

CABLE CONNECTIONS

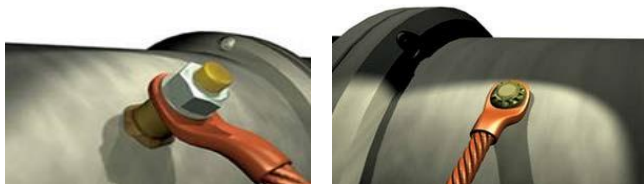
Electronic Pin Brazing Unit S30XC

Document No.: PSE-22-800-R622

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PSE ENGINEERING
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When a cathodic protection system is applied to steel, ductile or cast-iron pipelines, vessels, tanks or reinforcement bars. No more confusion and maintenance with thermit weld molds and weld portions. Just pin braise your cables, easy and quick!



The advantages with pin brazing

- Works in any weather condition
- Fast, the pin brazing process takes only a second Does not affect internal coatings
- Economical
- Safe for the operator
- Low temperature, much less than thermit welding Does not melt the work material down
- No need for special moulds
- The whole preparation takes less than 1 minute

Electronic Pin Brazing Unit S30XC

S30 X/C is a small hand bearable pin brazing unit made specially for cathodic protection and grounding installations. S30 X/C is electronically steered, driven by 3 pcs of 12 V batteries which is easily exchangeable with a cassette system. The power (36V DC) comes from sealed high power batteries placed in a separate battery box for easy exchanging.

The well-reputed patented Automatic S4 gun is standard. Brazing pins without fuse wire is used.

Technical Specification

Voltage	36 V DC	Width	230 mm
Number of brazes	40-60	Height	390 mm
Weight (13Ah/16Ah)	22/25 kg	Length	280 mm

Unit S30XC is delivered with:

Braze pistol S4 Automatic	SAFE 9105
Battery case for 13 Ah with cables	SAFE 9321
Batteries 13 Ah 3 pcs required	SAFE 8092
Battery Charger 5 A	SAFE 8049
Ground magnet, std.	SAFE 8067

Brazing pins

The Pinbrazing system use a special patented silver containing brazing pin with a melting temperature of less than 700°C (1300°F). The special pin brazing technique ensure that it is only the solder material that melts. Never the steel structure.



SAFE No.	Dimensions mm	Qty. pack
10051	Ø 8	100
10301	Ø 8 extra	100
10191	Ø 9.5	100
10381	M8, Threaded brazing pin, L=16	50
10401	M10, Threaded brazing pin, L=24	50
10421	M12, Threaded brazing pin, L=24	50

Ferrules

Ferrules are used when Pin brazing to avoid the brazing gun to be stuck to the work piece and also for distribute the oxygen even to the process.

SAFE No.	Dimensions mm	Qty. pack
2003	Ø 8	100
2009	Ø 9.5	100
2012	Ø 12 use for all threaded brazing pins (M8/M10/M12)	100



Accessories

Grinding machine	SAFE 8005
Tool case	SAFE 9524
Shoulder strap	SAFE 9523
Battery Charger 3A	SAFE 8052
Battery Charger 5A	SAFE 8049
Battery charger, for car use	SAFE 8055
High power batteries 13 Ah	SAFE 8092
High power batteries 16 Ah	SAFE 8093
Ground with super magnet for CP	SAFE 8069
Ground Grip	SAFE 8071
Grinding wheel, silicon free	SAFE 8025
Carbide burr, type C	SAFE 8014
Carbide burr, type C extended (XL)	SAFE 8014
Handy 2, rail trolley	SAFE 9361
Separate battery box for 16 Ah exl. batteries. With lid and handle.	SAFE 9320
Separate battery box for 13 Ah exl. batteries. With lid and handle.	SAFE 9321
Battery adapter for charging of separate battery box	SAFE 9318
Angle device for S4 gun	SAFE 9232
Pin holder 8-9.5	SAFE 9211
Pin holder M8	SAFE 9213
Pin holder M10	SAFE 9215
Pin holder M12	SAFE 9217
Ring holder 8-9.5	SAFE 9202
Ring holder M8/M10/M12	SAFE 9204
Extension set for S4 / 8-9.5	SAFE 9227
Extension set threaded pins	SAFE 9229

Cable lugs - Field made bonds

It is possible to make your own bond with a special cable lug made for Pin brazing. It is very important that this lug is exactly manufactured for the pin brazing method to secure a perfect bond.

You crimp the cable to the lug with a crimping tool.

The lugs are supplied in a cpl. kit with brazing pins and ferrules so there is no risk of mixing the material.



Cable lug SAFE No.	Cable area	D inner	D outer	Qty. pack	Complete kit incl. Brazing pin
6056CP	10 mm²	6	9	100	SAFE 10051
6057Cp	16 mm²	6.5	9	100	SAFE10051
6080CP	25 mm²	8	12	100	SAFE10301
6091CP	Ø 8 mm	8.5	12	100	SAFE10301
6081CP	35 mm²	9	12	100	SAFE10301
6079CP	50 mm²	11	14	100	SAFE10301

For connecting smaller cable sizes use terminal sleeves and lugs as follow:

2.5 mm², use sleeve SAFE 6700 + lug SAFE 6056

4.0 mm², use sleeve SAFE 6701 + lug SAFE 6056

6.0 mm², use sleeve SAFE 6702 + lug SAFE 6056

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Capacitor Discharge Stud Welding Unit

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Compact stud welding unit LBS 80

for capacitor discharge stud welding according to DIN EN ISO 14555 (contact and gap welding)

Capacitor Discharge stud welding is an extremely efficient method of welding fasteners to a wide variety of metals like mild steel, stainless steel, brass, copper, etc. The process utilizes a powerful bank of capacitors to store energy at a specific voltage determined by stud size and material. When a weld is initiated, this energy is "discharged" through a special "ignition tip" at the base of the stud, creating an instantaneous arc which melts both the base of the stud and the adjoining surface on the work piece. At the same time, the welding gun forces the stud into the work piece, resulting in a permanent bond.

- welding range: $\varnothing$ 2-10 mm
- welding material: steel, stainless steel, brass
- highest operational reliability
- excellent welding quality, simple handling indication of all functions by LED
- display of potential error messages
- electronic control of all functions
- digital display of charging voltage
- short charging time and thus quick welding sequences through electronically clocked inverter charging board
- low-loss charging of capacitors through electronically clocked inverter charging board
- low thermal power loss
- charging voltage not influenced by supply voltage variations
- optimal safety during welding through integrated safety switching
- internal charging time regulation in order to prevent overheating
- light and handy, especially suitable for mobile use



Characteristics

- thermic controlled ventilation
- compact construction, low weight
- robust, powder - coated metal housing
- front plate with screen print (scratch resistant)
- 50 mm² welding cable sockets
- automatic function test after switch-on
- tensile secure welding cable sockets
- electromagnetic compatibility (EMC) tested
- CE conformity

Technical data

Welding range	$\varnothing$ 1-10 mm
Welding material	steel, stainless steel, brass
Welding rate	up to 25 studs/min. (depending on stud diameter)
Welding method (acc. to DIN EN ISO 14555)	capacitor discharge (contact and gap welding)
Welding time	1 - 3 ms
Capacitance	90 000 μ F
Charging voltage	60-200 V, continuously adjustable
Charging energy	1800 Ws
Power source	capacitor battery
Mains plug	earth contact plug acc. to DIN 49441
Mains fuse external	≥ 10 AT
Protection class	IP 21
Dimensions (W x H x L)	195 x 265 x 410 mm
Weight	13.5 kg
Suitable welding guns	PKM-1B , PKM-101, PHM-1A, PHM-101, PIM-1B

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Capacitor Discharge Stud Welding Unit

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Compact Stud Welding Gun PKM-1B

compact stud welding gun for capacitor discharge stud welding (contact method) according to DIN EN ISO 14555



- welding range: $\varnothing$ 1-10 mm
- welding materials: steel (unalloyed and alloyed), weldable special alloys
- highest operational reliability
- simple handling, excellent welding quality light and handy
- very well suited for welding on problematic surfaces (e.g. zinc, tinder)
- all stud types weldable (special chuck might be required)
- short retooling time (quickly changeable chucks)
- robust housing made of impact resistant plastic
- highest stud positioning accuracy

Technical data

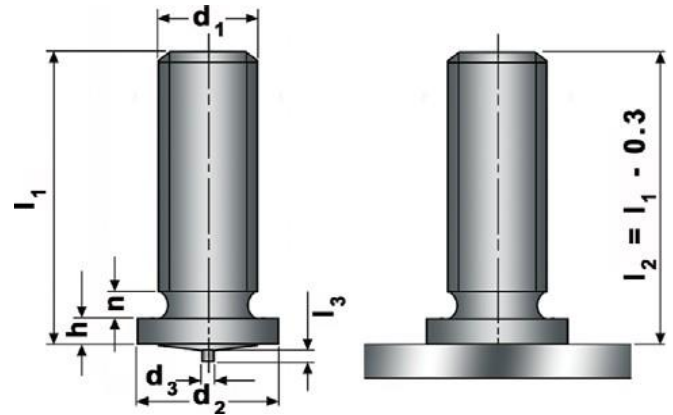
Welding range	$\varnothing$ 1-10 mm
Welding material	steel, stainless steel, brass
Stud length	standard: 6 - 40 mm with intermediate rings: any length
Welding method acc. to DIN EN ISO 14555	capacitor discharge (contact method)
Welding cable	6.5 m highly flexible, 25 mm ²
Dimension (WxHxL)	40x130x183 mm
Weight	0.7 kg

Characteristics

- Spring pressure adjustable
- Indication of adjusted spring pressure in sight window
- Light handy
- CE conformity

Threaded studs (Type PT)

according to DIN EN ISO 13918



d ₁	l ₁	d ₂	d ₃	l ₃	n	h	Material (Article-No.)			Chuck
							steel 4.8 copper-plated	A2-50	CuZn37	
M4	15						11-04-015	12-04-015	13-04-015	82-50-004
M4	20						11-04-020	12-04-020	13-04-020	
M4	25	5.5	0.65	0.55	max 1.5	0.7	11-04-025	12-04-025	13-04-025	
M4	30					1.4	11-04-030	12-04-030	13-04-030	
M4	35						11-04-035	12-04-035	13-04-035	
M4	40						11-04-040	12-04-040	13-04-040	82-50-005
M5	10						11-05-010	12-05-010	13-05-010	
M5	15						11-05-015	12-05-015	13-05-015	
M5	20	6.5	0.75	0.8	max 2	0.7	11-05-020	12-05-020	13-05-020	
M5	25					1.4	11-05-025	12-05-025	13-05-025	
M5	30						11-05-030	12-05-030	13-05-030	
M5	35						11-05-035	12-05-035	13-05-035	82-50-006
M5	40						11-05-040	12-05-040	13-05-040	
M6	10						11-06-010	12-06-010	13-06-010	
M6	15						11-06-015	12-06-015	13-06-015	
M6	20	7.5	0.75	0.8	max 2	0.7	11-06-020	12-06-020	13-06-020	
M6	25					1.4	11-06-025	12-06-025	13-06-025	82-50-008
M6	30						11-06-030	12-06-030	13-06-030	
M6	35						11-06-035	12-06-035	13-06-035	
M6	40						11-06-040	12-06-040	13-06-040	
M8	10						11-08-010	12-08-010	13-08-010	
M8	15						11-08-015	12-08-015	13-08-015	82-50-010
M8	20						11-08-020	12-08-020	13-08-020	
M8	25	9	0.75	0.85	max 3	0.7	11-08-025	12-08-025	13-08-025	
M8	30					1.4	11-08-030	12-08-030	13-08-030	
M8	35						11-08-035	12-08-035	13-08-035	
M8	40						11-08-040	12-08-040	13-08-040	82-50-010
M8	45						11-08-045	12-08-045	13-08-045	
M8	50						11-08-050	12-08-050	13-08-050	
M8	55						11-08-055	12-08-055	13-08-055	
M8	60						11-08-060	12-08-060	13-08-060	
M10	15						11-10-015	12-10-015	-	82-50-010
M10	20						11-10-020	12-10-020	-	
M10	25						11-10-025	12-10-025	-	
M10	30						11-10-030	12-10-030	-	
M10	35						11-10-035	12-10-035	-	
M10	40	10.5	0.75	0.75	max 3	0.7	11-10-040	12-10-040	-	82-50-010
M10	45					1.4	11-10-045	12-10-045	-	
M10	50						11-10-050	12-10-050	-	
M10	55						11-10-055	12-10-055	-	
M10	60						11-10-060	12-10-060	-	