



Joining Solutions_KUKA Genius



The award-winning single-head machine from the **KUKA Genius** product family is a new development whose modular design presents a universal solution for a wide range of applications. Available as **KUKA Genius eco**®, **KUKA Genius plus**® and **KUKA Genius power**®, the Genius offers several drive and equipment variants.

Industries & applications

The KUKA Genius features the latest, industry-proven 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 radically redesigned system architecture enables a highly compact configuration (12 m²) and an ergonomic workspace. A machine bed free of bending moments and with high inherent stiffness makes floor anchoring unnecessary. Similarly, the ease of transportation (container dimensions), optimized cabling, reduced footprint and shorter commis-

sioning time significantly enhance the cost efficiency of the Genius. The electronically controlled hydraulic system additionally saves up to 20 % energy.

Features & functions

- Active travel control (for minimizing length tolerances)
- VIPER drive (virtual inertia welding – without flywheel mass)
- Defined-angle positioning
- Data matrix code interface (for component tracking)
- Automatically adjustable backstop (ABS)
- Weld data export
- Ready for I4.0, based on OPC UA
- Automation interface
- KUKA RemoteService

Control & operation

The KUKA Genius 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 (1 ms) 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	eco 340 Nm plus 490 Nm power 2400 Nm
Slide advance	max. 400 mm
Component length (spindle side)*, **	max. 300 mm
Component length (slide side)*, **	max. 1,200 mm
Noise emission	approx. 78 dB (A)
Footprint	approx. 12 m ²
Dimensions (L x W x H, excl. swarf conveyor)	approx. 5,500 x 2,105 x 2,390 mm
Weight	approx. 12,000 kg

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

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



Automation of KUKA Genius with cell4_loading modular

Wide range of options

Cycle time reduction package

- Automatic operator door (KUKA Genius eco)
- Integrated light curtain

Production optimization package

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

Turning unit package

- Turning unit 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)
- Steady rest for guiding long components

Premium interior lining

- Stainless steel interior lining
- Robust stainless steel additionally protects the machine from swarf and dirt



KUKA Genius workspace with Premium interior lining

For further information please contact us at
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