

Butt Welding Machine Model SM



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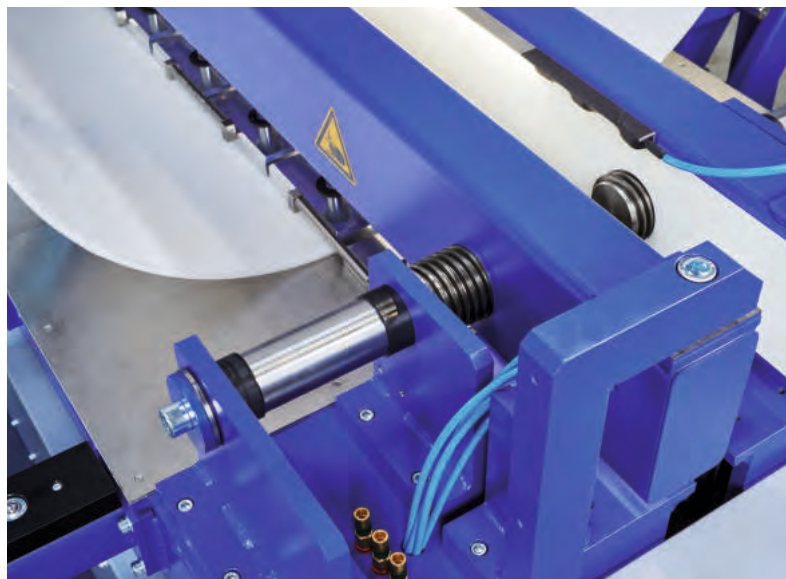
Our butt welding machines from the SM series are based on a sturdy welded tube design and have been setting the standard for butt welding thermoplastic materials for decades. All of the machine's components are matched to the relevant load case to ensure the top quality welding of plastics. The machine tables are of a sandwich design to guarantee a high flexural strength. Together with the symmetrical design and the heavy-duty guides that are used, this results in a balanced load characteristic and ensures a constant quality of the welds, even when the available engine powers are in permanent use. The high quality standard of **WEGENER**-machines is your guarantee for maximum precision, reliability and longevity. You will find the right machine configuration to meet your needs from our range of butt welders, be this for the single-part or serial production of panel thicknesses from 3 - 60 mm, in working widths of 2 to 6 m. **WEGENER** butt welding machines for thermoplastic materials – are the original that has often been copied, but never matched.

The parallel movement mechanism (patented) is a further key element of our machine concept, guaranteeing a precise and safe parallel movement of the tables. An even distribution of pressure over the entire working width (welding length) is essential to ensure a faultless welding process. **WEGENER** satisfies this requirement through the integration of a patented, low-maintenance mechanical synchronisation of the working tables. The overall machine concept creates the ideal requirements for quality-assured welding in accordance with DVS 2208-1.



Even the basic model of the SM series

WEGENER butt welding machine has a modern and innovative Siemens S7-1500 control system with 12" Simatic industrial touch screen and valve cluster technology as well as a database that automatically determines the times, forces and temperature needed for welding based on DVS parameters after the material, panel thickness and length have been entered and then sets and uses these values for the respective welding operation. The new user interface enables interactive operation of the machine and has a plain-text display to guide the operator to the next operating step.



The standard **WEGENER** VARIO clamping system means that the clamping beam and thus the gap between the clamping feet and table edge can be set variably. This system has been designed so that thin panels can be clamped as shortly as possible, enabling welding with no offsets, and so that enough space is left with thick panels to allow a problem-free production of the weld bead. The VARIO clamping system provides the ideal conditions for a corner weld connection in conjunction with the servo-electric heating element's height adjustment of the optional 90° welding device. The height of the heating element can thus be adapted to the thickness of the plastic boards via the control panel and the VARIO clamping system guarantees an ideal support for the plastic panels during welding.

The **WEGENER** sheet rolling technology allows the rational production of cylinders from thermoplastic panel materials. It has been designed as an option for the butt welding machines in the SM series and is available in two different power classes. It can be retrofitted on a **WEGENER** butt welding machine from the latest SM series at any time.

The RV or SR sheet rolling devices are ideally matched to the requirements of producing cylindrical blanks. They significantly reduce the number of personnel needed and ideally allow a one-

man operation. At the same time, the sheet rolling device actively increases the safety of the operating personnel during sheet rolling since the blanks is normally held and fixed by two belts. Even if the supply voltage fails, the self-locking drive systems secure the position of the blank and thus actively increase the safety of the operating personnel. Further aids* such as a crane, fork-lift truck, roller tables, etc. to assist the sheet rolling device may have to be used depending on the application.



SM 348 with Sheet Rolling Device SR3

The machines can be equipped with the following optional extras:

- **Documentation of the welding data pursuant to DVS including laser printer**
- **TPQ system: force-measuring system including position measuring system**
with our TPQ system, additional loads on the machine such as the weight of the panel material being processed can be compensated to ensure that the calculated values are in fact available for processing the panels. The printer to print out the welding reports is standard equipment for this and higher configuration levels.
- **Work table surface from stainless steel friction optimized design**
to allow a reliable fixation of the sheet during welding. Replaces the standard table design with aluminium. Simplifies the production of round cylinders.
- **Production data acquisition interface (Epson ESC-Emulation)**
welding data and texts entered by the operator are sent to an external computer (not included) after every welding process.
- **USB interface to document the welding data on a USB stick**
- **Storage option for product-specific parameter sets**
this allows the welding machine's rigging and set-up times to be minimised when changing between individual products and rules out possible sources of errors.
- **Enter customised parameter sets* in the machine's database**
customised or special materials can also be processed on the basis of the parameters provided by the customer after the material, panel thickness and length have been entered.
- **Welding zone illumination**
easily removable strip light with LED technology to illuminate the welding zone between the clamping beams.
- **Height adjustment of the heating element (infinitely variable)**
speed and motion optimized servo-electric heating element drive; needed for the later fitting of a 90° welding device.
- **One- or two-sided sheet lifting device**
for easier removal of the welded panel by raising on one or two sides.
- **Remote control (with cable)**
with the following functions: Clamp left/right, set-up mode on/off, weld start/stop and prolong/abort the times.
- **Splitting of clamping area into two or more parts**
for the simultaneous production of two adjacent welds.
- **Infinitely variable clamping force**
- **Extension arms with ball bearings**
- **Signal horn**
acoustic signal at the end of the welding process.
- **90°-welding device**
including heating element height adjustment, flow control valve for the detection of the vacuum buildup and vacuum prisms to hold the vertical panel/board.
- **Height adjustable clamping beams 2-position**
for hollow sheets processing (e.g. Paneltim, Röchling, Simona, etc.) under consideration of the maximum table forces.
- **High-temperature contact heating sword**
- **LAN- or GSM-based remote maintenance module**

* provided by customer

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Butt Welding Machine with Sheet Rolling Device SR3 and optional equipment

Technical Data	SR	RV
Number of motors:	2, 3, 4, 5	2, 3, 4
Material thickness (mm):	to 30	to 20
Cylinder diameter (mm):	800 to 4,000	800 to 4,000
Optional:	500 to 800	500 to 800
Power consumption (kW):	2 / 3 / 4 / 5	2 / 3 / 4
Power supply:	230/400 V 3/N/PE 50/60 Hz	230/400 V 3/N/PE 50/60 Hz

Technical Data	SM 338 / 438 / 538	SM 348 / 448 / 548 / 648	SM 358 / 458 / 558	SM 368 / 468 / 568
Machine length (mm):	4,950 / 5,950 / 7,000	4,950 / 5,950 / 7,000 / 8,000	4,950 / 5,950 / 7,000	4,950 / 5,950 / 7,000
Machine width (mm)	1,600			
Machine height (mm):	1,300		1,350	
Total weight approx. (kg):	4,800 / 5,400 / 7,500	4,800 / 5,400 / 7,500 / 8,200	5,300 / 5,900 / 8,400	5,300 / 5,900 / 8,400
Max. working width (mm):	3,050 / 4,050 / 5,100	3,050 / 4,050 / 5,100 / 6,100	3,050 / 4,050 / 5,100	3,050 / 4,050 / 5,100
Weldable sheet thickness (mm):				
PE [0.15 N/mm ²]	3 to 30	3 to 40	3 to 50	3 to 60
PP [0.10 N/mm ²]	3 to 30	3 to 40	3 to 50	3 to 60
PVDF [0.10 N/mm ²]	3 to 30	3 to 40	3 to 50	3 to 60
PVC-C at 8 bar [0.50 N/mm ²]	3 to 12	3 to 12	3 to 15	3 to 18
PVC-C at 10 bar [0.50 N/mm ²]	-	3 bis 15	3 bis 18,75	3 bis 22,50
PVC-U at 8 bar [0.60 N/mm ²]	3 to 10 mm	3 to 10	3 to 12,5	3 to 15
PVC-U at 10 bar [0.60 N/mm ²]	-	3 to 12,50	3 to 15,6	3 to 18,75
Min. channel cross section inside dimension (W x H in mm):	300 x 280 / 300 x 290 / 300 x 300	300 x 280 / 300 x 290 / 300 x 300 / 330 x 415	300 x 350 / 300 x 360 / 330 x 415	300 x 350 / 300 x 360 / 330 x 415
Min. cylinder diameter (mm):	400 / 400 / 500	400 / 400 / 500 / 600	500 / 500 / 600	500 / 500 / 600
Power supply:	230/400 V 3/N/PE 50/60 Hz			
Power consumption (kW):	3.5 / 4.5 / 5.5	6.5 / 8.5 / 10.5 / 12.5	6.5 / 8.5 / 10.5	6.5 / 8.5 / 10.5
Compressed air connection min.- max. (bar):	8 to 10	8 to 10	8 to 10	8 to 10
Clamping force (at 8 bar in kN):	30 / 40 / 49.8	39.9 / 54.9 / 64.8 / 79.8	48 / 64 / 80	64 / 88 / 104.5
Clamping force (at 10 bar in kN):	37.5 / 50 / 62	49.8 / 68.5 / 81 / 99.7	60 / 80 / 100	80 / 110 / 130
Table force min. (N):	800 / 900 / 1,000	800 / 900 / 1,500 / 1,500	800 / 900 / 1,500	800 / 900 / 1,500
Table force max. (at 8 bar kN):	20 / 27 / 49.8	20 / 27 / 30.6 / 36.6	23 / 30.5 / 38.5	30 / 40 / 46
Table force max. (at 10 bar kN):	25 / 33.7 / 62	25 / 33.7 / 38 / 45.7	28.8 / 38.1 / 48	37.5 / 50 / 57.5
Heating element (W x H in mm) Teflon coated, Tmax = 260 °C:	20 x 50	20 x 80	20 x 80	20 x 80



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