



## Joining Solutions\_KUKA Genius V

The **KUKA Genius V** is the award-winning vertically designed member of the KUKA Genius product family. Available as **KUKA Genius V plus**, it is a versatile single-head friction welding machine for customers with limited space and special component requirements.

### Industries & applications

The KUKA Genius V 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
  - Piston rods
  - Drive / prop shafts
  - Axles
- Construction industry
  - Piston rods
  - Hydraulic cylinders
- Metal industry
  - Shafts
  - Heat exchangers
  - Tools

### System architecture

The vertical system architecture enables a substantially smaller footprint of just 5.9 m<sup>2</sup> incl. control cabinet. The significantly more compact design based on the plug & play principle enables an ergonomic workspace, as well as simple transportation, optimized cabling and shorter commissioning times. The electronically controlled hydraulic system additionally saves up to 20 % energy.

### Features & functions

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



### Control & operation

The KUKA Genius V 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.



reddot award 2017  
winner

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### Basic configuration – technical data

Forge force	12 – 300 kN
Spindle speed*	max. 3,000 1/min
Spindle drive	490 Nm
Slide advance	max. 390 mm
Component length (spindle side)*,**	max. 200 mm
Component length (slide side)*,**	max. 800 mm
Noise emission	approx. 78 dB (A)
Footprint with control cabinet	approx. 5.9 m <sup>2</sup>
Footprint without control cabinet	approx. 4.2 m <sup>2</sup>
Dimensions (L × W × H)	approx. 1,660 × 2,520 × 4,300 mm
Weight	approx. 15,000 kg

\* Depending on component, forge force and process sequence  
 \*\* Longer components on request



Extra-small footprint

### 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

### Wide range of options

- Optional packages are available for the Genius V model. 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



Integrated hydraulic cabinet with generously dimensioned maintenance doors

For further information please contact us at  
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