

FAST MOVING TECHNOLOGY

*STÄUBLI*

# Stäubli Electrical Connectors

Division Profile Stäubli Electrical Connectors AG

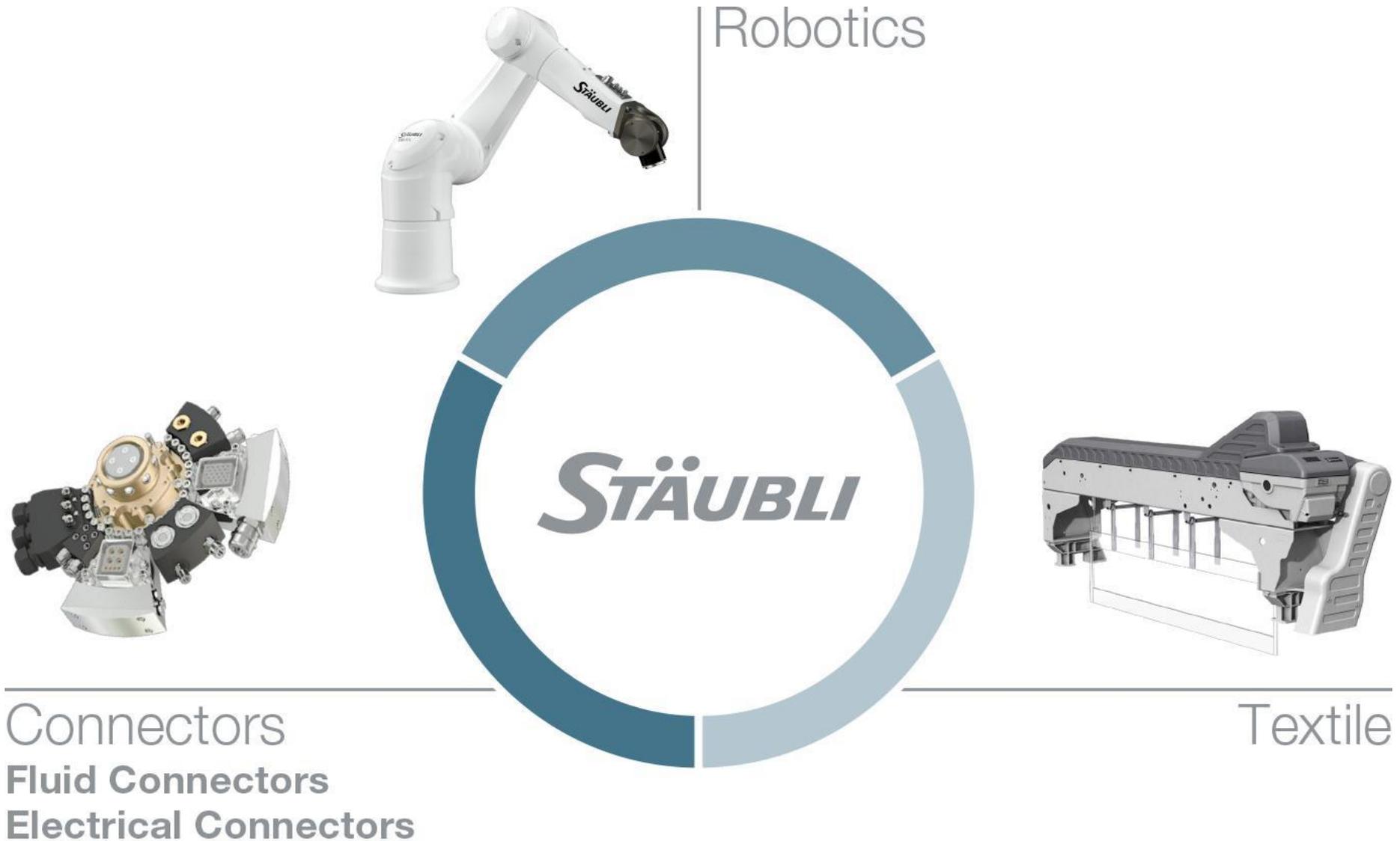


# The group at a glance



OUR DIVISIONS

An international group for all industrial sectors



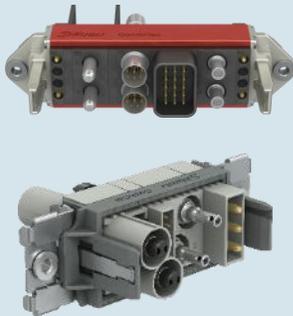
# 7 Business fields

## General Industry

### Renewable energy



### Modular



### Power, Transmission & Distribution



### Railway



### Welding automation



### Test & Measurement



### E-Mobility



## ELECTRICAL CONNECTORS

# Reliability and flexible versatility

Stäubli Electrical Connectors develops and produces countless variations of electrical connectors and sophisticated solutions covering the whole range from single parts to highly complex systems

- based on the **unique MULTILAM technology**
- designed for **reliability and long service life**
- consistently **outstanding electrical and mechanical properties**
- fit for **applications in harsh environments**
- to **transmit power, data, signals and fluids**

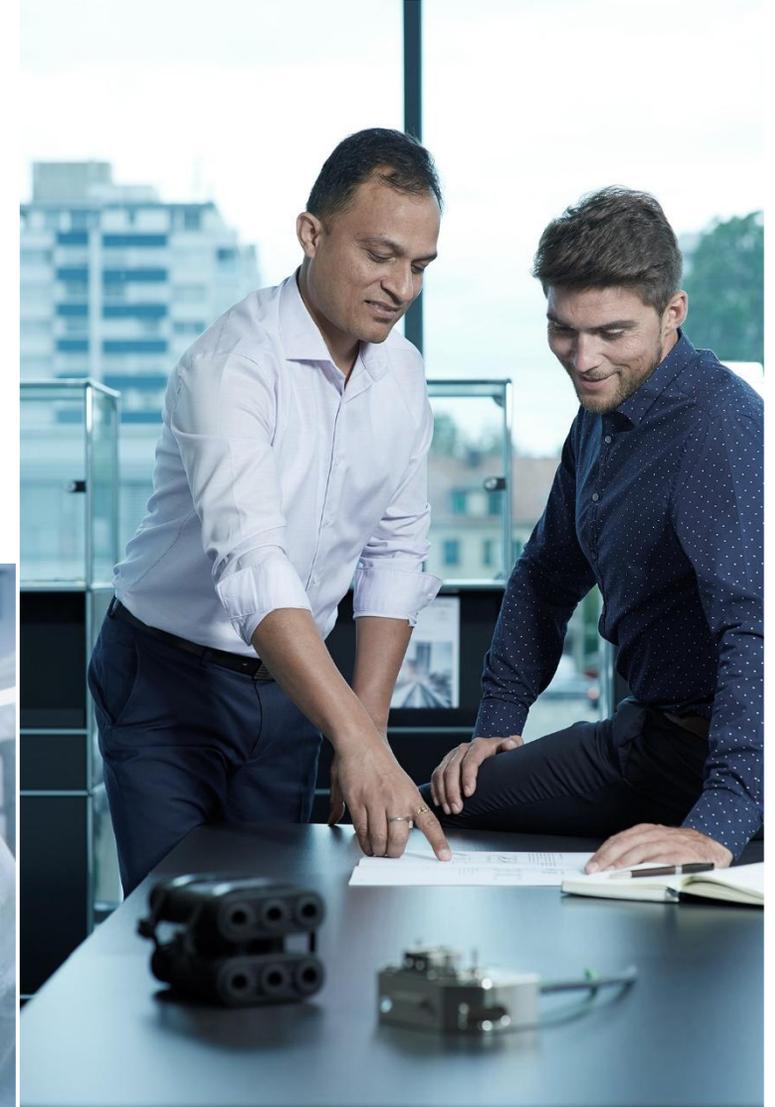


ELECTRICAL CONNECTORS

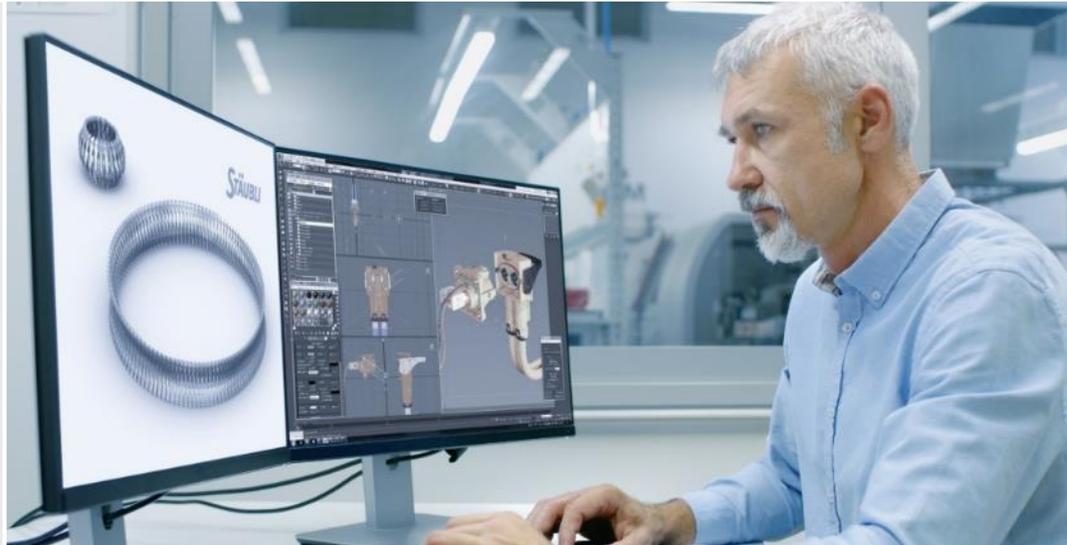
# Research and Development

## Pioneering spirit and innovation are our driving forces

- Our broad expertise includes technology and application know-how for countless **standard connectors** and **tailor-made electrical connection solutions** for many different markets
- With **local engineering departments**, we accompany our customers from the initial idea through extensive testing to implementation and beyond



- **Switzerland** (Allschwil, Divisional Headquarters)
- **Germany** (Weil am Rhein, Essen)
- **France** (Hésingue)
- **USA** (Windsor)
- **China** (Hangzhou)

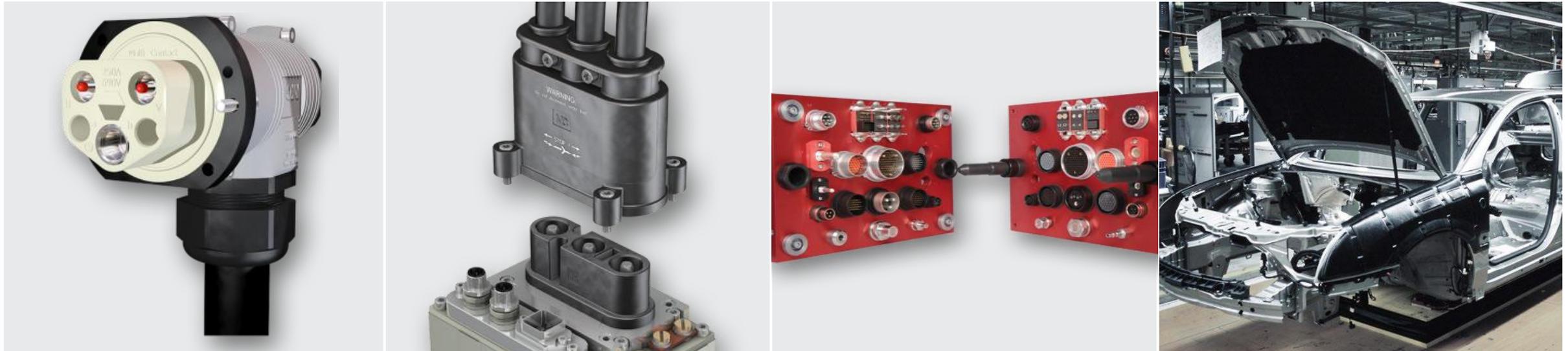


## ELECTRICAL CONNECTORS

## Automation

Robust and reliable solutions for demanding applications

- **Production equipment:** connectors for spot welding applications on robots, welding guns and automatic tool-changers
- **Testing equipment and machinery:** multipole connections for docking and multi-coupling systems (> 1 million mating cycles maintenance-free)



## RobiFix

Flat primary circuit connectors | Welding automation

EN



# RobiFix Overview

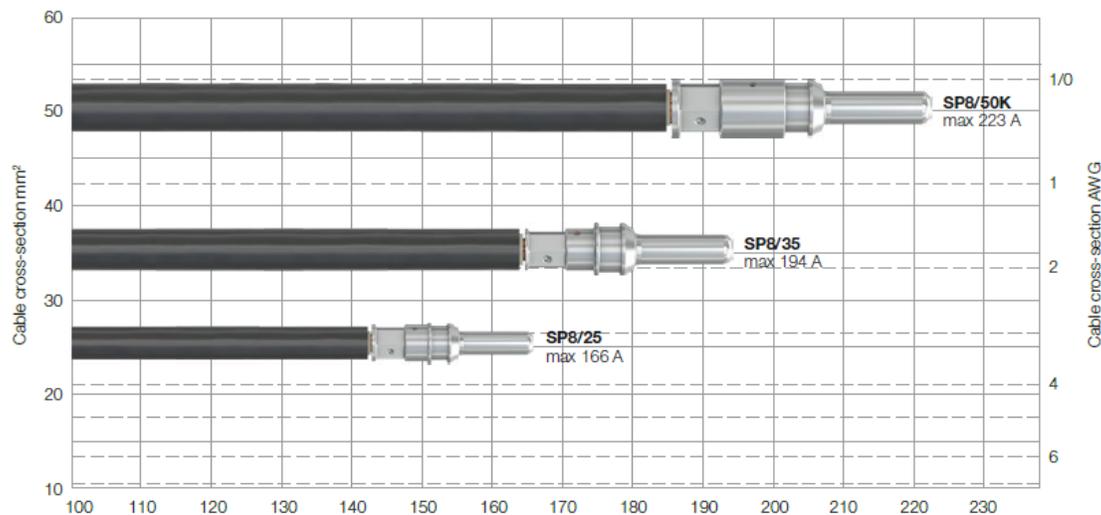


Technical data	
Number of poles	2 + PE
Rated current	max. 223 A (up to 1 kHz; higher frequencies see table p. 28) UL: max. 130 A (50 mm <sup>2</sup> ~ 1/0 AWG)
Rated voltage	max. AC 1000 V UL: max. AC 600 V
Test voltage	4,26 kV (50 Hz, 1 min.)
Protection, in mated condition	IP67 (IEC)
Type of termination	Crimping
Operating temperature	-20 °C...+90 °C
Material contacts	CuZn, Ag
Insulation material	TPE <sup>1)</sup>
Further specifications	IEC 61984, DIN VDE 0298-4/2003-08
Weight (incl. contacts)	J1: ~ 780 g (RobiFix-B35-FZEM/RobiFix-S35-FZEE) J1: ~ 765 g (RobiFix-B35-ZEM/RobiFix-S35-MTB) J3: ~ 580 g (RobiFix-B35-MTB/RobiFix-S35-MTB) J6: ~ 500 g (RobiFix-B35-FZEE/RobiFix-TAE1-57)

## Thermal steady current

Depending on cross-section, ambient temperature and cable type, RobiFix can be used for a thermal steady current up to **223 A**.

With two RobiFix in a stacked configuration (RobiFix-TwinPower), **max. 421 A** are possible (page 23). This is ideal for aluminium spot-welding guns.



Rated current A (metric cables), 100% duty cycle, Ambient temperature 20 °C

AC 1000 V | max 223 A (RobiFix-Twin: max 421 A)



UL: AC 600 V | UL: max 130 A (50 mm<sup>2</sup> ~ 1/0 AWG)

## Quick and easy assembly

Insertion and extraction of crimped-on conductors by hand.

Different cable cross-sections can be combined.

## Smaller bending radii possible in comparison to jacketed cable (2+PE).

## Cable strain relief



Cable strain relief for single conductors.

No need for cable glands.

Cable outer Ø from 11 mm to 17 mm. The diameter can be adjusted using rubber rings if necessary see page 24/25 for custom solutions for smaller diameters.

# Overview RobiFix solutions

J6

Transformer connection 90°  
Page 17



J6

Transformer connection  
Page 16



J3

double dresspack  
page 23



J3

Mixed conductors  
Page 15



J3

Single conductors  
Page 14



J1

Flat mount  
Page 13



J1

Flange mount  
Page 12



J1

Flange mount  
single conductors  
Page 11



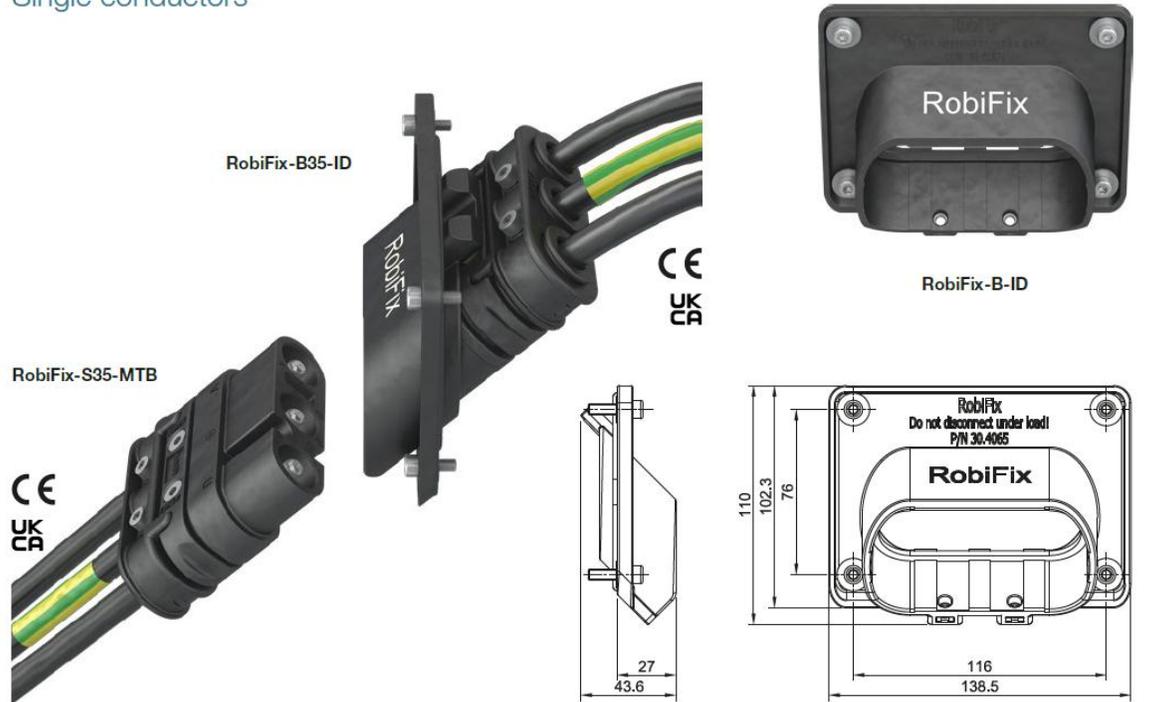
Weld timer connection,  
single conductors  
Page 10



RobiFix Overview

# Weld Controller Connectors

Single conductors



Order No.	Type	Designation	Contacts	Cable outer Ø
				mm
30.4066	RobiFix-B35-ID	Receptacle, incl. complete socket contact carrier with contacts	BP8/35	~11-17
30.4010	RobiFix-S35-MTB	Complete pin contact carrier (incl. cable strain relief and contacts)	SP8/35	~11-17

Individual parts

30.4065	RobiFix-B-ID	Receptacle, without connector	without	~11-17
30.4016	RobiFix-S-L	Empty pin contact carrier (incl. cable strain relief)	without	~11-17
		Pin and socket contacts (25/35/38/50 mm <sup>2</sup> )	see page 20	

# Weld Controller Connectors

Mixed conductors



CE  
UK  
CA

RobiFix-B35-ZEM

Order No.	Type	Designation
30.4018	RobiFix-B35-ZEM	Female connector, incl. cable strain relief housing RobiFix-ZEM

Individual parts

30.4023	RobiFix-B-ZEM	Female connector empty, incl. cable strain relief housing RobiFix-ZEM
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# J1 Connectors

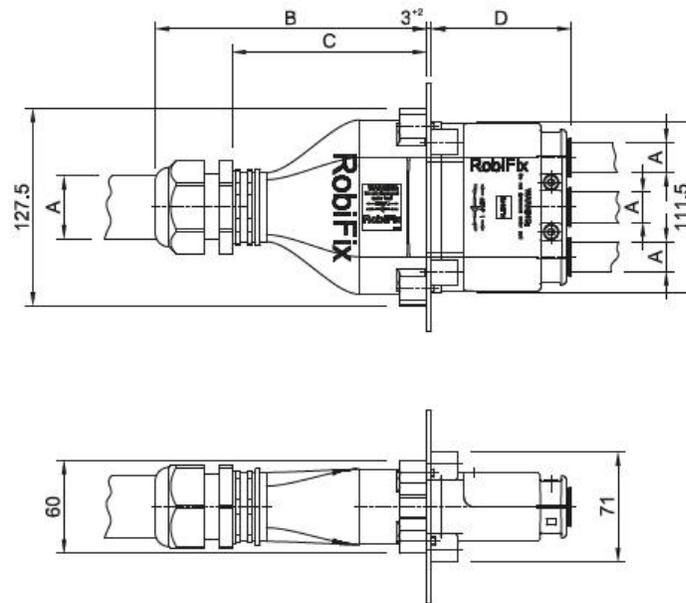
Mixed conductors



RobiFix-B35-FZEM  
RobiFix-B50-FZEM-M50



RobiFix-S35-FZEE



Order No.	Type	Designation	Contacts	Cable outer Ø		Length		
				A	B	C	D	
				mm	mm			
30.4071	RobiFix-B35-FZEM	Female connector, incl. cable strain relief housing RobiFix-FZEM	BP8/35	18 – 32 (M40)	175	125	–	
30.4052	RobiFix-B50-FZEM-M50	Female connector, incl. cable strain relief housing RobiFix-FZEM-M50	BP8/50K	24 – 38,5 (M50)	185	130	–	
30.4039	RobiFix-S35-FZEE	Male connector, incl. cable strain relief housing RobiFix-FZEE	SP8/35	~ 11 – 17	–	–	90	

# J1 Connectors

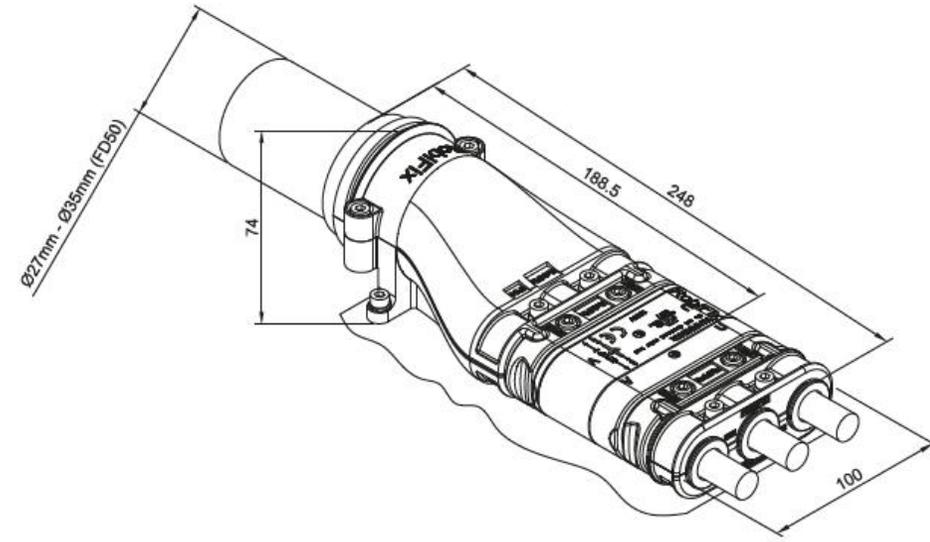
Mixed conductors



RobiFix-B35-ZEM



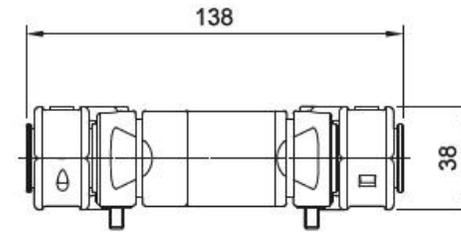
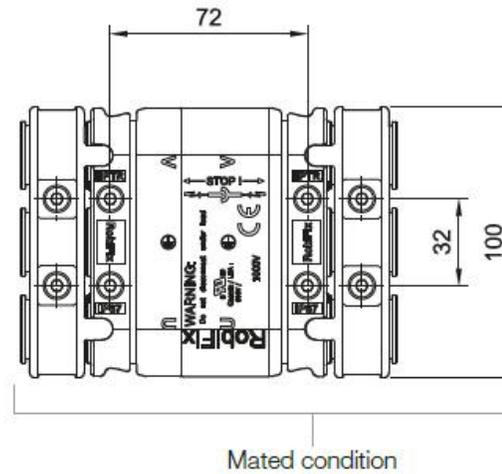
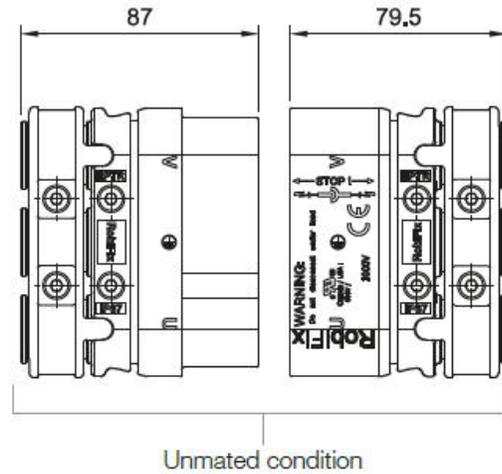
RobiFix-S35-MTB



Order No.	Type	Designation	Contacts	Cable outer Ø
				mm
30.4018	RobiFix-B35-ZEM	Female connector, incl. cable strain relief housing Robifix-ZEM	BP8/35	27 – 35 36 – 50 <sup>1)</sup>
30.4010	RobiFix-S35-MTB	Male connector complete (incl. cable strain relief and contacts)	SP8/35	~ 11 – 17

# J3 Connectors

## Single conductors



**UL**® **US**  
 UL-File No.: E351413  
 25/35/50 mm<sup>2</sup>

Order No.	Type	Designation	Contacts	Cable outer Ø
				mm
30.4005	RobiFix-B35-MTB	Female connector complete (incl. cable strain relief and contacts)	BP8/35	~ 11 – 17
30.4010	RobiFix-S35-MTB	Male connector complete (incl. cable strain relief and contacts)	SP8/35	~ 11 – 17

# J3 Connectors

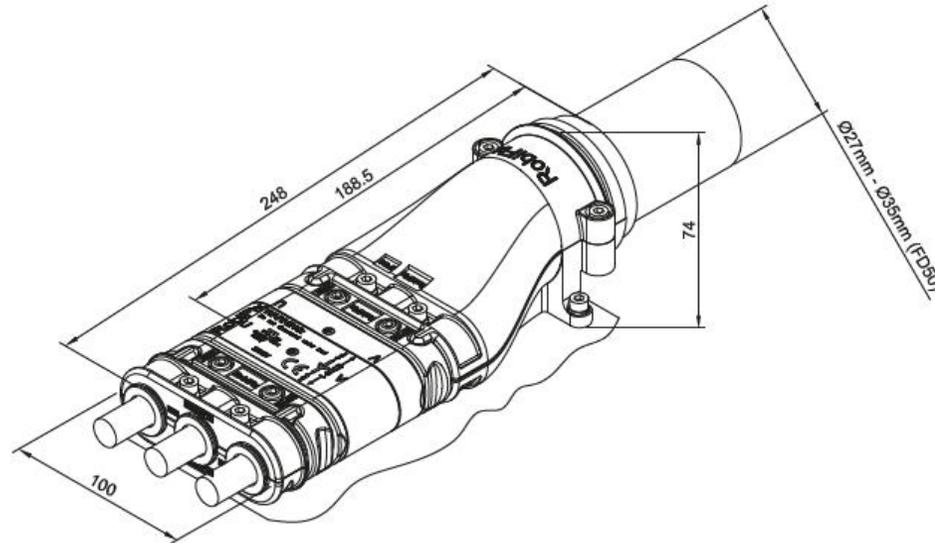
Mixed conductors



RobiFix-B35-MTB

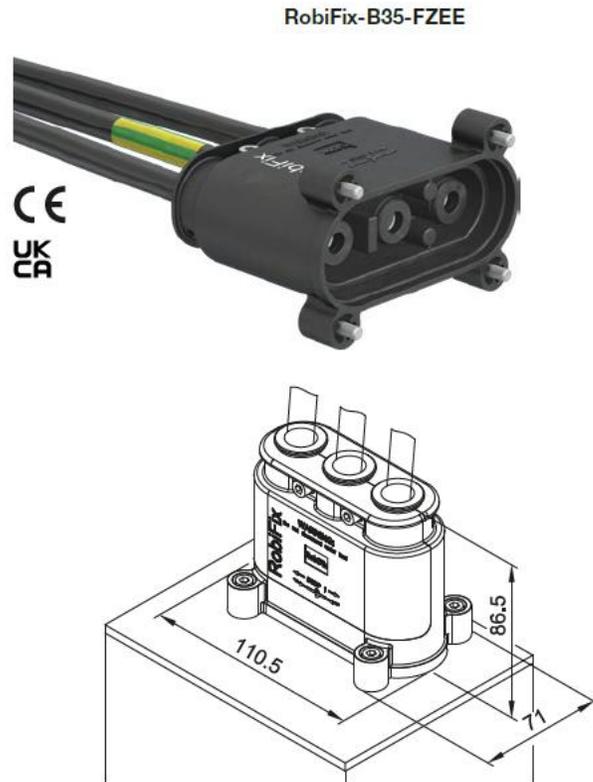


RobiFix-S35-ZEM



Order No.	Type	Designation	Contacts	Cable outer Ø
				mm
30.4005	RobiFix-B35-MTB	Female connector complete, incl. cable strain relief housing and contacts	BP8/35	~ 11 – 17
30.4025	RobiFix-S35-ZEM	Male connector, incl. cable strain relief housing RobiFix-ZEM	SP8/35	27 – 35 27 – 50 <sup>1)</sup>

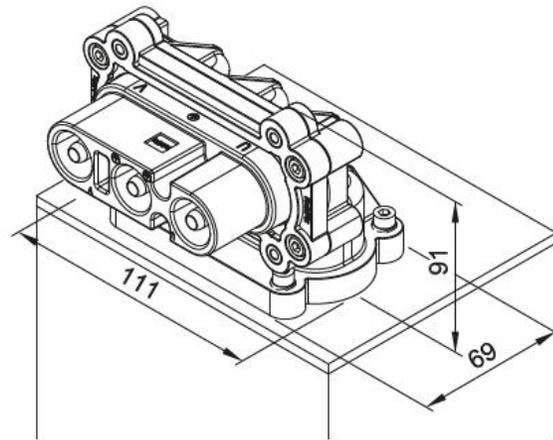
Straight



Order No.	Type	Designation	Contacts	Cable outer Ø
				mm
30.4033	RobiFix-B35-FZEE	Female connector, incl. flanged cable strain relief housing RobiFix-FZEE	BP8/35	~11 – 17
30.4046	RobiFix-TAE1-57	Male connector for welding transformers	S8/M8-57 AG	–
30.4187	RobiFix-TAE1-C-57	Male connector for welding transformers, with coding	S8/M8-57 AG	–

# J6 Transformer connection

90° adapter



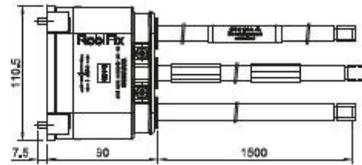
Order No.	Type	Designation	Contacts	Cable outer Ø mm
30.4033	RobiFix-B35-FZEE	Female connector, incl. flanged cable strain relief housing RobiFix-FZEE	BP8/35	~ 11 – 17
30.4013	RobiFix-TWA	Male connector for welding transformers, 90° adapter	–	–

## RobiFix Overview

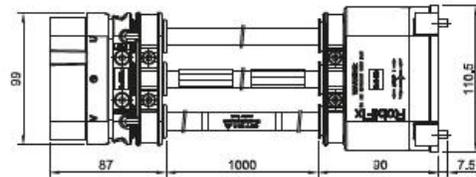
RobiFix, with pre-wired 35 mm<sup>2</sup> conductors and mounting plates

Suitable for stationary robotic welding guns up to 690 V and 150 A, with one or two connectors

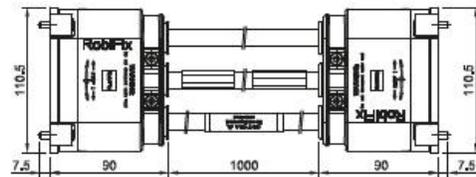
33002312-1502021



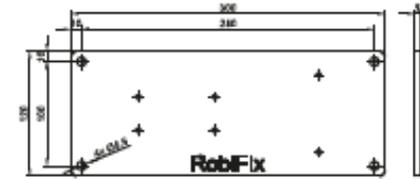
33002338-1002021



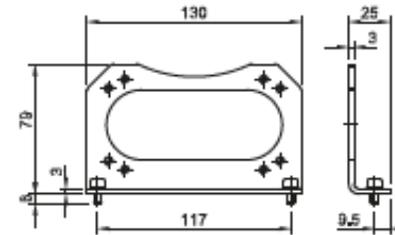
33002378-1002021



33002207



33002380



Order No.	Type	Name	Contacts	Cable	
				Outer Ø (mm)	Length L (cm)
33002312-1502021	RobiFix-PW150-B35FZEE	RobiFix-B35-FZEE, pre-assembled with 3 individual wires 150 cm	BP8/35	-11 - 17	150
33002338-1002021	RobiFix-PW100-S35MTB-B35FZEE	RobiFix-S35-MTB + RobiFix-B35-FZEE, pre-assembled with 3 individual wires 100 cm	SP8/35 + BP8/35	-11 - 17	100
33002378-1002021	RobiFix-PW100-S35FZEE-B35FZEE	RobiFix-S35-FZEE + RobiFix-B35-FZEE, pre-assembled with 3 individual wires 100 cm	SP8/35 + BP8/35	-11 - 17	100
33002207	RobiFix-MP	Mounting plate (300 mm x 120 mm)	-	-	-
33002380	RobiFix-W	Mounting bracket (130 mm x 79 mm)	-	-	-

# Stationary Weld Guns



**Robifix-A-TAE1**



**Robifix-W-ZEM**



Order No.	Type	Designation	fits to
30.4058	Robifix-A-TAE1	Adapter for flange-mount connector	Robifix-TAE1... + Robifix-B...-FZEM
30.4062	Robifix-W-ZEM	Bracket for flat-mount connector	Robifix-TAE1... + Robifix-B...-ZEM

## RobiFix Overview

If not installed on the robot, RobiFix remains connected and locked using RobiFix-LOCK. Ideal for cable extensions.



Wall mounting



RobiFix-LOCK



Mobile mounting

Order No.	Type	Designation	fits to
30.4061	RobiFix-LOCK	Locking system (including mounting screws and Velcro)	RobiFix-S...-MTB + RobiFix-B...-MTB

## Accessories for double dresspacks

### Mounting bracket

Safe and easy to mount, this bracket allows the installation on welding transformers of

double dresspacks ending with two RobiFix power connectors.



RobiFix-Twin-TB



Order No.	Type	Designation	fits to
30.4067	RobiFix-Twin-TB	Mounting bracket for welding transformer installation	RobiFix-B...-MTB

### Locking system

Aluminum welding requires more welding current, usually more than 250 A on the primary side. Therefore bigger cables and larger power connectors are needed. With conventional solution, the robot dress-out

would become extremely rigid. Thanks to RobiFix-TwinLock, you can carry up to 421 A (thermal steady current) and still keep the flexibility of your dresspack, even with single conductors up to 50 mm<sup>2</sup>.



RobiFix-TwinPower  
Robot mounting



RobiFix-TwinLock  
Mobile mounting



Order No.	Type	Designation	fits to
30.4064	RobiFix-TwinPower	Locking system, incl. mounting screws and removable cable ties (without connector)	RobiFix-S...-MTB + RobiFix-B...-MTB
30.4063	RobiFix-TwinLock	Locking system, incl. removable cable ties (without connector)	RobiFix-S...-MTB + RobiFix-B...-MTB

## Crimping pliers case CZK2-...

Stäubli recommends the use of this cordless hydraulic crimping tool together with the crimping dies for crimping the contacts.

This tool guarantees a safe and high quality crimp termination.

- **Lowest contact resistance**
- **Special Stäubli crimp dies with punch notch**
- **Best ergonomically for high volume applications.**



Pos. No.	Order No.	Type	Name	
1a	18.3111	CZK2-230	Crimping pliers case (incl. strap and plastic case)	230 V
<b>Contents</b>				
2	-	CZ-B500	Electro hydraulic crimping tool B500, compatible with the Cordless Alliance System (CAS)	
3	18.3042	ALI-18	Li-Ion battery – 18 V – 4.0 Ah	
4	18.3023	MTB11-25-50	Crimp insert 25 mm <sup>2</sup> /4 AWG	
5	18.3024	MTB13-35-50	Crimp insert 35 mm <sup>2</sup> /~2 AWG	
6	18.3044	ALG2-230	Battery charger AC 230 V	
1b	18.3112	CZK2-110	Crimping pliers case (incl. strap and plastic case)	110/120 V
<b>Contents</b>				
2	-	CZ-B500	Electro hydraulic crimping tool B500, compatible with the Cordless Alliance System (CAS)	
3	18.3042	ALI-18	Li-Ion battery – 18 V – 4.0 Ah	
4	18.3023	MTB11-25-50	Crimp insert 25 mm <sup>2</sup> /4 AWG	
5	18.3024	MTB13-35-50	Crimp insert 35 mm <sup>2</sup> /~2 AWG	
7	18.3043 <sup>1)</sup>	ALG2-110	Battery charger 110 / AC 120 V	

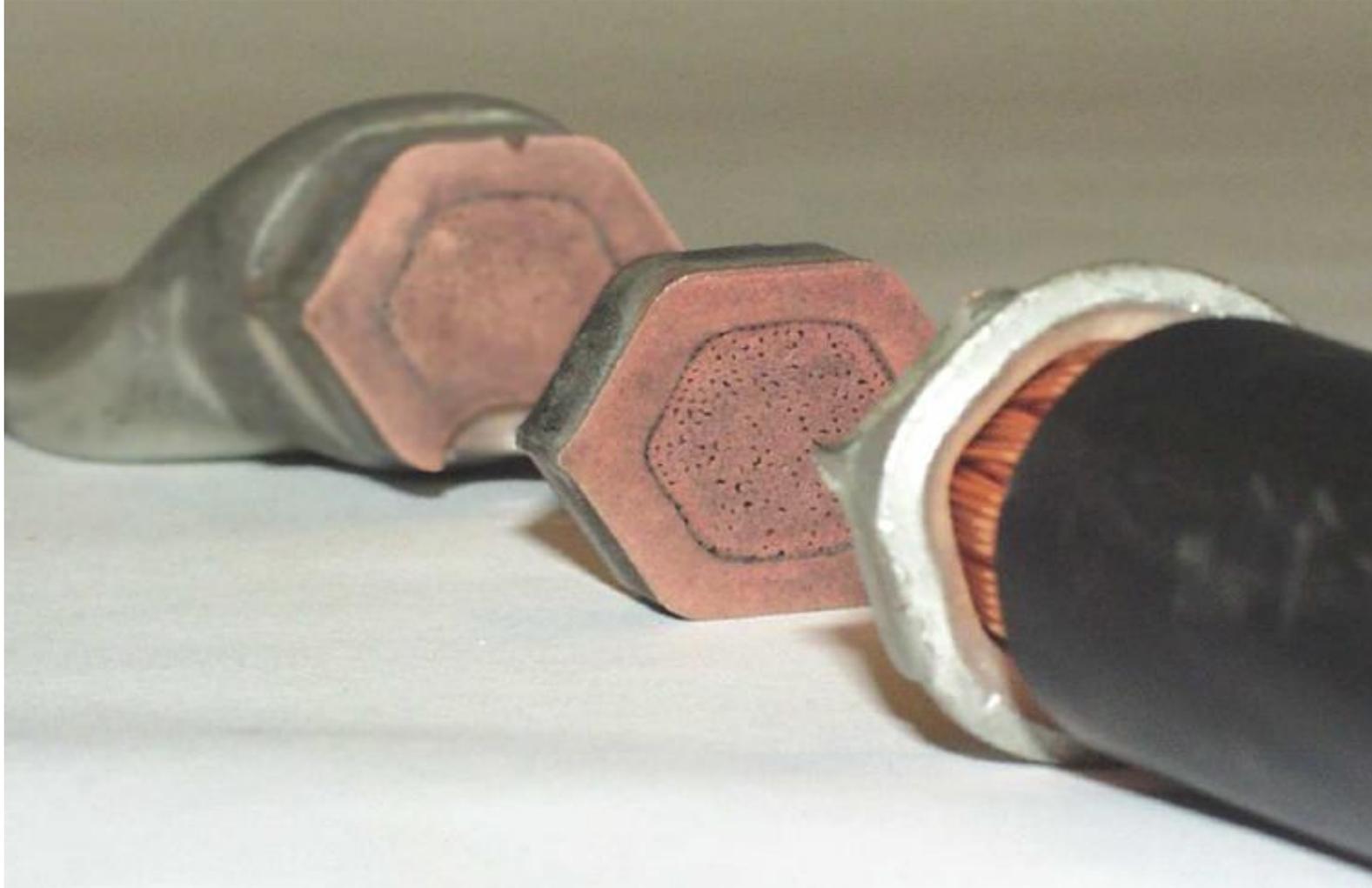
## Manual crimping pliers and accessories

Stäubli recommends crimping plier M-PZ-13 for low quantity crimping or individual assembly and crimping plier M-PZ-T2600 for higher quantity crimping assembly.

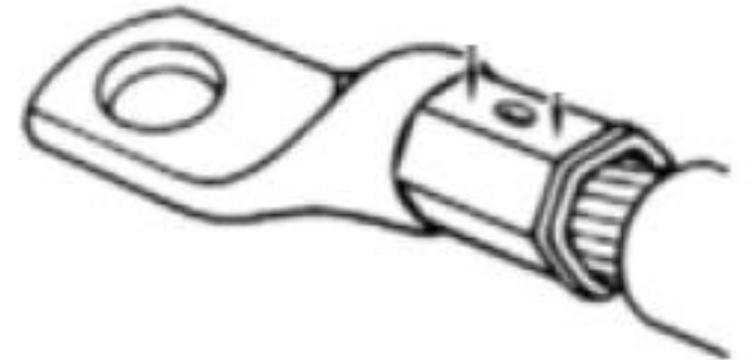


Pos.	Order No.	Type	Nominal-Ø pin/ socket mm	Conductor cross-section mm <sup>2</sup>	Accessories Assembly Instructions 	Name
1	18.3700	M-PZ13			MA224	Crimping pliers
2	18.3701	MES-PZ-TB5/6	6	6		Crimping die for Pos. 1
3	18.3702	MES-PZ-TB8/10	6	10		Crimping die for Pos. 1
4	18.3703	MES-PZ-TB9/16	6/8	16		Crimping die for Pos. 1
5	18.3704	MES-PZ-TB11/25	6/8	25		Crimping die for Pos. 1
6	18.3705	MES-PZ-TB13/35	8	35		Crimping die for Pos. 1
7	18.3707	MPS-PZ13				Test insert
8	18.3708	MALU-PZ13			MA224	Round test rod
9	18.3749	MP13				Storage box
10	18.3710	M-PZ-T2600			MA226	Crimping pliers with box
11	18.3711	TB8-17 <sup>1)</sup>	6/8	10 & 70 <sup>1)</sup>		Crimping die for Pos. 10
12	18.3712	TB9-13 <sup>1)</sup>	6/8	16 & 35 <sup>1)</sup>		Crimping die for Pos. 10
13	18.3713	TB11-14,5 <sup>1)</sup>	6/8	25 & 50 <sup>1)</sup>		Crimping die for Pos. 10
	18.3714	TB7-20	12	95 <sup>1)</sup>		Crimping die for Pos. 10

RobiFix Overview  
Crimping



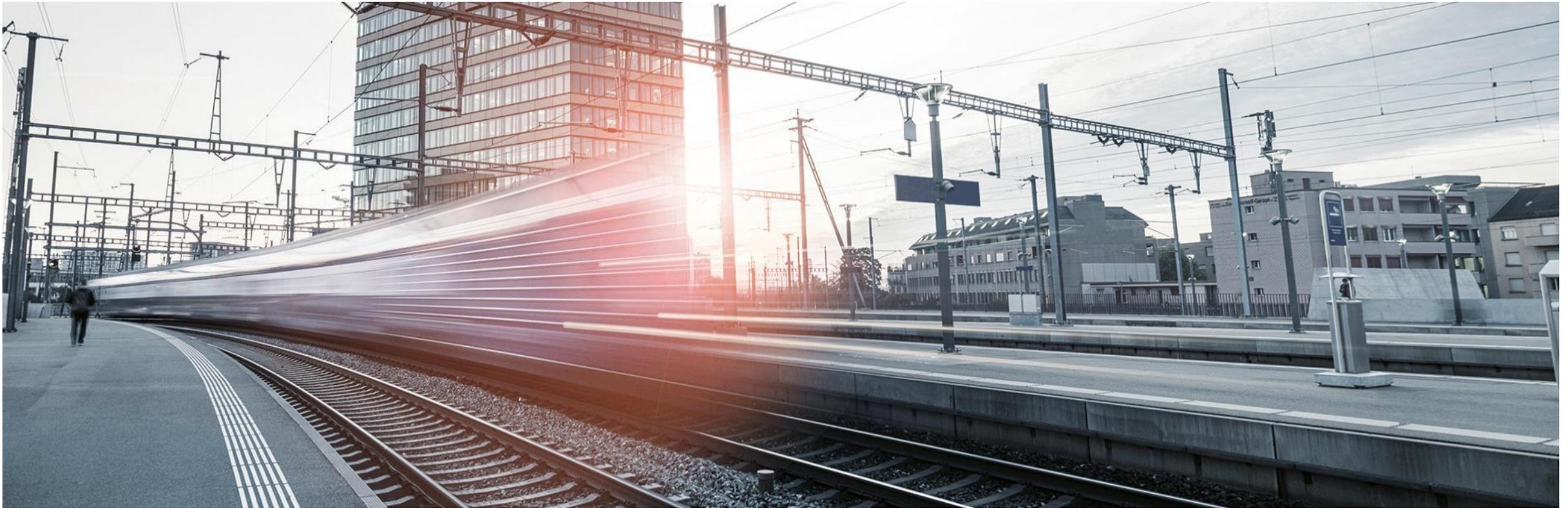
Sight hole



# Customers that are Spec'd in



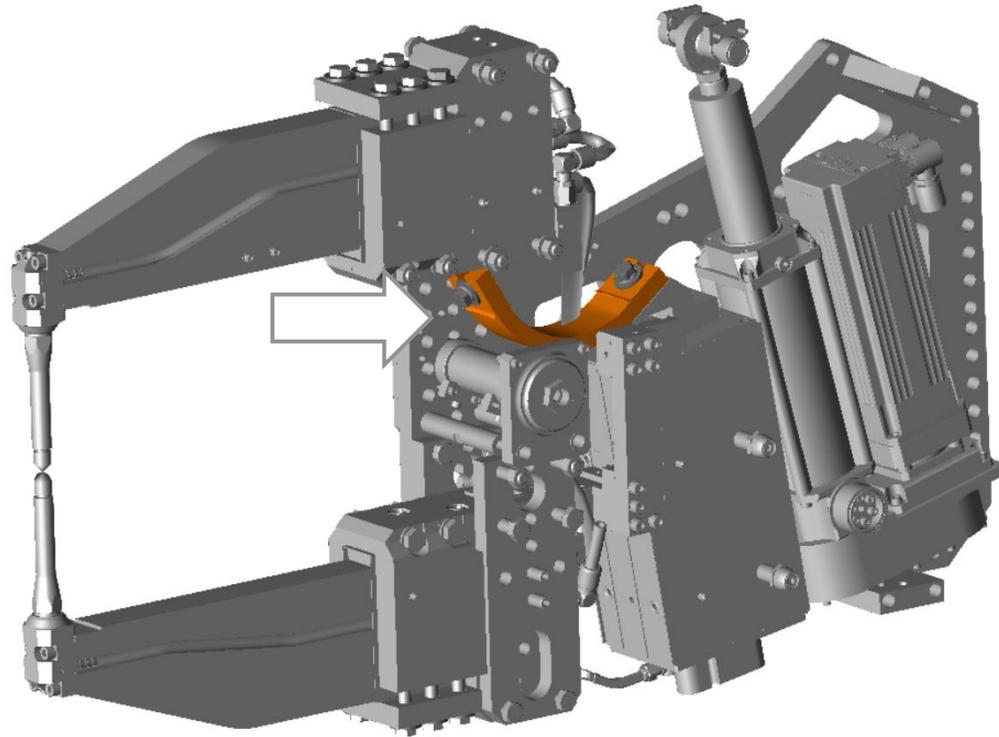
Thank you for your attention!



# Leaf shunt connectors



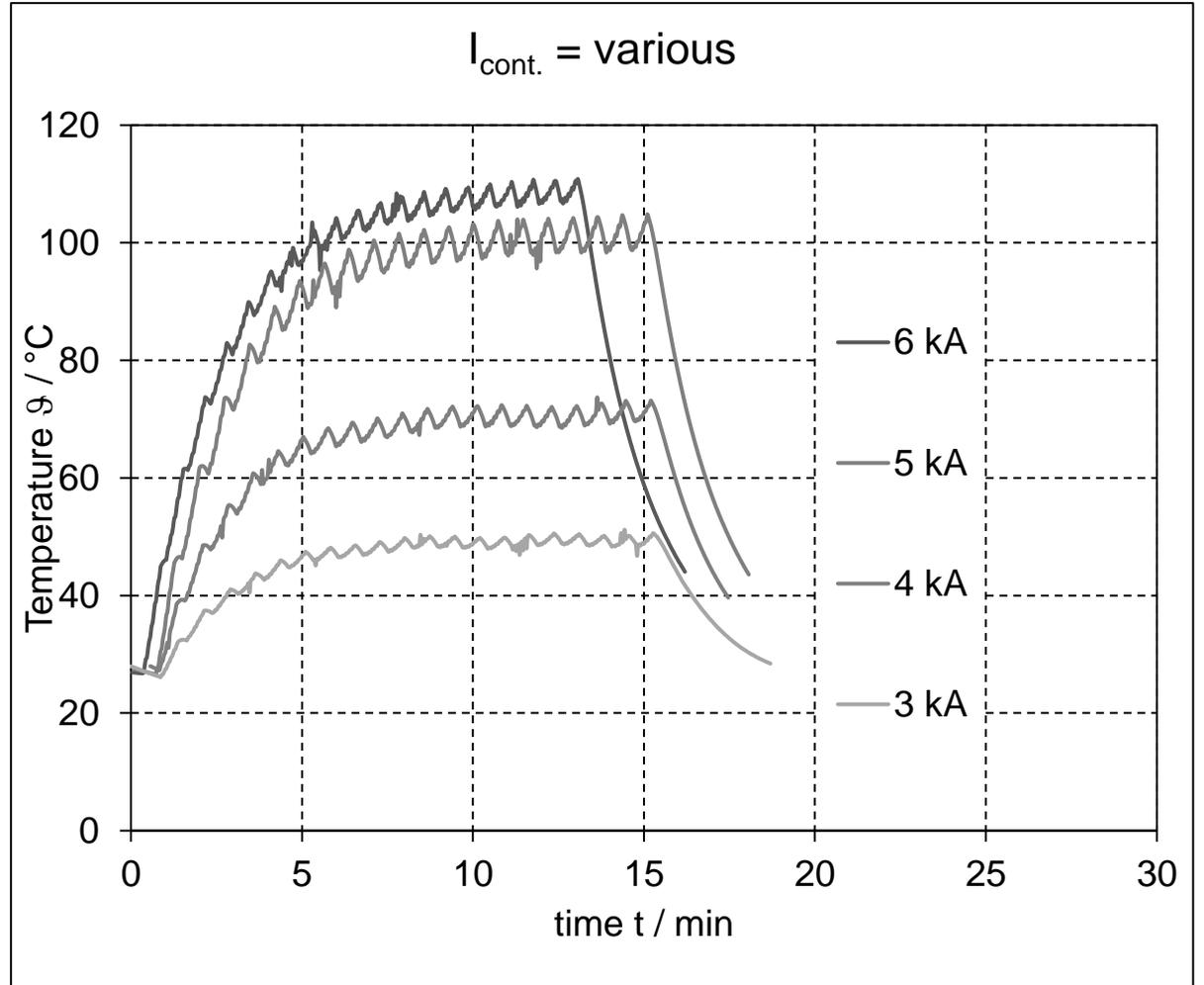
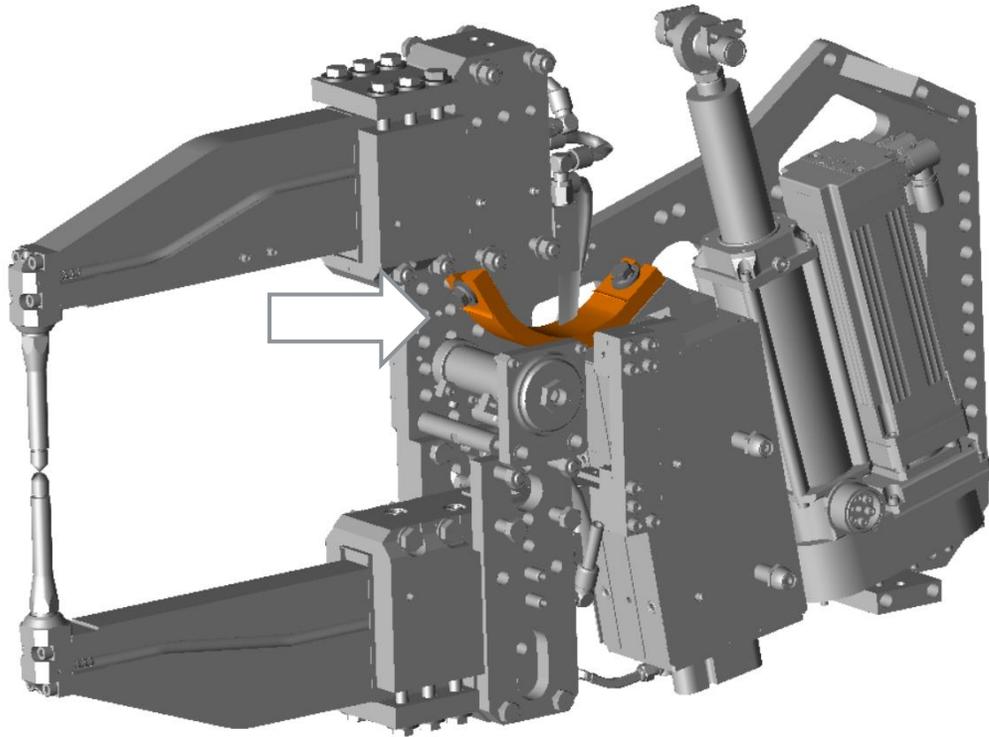
# Standard Bolt-on Solution



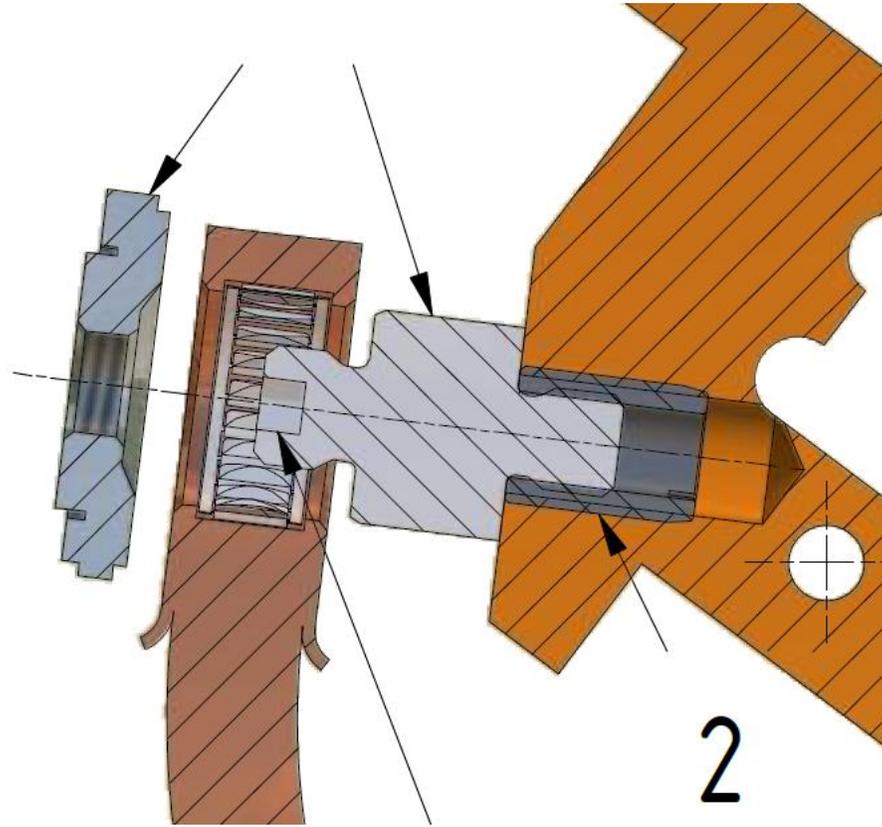
Leaf shunt on X-Gun



# Standard Bolt-on Solution



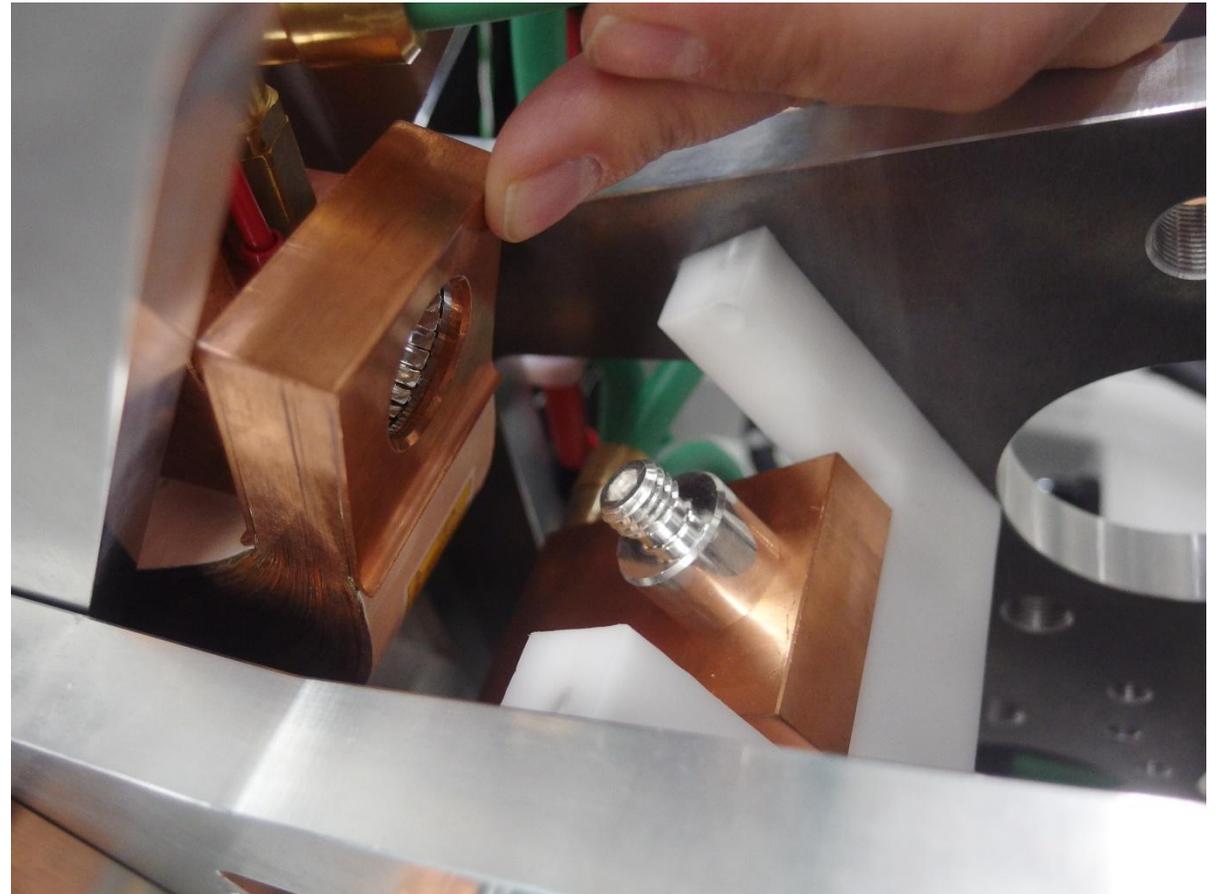
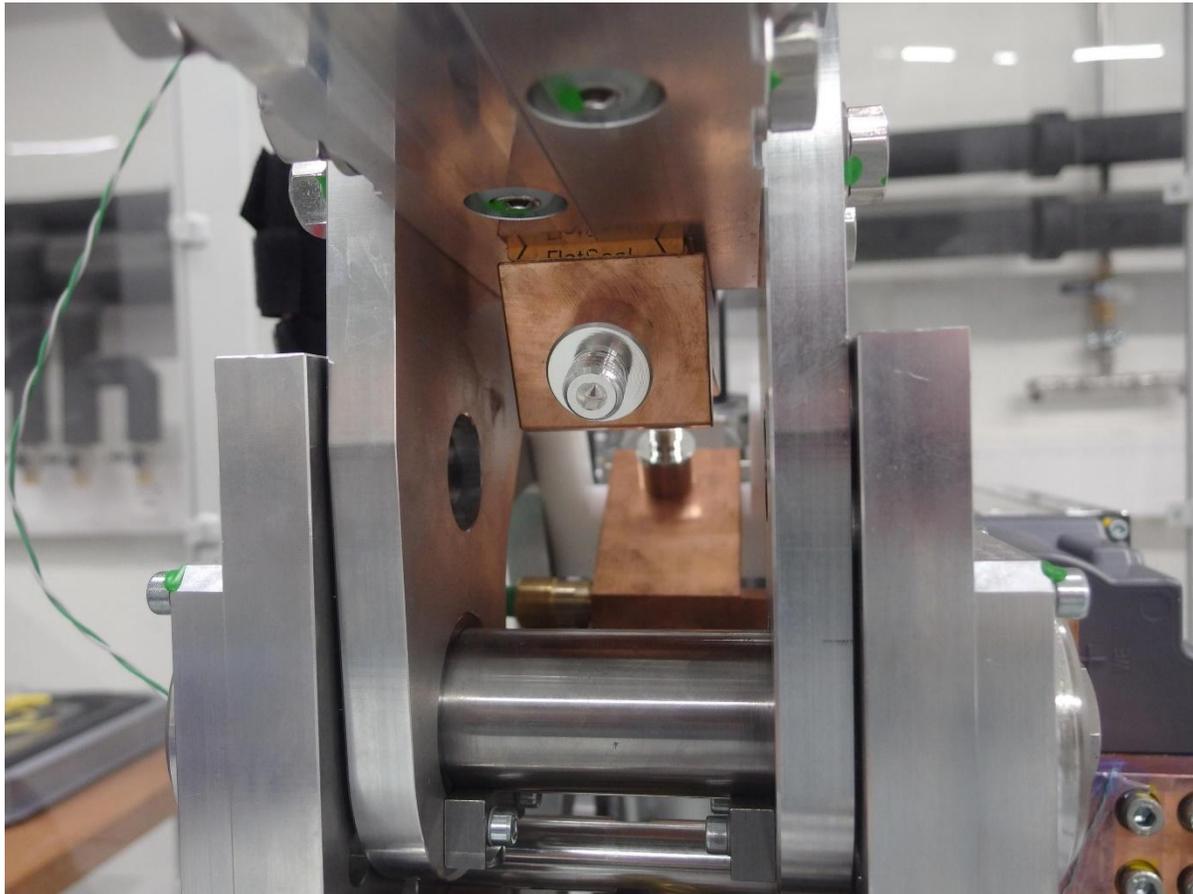
# LA-CU in Shunt



LEAF SHUNTS

# Stäubli's solution

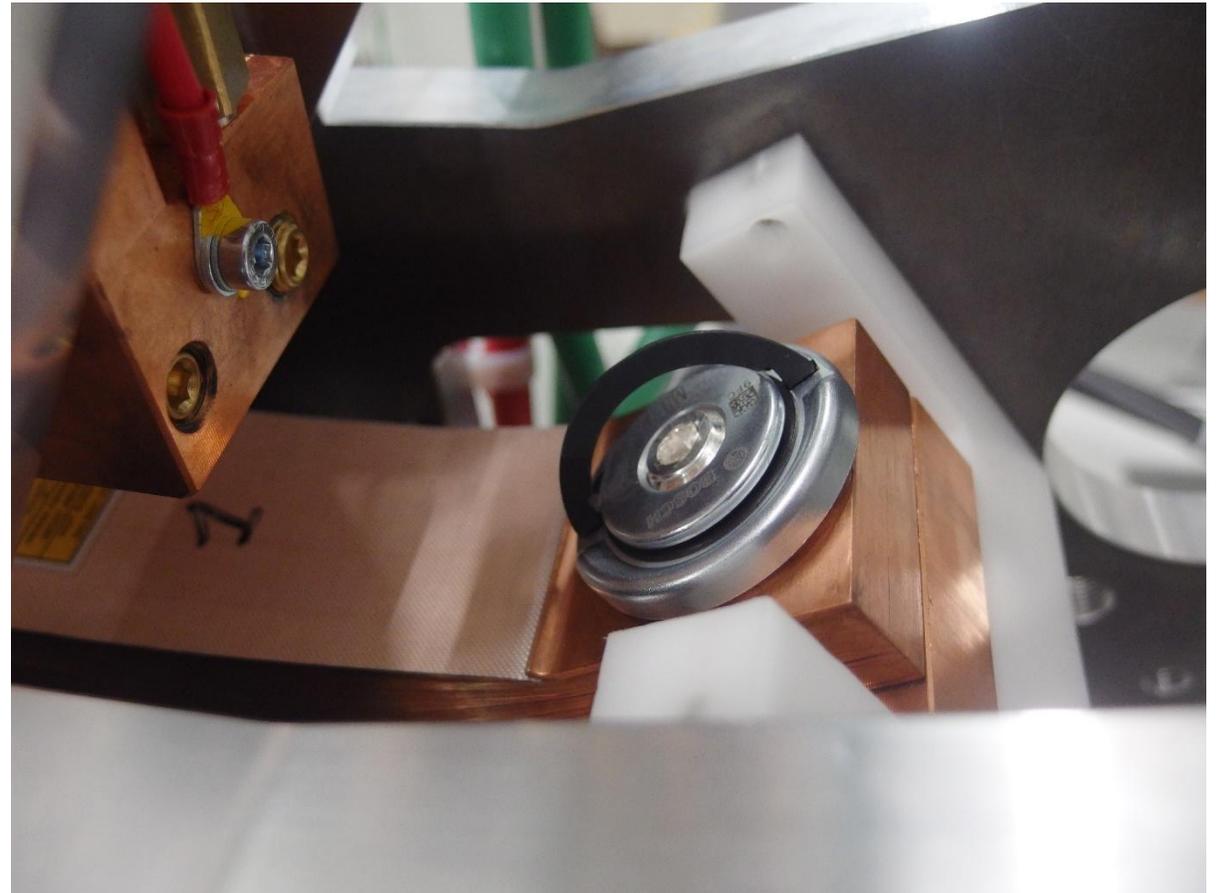
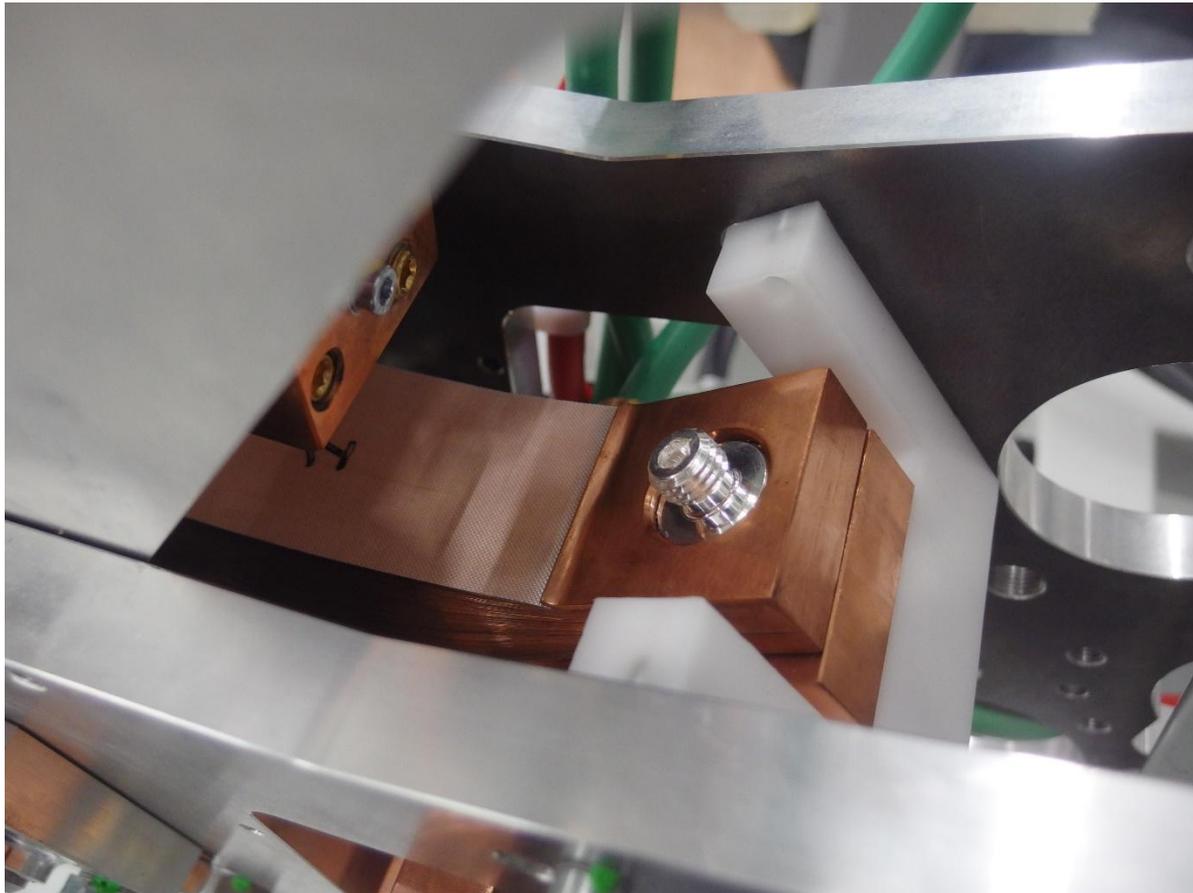
STÄUBLI



LEAF SHUNTS

# Stäubli's solution

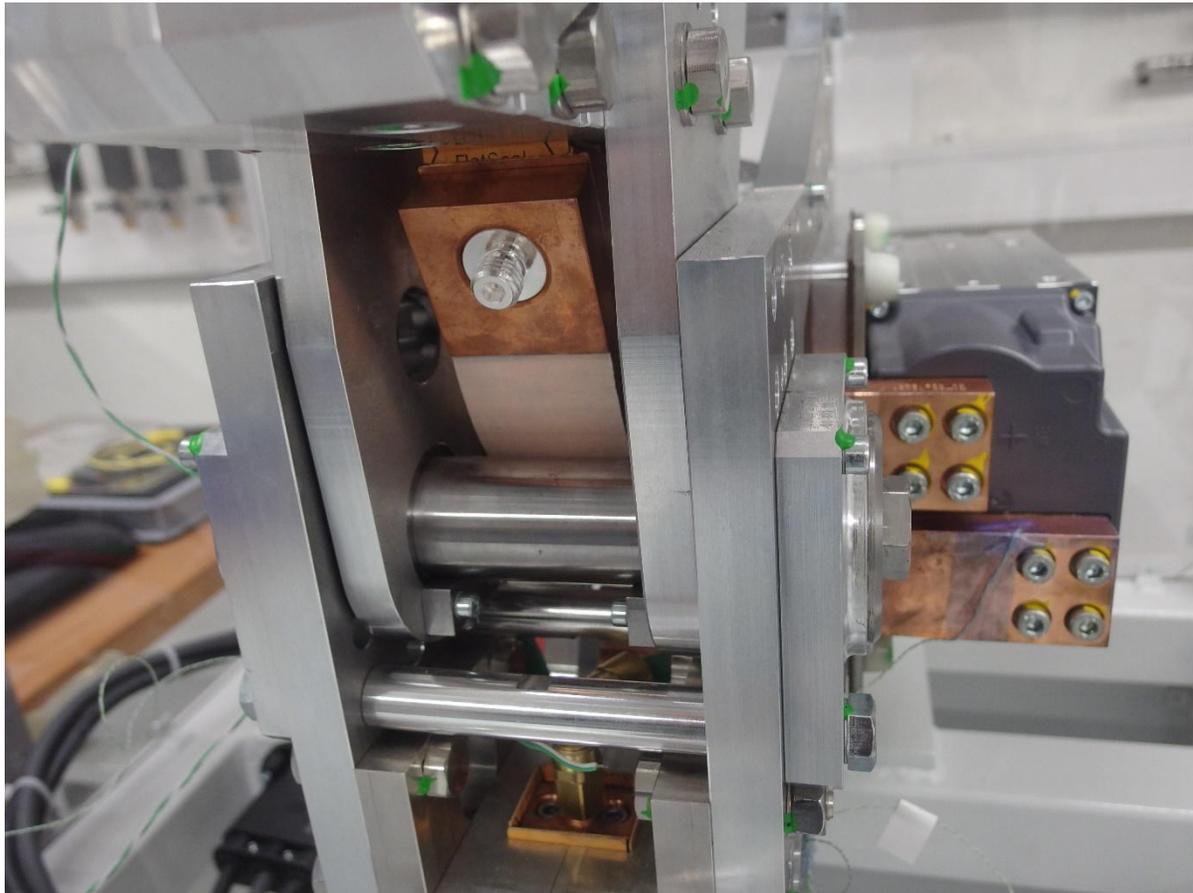
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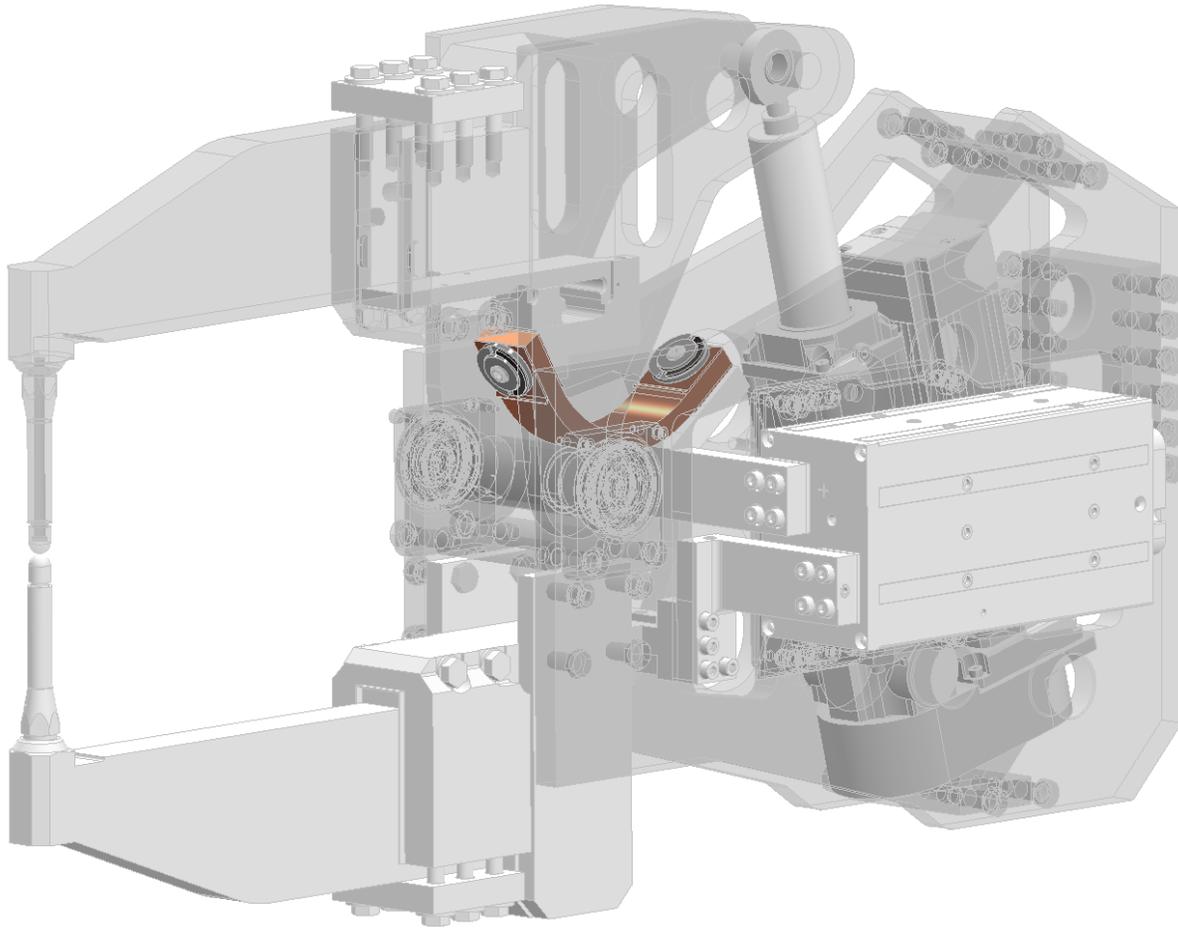
LEAF SHUNTS

# Stäubli's solution

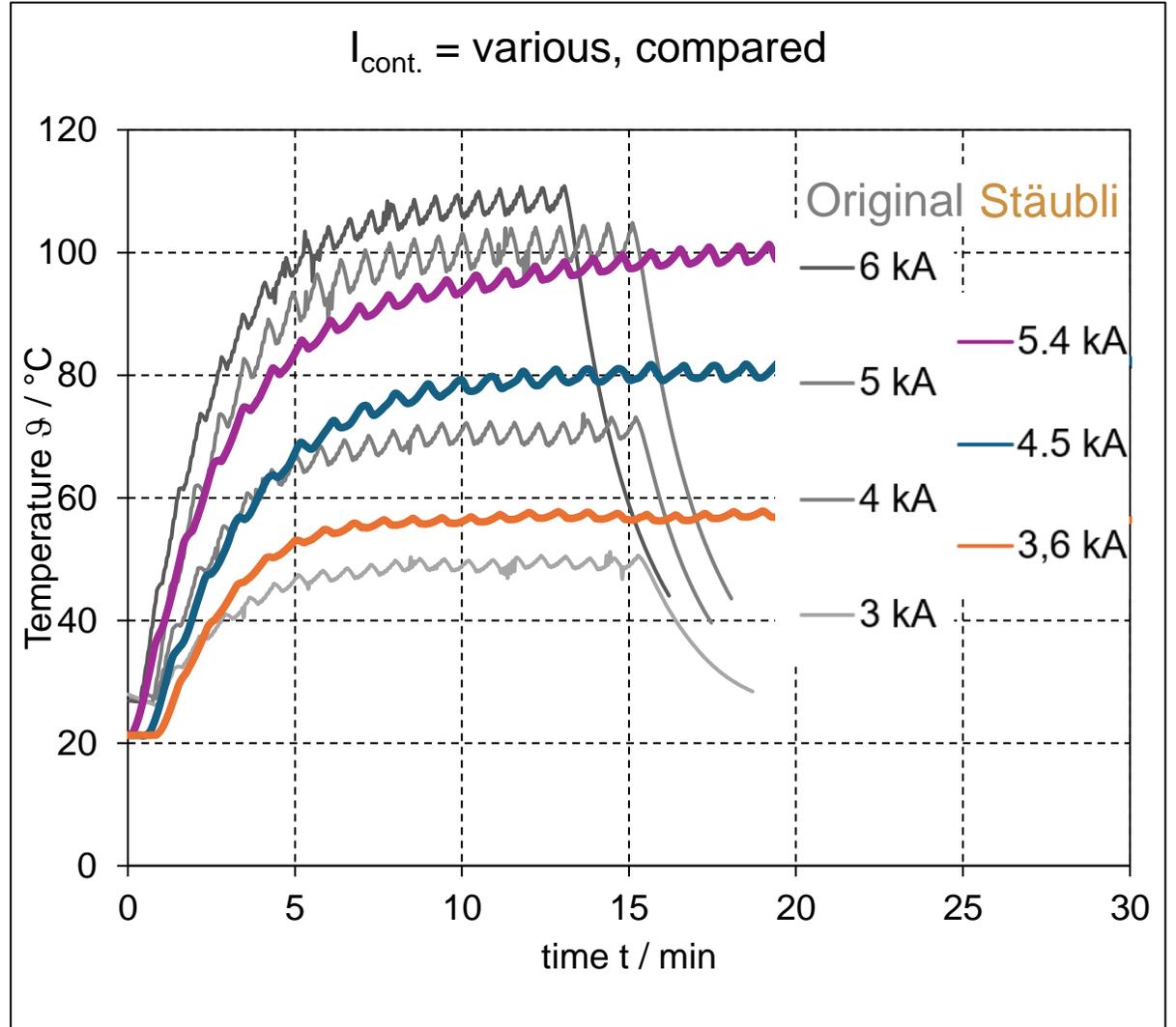
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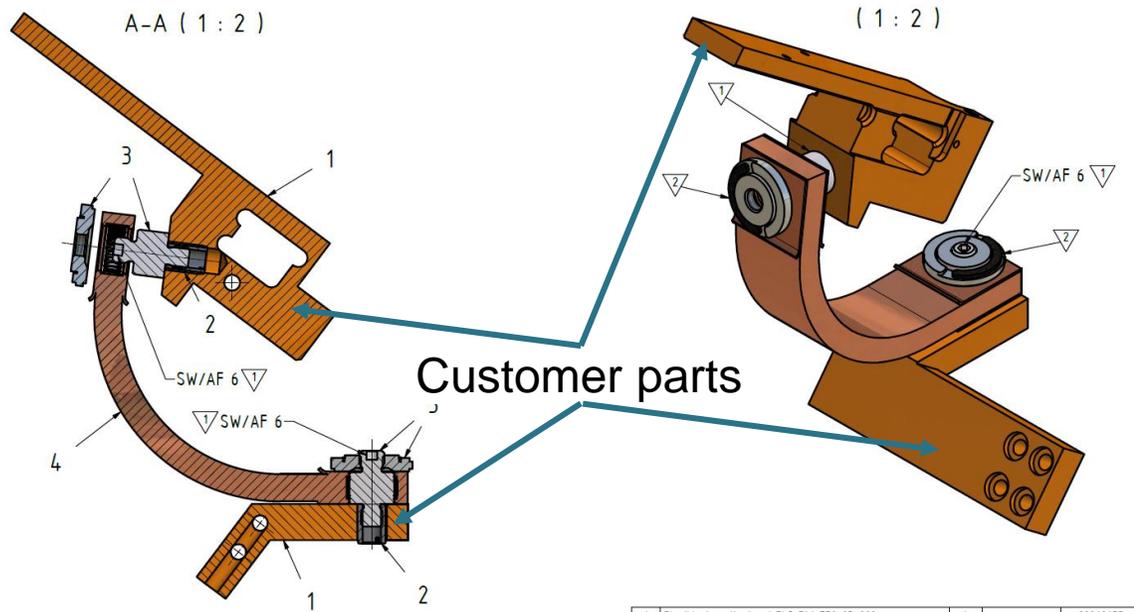
# Comparison



Stäubli solution: **cooler**



## Stäubli's solution



Items delivered in set:

- 2 Spanners (Bosch)
- 2 MULTILAMS LA-CU
- 2 silver coated pins (M12)
  
- 177 CHF per Set (25 pieces)
- 125 CHF per Set (100 pieces)
- optional customized shunt:
  - Diffusion welded with milled ML groove
  - App. 120 CHF (depends on length and cross section)

# Gun Arm Connector (Tesla)



GUN ARM CONNECTOR (TESLA)

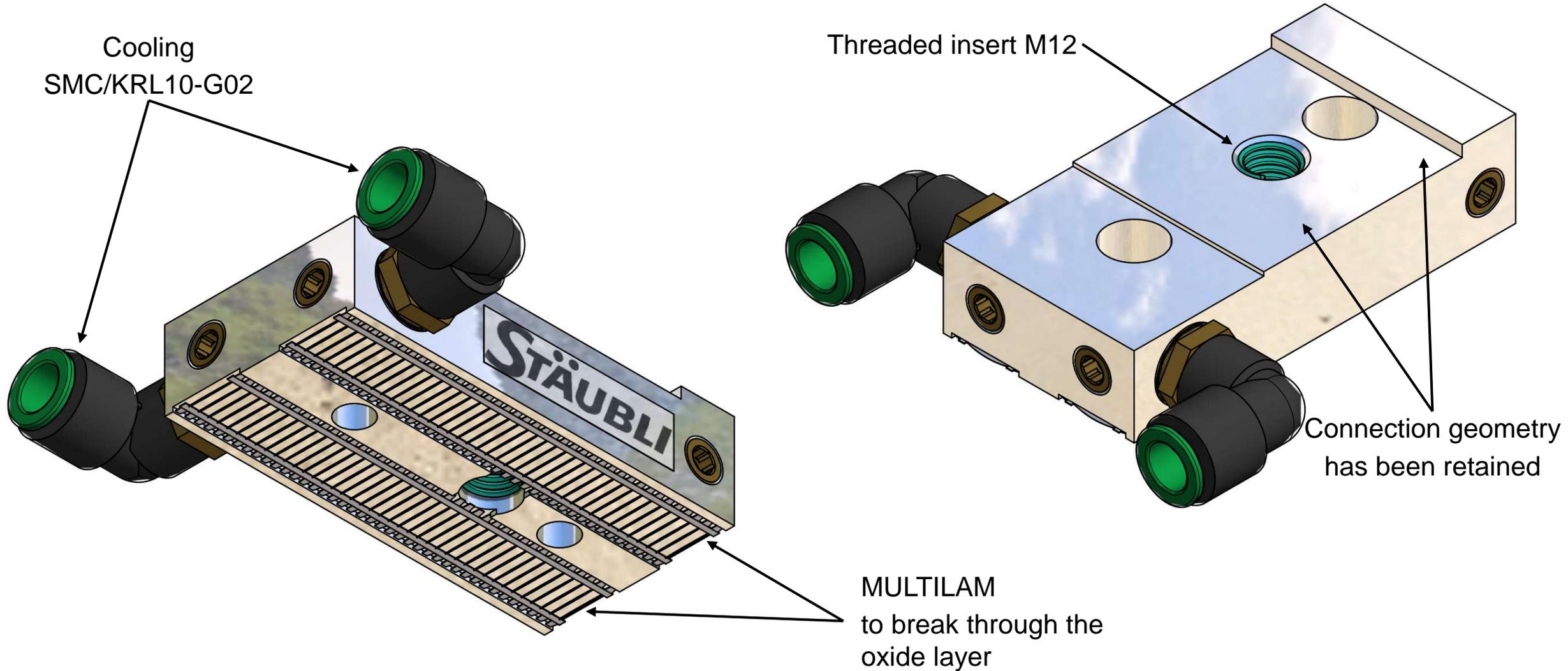
# Tesla / Centerline with the Gun Arm Connector

- Connecting problems with Centerline gunarm connectors

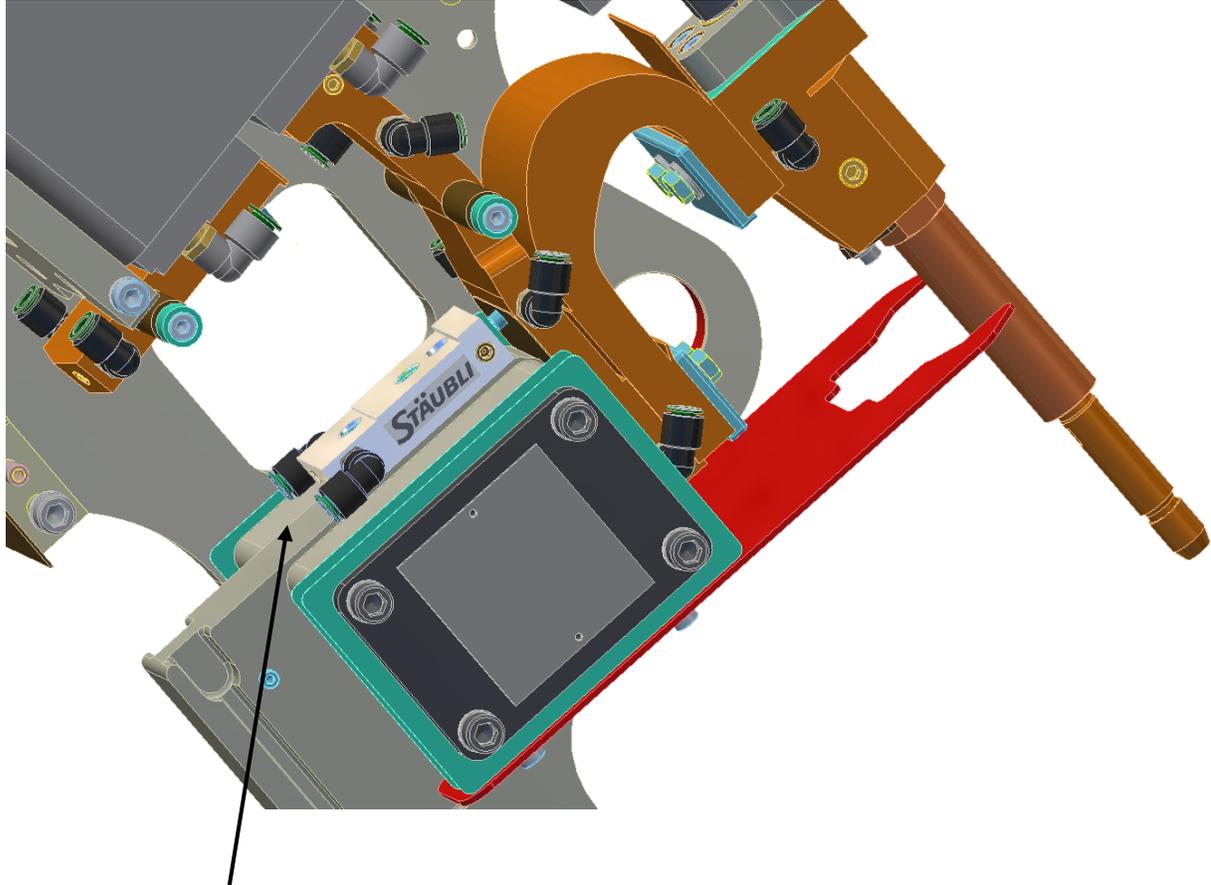


# Tesla / Centerline with the Gun Arm Connector

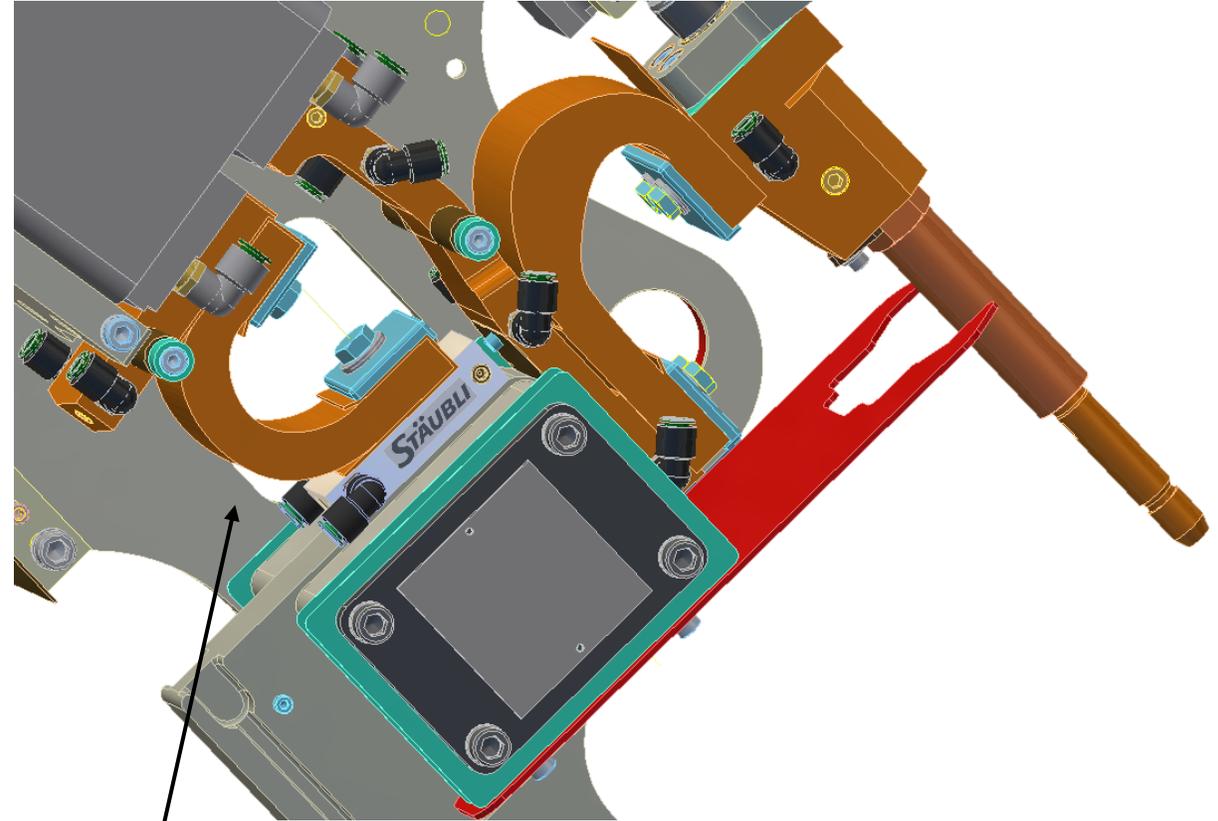
## Our solution – Gun arm connction LS-GAC-02



# Tesla / Centerline with the Gun Arm Connector



Gun arm connector **without** lamellar hinge



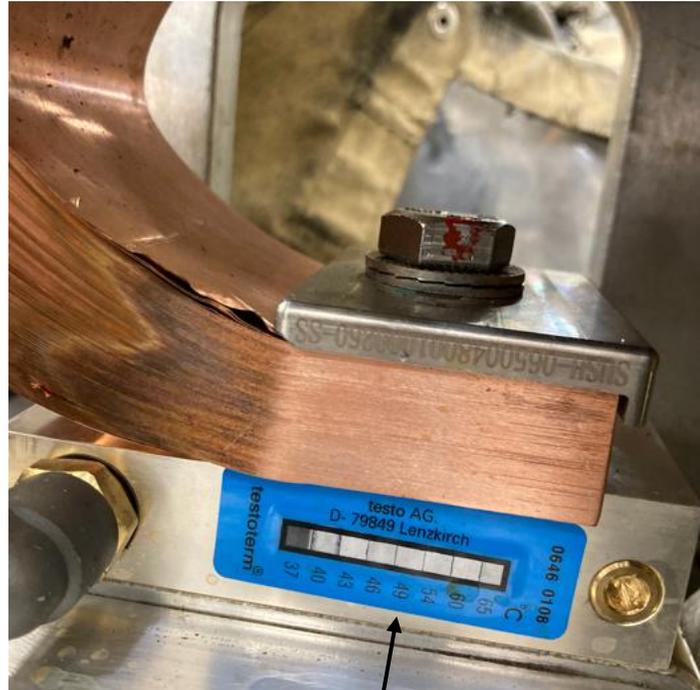
Gunarm connector with mounted lamellar hinge

GUN ARM CONNECTOR (TESLA)

Tesla / Centerline with the Gun Arm Connector



Centerline old solution  
gunarm connector –  
88°C

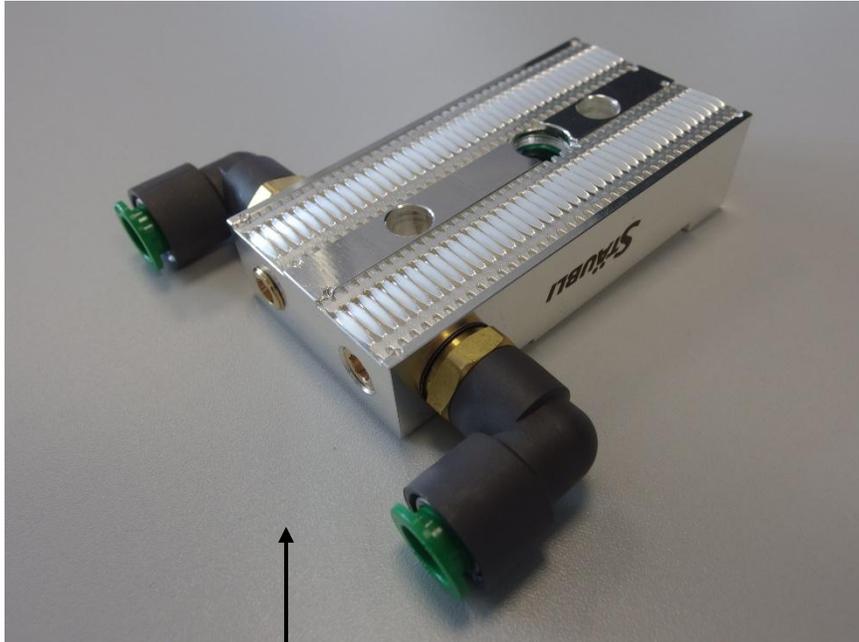


Stäubli solution gunarm  
connector - < 37°C

- One gunarm connector is now installed in a welding gun at Tesla

GUN ARM CONNECTOR (TESLA)

Gunarmconnector LS-GAC-02



Gunarm side with MULTILAM



Laminated shunt side

# Tesla / Centerline with the Gun Arm Connector

- First order end of May from Tesla about 14 GAC for further test's in line

**APPROVED**

Tesla Manufacturing Brandenburg SE  
 Tesla Straße 1 15537 Grünheide  
 (Mark), Germany  
 VAT#: DE815650157

**Purchase Order**

PO # 5100977989

Last Release Date: 2025-May-13

REVISED: (1) on 2025-May-13

**Vendor**

Supplier Code : 181232  
 Staubli Electrical Connectors GmbH  
 Hegerheimer Strasse 19  
 Postfach 1606  
 Weil am Rhein, 79576 DE  
 Contact: Tobias ELSNER  
 Phone: +49 7621 667 172  
 Fax: +49 7621 667 100  
 Email: Telsner@staubli.com

**Ship To**

**Tesla Manufacturing Brandenburg SE**  
 (NPM (FLUX)) Tesla Gigafactory Brandenburg SE  
 Delivery to NPM-Warehouse-FLUX  
 Tesla Straße 1  
 Grünheide, Brandenburg 15537 Germany  
 Requestor /Contact: Igor Kucharczyk  
 Email: ikucharczyk@tesla.com

**Terms & Payment**

**INCO TERMS:** DAP - (NPM (FLUX)) Tesla Gigafactory Brandenburg SE-Grynheide-12647 - Delivery to NPM-Warehouse-FLUX GvP

**PAYMENT TERMS:** Net due in 30 days

**Bill To**

Please, submit all invoices through company's selected e-invoicing channel and ensure your invoice reflects the correct Tesla Entity Name/Address/VAT number which can be found at the top of this PO. If you have not selected an e-invoicing channel, contact [invoices@tesla.com](mailto:invoices@tesla.com)

Line #	Tesla Part Number	Description	Detail / Sub Assembly	Qty	UM	Due Date	Unit Price (EUR)	Rev'd Qty	Status	Total (EUR)
10		MFN: 11015604; VPN: 11015604; MN: Staubli Electrical Connectors GmbH; Desc: Zangenarmanschlus chluss SpotFix LS-GAC		14.00	EA	2025-07-09	297.00	0.00	Open	4,158.00
<b>Line Notes</b>										
2025-05-13: Flux Partid: 84068; Flux Quoteld: 21567; Flux VendorQuoteNumber: 20324697; Datamatrix Barcode: https://flux-glb.tesla.com/app/spares/purchases/41436										4,158.00

5/13/2025 1:37:28 PM

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FAST MOVING TECHNOLOGY

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## Auftragsbestätigung 2490022 vom 3. Juni 2025

Tesla Manufacturing Brandenburg SE  
 Brandenburger Allee 4  
 14774 Brandenburg an der Havel

Beleg Datum: 14.05.2025  
 Ihre Kundennummer: 6032032  
 Ihre Bestellnummer: 5100977989  
 Unsere Angebots-Nr.: 20324697 / 26.02.2025  
 Ihre SachbearbeiterIn: Igor Kucharczyk  
 Unsere SachbearbeiterIn: Frau Sabine Liane Brombacher  
 Tel.: +49 7621 667 109  
 Fax: +49 7621 667 100  
 E-Mail: S.BROMBACHER@STAUBLI.COM

**Versandanschrift**

Tesla Manufacturing Brandenburg SE  
 (NPM (FLUX)) Tesla Gigafactory Brandenbu  
 Delivery to NPM-Warehouse-FLUX  
 Tesla Straße 1  
 15537 Grünheide (Mark) Brandenburg

Versandtermin: 22.08.2025  
 Zahlungsbedingungen: 30 Tage netto  
 Versandart: UPS-Standard  
 Lieferbedingungen: CPT Grünheide (Mark) Brandenburg

Wir werden die erwähnten Optimierungsmaßnahmen in die Produktion des Zangenarmanschlusses einfließen lassen.

Projekt: 265444  
 Zangenarmkontaktilierung

Zum Projektstart erhalten Sie einmalig für 14 bzw. 40 Stück einen Sonderpreis.

Pos.	Material Menge	Bezeichnung	Versandtermin	Preis	Kundenbez. Preis/Einheit	Wert in EUR
010	11015604	SpotFix LS-GAC Zangenarmanschluß Ursprungsland: DE	22.08.2025	29.700,00 EUR	100 Stück	4.158,00
					HS-Code: 85369010	
Summe Positionen EUR						4.158,00
Mehrwertssteuer 19,00 %						790,02
Endbetrag EUR						4.948,02

Wir danken für Ihren Auftrag

EDV-Auftragsbestätigungen sind bis EUR 10.000,- ohne Unterschrift gültig.  
 Es gelten unsere Verkaufs- und Lieferbedingungen (<https://www.staubli.com/global/de/electrical-connectors/downloads/conditions.html>).

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 Telefon: +49 7621 667 100  
 e-mail: sales@staubli.com  
 www.staubli.com/electrical

HRB 412271, Amtsgericht Freiburg i.Br.  
 Steuer-Nr. 208/116/04316  
 USt-Id-Nr. DE 457203920  
 Geschäftsführer: Jens Dattagoltsch,  
 Remy Baumberger

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 74133 Karlsruhe / Germany  
 Konto-Nr. 500 705102 000 100 75  
 BIC: BFSW33HAN  
 SWIFT BIC: BFSW33HAN  
 SWIFT IBAN: DE44 2512 0510 0007 0017 99

Sparkasse Marktgemeinschaft  
 Postfach 1000, 14774 Brandenburg  
 Konto-Nr. 101 199 862 000 53346  
 BIC: BFSW33HAN  
 SWIFT BIC: BFSW33HAN  
 SWIFT IBAN: DE44 2512 0510 0007 0017 99



## GUN ARM CONNECTOR (TESLA)

## Assembly of the Gun Arm Connector at Tesla

- The condition before and during the reconstruction of the GAC
- It's necessary to polish and to clean the gunarm with industrial alcohol for removing dirt and grease
- This was the situation:



# Assembly of the Gun Arm Connector at Tesla

- The situation after cleaning and polishing should be like this:

