

CABLE CONNECTIONS

Capacitor discharge stud welding unit

Document No.: 09-550-R2

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German Cathodic Protection



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 such as mild steel, stainless steel, brass, copper, etc. The process uses a powerful bank of capacitors to store energy at a specific voltage as required by stud size and material. When welding begins, this energy is discharged through a special ignition tip at the base of the stud. This creates an instantaneous arc which melts both the base of the stud and the adjoining surface onto the workpiece. At the same time, the welding gun forces the stud into the workpiece, 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

- thermally controlled ventilation
- compact construction, low weight
- robust, powder-coated metal housing
- front plate with screenprint (scratch resistant)
- 50 mm² welding cable sockets
- automatic function test after switching on unit
- 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	\geq 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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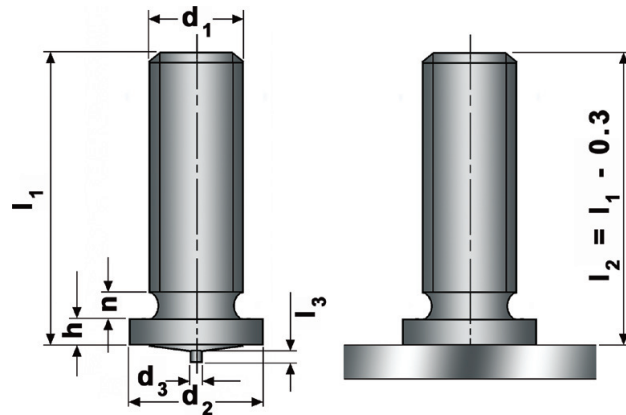
Compact stud welding gun PKM-1B

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



Threaded studs (Type PT)

according to DIN EN ISO 13918



- 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 easy to use
- very well suited for welding on problematic surfaces (e.g. zinc, tinder)
- all stud types weldable (special chuck might be required)
- short re-tooling 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
Dimensions (WxHxL)	40x130x183 mm
Weight	0.7 kg

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	5.5	0.65	0.55	max 1.5	0.7 - 1.4	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						11-04-025	12-04-025	13-04-025	
M4	30						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	
M5	10	6.5	0.75	0.8	max 2	0.7 - 1.4	11-05-010	12-05-010	13-05-010	82-50-005
M5	15						11-05-015	12-05-015	13-05-015	
M5	20						11-05-020	12-05-020	13-05-020	
M5	25						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	
M5	40						11-05-040	12-05-040	13-05-040	
M6	10	7.5	0.75	0.8	max 2	0.7 - 1.4	11-06-010	12-06-010	13-06-010	82-50-006
M6	15						11-06-015	12-06-015	13-06-015	
M6	20						11-06-020	12-06-020	13-06-020	
M6	25						11-06-025	12-06-025	13-06-025	
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	9	0.75	0.85	max 3	0.7 - 1.4	11-08-010	12-08-010	13-08-010	82-50-008
M8	15						11-08-015	12-08-015	13-08-015	
M8	20						11-08-020	12-08-020	13-08-020	
M8	25						11-08-025	12-08-025	13-08-025	
M8	30						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	
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	10.5	0.75	0.75	max 3	0.7 - 1.4	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						11-10-040	12-10-040	-	
M10	45						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	-	

Characteristics

- spring pressure adjustable
- indication of adjusted spring pressure in sight window
- low weight and easy handling
- CE conformity