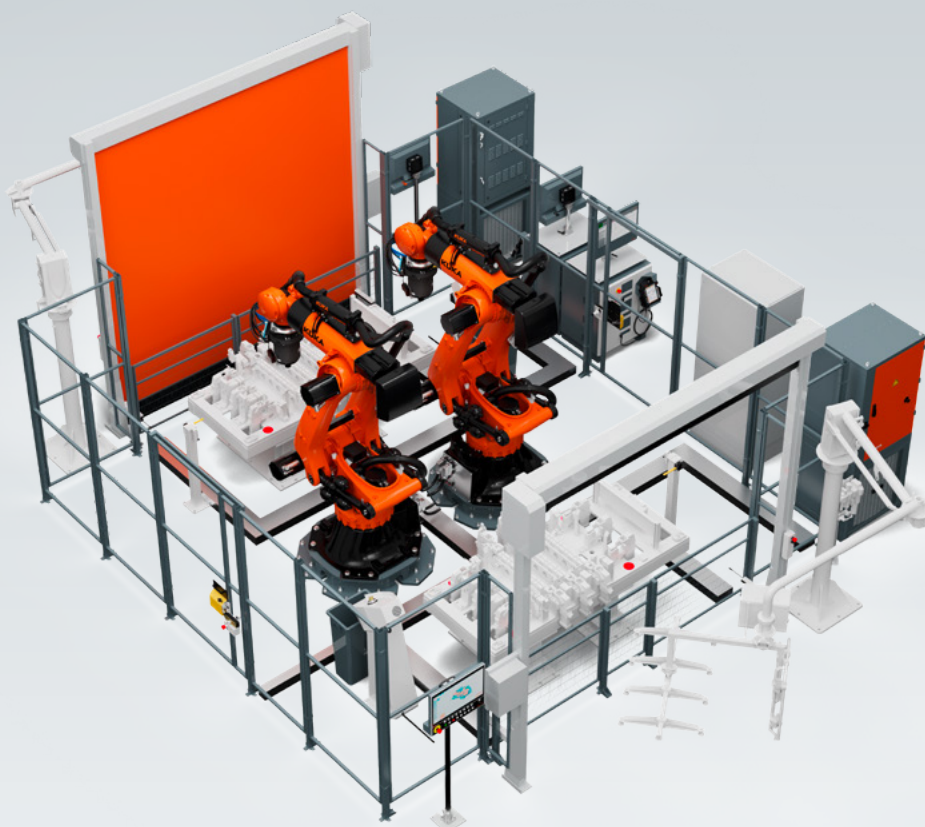


cell4_production manufacturing cells _friction stir welding efficiently automated



KUKA cell4_FSW _the modular cell for joining non-ferrous metals

KUKA Friction Stir Welding (FSW) cells join non-ferrous metals with a low melting temperature and mixed-material combinations such as aluminum and steel. Ideal for future-oriented markets, such as electromobility. The modular cells can be easily configured for specific requirements and upgraded with expansion modules. For efficiency in top quality.

Highlights cell4_FSW

- Maximum process utilization up to 95% with two workstations in separate loading areas
- Compact, modular cell based on the FSW application module of the new FORTEC ultra series
- Enables cost-effective welding of non-ferrous metals and mixed-material combinations
- Loading and unloading with no impact on cycle time
- 100% process monitoring
- Ready for IIoT and remote services

KUKA cell4_FSW

_modular, compact friction stir welding cell
for optimum process utilization



cell4_FSW
midsize single KR 300 R2800-2 MT



cell4_FSW
large dual KR 300 R2800-2 MT

Standard configuration

Length**	5,600 mm	6,750 mm
Width**	4,600 mm	5,400 mm
Height**	3,500 mm	3,500 mm
FSW application modules	1	2
Weight approx.*	5,000 kg	8,000 kg
Installation area approx.*	25.8 m²	36.5 m²
Robot	FORTEC ultra KR 300 R2800-2 MT	2 x FORTEC ultra KR 300 R2800-2 MT
Worktable (optional), quantity	2	2
Welding area (W x D x H)	1,250 mm x 880 mm x 280 mm	2,000 mm x 1,180 mm x 280 mm
Cell equipment	Siemens TIA Portal series 1500, KUKA.SafeOperation, 2 roll doors with point-of-operation guarding and light curtain, polycarbonate fence with 1 or 2 maintenance gates and locking mechanisms	
Robot controller	KR C5 triplecab with KSS 8.7	KR C5 triplecab with KSS 8.7
Cell operation	HMI Advanced, 23.4" Display with IPC	HMI Advanced, 23.4" Display with IPC

* without clamping system and manipulator ** excluding control cabinets

Various option packages can be selected, depending on the specific requirements on the friction stir welding applications:

- PCD 507 for process monitoring with display on HMI Advanced
- Laser-assisted detection of seam positions for automatic compensation of tolerances on the component
- FSW tools:
 - Tooling kit »Rotating Shoulder« (pin and shoulder)
 - Tooling kit »Stationary Shoulder« (pin and shoulder)
 - Special tools on request
- Product-specific clamping systems
- Automatic cleaning station for FSW tools with stationary shoulder
- Automatic tool changer for FSW tools with stationary or rotating shoulder
- Customer-specific designs on request



Target applications

- Battery housings for EV and HEV
- Housings for power electronics and heat exchangers
- Cooling systems for power electronics
- Casings for smartphones, tablets and operator panels

Features

- Scalable solution for cost-effective joining using one or two FSW robots
- Increased component flexibility enabled by 38% larger welding area compared to the KR 500 R2830 MT
- Two worktables in separate loading areas
- User-friendly, customizable KUKA.Web HMI
- Ready for I4.0, based on OPC UA

Scope of supply and services

- FSW cell
- Component-specific tooling and clamping systems (optional)
- Process validation (optional)
- Project management with system acceptance
- CE certificate (in the case of turnkey solution)

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