



## K&S SMART SERIES: GEN-S

The **GEN-S Series** of Ball Bonders from K&S is a brand new series of equipment succeeding the **Power Series** lines of bonding equipment.

In addition to its superior capability in wire bonding, the **GEN-S Series** of bonders marks the introduction of Smart bonding equipment.

## AUTOMATIC WIRE BONDER

# RAPID™ Pro

**RAPID™ Pro** introduces advanced process capabilities, real-time monitoring and diagnostics to ensure the best quality and efficient assembly serving high-performance and high-reliability semiconductor applications.

**RAPID™ Pro** is the first K&S **GEN-S Series** Automatic Bonder engineered to enable Industry 4.0 communication and is RoHS compliant.

## KEY FEATURES

- Real-time Process & Performance Monitoring
- Real-time Equipment Health Monitoring
- Advanced Data Analytics & Traceability
- Predictive Maintenance Monitoring & Analysis
- Detection & Enhanced Post bond Inspection
- Latest Response Based Processes
  - ProCu-6, ProAu-2, ProAg
  - PSP-Cu, PSP-Ag
  - ProCu Loop



Real-time Process Monitoring

Enabling a **Smart Future**.

# TECHNICAL SPECIFICATIONS

## WIRE BONDING CAPABILITY

### Ultra Fine Pitch

35 µm inline bond pad pitch

### Wire Size

0.6 mil to 2.5 mil copper, silver, or gold wire  
(heavy wire kit needed for wire diameter > 2.0 mil)

### Bonding Area

X Axis: 56 mm  
Y Axis: 80 mm (Standard), 87 mm (LA), 90 mm (ELA)

### Total Bond Placement Accuracy

2.0 µm @ 3 sigma

### Pattern Recognition/Optics/Vision

Higher Resolution Progressive Scan Vision System  
CCD Camera

- Dual Magnification Optics (standard: 2x & 6x)
- Optional Programmable Focus for High Magnification

### Premium Processes

New - ProCu-6 and ProAu-2  
Pro Series - ProBond, ProStitch PLUS, ProLoop, and ProCu SSB

### Program Compatibility

Compatible with all standard processes from existing models  
Process programs are NOT backwards compatible. Programs taught on a new bonder model will not run on an older bonder.

## LOOPING CAPABILITY

### Maximum Wire Length

7.6 mm with 1.0 mil wire  
3.0 mm with 0.6 mil wire

### Minimum Loop Height

Ultra-low loop with Power Series Low Loop  
40 µm with 0.6 mil wire

### Wire Sway

Wire length < 2.54 mm: 25 µm @ 3 sigma  
Wire length > 2.54 mm: ± 1% wire length @ 3 sigma

## SET UP & CONVERSION TIMES

If Wire Type remains unchanged, the time estimated below applies.  
If Wire Type changes, the time estimated would be doubled.

### Same Leadframe Type: < 4 min

Heat block insert & clamp changes, program load from disk

### Different Leadframe Type: < 8 min

Leadframe width & length changes, magazine size change, heat block insert & clamp change, program load from disk

## KNET PLUS ASSEMBLY EQUIPMENT NETWORK

KNet PLUS improves efficiency and productivity, by monitoring equipment status in real-time. It collects data and controls process programs locally or from anywhere on a customer's network. Contact your K&S Sales Representative to learn more.

## MATERIAL HANDLING CAPABILITY

### Package/Leadframe Dimensions

Length:	90 to 300 mm (L/F shorter than 100 mm will require optional injector kit and short magazine kit)
Width:	15 to 92 mm (Standard) 15 to 95 mm (LA) 25 to 100 mm (ELA)
Thickness:	0.10 to 1.1 mm
Die Pad Downset:	Up to 2.3 mm

### Magazine Dimensions

Width:	20 to 110 mm
Length:	127 to 305 mm
Height:	50 to 178 mm
Slot Pitch:	1.27 to 25 mm
Max. Weight:	5.22 kg

## MAN-MACHINE INTERFACE

### Monitor

21.5" color LCD display

### Durable Control Panel

Function keys and dedicated buttons, and user-friendly mouse.

### Industry-Recognized User Interface

Simple pull-down menus. Color-overlays of wire groups for easy programming and teach.

## FACILITY REQUIREMENTS

### Minimum Air Pressure

3.52 kg/sq cm (50 psi)

### Nominal Air Consumption (flow rate)

185 liters/min @ 4.6 kg/sq cm (6.5 CFM @ 65 psi)

### Cover Gas Consumption for Cu & Ag wire bonding (flow rate)

Minimum 0.6 liters/min  
Maximum 1.5 liters/min  
Nominal 1.1 liters/min

### Input Voltage

Standard  
200 - 240 VAC; - 15% to + 10%  
Single Phase 50/60 Hz (± 3 Hz)

Optional  
100 - 115 VAC; - 15% to + 10%  
Single Phase 50/60 Hz (± 3 Hz)

### Power Consumption

1.5 KVA (nominal), 2.6 KVA (max.)

### Footprint

Base machine with MHS  
889 mm wide x 1009 mm deep (35" x 39.7")

### Weight (estimated)

Machine:	590 kg (1300 lbs)
Machine & Crate:	670 kg (1477 lbs)

