

Joining Solutions_KUKA Genius D



Based on the modular system of the Genius product family, the new **KUKA Genius D** double-head friction welding machine is the ideal solution for applications with double welds. Available as **KUKA Genius D power**, it makes for maximum efficiency, allowing simultaneous welding of the component at both ends in a single work cycle (one-pass productivity).

Industries & applications

The KUKA Genius D features the latest, industry-proven technology modules and, with a forge force of 1.2–30 tonnes, can be used for a wide range of components in diverse industries, e.g.:

- Automotive
 - Camshafts
 - Drive / prop shafts
 - Axles
- Construction industry
 - Truck axles
 - Piston rods
 - Hydraulic cylinders
- Metal industry
 - Shafts
 - Heat exchangers
 - Tools

System architecture

The newly designed system architecture enables a highly compact configuration (22 m²). The two large operator doors allow fast set-up, loading and unloading optimized in terms

of cycle time, and ergonomic working. Similarly, the higher machine performance, ease of transportation (container dimensions), optimized cabling, reduced footprint and shorter commissioning time significantly enhance the cost efficiency of the Genius D. The electronically controlled hydraulic system additionally saves up to 20 % energy.

Features & functions

Numerous functions can be individually configured:

- Automatically adjustable backstop (ABS)
- Defined-angle positioning
- Component lifter
- Automatic operator door
- User management with EKS chip
- Weld data export
- Data matrix code interface (for component tracking)
- Ready for I4.0, based on OPC UA
- Automation interface
- KUKA RemoteService

Control & operation

The KUKA Genius D has a clearly designed touch panel for simple and intuitive operation. Comprehensive reporting with data analysis of all process-relevant parameters for improved quality monitoring is possible for 12 weld parameters in real time thanks to the new PCD controller. A reject is reported if the parameter limits are violated.

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Basic configuration – technical data

Forge force*	12 – 300 kN
Spindle speed*	max. 3,000 1/min
Spindle drive	2,400 Nm
Slide advance	max. 350 mm per side
Adjustable travel, ABS system	850 mm per side
Component length (spindle side)*	max. 300 mm
Component length (center)*	min. 300 mm**
	min. 150 mm***
	min. 500 mm****
	max. 2,000 mm
Noise emission	approx. 78 dB (A)
Footprint	approx. 22.0 m ²
Dimensions (L × W × H, excl. swarf conveyor)	ca. 8,600 × 2,550 × 2,550 mm
Weight	approx. 23,000 kg

* Depending on component type, forge force and process sequence

** Double-head operation

*** Single-head operation

**** Double-head operation with turning

Wide range of options

Optional packages are available for the Genius D. These significantly help to increase productivity and can be configured independently of each other.

Cycle time reduction package

- Integrated light curtain

Production optimization package

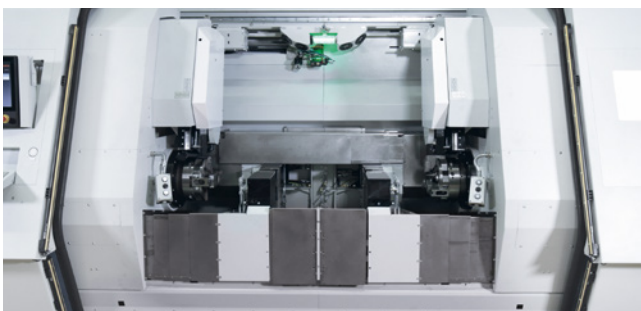
- Automatic temperature control of the headstock
- Monitoring of the cooling unit
- Start button on pedestal

Turning unit package

- Two turning units for flash removal and facing
- Tool holder or duplex tool changer
- Conveyor for removal of swarf (integrated into the side or rear of the machine)

Scope of supply

- Machine
- Component-specific tooling
- Process validation
- Project management
- Machine acceptance (CMK available)
- CE certificate (Declaration of Conformity)
- Version “based on UL standard” on request



Workspace



Swarf conveyor variants

For further information please contact us at
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