $\mu\text{m}^{**}$  bondhead for Al, Cu, AlCu (2 mil - 24 mil)
- Ribbon up to 2000  $\mu\text{m}$  x 400  $\mu\text{m}^{**}$  (80 mil x 16 mil)
- Precisely programmable bondforce actuator
- Wear-free components with Piezo technology
- Maintenance-free solid state joints
- Pattern recognition time: 6 ms – 8 ms (search region: 512 x 512 pixels, pattern: 64 x 64 pixels)
- Rapid image capture with new digital image processing and flash light illumination
- E-Box: patented solution for optimized tool change and programmable alignment marks for guide, cutter and bond wedge

#### Central wedge bonder control system

- A central 23" touch panel is used to monitor and control the bonder and indexing system
- A user-friendly calibration wizard and automatic update of calibration data at bondhead change on all available bondheads

#### Speed

- Highest UPH on the market due to linear motors

#### Quality

- Continuous real time monitoring of wire deformation, transducer current and frequency within programmable control limits
- Process integrated Quality Control PiQC: detection of further parameters, e.g. friction behavior, by additional sensor system for 100 % quality monitoring in real time (patented); as option
- Remote pull function on PiQC threshold value for optimized cycle time; up to 30 % safe on equipment
- Integrated, non-destructive pulltest for wire and ribbon
- BDE, traceability: integrated CSV-logger or customized implementation
- SECS/GEM: integrated standardized server connection for automation and communication, handling via Workbench
- MES: interface to Manufacturing Execution Systems, integrated or customized implementation

#### Heavy wire bondheads

- Heavy wire and ribbon bondheads for aluminum, copper and AlCu
- An intelligent bondhead connecting system with integrated memory stores all calibration data and enables bondhead replacement in a few minutes
- Wire clamp for loop shape control is standard on all bondheads, optional equipped with non-destructive pulltest



## Technical data at a glance

### Working area

- X: 700 mm; Y: 1132 mm; Z: 42 mm
- P-rotation: 440°

### Mechatronic bondhead

- HBK (Frontcut, Backcut)
- RBK Ribbon (Frontcut)
- RBK Copper (Frontcut, Backcut)

Frequency: 60 kHz\*; alternative frequencies on request

### Cutting methods

- active, passive, air cut (for frontcut)

### Wire

- Al, Cu, AlCu: 50 µm – 600 µm\*\* (2 mil - 24 mil)

### Ribbon

- Al, Cu, AlCu: 250 µm x 25 µm up to 2000 µm x 400 µm\*\* (Cu: 200 µm)  
(10 mil x 1 mil up to 80mil x 16 mil)

### Ultrasonic

- Digital ultrasonic generator with PLL (Phase-Locked-Loop), internal frequency resolution <1 Hz
- Ultrasonic power output : programmable

### Footprint and weight

- 1280 mm x 2155 mm x 1822 mm (W x D x H , excl. monitor and light tower)
- Weight: approx. 3.000 kg

### Media connectivity

- Compressed air (high purity)
- Vacuum
- 16A/230V AC
- Digital IOs
- USB Ports
- SMEMA connection
- Gigabit-Ethernet (TCP/IP)

### Various loop form functions

- Reproducible loop geometry by wire guide appropriate for the material involved (e.g. pulling wire buffer)
- Constant wire length and loop height
- Mechanically demanding loop geometrics by parameterization and individual wire clamp application

### Manual and fully automated operation

- Standard components or individually adapted solutions
  - Manual bonding station (with/without heating)
  - Automated bonding station (with/without heating), multi-lane operation → lowest Cost of Ownership (CoO)
  - Indexer / transport system
  - Magazine lifts
  - Visualization
- Integrated PLC controller

### Options

- E-Box: patented solution for optimized tool change and programmable alignment marks for guide, cutter and bond wedge
- PiQC: Process integrated Quality Control by multi-dimensional signal analysis - integrated in Hesse Mechatronics' Workbench
- BDE, traceability: integrated CSV-logger or customized implementation
- SECS/GEM: integrated standardized server connection for automation and communication, handling via Workbench
- MES: interface to Manufacturing Execution Systems, integrated or customized implementation

You want more?

Contact us - we will provide a solution!

\* exact range of frequencies on request

\*\*depending on application and wire

# HESSE

## MECHATRONICS

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

Hesse GmbH, founded in 1995 and based in Paderborn, Germany, develops and manufactures fully automatic ultrasonic and thermosonic wire 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 technology and develops customer-specific production processes.

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

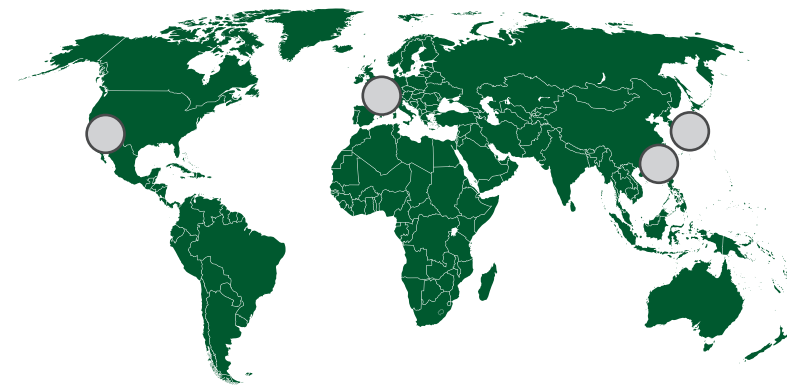
The core competencies of the company are mechatronic systems, ultrasonic technology, control engineering and the detailed understanding and knowledge of the processes and physical effects relevant in ultrasonic joining technology. In order to maintain and expand technological leadership, we conduct intensive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

[www.Hesse-Customersolutions.com](http://www.Hesse-Customersolutions.com)

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

- Pre-production prototype
- Small series production
- (Online) Services:
  - Training
  - Production support
  - 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](http://www.hesse-mechatronics.de)

E-Mail: [sales@hesse-mechatronics.com](mailto:sales@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: [sales-us@hesse-mechatronics.com](mailto:sales-us@hesse-mechatronics.com)

### 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-asia@hesse-mechatronics.com](mailto:sales-asia@hesse-mechatronics.com)

### 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: [sales-jp@hesse-mechatronics.com](mailto:sales-jp@hesse-mechatronics.com)

The Bonding Experts.

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