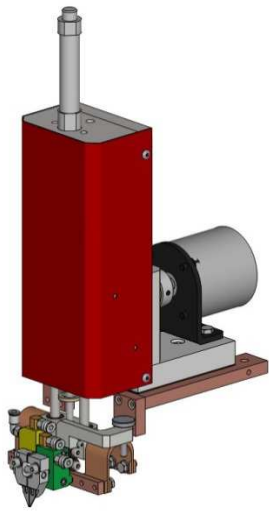
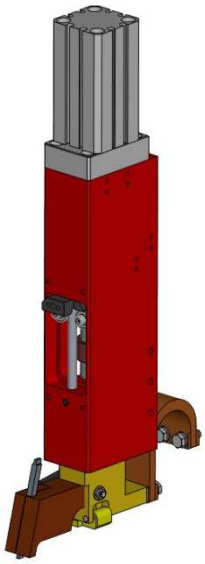
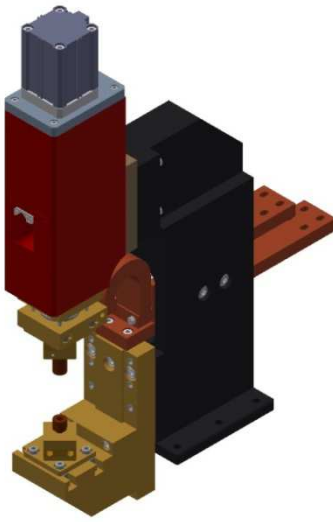
Pneumatic Weld Head

The weld heads of the **PSK-series** are pneumatically activated by a cylinder and the force is set reproducible via a proportional valve. The integrated spring-system assures an optimized follow-up movement during welding. The excellent guiding is based on pretensioned ball-bushing, the anti-rotation stop is accessible easy from outside. By changing cylinders the weld head can cover a wide range of force.

The variant of the weld head is adapted to its specific task from single heads to double heads as well as units with lower lift cylinders. The small weld heads with their low touchdown force make them ideal for thermo-compression applications. All weld heads are prepared to integrate force and displacement measurement sensors.

The compact design allows a flexible use and integration in your manufacturing unit. Of course every product will be designed and adapted to the customer-specific requirements.

PSK0	**PSK2**	**PSK3**	**PSK4**
			
Force range: 1-35 N	Force range: 10- 240 N with 4 cylinders	Force range: 20- 1.100 N with 4 cylinders	Force range: 30-4.700 N with 4 cylinders
Stroke: 15 mm	Stroke: 30 mm	Stroke: 30 mm	Stroke: 40 mm
90x63x284 mm 5 kg	50x265x498 mm 1 kg	80x307x575 mm 1,6 kg	100x380x736 mm 9,3 kg
Thermo-compression	Thermo-compression Double head Lower stroke	Double head Lower stroke	Double head Lower stroke

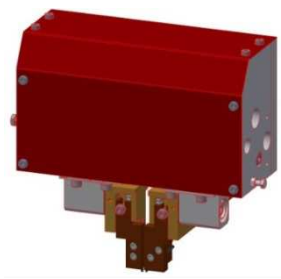
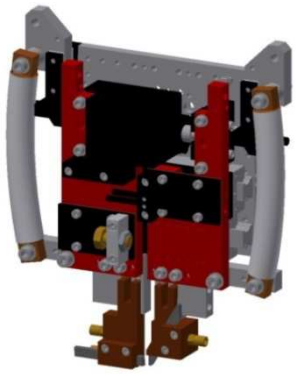
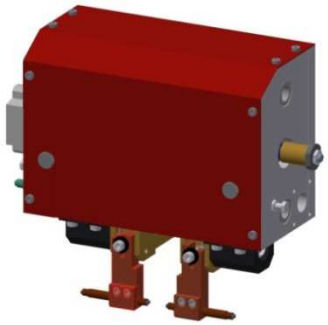
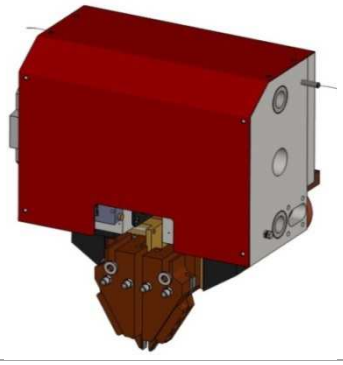
Lingl Schweißtechnik GmbH - Rudolf-Diesel-Straße 29A - 82216 Maisach-Gernlinden
Phone: + 49 8142 / 669 74-0 – Fax. +49 8142 / 669 74-29
e-mail: info@lingl-schweisstechnik.de www.lingl-schweisstechnik.de

Pneumatic Welding Pincer

The welding pincer of the **PZ-series** are pneumatically activated by a cylinder and the force is set reproducible via a proportional valve. The integrated spring-system assures an optimized follow-up movement during welding. The excellent guiding is based on pretensioned ball-bushing or guide rail. By changing cylinders the weld head is capable to fulfill a great range of force.

The closing movement depends on the accessibility of the welding area and the force which the part can absorb. In the floating version the welding pincer centers itself touching on the part by applying force on it.
If the part is not stable enough to absorb this, the pincer is also available with centric closing movement. This requires a very precise positioning of the part. Furthermore it is possible to mount an additional stroke cylinder, to close on a fixed position from one side.
All weld heads are prepared to integrate force and displacement measurement sensors.

The compact design allows a flexible use and integration in your manufacturing unit. Needless to say, that every product will be designed and adapted to the customer-specific requirements.

PZ1	PZ2	PZ3	PZ4
			
Force range:10-220 N with 3 cylinders	Force range: 10-1.080 N with 4 cylinders	Force range: 30-1.000 N with 3 cylinders	Force range: 300-4.200 N with 3 cylinders
Stroke: 30 mm	Stroke: 25 mm	Stroke: 30 mm	Stroke: 40 mm
245x213x111,5 mm 8 kg	247x276x76,5 mm 10 kg	245x213x111,5 mm 11 kg	350x180x341 mm 41kg
Floating Centric closing Stroke cylinder	Floating Centric closing Stroke cylinder	Floating Centric closing Stroke cylinder	Floating Centric closing

Lingl Schweißtechnik GmbH - Rudolf-Diesel-Straße 29A - 82216 Maisach-Gernlinden
Phone: + 49 8142 / 669 74-0 – Fax. +49 8142 / 669 74-29
e-mail: info@lingl-schweisstechnik.de www.lingl-schweisstechnik.de

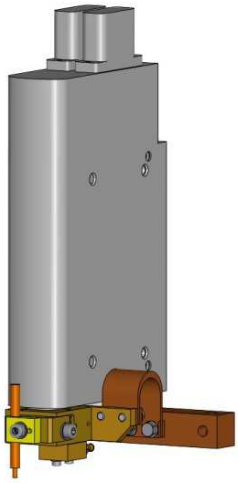
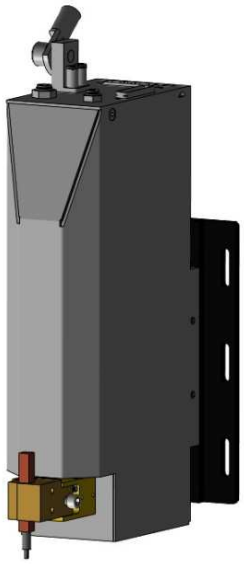
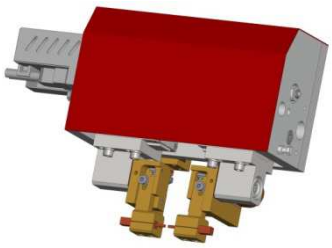
PRODUCT OVERVIEW

Motor-Driven Weld Heads / Pincer

The weld heads of the **LSK-series** are equipped with an electro-magnetic linear drive. The follow-up characteristic is comparable to that of an ideal spring. Self-locking behaviour due to friction which is typical for ball-screw spindle systems is avoided.

Unique motion algorithms provide a soft touch down capability despite extremely fast positioning and force build-up. An auto position referencing feature simplifies the electrode adjustment. The LSK-weld heads includes a position measuring system with a resolution of 1 µm as a standard feature. The force monitoring is based upon the motor current.

Application fields are cycle-time-optimized automatic production lines as well as welding of sensitive parts, which should be prevented of damage.

LSK80	**LSK200**	**LSK300**	**MZ1**
			
Force: 2-50 N	Force: 5-200 N	Force: 7-300 N	Force: 2-200 N
Stroke: 25 mm	Stroke: 30 mm	Stroke: 50 mm	Stroke: 30 mm
23x92x216 mm 1,5 kg	40x135x228 mm 3,6 kg	72x148x319 mm 10 kg	305x190x90 mm 10 kg
Thermo-compression Double head Stroke cylinder	Thermo-compression Double head Stroke cylinder	Double head Stroke cylinder	Floating

Lingl Schweißtechnik GmbH - Rudolf-Diesel-Straße 29A - 82216 Maisach-Gernlinden
Phone: + 49 8142 / 669 74-0 – Fax. +49 8142 / 669 74-29
e-mail: info@lingl-schweisstechnik.de www.lingl-schweisstechnik.de

Weld Control Units

The weld control units of the **SPATZ-series** are all working with inverter technology. With its rapid reaction speed, the SPATZ displays high-performance, lasting welding capability, functioning with just as much precision. Each welding operation is feedback-controlled during the procedure. The control process takes place very quickly. Actual values are compared with target values constantly. Constant Current Control, Constant Power Control and Constant Voltage Control can all be used. At the end of each weld, the SPATZ checks if the actual welding parameters are keeping within the defined limit.

H6000plus / H+9000	**M300plus**	**SilverspatzM600LW/ M+400**	**Dragspatz H2400**
			
20 kHz	1 kHz	1 kHz	20 kHz
Current range up to 9000 A S_n: 33 kVA bei 50% ED	Current range up to 18 kA S_n: 9 kVA bei 50% ED	Current range up to 30 kA S_n: 90 kVA bei 50% ED	Current range up to 65 kA S_n: 300 kVA bei 50%ED

Transformer

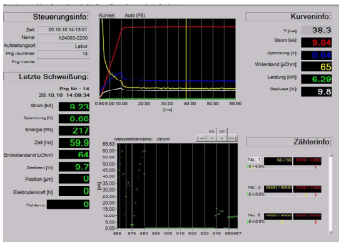
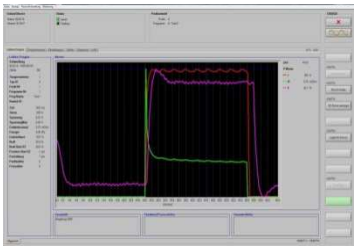
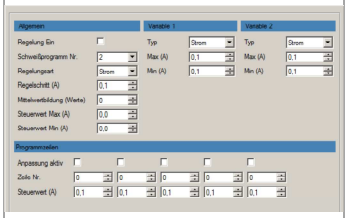
With an external transformer aligned to the weld control inverter, the system can be used efficiently and be customized to the application due to different current ranges.

TI60R	**TI120R**	**T1 Pack**	**T4 Pack**	**T6 Pack**
				
1 kHz	1 kHz	20 kHz	20 kHz	20 kHz
M600	M600	H300 / H300plus	DragSpatz	DragSpatz
I_{2max}: 18 kA S_n: 60 kVA U_{20}: 6,4 V DC	I_{2max}: 26,5 kA S_n: 120 kVA U_{20}: 9,3 V DC	I_{2max}: 9 kA S_n: 33 kVA U_{20}: 10 V DC	I_{2max}: 45 kA S_n: 180 kVA U_{20}: 11 V DC	I_{2max}: 65 kA S_n: 270 kVA U_{20}: 11 V DC

Lingl Schweißtechnik GmbH - Rudolf-Diesel-Straße 29A - 82216 Maisach-Gernlinden
Phone: + 49 8142 / 669 74-0 – Fax. +49 8142 / 669 74-29
e-mail: info@lingl-schweisstechnik.de www.lingl-schweisstechnik.de

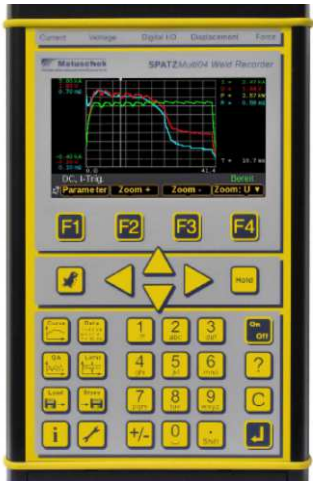
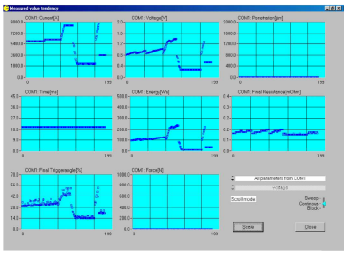
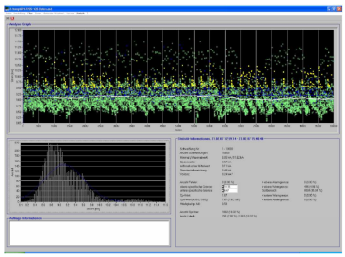
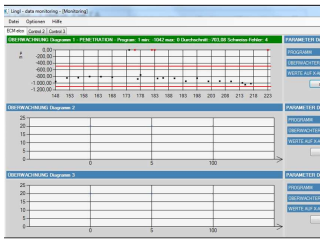
Programming

The weld control unit can be programmed by different manual operating panels and software. Additionally to set welding parameters, limits can be defined for your quality assurance. The display of QA-data numeric values as well as curves and measured value trend helps the operator set up optimized process parameters.
The LRM readjust the process parameter based on measured values automatically. The rules and step size for readjustment are set in the computer software

BG02	AS32	SpatzStudioNetE	LRM
			
• Graphic manual operating panel **SPATZ***BG-02*	• Communication via Ethernet • Connection of up to 100 Inverter possible	• Communication via Ethernet • Connection of up to 100 Inverters possible • Extensive QA-Analysis-Tools integrated	• Communication to the inverter via Profibus • Communication to the computer via Ethernet • Up to two QA-values as control parameter selectable
for H6000plus, M300plus, M600LW	for H6000plus, M300plus, M600LW	for Spatz+ Inverter	for Inverter with Profibus-interface

Process Monitoring and Analysis

For process monitoring there are two options: live recording and offline analysis.
The recording is important for quality tracking and control. Due to the constantly updating measured value trend it is possible to react on changes in the process at an early stage before the limits are violated and scrap parts are produced.
The LDM software simplifies the data monitoring, when many weld joints are made with one control unit. The software enables a sorting of QA-data provided from the SPATZ on parameters or welding program numbers.
With the software tools for offline analysis important quality values such as average, dispersion and process capability can be calculated.

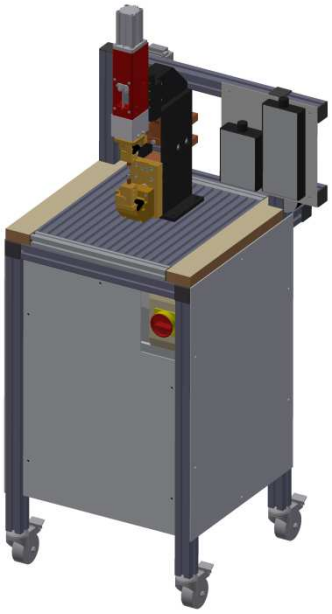
Multi04	SpatzDatagrabber	SpatzQS+	LDM
			
External measurement instrument to record, analyse and control all important process values: • Current • Voltage • Force • Penetration • Weld time	Live recording of QA-data via serial interface One parameter of up to 8 inverters <u>or</u> all parameters of one inverter	Offline analysis and calculation of quality and process values The data is transferred to the computer with SPATZ*BG02,* SPATZ*AS01,* SPATZ*AS32,* *SPATZMulti04*	Live data recording from up to 4 inverter Simplifies the analysis of complex systems with a large number of welding joints

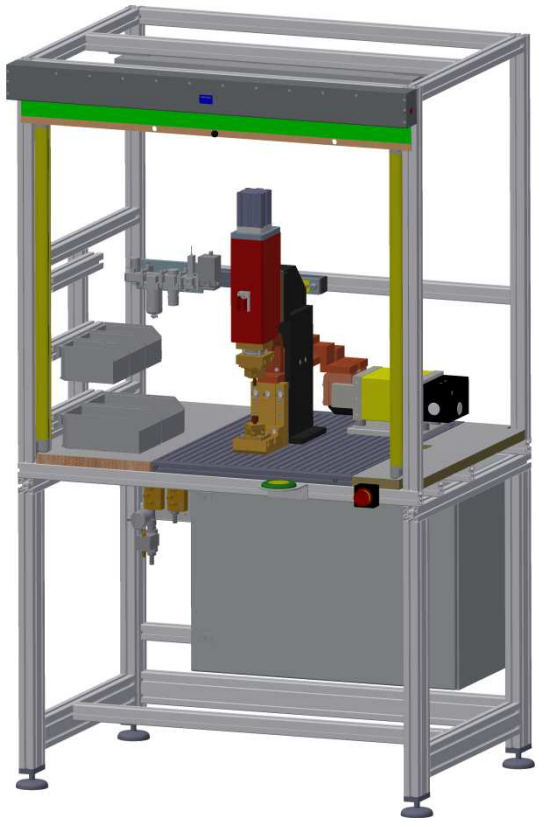
Lingl Schweißtechnik GmbH - Rudolf-Diesel-Straße 29A - 82216 Maisach-Gernlinden
Phone: + 49 8142 / 669 74-0 – Fax. +49 8142 / 669 74-29
e-mail: info@lingl-schweisstechnik.de www.lingl-schweisstechnik.de

Manual Work Stations

Simple Manual Stations

manual weld stations are used for flexible area of application e.g. in laboratories or for low volume / sample production.

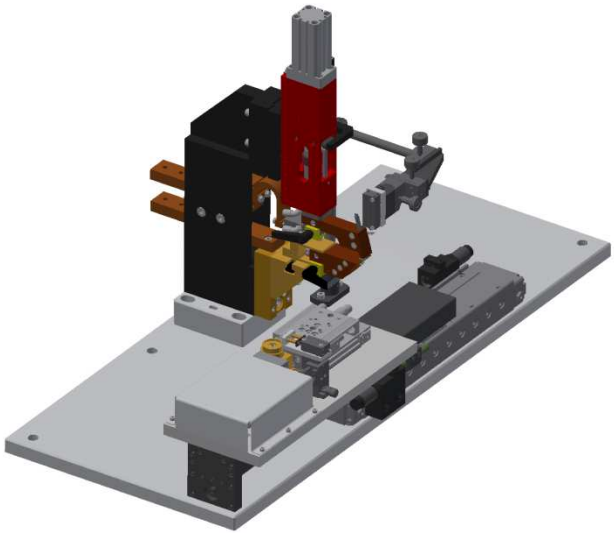


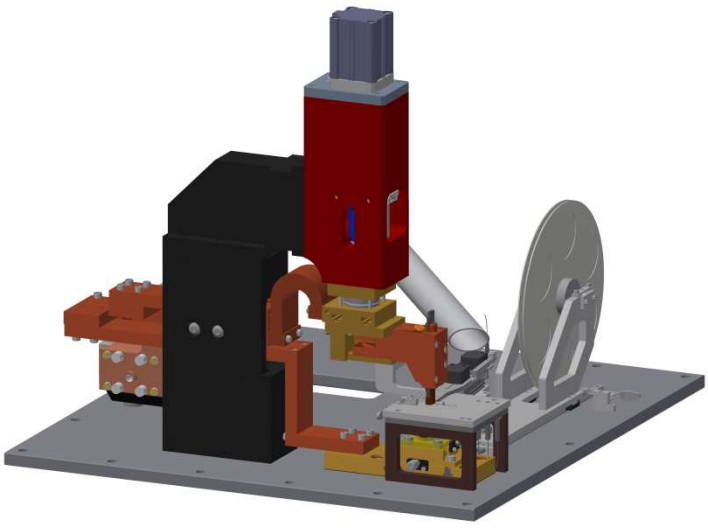


Semi-automated Manual Work Station

... with pneumatic or manual slide or turning devices

Manual devices can reduce the cycle time on pre-mounted parts enormously, when following parts can be assembled in the auxiliary time. The reproducibility improves enormously, because the parts are fixed in position. Light curtains, doors or perspex-housings assure the safety of the operator.

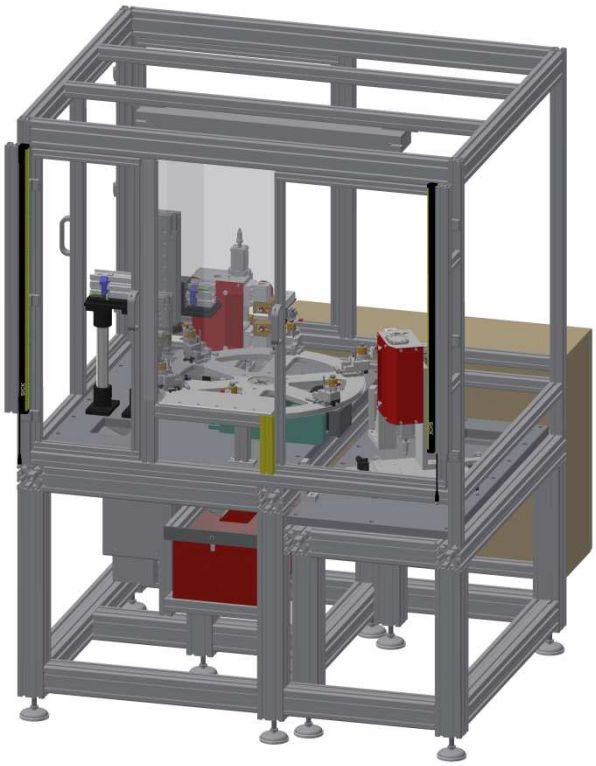


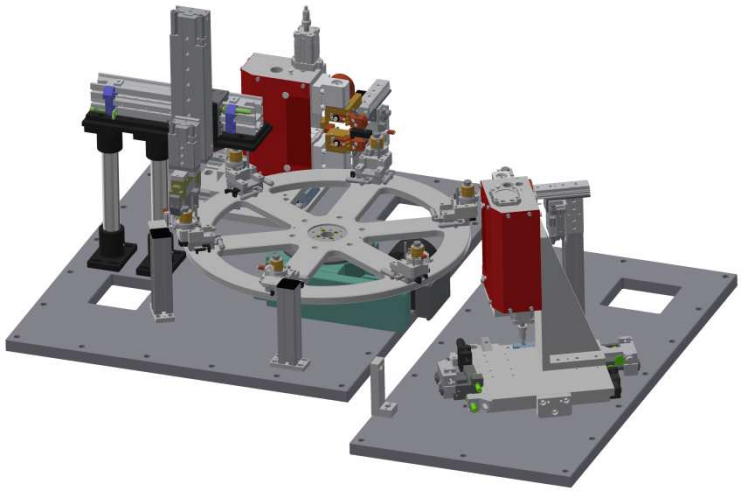


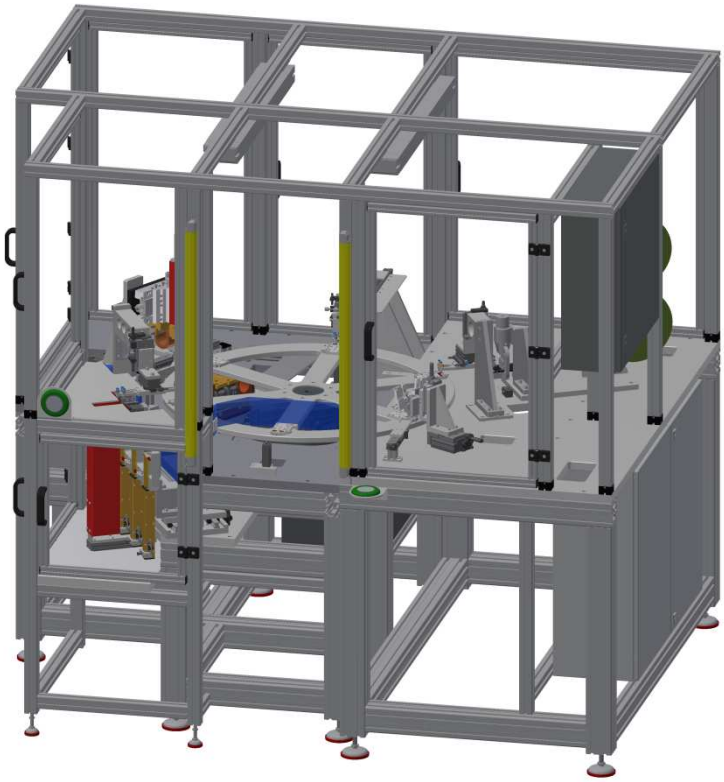
Lingl Schweißtechnik GmbH - Rudolf-Diesel-Straße 29A - 82216 Maisach-Gernlinden
Phone: + 49 8142 / 669 74-0 – Fax. +49 8142 / 669 74-29
e-mail: info@lingl-schweisstechnik.de www.lingl-schweisstechnik.de

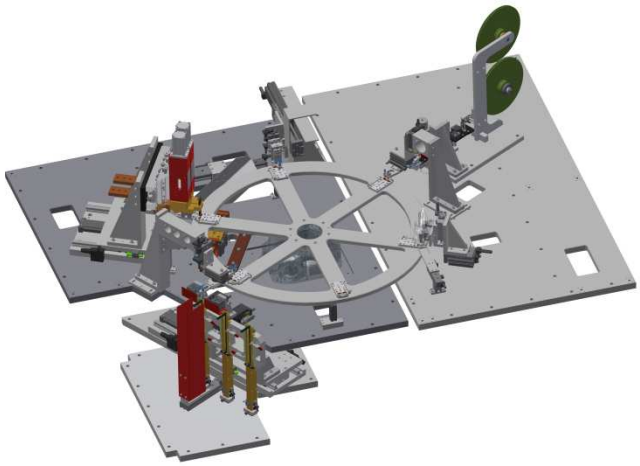
Semi-automated system solutions

If your application is more complex than just welding, we integrate also feeding and joining processes as well as inspection tasks (e.g. visual or continuity tests).
We build system solutions with automatic sorting of good and bad part, process supervision and data handling to higher-level control systems.









Lingl Schweißtechnik GmbH - Rudolf-Diesel-Straße 29A - 82216 Maisach-Gernlinden
Phone: + 49 8142 / 669 74-0 – Fax. +49 8142 / 669 74-29
e-mail: info@lingl-schweisstechnik.de www.lingl-schweisstechnik.de