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 m² 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.
Basic configuration – technical data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forge force</td>
<td>12 – 300 kN</td>
</tr>
<tr>
<td>Spindle speed*</td>
<td>max. 3,000 1/min</td>
</tr>
<tr>
<td>Spindle drive</td>
<td>490 Nm</td>
</tr>
<tr>
<td>Slide advance</td>
<td>max. 190 mm</td>
</tr>
<tr>
<td>Component length (spindle side)*,**</td>
<td>max. 200 mm</td>
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<tr>
<td>Component length (slide side)*,**</td>
<td>max. 800 mm</td>
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<tr>
<td>Noise emission</td>
<td>approx. 78 dB (A)</td>
</tr>
<tr>
<td>Footprint with control cabinet</td>
<td>approx. 5.9 m²</td>
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<tr>
<td>Footprint without control cabinet</td>
<td>approx. 4.2 m²</td>
</tr>
<tr>
<td>Dimensions (L x W x H)</td>
<td>approx. 1,660 x 2,520 x 4,300 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>approx. 15,000 kg</td>
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</tbody>
</table>

* 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

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

For further information please contact us at frictionwelding.industries.de@kuka.com