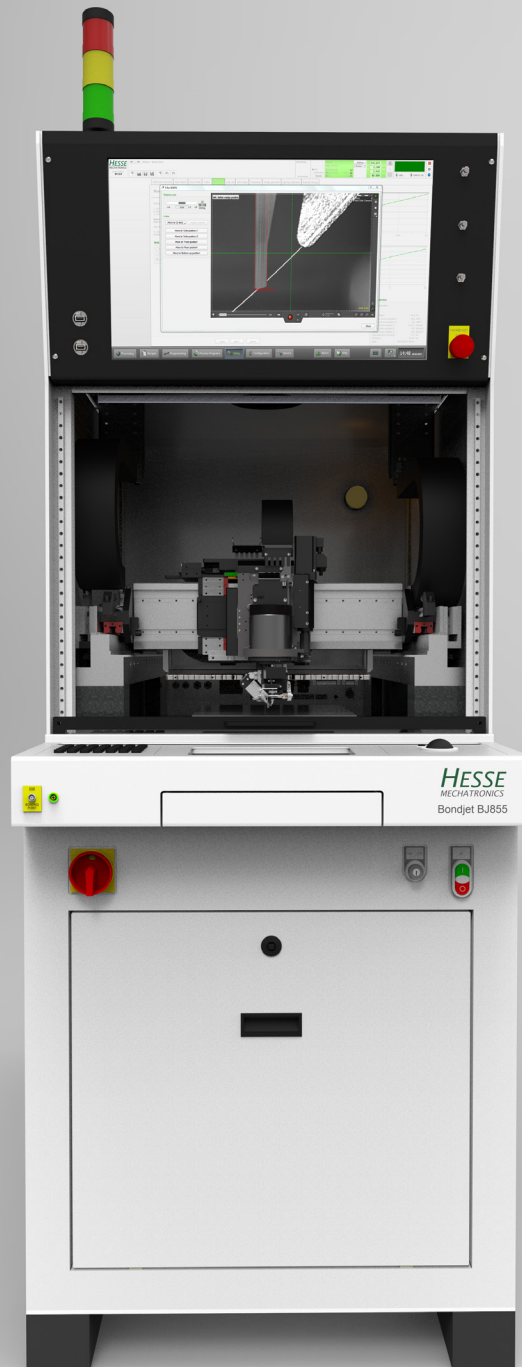


## Bondjet BJ855

Fine Wire Wedge Bonder



# Bondjet BJ855

## High Speed Fully Automatic Fine Wire Wedge Bonder

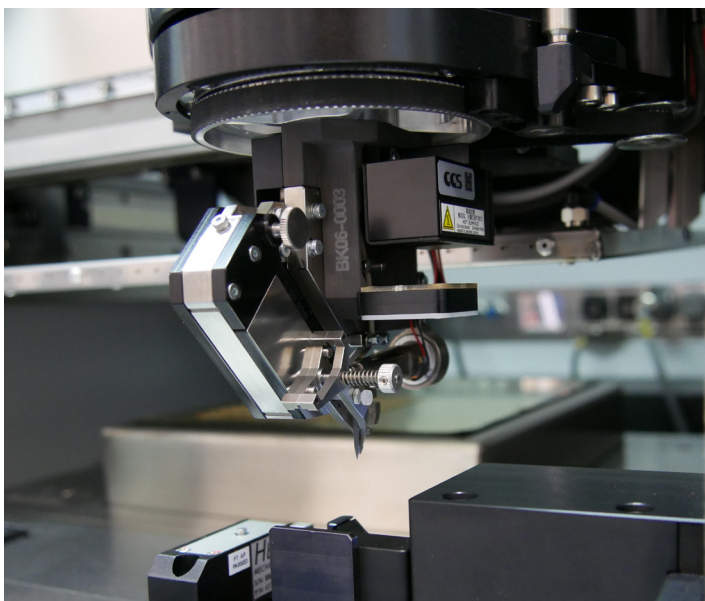
The Bondjet BJ855 is the successor of the proven Bondjet BJ820, the world's leading fully automated fine wire wedge-wedge wire bonder. The new bonder generation of the Bondjet BJ855 is characterized by several new features:

- Optimized pattern recognition (PR)
- Software features for the growing demand of connectivity and industry 4.0 (e.g. Hesse Bonder Network, remote control of PR, improved MES integration, ...)
- Hesse Assist Tools: load cell, bondtool and wire spool detection, bond tool calibration without wedge gauge for operator independency

The Bondjet BJ855 is ready for all wire bonding challenges on a single platform, using wires and ribbons of all common materials. Typical applications are components in RF technology, COB, MCM, hybrids, optical and automotive electronics. In addition to a standard configuration, Hesse offers automation concepts individually adapted for every application.

The Bondjet BJ855 defines the latest state of technological development compared to the competition and is benchmarked for:

- The fastest bonding speed in the industry
- The largest working area
- The greatest axis accuracy



Fine wire bondhead 45°

## Fine Wire Wedge Bonder

## 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
- Optimized pattern recognition: image capture with new digital image processing and flash
- Hesse Assist Tools (option):
  - E-Box: patented solution for optimized tool change and programmable alignment marks for wedge and wire clamp
  - Automated bondforce calibration; a load cell prevents operator error and ensures robust processes
  - Innovative bondtool detection
  - Wire spool detection
- Automated bondtool calibration without wedge gauge
- Loop generator for individualized loops
- Wear-free components with Piezo technology
- Maintenance-free solid state joints
- Pre-setting of bondheads via EEPROM

### Flexibility

- Working area: 305 mm x 410 mm (12" x 16")
- Flexible use of working area, e.g. with a number of bonding stations (manual loading or with indexers)
- Universal software interface for indexer control
- Maximization of throughput by automation with two or more parallel lines

### 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
- Process integrated Quality Control PiQC: detection of further parameters by additional sensor system (e.g. friction) for 100 % quality monitoring in real time (patented); available as an option

### Piezo bondheads

- Bondhead 45° and 90° (deep access)
- Freely programmable wire feed, tail length, tear stroke and opening gap of wire clamp
- Precise bondforce control (static and dynamic)
- Bondheads can be replaced in minutes



## Technical data at a glance

### Working area

- X: 305 mm (12"); Y: 410 mm (16"); Z: 30 mm (1.2")
- P-rotation: 440°

### Mechatronic bondhead

- Bondhead 45°
- Bondhead 90° (deep access) for ribbon or wire

Frequency: 100 kHz\*; alternative frequencies available on request

### Wire

- Al, Au, Ag, Cu, Pt, Ni: 12.5 µm – 75 µm\*\* (0.5 mil - 3 mil)\*\*

### Ribbon

- Al, Au: 35 µm x 6 µm up to 250 µm x 25 µm\*\* (1.4 mil x 0.25 mil up to 10 mil x 1 mil)\*\*

### Fine Wire Wedge-Wedge Loop Design

- Loop form functions: constant wire length, constant loop height, individual loop shapes
- Fine pitch: 40 µm inline, 25 µm staggered/dual line (depending on wire diameter and loop)

### Small footprint – high performance

- 740 mm x 1484 mm x 1910 mm (29" x 58" x 75") (W x D x H)
- Weight: approx. 1100 kg

### Media connectivity

- Compressed air (high purity)
- Vacuum
- 16A AC
- Digital I/Os
- USB ports
- SMEMA connection
- Gigabit Ethernet (TCP/IP)
- Profibus support

### 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
- Integrated operation in machine control (TwinCAT®)

### Software Options

- Hesse Bonder Network (HBN): complete line management, synchronization of data, easy integration of new machines via Plug & Produce, no server necessary
- PBS Server & Workbench 2.0: central data management, line management, automatic backup system, remote pattern recognition
- TwinCAT® Automation: integration of control software for automation in Hesse Bonder Interface
- SECS/GEM: integrated standardized server connection for automation and communication, handling via Workbench
- MES: interface to Manufacturing Execution Systems, integrated or customized implementation
- CSV Logger: storage of all machine and process data, e.g. bond positions etc.
- Login via USB stick

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 1986 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.

### Process support, development and consulting:

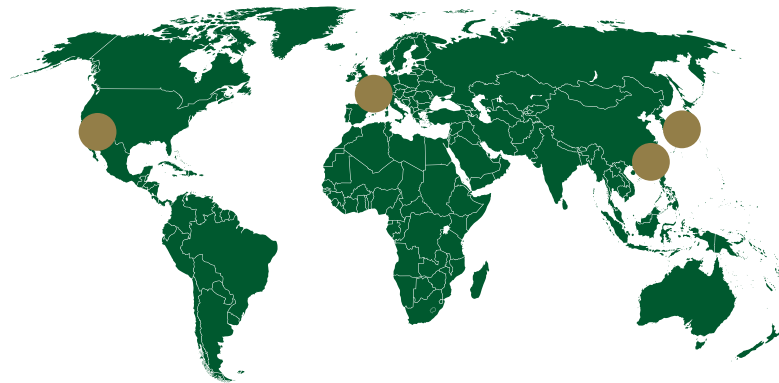
We support you in developing and implementing your individual process requirements. Our range of services includes:

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

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 **Accelonix**  
keeping you ahead The Bonding Experts.