

# DALEX

## SCHWEISSTECHNIK



A  
SPOT  
Welding machine



fig. PMS 12-5 in Model A  
as spot 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
- menu-driven, multilingual synchronised welding control with bilingual LDC-Display

### TECHNICAL DATA

|                            |                                                                 |
|----------------------------|-----------------------------------------------------------------|
| Power rating at 50 % d.c.: | 80, 100, 125, 160, 200 kVA                                      |
| Machine throat depth:      | 350, 550, 750 oder 1050 mm                                      |
| Electrode force:           | 120 – 720 daN, 165 – 990 daN,<br>215 – 1290 daN, 300 – 1800 daN |
| Electrode stroke:          | max. 100 mm                                                     |

### EXTRA EQUIPMENT

- double stroke cylinder (DH), 75 + 25 mm Hub
- double stroke cylinder with approach stroke and sequencing (DHZF) 0 - 100 mm approach stroke for working stroke , 0 - 100 mm operational stroke or 100 mm long stroke
- cylinder with extended force range 95 - 1290 daN or 135 - 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
- pressure-compensator to reconcile tool tolerances

PMS 12-5

Resistance Welding machine

# Resistance Welding machine Type PMS 12-5

TECHNICAL DATA acc.to DIN 44753

09/2006

| Group                                   | Parameters                                                                                  | Nominal Throat Depth 350 mm 8) 9)                                                                |                                           |                                          |                                                    |             |
|-----------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------|------------------------------------------|----------------------------------------------------|-------------|
|                                         |                                                                                             | Model A                                                                                          |                                           |                                          |                                                    |             |
| Electrical Part                         | Machine Power                                                                               | Power rating (50 % d.c.)                                                                         | kVA                                       | 100                                      | 125                                                | 160         |
|                                         |                                                                                             | Continuous output                                                                                | kVA                                       | 70,7                                     | 88,4                                               | 113         |
|                                         |                                                                                             | Maximum short-circuit power                                                                      | kVA                                       | 390                                      | 460                                                | 548         |
|                                         |                                                                                             | Maximum welding power                                                                            | kVA                                       | 312                                      | 368                                                | 438         |
|                                         | Machine voltage                                                                             | Secondary idling voltage                                                                         | V                                         | 8,33                                     | 9,09                                               | 9,75        |
|                                         |                                                                                             | Number of regulating steps                                                                       |                                           | 0                                        | 0                                                  | 0           |
|                                         | Mains connection                                                                            | Rated primary voltage                                                                            | V                                         | 400                                      | 400                                                | 400         |
|                                         |                                                                                             | Rated primary current                                                                            | A                                         | 250                                      | 312,5                                              | 400         |
|                                         |                                                                                             | Rated frequency                                                                                  | Hz                                        | 50                                       | 50                                                 | 50          |
|                                         |                                                                                             | Supply power                                                                                     | kVA                                       | 234                                      | 276                                                | 329         |
|                                         |                                                                                             | Primary short-circuit current                                                                    | A                                         | 975                                      | 1150                                               | 1370        |
|                                         |                                                                                             | Main switch / fusing <sup>1)</sup>                                                               | A                                         | KG 251/160                               | KG 251/160                                         | KG 316/200  |
|                                         |                                                                                             | Wire range <sup>12)</sup>                                                                        | mm <sup>2</sup>                           | 35                                       | 35                                                 | 50          |
|                                         | Secondary current                                                                           | Rated operating current                                                                          | kA                                        | 11,7                                     | 13,4                                               | 16          |
| Permanent current <sup>2)</sup>         |                                                                                             | kA                                                                                               | 8,3                                       | 9,5                                      | 11,3                                               |             |
| Short-circuit current                   |                                                                                             | kA                                                                                               | 46                                        | 49,5                                     | 55                                                 |             |
| Highest welding current                 |                                                                                             | kA                                                                                               | 36,8                                      | 39,6                                     | 44                                                 |             |
| permitt. duty cycle at high. weld. cur. |                                                                                             | %                                                                                                | 5,1                                       | 5,7                                      | 6,6                                                |             |
| Mechanical Part                         | Cylinder EH                                                                                 | Electrode stroke max.                                                                            | mm                                        | 100                                      | 100                                                | 100         |
|                                         |                                                                                             | Electrode force min. / max.                                                                      | daN                                       | 165 / 990 <sup>10)</sup>                 | 215/1290 <sup>11)</sup> i.e. 95/1290 <sup>7)</sup> |             |
|                                         |                                                                                             | Max. movements / 10mm stroke                                                                     | min <sup>-1</sup>                         | 200                                      | 200                                                | 200         |
|                                         |                                                                                             | Air consumption / 1000 strokes <sup>3)</sup>                                                     | m <sup>3</sup>                            | 3                                        | 3,1                                                | 3,1         |
|                                         | Cylinder DH                                                                                 | Electrode stroke. max. work. + oper. str.                                                        | mm                                        | 100/75 + 25                              | 100/75 + 25                                        | 100/75 + 25 |
|                                         |                                                                                             | Electrode force min. / max.                                                                      | daN                                       | 165/990 <sup>10)</sup>                   | 215/1290 <sup>11)</sup> i.e. 95/1290 <sup>7)</sup> |             |
|                                         |                                                                                             | Max. movements / 10mm stroke                                                                     | min <sup>-1</sup>                         | 200                                      | 200                                                | 200         |
|                                         |                                                                                             | Air consumption / 1000 strokes <sup>3)</sup>                                                     | m <sup>3</sup>                            | 3,3                                      | 3,4                                                | 3,4         |
|                                         | Spot mounting "A"                                                                           | Throat gap min. / max.                                                                           | mm                                        | 110/410                                  | ---                                                | ---         |
|                                         |                                                                                             | Electrode arm-Ø                                                                                  | mm                                        | 75                                       | ---                                                | ---         |
| Electrode holder-Ø                      |                                                                                             | mm                                                                                               | 35                                        | ---                                      | ---                                                |             |
| Electrode holder adjustability          |                                                                                             | mm                                                                                               | 150                                       | ---                                      | ---                                                |             |
| Spot electrode seat no. / outer Ø       |                                                                                             | mm                                                                                               | 3/25                                      | ---                                      | ---                                                |             |
| Comp. air                               | Pipe conn., nom. width / thread                                                             |                                                                                                  | NG 20/G <sup>3/4</sup>                    | NG 20/G <sup>3/4</sup>                   | NG 20/G <sup>3/4</sup>                             |             |
|                                         | Operating pressure min. / max.                                                              | bar                                                                                              | 6/10                                      | 6/10                                     | 6/10                                               |             |
| Cooling water                           | Pipe connection in/ out.                                                                    |                                                                                                  | NG 20/G <sup>3/4</sup>                    | NG 20/G <sup>3/4</sup>                   | NG 20/G <sup>3/4</sup>                             |             |
|                                         | Operating pressure min. / max. <sup>6)</sup>                                                | bar                                                                                              | 4/6                                       | 4/6                                      | 4/6                                                |             |
|                                         | Consumption at max. loading                                                                 | l/min <sup>-1</sup>                                                                              | 10                                        | 12                                       | 12                                                 |             |
| Machine dimensions                      | Width x depth x height                                                                      | mm                                                                                               | 775 x 1330 x 1745,5 EH / 1876,5 DH        |                                          |                                                    |             |
|                                         | Weight machine / cabinet                                                                    | kg                                                                                               | 705 EH / 715 DH                           | 735 EH / 745 DH                          | 760 EH / 770 DH                                    |             |
|                                         | Gross weight                                                                                | kg                                                                                               | ---                                       | ---                                      | ---                                                |             |
| Shipping data                           | Box: Width x depth x height                                                                 | mm                                                                                               | ---                                       | ---                                      | ---                                                |             |
|                                         | Volume                                                                                      | m <sup>3</sup>                                                                                   | ---                                       | ---                                      | ---                                                |             |
|                                         |                                                                                             |                                                                                                  |                                           |                                          |                                                    |             |
| Op. Part                                | Welding values                                                                              | Steel sheet C-content < 0,2 % <sup>4)</sup>                                                      | mm                                        | 12 + 12                                  | 12 + 12                                            | 12 + 12     |
|                                         |                                                                                             | Brass sheet <sup>4)</sup>                                                                        | mm                                        | 6 + 6                                    | 6 + 6                                              | 7 + 7       |
|                                         |                                                                                             | Aluminium sheet <sup>4)</sup>                                                                    | mm                                        | 4 + 4                                    | 4 + 4                                              | 5 + 5       |
|                                         |                                                                                             | Round steel Ø C-content < 0,2 % <sup>4)</sup>                                                    | mm                                        | 26 + 26                                  | 26 + 26                                            | 28 + 28     |
| Power stage                             | Thyristor power stage <sup>5)</sup>                                                         | IW                                                                                               | 1/500 IW                                  | 1/500 IW                                 | 1/900 IW                                           |             |
| Notes                                   | Technical alterations reserved. The table contents refer to standard models.                |                                                                                                  |                                           |                                          |                                                    |             |
|                                         | 1) operating class. gl                                                                      | 5) relative duty cycle and max. current time during the total time, see appropriate load diagram |                                           | 8) act. throat depth 353 mm              |                                                    |             |
|                                         | 2) at max. transformer level                                                                | 6) circulatory cooling = pressure difference between coolant forward motion/return motion        |                                           | 9) data for other mountings upon request |                                                    |             |
| 3) at operating pressure 6 bar          | 7) special models with extended electrode force range, only for throat depth 350 and 550 mm |                                                                                                  | 10) from throat depth 750 mm: 120/720 daN |                                          |                                                    |             |
| 4) subject to size influences           |                                                                                             |                                                                                                  | 11) from throat depth 750 mm: 165/990 daN |                                          |                                                    |             |
|                                         |                                                                                             |                                                                                                  | 12) cable length < 15 m                   |                                          |                                                    |             |