

# PMS

## RESISTANCE WELDING MACHINE

### PMS 16-6



- A** SPOT welding machine
- B** COMB. SPOT-/PROJECTION-welding machine
- C** PROJECTION welding machine
- N** SEAM welding machine with cross or longitudinal arms

### 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

Ausführung	Maß H
A-EH	1885
A-DH	1945
A-DHZ	2020
A-DHZF	2078,5

### TECHNICAL DATA

Power rating at 50 % d.c.	200 or 250 kVA
Throat depth	350, 550, 750 or 1050 mm
Electrode force	340- 2040 daN or 140- 2040 daN or 500 - 3000 daN
Electrode stroke	max. 120 mm

### OPTIONAL FEATURES

- double stroke cylinder (DH), 90 + 30 mm stroke
- double stroke cylinder + travel for working stroke (DHZ), 0 - 90 mm working stroke + 30 - 120 mm operational stroke
- double stroke cylinder with approach stroke and sequencing (DHZF) 0 - 120 mm approach stroke for working stroke , 0 - 120 mm operational stroke or 120 mm long stroke
- cylinder with extended force range 140 - 3000 daN
- cylinder with increased force range 500 - 1800 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 unit acc. to choice

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Technical Data according to DIN 44753

			Nominal Throat Depth 350 mm 8)						
Group	Parameters		Model			Model			
			A	B	C	A	B	C	
Electrical Part	Machine power	Power rating (50 % d.c.)	kVA	200			250		
		Continuous output	kVA	141,4			176,5		
		Maximum short-circuit power	kVA	604	848	908	920	1268	1380
		Maximum welding power	kVA	483	678	726	735	1015	1104
	Machine voltage	Secondary idling voltage	V	6,15/7,54/8,88/10,25			7,7/9,3/10,8/12,5		
		Number of regulating steps		4			4		
	Mains connection	Rated primary voltage	V	400			400		
		Rated primary current	A	500			625		
		Rated frequency	Hz	50			50		
		Supply power	kVA	362	508	545	550	761	828
		Primary short-circuit current	A	1510	2120	2270	2300	3170	3450
		Main switch / Fusing <sup>1)</sup>	A	MC 408/200	MC 408/250	MC 408/315	MC 408/315	MC 408/400	MC 408/400
		Wire range <sup>10)</sup>	mm <sup>2</sup>	50	70	95	95	150	150
	Secondary current	Rated operating current	kA	19,25	19,29	19,3	19,47	19,52	19,54
		Permanent current <sup>2)</sup>	kA	13,61	13,64	13,65	13,77	13,8	13,82
		Short-circuit current	kA	57,8	81,3	87,7	72	99,6	108
Highest welding current		kA	46,2	65	70,2	57,6	79,7	86,4	
permitt. duty cycle at high. weld. curr.		%	8,7	4,4	3,8	5,7	3	2,5	
Mechanical Part	Cylinder EH	Electrode stroke max.	mm	120			120		
		Electrode force min. / max. <sup>9)</sup>	daN	340/2040 i.e. 140/2040			340/2040 i.e. 140/2040		
		Max. movements / 10mm stroke	min <sup>-1</sup>	300			300		
		Air consumption / 1000 strokes <sup>3)</sup>	m <sup>3</sup>	3,2			3,2		
	Cylinder DH, DHZ, DHZF	Electrode str. max. work. + oper. str.	mm	120 / DH = 90 + 30 / DHZ = 0 - 90 + 30-120 / DHZF = 0 - 120 + 0-120					
		Electrode force min. / max.	daN	340/2040 i.e. 140/2040			340/2040 i.e. 140/2040		
		Max. movements / 10mm stroke	min <sup>-1</sup>	300			300		
		Air consumption / 1000 strokes <sup>3)</sup>	m <sup>3</sup>	3,4			3,4		
	Spot mounting "A"	Throat gap min./max.	mm	160/460			160/460		
		Electrode arm-Ø	mm	90			90		
		Electrode holder-Ø	mm	35 i.e. on-flange model at "B4"			35 i.e. on-flange model at "B4"		
		Electrode holder adjustability	mm	160			160		
		Spot electrode seat no./outerØ	mm	3/25			3/25		
	Projection mounting "B" and "C"	Clamping plate above W x D	mm	200 x 200			200 x 200		
		Clamping plate below W x D	mm	200 x 200			200 x 200		
		Clamping plate sep. min. / max.	mm	200/500			200/500		
		T-grooves/separation mm x no.	mm	14 DIN 650/126 x 2			14 DIN 650/126 x 2		
	Seam mounting "N"	Roller electr.aboveØcross / long	mm	---			---		
		Roller electr.belowØcross / long	mm	---			---		
		Travel speed min. / max.	m/min <sup>-1</sup>	---			---		
	Comp. air	Pipe conn., nom. width / thread		NG 16/G 1/2			NG 16/G 1/2		
		Operating pressure min. / max.	bar	6/10			6/10		
	Cooling water	Pipe conn., nom. width / thread		NG 20/G 3/4			NG 20/G 3/4		
		Operating pressure min. / max.	bar	2/5			2/5		
Consumption at max. loading <sup>7)</sup>		l/min <sup>-1</sup>	14 i.e. 10			14 i.e. 10			
Machine dimensions	Width x depth x height <sup>6)</sup>	mm	900 x 1425 x 1885 EH / 1945 DH / 2020 DHZ / 2078,5 DHZF						
	Weight machine / cabinet <sup>4)</sup>	kg	1030/70	1060/70	1055/70	1070/20	1100/70	1095/70	
Shipping data	Gross weight <sup>4)</sup>	kg	1450	1480	1475	1490	1520	1515	
	Box: Width x depth x height	mm	1100 x 1625 x 2085 EH / 2145 DH / 2220 DHZ / 2279 DHZF						
	Volume	m <sup>3</sup>	3,8 EH / 3,9 DH / 4,0 DHZ / 4,1 DHZF						
Op. Part	Welding values	Steel sheet C-content < 0,2 % <sup>5)</sup>	mm	14 + 14			14 + 14		
		Brass sheet <sup>5)</sup>	mm	8 + 8			8 + 8		
		Aluminium sheet <sup>5)</sup>	mm	6 + 6			6 + 6		
		Round steel Ø C-content < 0,2 % <sup>5)</sup>	mm	30 + 30			32 + 32		
Power stage	Thyristor power stage	IW	1/900 IW			1/900 IW	1/1700 IW		
Notes	Technical alterations reserved. The table contents refer to standard models.								
	1) operating class. gL		5) subject to size influences						
	2) at max. transformer level		6) excl. switching cabinet, width = 600 mm		9) special models with extended electrode force range				
	3) at operating pressure 6 bar, stroke 20 mm		7) excl. thyristor power stage		10) cable length < 15 m				
	4) DH+20 kg, DHZ+25 kg, DHZF+30 kg		8) act. throat depth = model A + 8 mm/B u. C - 22 mm						