



# WIRE BONDER G5 SINGLE

## Datasheet

### Wire Bonder G5 Single –

The first and only fully automatic all-in-one wire bonder in the world

The compact, space saving G5 single wire bonder is truly a multi-talent. Within minutes it can be changed to all common bonding processes. For highest productivity with lowest operating costs applications specialists from F&K determine the level of automation required for the customer's product exactly.

#### Advantages

- G5 platform suitable for all wire bonding technologies
- Quick and simple conversion in under 15 minutes
- Continuous monitoring and active control of the bond process with the patented Bond Process Control
- Multiple possibilities for automation from manual to in-line

**STAYING AHEAD IN BONDING TECHNOLOGY**

## Possible bond technologies

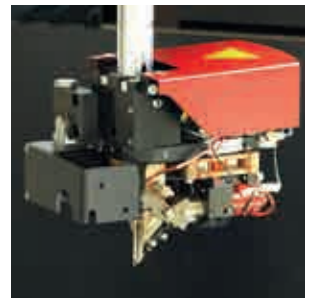
### Gold Ball (G5 62000)

- Applications: MCM, BGA, COB, MEMS, QFN leadframes, ceramic carriers, fine pitch, CSP
- Au, Al, Ag, Cu, Pt for high temperature applications
- Fine wire  $\varnothing$  17  $\mu\text{m}$  to 75  $\mu\text{m}$  (gold, copper, platinum, other materials on request)
- Speed 2 to 3 wires per second (depending on application)
- Programmable bond weight
- 90° wire feed, 2" spool
- Programmable negative flame-off for different ball sizes
- Stitch bonding
- Safety bumps
- Bumping function with highest bond quality



### Fine Wire (G5 64000)

- Applications: pressure sensors, PCBs, automotive, HF components, leadframe applications
- Fine wire  $\varnothing$  17  $\mu\text{m}$  to 75  $\mu\text{m}$  (aluminium, gold, other materials on request)
- Programmable bond weight
- Speed 2 to 3 wires per second (depending on application)
- Standard wire feed 45°, optionally 60°, 2" wire spool
- Supports heated work station (optional)



### Deep Access Fine Wire (G5 64000DA)

- Applications: high frequency, micro-wave, military, opto-electronics
- Fine wire  $\varnothing$  17  $\mu\text{m}$  to 75  $\mu\text{m}$ , aluminium, gold (other materials on request)
- Ribbon up to 250  $\mu\text{m}$  x 50  $\mu\text{m}$
- Programmable bond weight
- Speed 2 to 3 wires per second (depending on application)
- 90° wire/ribbon feed, 2" wire spool
- Single wire clamp cascable with holding clamp for secure tear-off



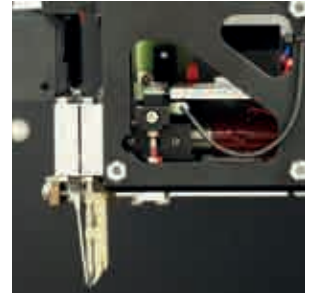
### Heavy Wire (G5 66000)

- Applications: power modules, power multi-chip modules, automotive components, hybrid components, IGBT, battery connections, photo-voltaic
- Heavy wire  $\varnothing$  100  $\mu\text{m}$  to 600  $\mu\text{m}$  aluminium, copper, aluminium sheathed copper (other materials on request)
- Programmable bond weight
- Speed 1 to 2 wires per second (depending on application)
- 90° wire feed
- Snap-on wire feed
- 3" to 4" wire spool
- Quick exchangeable cutter blade
- Optionally hardened metal cutter blade for exceptionally long life time



## Heavy Ribbon (G5 6600HR)

- Applications: E-mobility, battery connections, photo-voltaic modules, power modules, automotive components, hybrid components, IGBT
- Heavy ribbon up to 2000  $\mu\text{m}$  x 300  $\mu\text{m}$  (aluminium, copper)
- Programmable bond weight
- Speed 1 to 2 connections per second (depending on the application)
- 90° ribbon feed
- Mechanical ribbon feeding, 3" to 4" spool



## Manual or fully automatic

### Manual work station

- 4" x 4" to 10" x 8"
- Heated work station optional
- Vacuum or mechanical clamping
- Supports pre-heat and heated bonding stations

### Fully automatic indexing system

- Standard or customer specific design
- Synchronised feed system for customer specific substrates
- Pin indexer for leadframes, Auer boats and carriers
- Belt indexer for flat substrates and carriers
- Fixed or adjustable width
- Supports pre-heat and heated bonding stations
- Stopper system and anti-crash sensors

### Material and parts handling

- Magazine lifts for material input and output
- Single and multi-magazine capability
- Customer specific line integration via our parent company Strama-MPS

## Quality tools

### Bond Process Control BPC

- Closed loop system for continuous monitoring and real-time control of bond parameters, time, ultrasonic power and bond force
- Adjustment of the ultrasonic power to surface variations surfaces in the current process
- Statistical process control through continuous logging of the process parameters in a data base

## In-Head pull-tester and In-line pull-tester

- In-Head pull-tester for non-destructive bond testing
- In-line pull-tester for extremely fast check of wired components such as leadframes without interrupting the production. Up to two pull-testers can be integrated in the indexer for two different tests
- Visual display via a graphical software interface

## Machine Data

- **Machine**  
G5 single head wire bonder
- **Dimensions (H, W, D)**  
1,777 x 620 x 1,273 mm
- **Weight**  
620 kg
- **Working Area**  
X: 254 mm  
Y: 153 mm (204 mm optional)  
Z: 40 mm (60 mm optional)  
P-Range: 200° in each direction (220° optional)
- **Available bond heads or bond technologies**
  - G5 62000 (gold ball)
  - G5 64000 (fine wire)
  - G5 64000DA (Deep access fine wire)
  - G5 66000 (heavy wire)
  - G5 66000HR (heavy ribbon)
- **Monitor**  
19" flat screen
- **Microscope**  
Stereo zoom with adjustable work position/light intensity
- **Mains supply**  
Single phase, 200 to 240 V, -5%, +10%, 50 to 60 Hz, 100 V to 120 V, -5%, +10% optional
- **Power consumption**  
0.6 kVA minimum, 3.2 kVA maximum
- **Compressed air**  
5 bar to 8 bar
- **Vacuum**  
Minimum < -0.8 bar
- **Positioning accuracy**  
Repeatability  
+/- 5 µm @ 3 sigma
- **Ultrasonics**  
Digital generator  
30 kHz to 250 kHz
- **Transducer**  
40 kHz to 145 kHz
- **Wire de-spooler**  
Fully automatic
- **Machine control**  
Compact PCI, UNIX based, real-time capable, multi-tasking operating system
- **Pattern recognition**  
Moving CCD camera (better than 0.1 pixel resolution), Cognex® 8000 (Pat Max, Pat Quick)
- **Lighting**  
Type and intensity programme controlled, red LED with other colours optional
- **Traceability**  
Optional standard export of up to 336 quality data per wire
- **Networking**  
TCP/IP, Ethernet, SECS/GEM

Award winning technology

Thinking ahead with laser bonding

Smartomation for semiconductors

**Hilpert**  
electronics

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