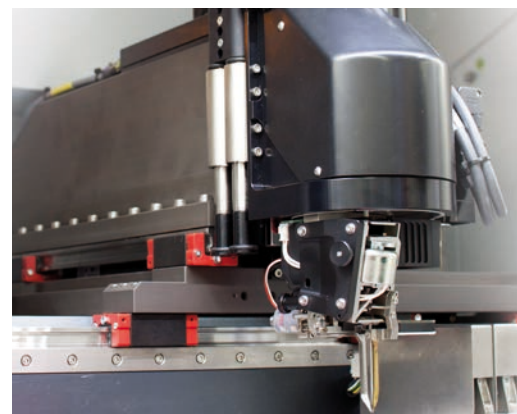
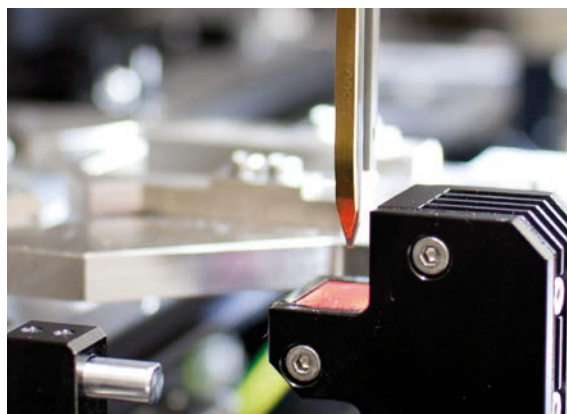
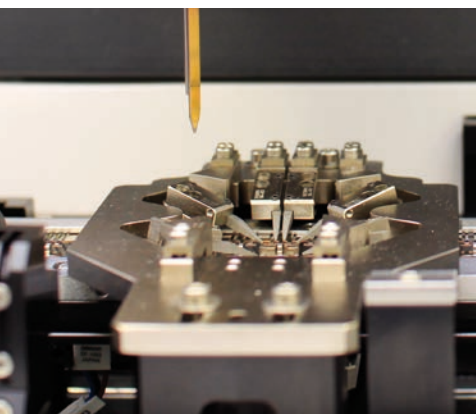




Bondjet BJ931
High Speed Fully Automatic
Dual-Head Wedge Bonder



Bondjet BJ931

High Speed Fully Automatic Dual-Head Wedge Bonder

Hesse Mechatronics, market-leading designer and manufacturer of high-speed fine wire wedge bonders and heavy wire bonders for semiconductor backend assembly, introduces its newest wedge bonder, the dual-head Bondjet BJ931.

The Bondjet BJ931 High Speed Fully Automatic Dual-Head Wedge Bonder meets the latest technology and flexibility demands for automotive and power electronics applications, handling thin and heavy aluminum, copper and gold wire and ribbon on two specialized bond heads that can be changed out in minutes. A robust, clean design with the largest work area in the industry, low maintenance requirements and user-friendly software and service support functions are integrated into the Bondjet BJ931, along with Hesse Mechatronics' industry-leading PiQC™ process monitoring system.

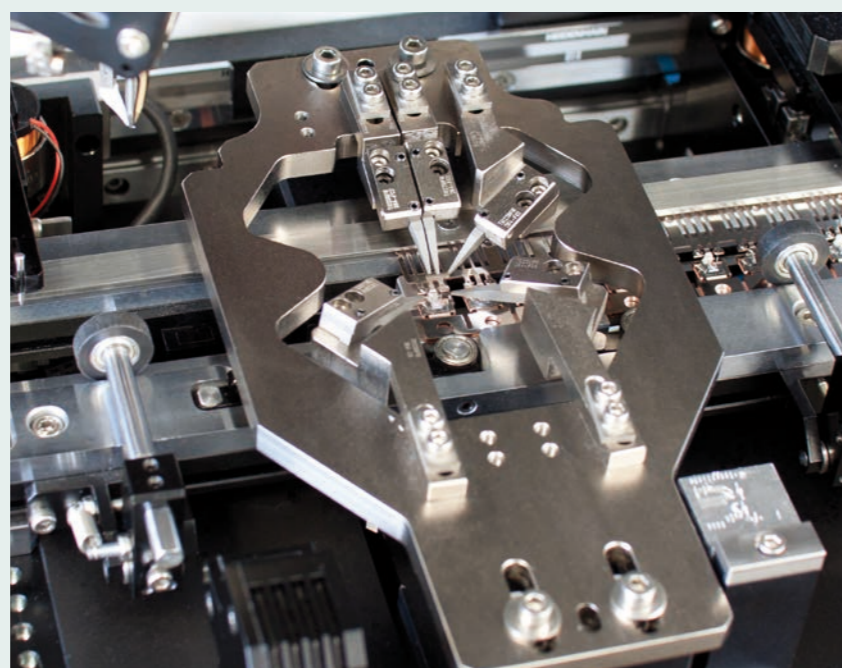
Bondjet BJ931 Key Features

A solid, high-speed, dual-head wedge bonder platform

- ▶ Highest UPH on the market due to linear motors for all bonder axes
- ▶ Linear motor-driven indexing system (<100 ms indexing time for typical TO 220 devices)
- ▶ A clean design provides easy access to all machine components
- ▶ A stiff body design and sophisticated vibration damping make it the most robust wedge bonder in the industry
- ▶ Rapid image capture with new digital image processing and flash light illumination

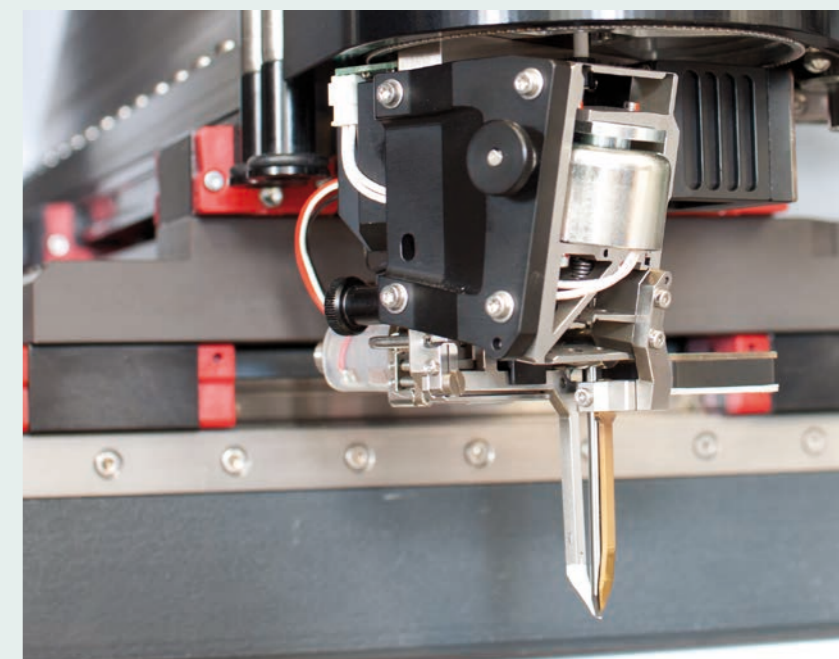
Central wedge bonder control system

- ▶ A central 23" touch panel is used to monitor and control the bonder and indexing system
- ▶ A user-friendly calibration wizard supports automatic update of calibration data at bond head change on all available bond heads
- ▶ Easy connectivity to standard and custom MES (Manufacturing execution systems)
- ▶ Gigabit Ethernet TCP/IP connection for the fastest possible manufacturing floor connectivity
- ▶ Full USB support for connecting storage devices
- ▶ Remote maintenance tools via Ethernet for easy access to data from anywhere



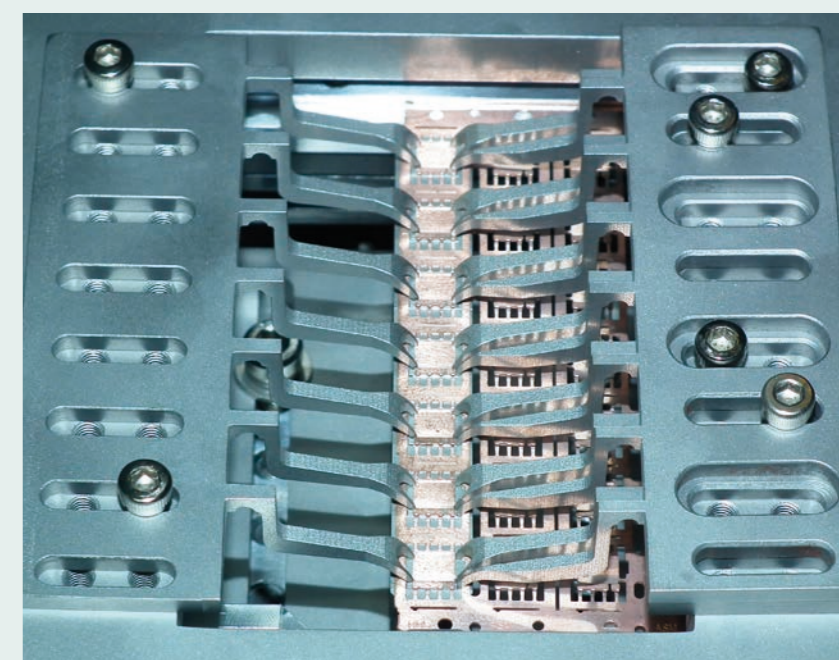
Interchangeable bond heads

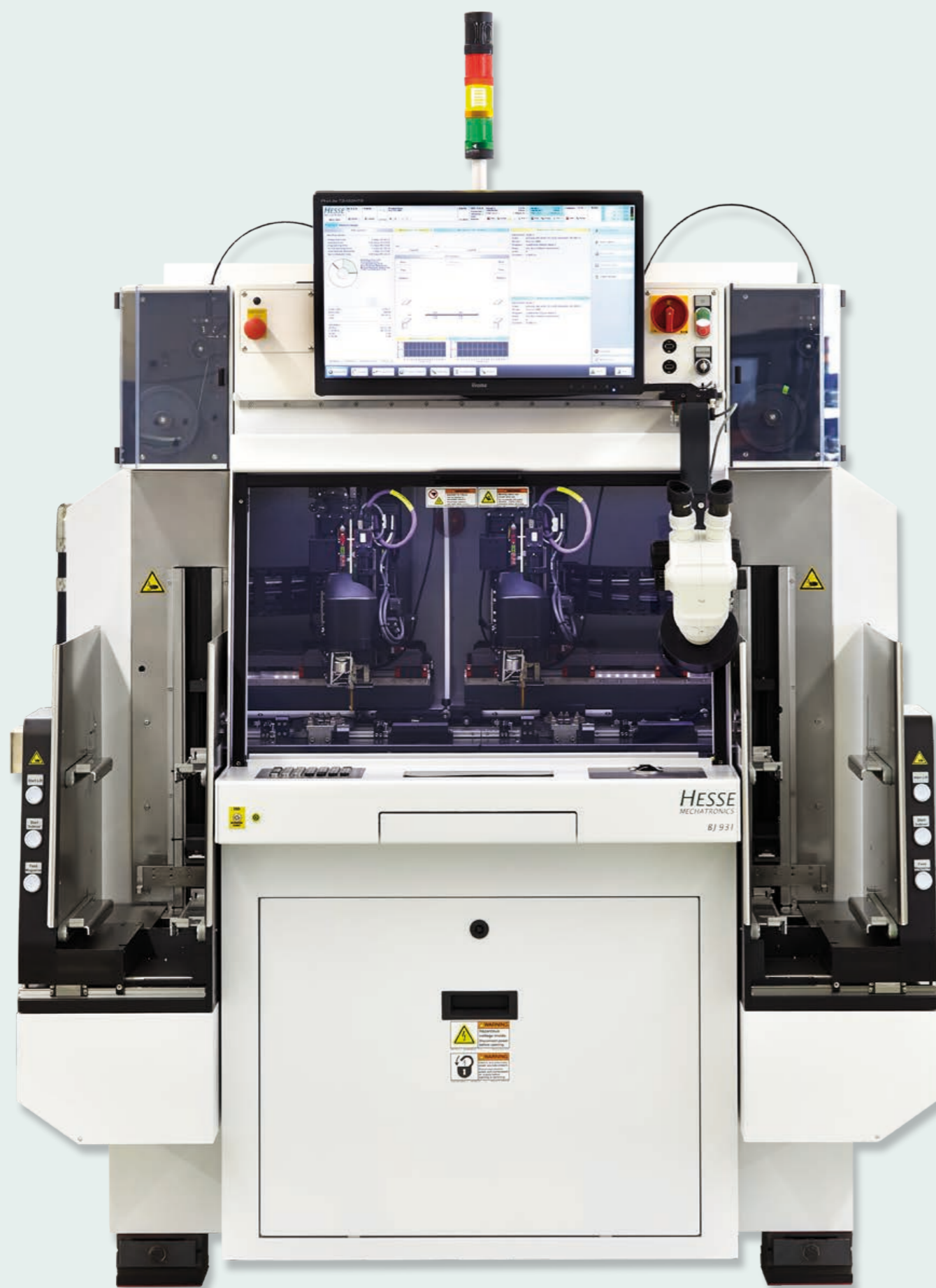
- ▶ The Bondjet BJ931 supports thin and heavy wire bond heads as well as ribbon bond heads for aluminum, copper, gold wire and ribbon
- ▶ An intelligent bond head connecting system with integrated memory stores all calibration data and enables bond head replacement in two minutes
- ▶ Wire clamp for loop shape control and non-destructive pull test is standard on all heavy wire bond heads
- ▶ The new bond head connecting system allows a system conversion – for example from wire to ribbon – in a very short time



Process Integrated Quality Control System – PiQC™

- ▶ The integrated PiQC system provides quality control for 100% of bonds on every type of application – from matrix lead frames to stitch bonds to simple source destination bonds – without a time delay. All data can be stored and displayed on the bonder screen and analyzed with additional software.
- ▶ The standard PiQC bond process control system monitors friction bond deformation, current and frequency signal with user-defined quality range limits. All data can be stored for later evaluation
- ▶ Up to eight additional inline non-destructive pull testers are available on the integrated indexing system
- ▶ Integrated non-destructive pull test on heavy wire bond heads can be used in combination and controlled by PiQC





General Data

Bond Area	100 mm x 90 mm
Z-Axis	50 mm
P-Axis	± 220'
Positioning Accuracy	±2 µm (± 0,08 mil) @ 3 σ
Power Requirements	190 - 240 VAC, single phase, 50/60 Hz, UPS included
Power Consumption	12,5 A @ 230VAC, 3kVA
Nitrogen / Compressed Air	Note: <ul style="list-style-type: none"> • small wire handling (optional) 150 l/min @ 4 bar, • leadframe blower (optional) 100l/min @ 4 bar
Vacuum	Not required optional: Vacuum clamping
Microscope	Single stereozoom scope
Monitor	23" Touchpanel
E-Box	Integrated optical inspection camera for both bond heads
Work Height	900 to 950 mm
Footprint	1650 mm wide, 1200 mm deep
Weight Uncrated	Approx. 1500 kg
Certification	CE

Pattern Recognition

Vision System	Hesse Mechatronics Advanced Pattern Recognition System
Digital Zoom Available	Yes
Field Of View	Maximum 8 X 6 mm
Die Rotation	±5 degrees from nominal for point and dual point mode ±20 degrees from nominal for edge mode
Lighting	Programmable dual lighting; LED ring light, down light, optional:Box light

System Configuration

CPU	2x IPC for RTS and GUI
File Storage	SSD, Raid system optional
Comm. Ports	USB 2.0, Gigabit Ethernet, TCP/IP
Operating System	RTOS for RTS, LINUX 64bit for GUI RT-TARGET

Leadframe Indexing System

Strip Dimensions	100 - 280 mm length 15 - 90 mm width max. 3.0 mm downset
High Speed Indexing System	For PQFN, DSO, DFN, TO220, Dpak, SOP multi lead Matrix, Programmable pitch
Index Time	100 ms for typical TO 220 device (includes clamping)
Magazine Size	115 - 285 mm length 20 - 100 mm width 50 - 200 mm height
Inline Pulltesters	Up to 4 non-destructive pulltesters per bonder module (up to a total of 8 per system)

Heavy Wire Bond Head

Type	Front cut and back cut
Transducer	60 kHz, optional 40 kHz
Bond Tool	2,5"
Bond Force	50 - 1500 cN
Bond Head Pull Test	Bond head integrated pull test (optional available on all bond heads)
Loopformer Version	Available as an option for frontcut

Ribbon Bond Head

Ribbon Dimensions	750 x 100 µm to 2000 x 300 µm (30 x 4 mil to 80 x 12 mil) others may be available upon request
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Copper Bond Head

Copper Wire Dimension	125 - 500 µm (5 - 20 mil)
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Heavy Wire Handling

Wire Diameter	75 - 500 µm (3 - 20 mil)
Wire Feed	Motorized wire dereeler
Missing Wire Detection	Yes
Maximum Wire Looping	40 mm
Wire Spool Size	50 - 120 mm OD, 10 - 11 mm ID, 22 - 45 mm width



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