schunk

Sonosystems®

ultra fast. ultra strong. **ultrasonic.**

SCHUNK SONOSYSTEMS

ULTRASONIC WELDING FOR **BATTERY APPLICATIONS**

ABOUT US

ultra fast. ultra strong. ultrasonic.

Our 500 employees worldwide develop and produce our innovative ultrasonic welding equipment - and together with our representatives we are always close to our customers. In addition to our headquarters in Wettenberg (Germany), we have locations in Boston (USA), Toluca (Mexico), Kenitra (Morocco),Taicang (China), Ansan City (South Korea) and Yokohama (Japan). Furthermore we have a worldwide sales and service network.

APPLICATION AREAS

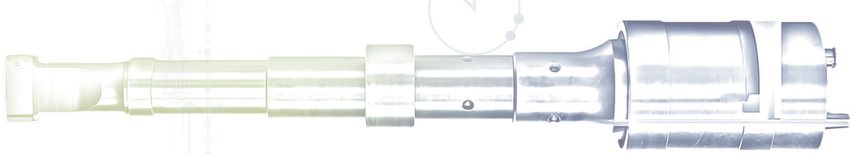
WIRE HARNESS
- Wire - Wire | Wire -Terminal
- X-/Y-Splices
- Cascade | Mixed-Connections
- Ground and high current contacts
- Busbars | Flat Flex Wires
- High Voltage Applications

COOLING TECHNOLOGY
- Copper tubes for refrigeration circuits
- Capillary tubes for thermostats
- EX-certified

POWER ELECTRONICS
- Power Module
- IPM Module
- Pin / Pin-Housing Welding
- PCB Welding

BATTERY
- Battery modules
- Li-Ion Technology
- Capacitors
- Anode/cathode connection
- Copper/Tab connection
- Battery Management Systems

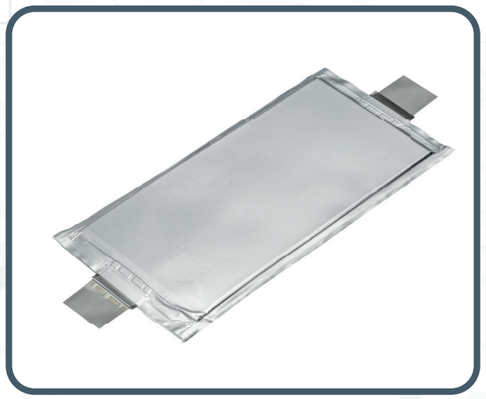
SERVICE
- Technical advice and support
- Process development and integration
- Software development
- Training system

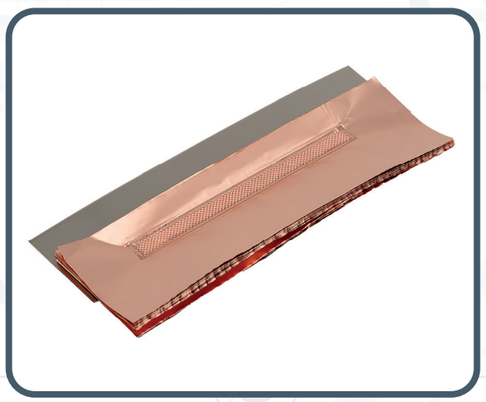


BATTERY APPLICATIONS

ULTRASONIC WELDING IN BATTERY PRODUCTION

In battery technology, Li-ion cells have become widely accepted today. Schunk Sonosystems covers the complete range of applications from cell production to interconnection and battery contacting. No matter whether you use your mobile phone in the morning, drive to work in your e-car or boot up your laptop: Metal welds on Schunk Sonosystems Li-Ion cells reliably accompany you all day long. The range of applications for Li-ion cells extends from ultrasonic welding of thin-walled Al and Cu foils to welding of high-current contacts and wire elements.

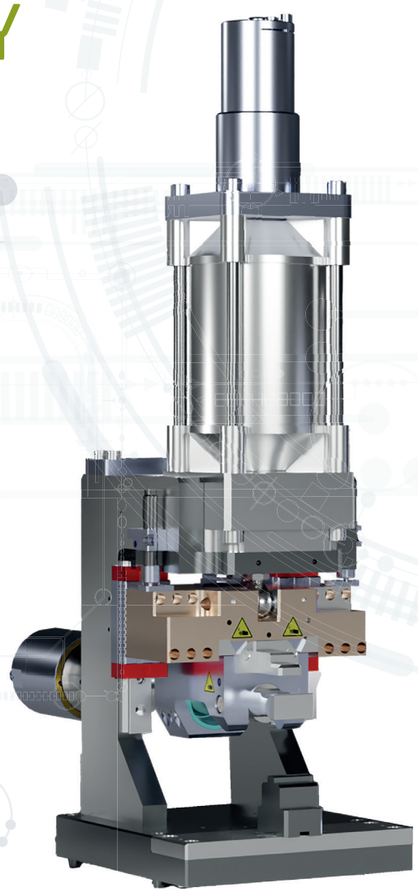




BatteryWelder20kHz

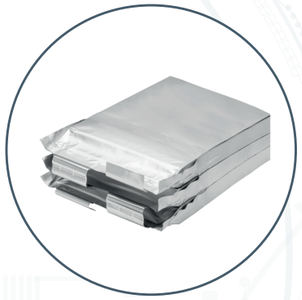
- ¬ Suitable for welding large cells
- ¬ Robust frame construction
- ¬ Modular machine design enables integration into automated production lines
- ¬ Quick-change system for exchanging the oscillation unit
- ¬ Optimum accessibility of the welding area
- ¬ Extensive log file contains all process data

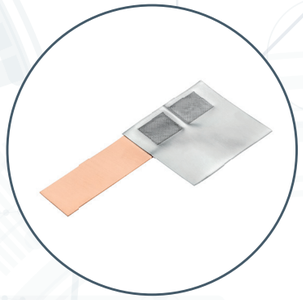
THE MODULAR BATTERY WELDING SYSTEM FOR EVERY NEED

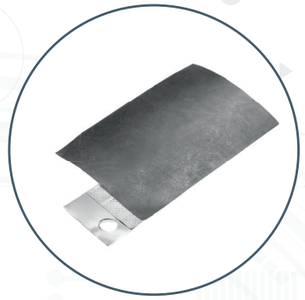


COMPACT-III CONTROLLER

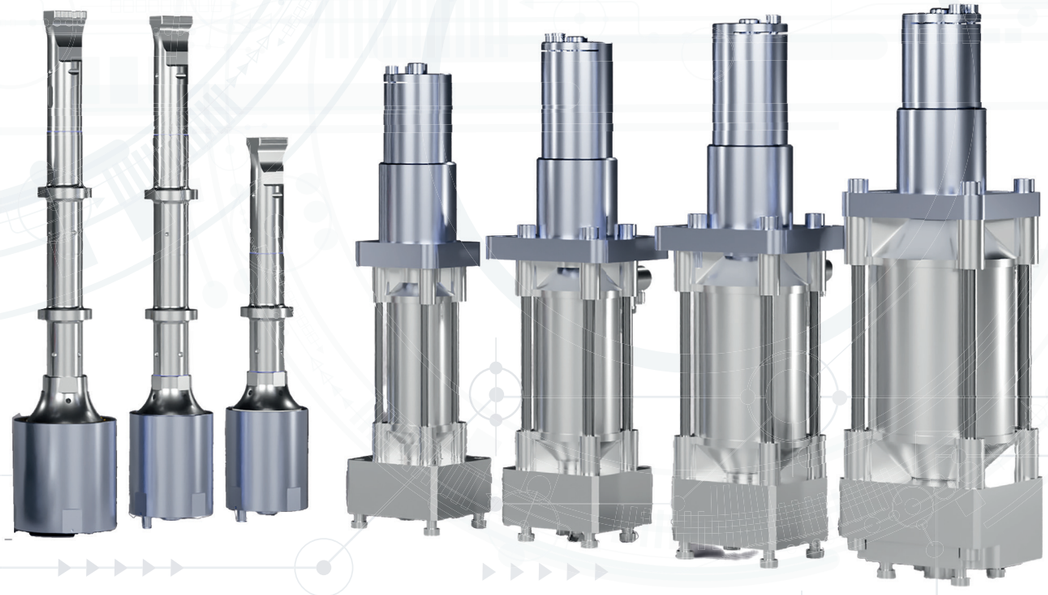
- ¬ Power: 3kW | 4 kW | 6 kW | 9 kW | 9+ kW
- ¬ Frequency: 20 kHz
- ¬ PC & PLC
- ¬ Various operating modes can be selected via key switch, the operation mode is additionally password protected
- ¬ Controlled cooling of the converter and the sonotrode
- ¬ Networkable





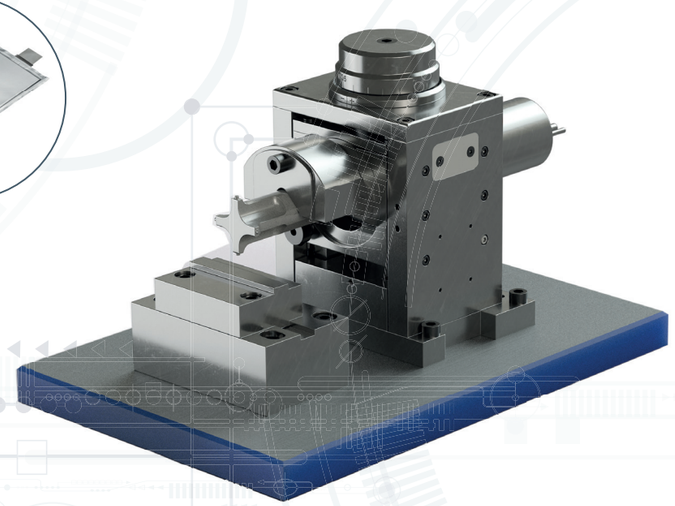


VARIOUS MODULAR OPTIONS AVAILABLE.
DIFFERENT OSCILATIONSYSTEM TYPES, DIFFERENT CYLINDER TYPES.



DS35-B

- Suitable for supercapacitors and filigree applications
- The precise mechanical design is designed for an operating cycle of millions of welds
- Can be easily integrated into production lines
- Simple and precise adjustment of the upper and lower end stops for the sonotrode

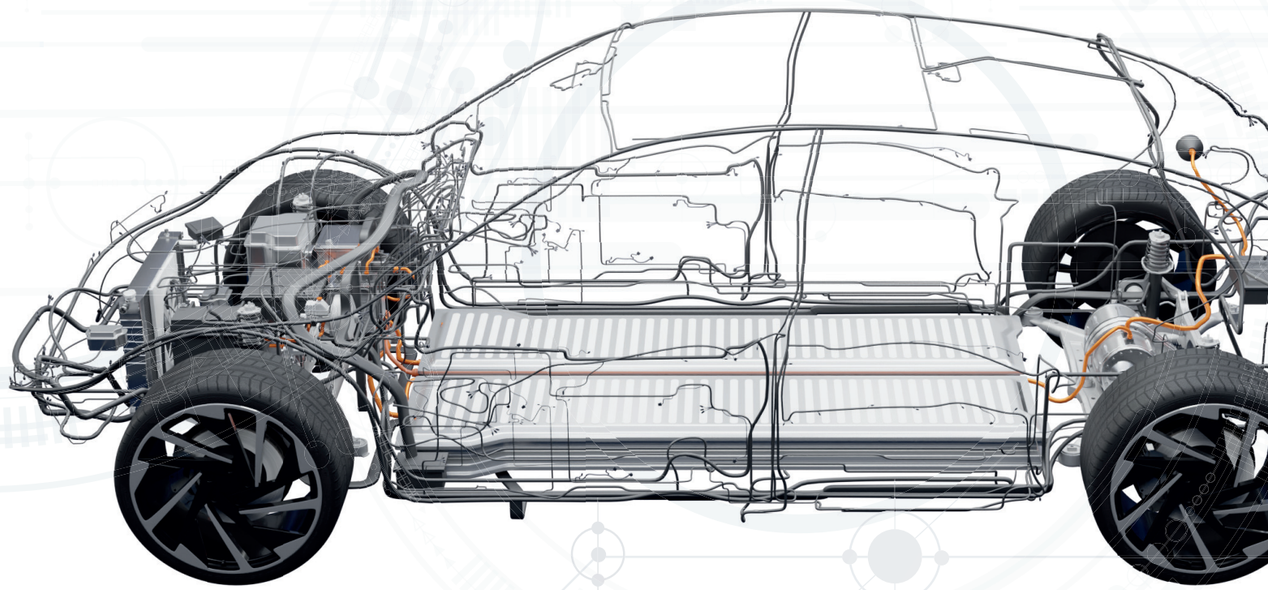


USC-4 CONTROLLER

- Power: 1 kW
- Frequency: 35 kHz
- PC & PLC
- Various operating modes can be selected via key switch, the operation mode is additionally password protected
- Networkable

SPECIFICATIONS

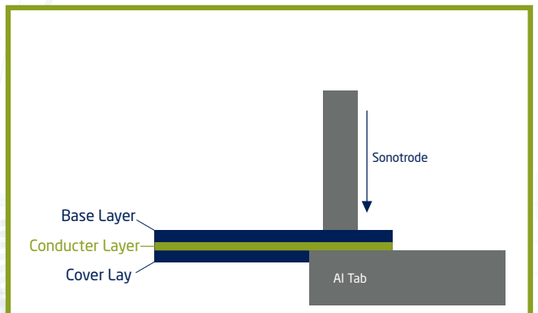
	BW20	DS35-B
STROKE	55 mm	20 mm
GENERATOR POWER	3kW | 4 kW | 6 kW | 9 kW | 9⁺ kW	1 kW
FREQUENCY	20 kHz	35 kHz
MAXIMUM PRESSING FORCE	> 7500 N	575 N
VOLTAGE SUPPLY	3 x 400 V, N, PE	1 x 230 V, N, PE
COMPRESSED AIR	6 bar	6 bar
DIMENSIONS (MM) L X B X H	615 x 240 x 560	270 x 120 x 230
WEIGHT (KG)	80 (without controller)	20



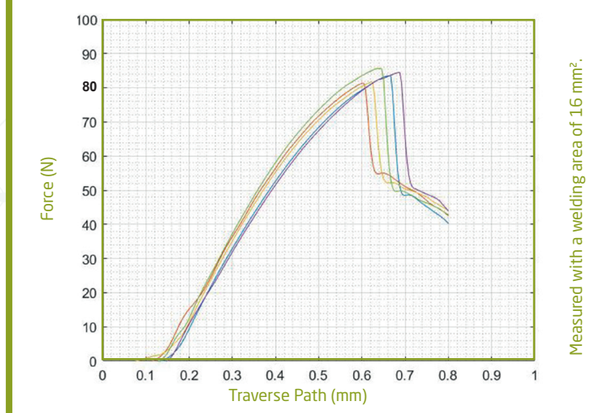
ULTRASONIC WELDING OF **FLEX PRINTED CIRCUITS (FPC)**

DS20-SERVO

- Electrical contacting **without removing of the carrier layer, e.g. polyimide, with ultrasonic welding**
- Established interconnection technology with known **long-term stability**
- Various fields of application e.g. EV: current sensing with FPC
- Latest machine generation with servo drive, 20/35 kHz technology
- **Various FPC configurations possible:**
  - base material: PI, PET (PEN possible)
  - conducter layer: Cu, Al
  - layer structure: glued or glueless



Layer Structure

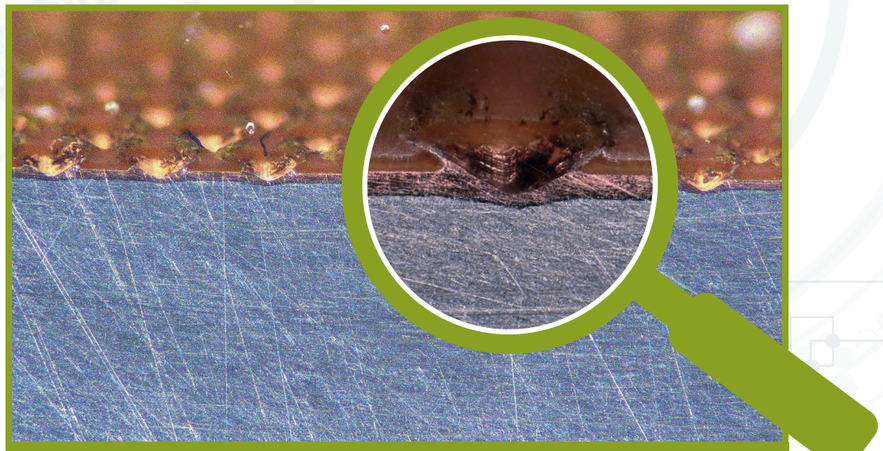


Pull Force Data

NEW DEVELOPMENT

Welding Sample PI/Cu

Welding Sample PET/Cu



Grinding Pattern

OUR LOCATIONS

GERMANY
Schunk Sonosystems GmbH
+49 641 803 0
sonosystems@schunk-group.com

USA
Schunk Sonosystems North America
+1 978 658-9400
sonosystems.usa@schunk-group.com

MOROCCO
Schunk Sonosystems Maroc
+212 660 695749
sonosystems.maroc@schunk-group.com

CHINA
Schunk Sonosystems China
+86 512 53443110
sonosystems.china@schunk-group.com

JAPAN
Schunk Carbon Technology Japan K.K.
+81 45 470 2339
sonosystems.japan@schunk-group.com

SOUTH KOREA
Schunk Carbon Technology Ltd
+82 31 491 2722
sonosystems.korea@schunk-group.com

All our local support teams
you find on our webpage
www.schunk-sonosystems.com

Schunk Sonosystems GmbH
Hauptstraße 95
35435 Wettenberg
Germany

+49 641 803 0
sonosystems@schunk-group.com
www.schunk-sonosystems.com