

# DALEX

## SCHWEISSTECHNIK



A  
SPOT  
Welding machine



B  
SPOT/PROJECTION  
Welding machine



C  
PROJECTION  
Welding machine



N  
SEAM  
Welding machine with cross or  
longitudinal arms



AN  
comb. SPOT/SEAM  
Welding machine



BN  
SPOT/PROJECTION/SEAM  
Welding machine

### TECHNICAL DETAILS

- non-distortion machine frame with ribbed shell construction
- generously-dimensioned switching cabinet for taking welding and machine controls
- absolute separation between machine and switching unit
- infinitely adjustable height of lower arm
- electrode force cylinder with precision guide and external rotational protection
- very good performance factor via the close coupling of the secondary circuits
- electrode force can be infinitely regulated
- speed of working and return strokes of the cylinders can be regulated separately via throttle
- 4 separate cooling water circuits for cooling the current-carrying parts and the power stage
- welding transformer cast in resin for water-cooling and thermal protective switch is fully enclosed in the primary side
- primary and secondary coils vacuum cast
- compressed air service unit as standard, consisting of filter, regulator and manometer



fig. PMS 11-4 in model B  
as comb. spot/project. weldi. machine

### TECHNICAL DATA

Power rating at 50 % d.c:	50, 80 or 100 kVA
Throat depth:	250, 350, 550, 750, 1050 mm
Electrode force:	100 – 600 daN, 20 – 600 daN, or 190 – 1140 daN
Electrode stroke:	max. 90 mm stroke

### EXTRA EQUIPMENT

- double stroke cylinder (DH), 65 + 25 mm stroke
- double stroke cylinder + travel for working stroke (DHZ), 0 - 65 mm working stroke + 25 - 90 mm operational stroke
- double stroke cylinder with approach stroke and sequencing (DHZF) 0 - 90 mm approach stroke for working stroke , 0 - 90 mm operational stroke or 90 mm long stroke
- cylinder with extended force range 20 - 600 daN
- cylinder with increased force range 190 - 1140 daN
- flow monitor for monitoring the cooling water amount
- adjusting device for raising and lowering the lower arm
- pressure-free lowering of upper arm via hand-valve
- electronic electrode force switch
- doubled secondary idling voltage
- 4-step switch mounted in switching cabinet
- main switch mounted in switching cabinet
- pressure-compensator to reconcile tool tolerances
- model as 3-phase direct current machine
- synchronised thyristor control acc. to choice

PMS 11-4

Resistance Welding machine

# Resistance Welding machine Type PMS 11-4

TECHNICAL DATA acc.to DIN 44753

09/2006

			Nominal Throat Depth 250 mm											
Group	Parameters		Model			Model			Model					
			A	B	C	A	B	C	A	B	C			
Electrical Part	Machine power	Power rating (50 % d.c.)	kVA			50			80			100		
		Continuous output	kVA			35,4			56,6			70,7		
		Maximum short-circuit power	kVA			150	183	195	296	359	370	402	491	520
		Maximum welding power	kVA			120	146	156	237	287	296	322	392	416
	Machine voltage	Secondary idling	V	5,0 i.e. 2,5 / 3,4 / 4,2 / 5,0 <sup>12)</sup>			7,0 i.e. 3,5 / 4,75 / 5,93 / 7,0 <sup>12)</sup>			8,26 i.e. 4,13 / 5,5 / 6,9 / 8,26 <sup>12)</sup>				
		Number of regulating steps		0 i.e. 4 <sup>12)</sup>			0 i.e. 4 <sup>12)</sup>			0 i.e. 4 <sup>12)</sup>				
	Mains connection	Rated primary voltage	V	400			400			400				
		Rated primary current	A	131			210			263				
		Rated frequency	Hz	50			50			50				
		Supply power	kVA	90	110	117	177	215	222	241	294	312		
		Main switch / Fusing <sup>1)</sup>	A	HL 125 / 80			HL 125/125		HL 250/160		HL 250/160		HL 250/200	
		Wire range <sup>1) 13)</sup>	mm <sup>2</sup>	16			25		35		35		50	
	Secondary current	Rated operating current	kA	9,77	9,83	9,86	11,31	11,36	11,37	11,96	12,0	12,03		
		Permanent current <sup>2)</sup>	kA	6,91	6,95	6,97	8,0	8,03	8,04	8,46	8,49	8,51		
		Short-circuit current	kA	29,5	35,9	39	42,2	50,5	52,2	48,5	59,2	62,8		
		Highest welding current	kA	23,6	28,7	31,2	33,8	40,4	41,8	38,8	47,4	50,2		
permitt. duty cycle at max. weld. curr.		%	8,6	5,9	5	5,6	4	3,7	4,8	3,2	2,9			
Mechanical Part	Cylinder EH	Electrode stroke max	mm			90			90			90		
		Electrode force min. / max.	daN			100 / 600 i.e. 190 / 1140 <sup>10)</sup>			100 / 600 i.e. 190 / 1140 <sup>10)</sup>			100 / 600 i.e. 190 / 1140 <sup>10)</sup>		
		Max. movements / 10mm stroke	min <sup>-1</sup>			400			400			400		
		Air consumption / 1000 strokes <sup>3)</sup>	m <sup>3</sup>			0,9 i.e. 1,0 <sup>10)</sup>			0,9 i.e. 1,0 <sup>10)</sup>			0,9 i.e. 1,0 <sup>10)</sup>		
	Cylinder DH, DHZ, DHZF	Electrode stro. max. work+operat. str.	mm										90 / DH = 65 + 25 / DHZ = 0 - 65 + 25 - 90 / DHZF = 0 - 90 + 0 - 90	
		Electrode force min. / max.	daN			100 / 600 i.e. 190 / 1140 <sup>10)</sup> only DHZF								
		Max. movements / 10mm stroke	min <sup>-1</sup>			400			400			400		
		Air consumption / 1000 strokes <sup>3)</sup>	m <sup>3</sup>			1,1 i.e. 1,2 <sup>10)</sup>			1,1 i.e. 1,2 <sup>10)</sup>			1,1 i.e. 1,2 <sup>10)</sup>		
	Spot mounting	Throat gap min./max.	mm			115 / 415			115 / 415			115 / 415		
		Electrode arm-Ø	mm			60			60			60		
		Electrode holder-Ø	mm			30			30			30		
		Electrode holder adjustability	mm			180			180			180		
		Spot electrode seat no./outerØ	mm			2 / 19			2 / 19			2 / 19		
	Projection mounting	Clamping plate above W x D	mm			130 x 130			130 x 130			130 x 130		
		Clamping plate below W x D	mm			130 x 130			130 x 130			130 x 130		
		Clamping plate sep. min/max.	mm			140 / 440			140 / 440			140 / 440		
T-grooves/separation mm x no		mm			10 DIN 650 / 63 x 2			10 DIN 650 / 63 x 2			10 DIN 650 / 63 x 2			
Seam mounting	Roller electr. above Ø cross/long	mm			—			—			—			
	Roller electr. below Ø cross/long	mm			—			—			—			
	Working stroke speed min. / max.	m/min <sup>-1</sup>			—			—			—			
Comp. air	Pipe conn. / nom. width / thread.				NW 16 / R 1/2			NW 16 / R 1/2			NW 16 / R 1/2			
	Operating pressure min. / max.	bar			6 / 10			6 / 10			6 / 10			
Cooling water	Pipe conn. / nom. width / thread				NW 20 / R 3/4			NW 20 / R 3/4			NW 20 / R 3/4			
	Operating pressure min. / max..	bar			2/5			2/5			2/5			
	Consumption at max. loading	l/min <sup>-1</sup>			10 i.e. 6 <sup>7)</sup>			12 i.e. 8 <sup>7)</sup>			12 i.e. 8 <sup>7)</sup>			
Machine dimensions	Width x depth x height <sup>6)</sup>	mm										780 x 1253 x 1560 EH / 1636 DH / 1703 DHZ / 1757 DHZF / 1645 EH <sup>10)</sup> / 1889 DHZF <sup>10)</sup>		
	Weight machine / cabinet <sup>4)</sup>	kg			440/65	450/65	460 <sup>11)</sup> /65	485/65	495/65	505 <sup>11)</sup> /65	495/65	505/65	515 <sup>11)</sup> /65	
Shipping data	Gross weight <sup>4)</sup>	kg			675	685	695 <sup>11)</sup>	720	730	740 <sup>11)</sup>	730	740	790 <sup>11)</sup>	
	Box: Width x depth x height	mm											930 x 1403 x 1710 EH / 1786 DH / 1853 DHZ / 1907 DHZF / 1795 DHZF <sup>10)</sup> / 1889 DHZF <sup>11)</sup>	
	Volume	m <sup>3</sup>											2,2 EH / 2.3 DH / 2.4 DHZ / 2.5 DHZF / 2.3 EH <sup>10)</sup> / 2.7 DHZF <sup>10)</sup>	
Op. Part	Welding values	Steel sheet C-content < 0,2 % <sup>5)</sup>	mm		7 + 7				8 + 8				8 + 8	
		Brass sheet <sup>5)</sup>	mm		4 + 4				5 + 5				5 + 5	
		Aluminium sheet <sup>5)</sup>	mm		2 + 2				3 + 3				3 + 3	
		Round steel Ø C-content < 0,2 % <sup>5)</sup>	mm		20 + 20				22 + 22				22 + 22	
Power stage	Thyristor power stage	IW		1/250			1/500			1/500		1/900		
Notes	Technical alterations reserved. The table contents refer to standard models.													
	1) operating class. gL			6) excl. switching cabinet, width = 510 mm			10) special equipment with increased electrode force range							
	2) at max. transformer level			7) excl. thyristor power stage			11) increased electrode force range + 10 kg							
	3) at operating pressure 6 bar, stroke 20 mm			8) act. throat depth = at model A + 5 mm / B, C-10mm			12) for special equipment with 4-step switching							
	4) DH+10 kg, DHZ+12 kg, DHZF + 15 kg			9) special models with extended electrode force range			13) cable length < 15 m							
5) subject to size influences														