

KUKA

KUKA Aerospace Solutions

KUKA AUTOMATED PANELISATION SYSTEMS



■ **KUKA AUTOMATED PANELISATION**
DRILLING AND FASTENING OF LARGE,
COMPLEX AIRCRAFT PANELS

KUKA Aerospace Solutions deliver complete solutions for flexible production systems. For 'panelisation', KUKA bring together a number of key technologies to provide a fully integrated system solution for the drilling, fastening and assembly of complex aircraft structures.

The system utilises two KUKA industrial robots, coupled with KUKA's RoboTeam functionality. The robots engage the individual panel fixtures, and then present and manipulate the panels to a stationary C-frame machine.

The Gemcor 'All Electric Drilling & Fastening' machine can be configured to process a variety of hole diameters and fastener sizes, and without hydraulic actuation is consequently suitable for both metallic and composite structures. The rotary head can be configured with application specific tool groups, providing future flexibility.

The entire KUKA system is available for offline-programming, reducing setup and commissioning times. All elements of the system are linked via Profibus to a main, central cell control; where process visualisation and all setup commands can be accessed.

Accuracy of the system is assured thanks to KUKA's innovative Adaptive Control which utilises a Metris non-contact optical CMM to give closed loop feedback of the robot positions throughout the process.



TECHNICAL DATA	
Positional Accuracy:	± 0.30 mm
Countersink Repeatability:	± 0.01 mm
Sealant Application:	Yes
Spindle Speeds:	3000 -18000 r.p.m.
Max Rivet per Minute:	Up to 14 (application dependant)
Foot print:	7.0 m x 7.9 m (application dependant)

COMPONENTS	BASIC SCOPE	OPTIONS
■ KUKA RoboTeam	■	
■ Linear Axis for Robot (Gantry)	■	
■ Panel Holding Tools	■	
■ Gemcor All Electric Drilling/Fastening Machine	■	
■ Drill Spindles and Fastener Tool Sets	■	■
■ Lower Anvil	■	■
■ Rivet Feeders	■	■
■ Metris K610 Camera	■	
■ KUKA Adaptive Control	■	
■ Safety Fence	■	
■ PLC (Siemens S7 or others)		■
■ Controls Comms (Profibus, Ethernet etc)		■
■ Remote Diagnostics		■
■ Web Camera		■

Specifications regarding the characteristics and usability of the products do not constitute a warranty of properties. They are intended to serve informative purposes only. Some items of equipment depicted in the illustrations are optional, and are not included in the standard scope of supply. Solely the respective contract of sale shall be binding in respect of the extent of our supplies.

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