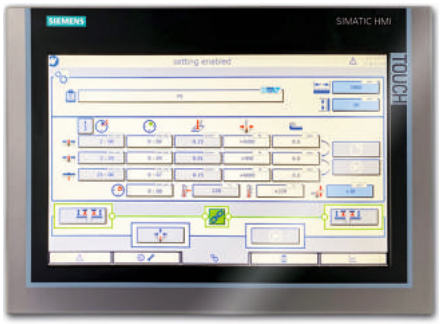
WEGENER

Butt Welding Machine
Model SM

Butt Welding Machine Model SM

The all-rounder – for many applikations

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 heavyduty 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.



Siemens S7-1500
with 12" Simatic-Touchscreen

Simply and interactive machine operation

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 plaintext display to guide the operator to the next operating step.

Patented parallel movement mechanism

The patented parallel movement mechanism 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 qualityassured welding in accordance with DVS 2208-1.

Features

- Solid machine base as a steel structure with integrated precision working tables in a sandwich design that are adapted to the loads
- VARIO-clamping system 2. generation for adjusting the distance between the clamping plate and the edge of the table
- Patented mechanical synchronisation of the working tables; a novelty to achieve a homogeneous application of pressure in the weld seam area
- Process forces regulated via proportional valve
- force-sensing system (incl. compensation of the tractive and frictional forces incl. position transducer) optional
- Siemens S7-1500 with 12" Simatic-Touchscreen
- Material property data record (parameter) with automatic choice of specific welding pressures, temperature and times
- 90° welding device (corner welds) incl. servoelectric height-adjustable heating sword and flow control value for the detection of the vaccum buildup and vacuum prisms
- Adaptable circular drawing device, optional
- Panels/Sheets up to 60 mm thick can be processed [PE/PP]

Sheet rolling technology for rational production of cylinders

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

VARIO clamping system

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.

Options:

- **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

Range of Application:

Tanks and containers

Apparatus construction

Ventilation systems

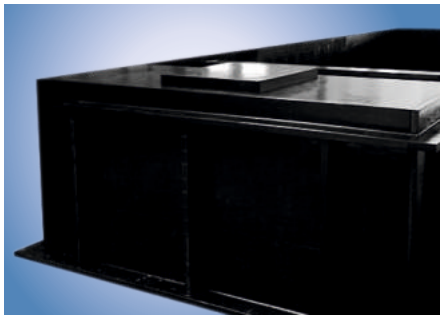
Water treatment systems

Environmental technology

Swimming pools

Scrubbers

Transport and logistics



Modell SM x
Working width from 3 to 6 m

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 Widht (mm):	1,600	1,600	1,600	1,600
Machine Height (mm):	1,300	1,300	1,350	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
Maximum 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
Sheet Thickness to be welded (mm):				
PE (0,15 N/mm²):	3 to 30	3 to 40	3 to 50	3 to 60
PP (0,10 N/mm²):	3 to 30	3 to 40	3 to 50	3 to 60
PVDF (0,10 N/mm²):	3 to 30	3 to 40	3 to 50	3 to 60
PVC-C at 8 bar (0,5 N/mm²):	3 to 12	3 to 12	3 to 15	3 to 18
PVC-C at 10 bar (0,5 N/mm²):	-	3 to 15	3 to 18.75	3 to 22.5
PVC-U at 8 bar (0,6 N/mm²):	3 to 10	3 to 10	3 to 12.5	3 to 15
PVC-U at 10 bar (0,6 N/mm²):	-	3 to 12.5	3 to 15.6	3 to 18.75
Minimum Channel Cross Section (mm):	300 x 280 / 300 x 290 / 300 x 300 *	300 x 280 / 300 x 290 / 300 x 300 / 300 x 415*	300 x 350 / 300 x 360 / 300 x 415 *	300 x 350 / 300 x 360 / 300 x 415 *
Minimum Cylinder Cross Section (mm):	400 / 400 / 500	400 / 400 / 500 / 600	500 / 500 / 600	500 / 500 / 600
Power Supply:	230/400V 3/N/PE 50/60 Hz	230/400V 3/N/PE 50/60 Hz	230/400V 3/N/PE 50/60 Hz	230/400V 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 (bar):	8 - 10	8 - 10	8 - 10	8 - 10
Clamping Force at 8,0 bar (kN):	30 / 40 / 49.8	39.9 / 54.9 / 64.8 / 79.8	48 / 64 / 80	64 / 88 /104.5
Clamping Force at 10,0 bar (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 8,0 bar (kN):	20 / 27 / 49.8	20 / 27 / 30.6 / 36.6	23 / 30.5 / 38.5	30 / 40 / 46
Table Force max, at 10,0 bar (kN):	25 / 33.7 / 62	25 / 33.7 / 38 / 45.7	28.8 / 38.1 / 48	37.5 / 50 / 57.5
Heating Element (B x H in mm) teflon coated, Tmax = 260 °C:	20 x 50	20 x 80	20 x 80	20 x 80

* When the machine is equipped with height adjustable clamping beam, sizes only valid for lower clamping beam

Optional Sheet Rolling Device

SM 348 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):	up to 30	up to 20
Cylinder diameter (mm):: Optional:	800 to 4,000 500 to 800	800 to 4,000 500 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

A strong connection for your success

The WEGENER machines

Butt welding machines

Welding by bending machines

Foam welding machines

The WEGENER equipment

Extrusion welders

Hot gas welders

Wedge welders

Testers to check the quality

The WEGENER specialists

Customised and product-specific special machines

Crease-hinge machines, surface welding systems,

Pallet welding machines, edge sealing systems,

foam welding machines and many more

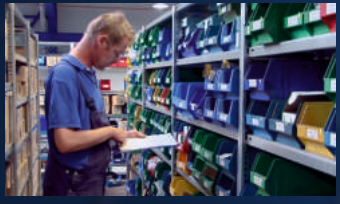
customised solutions

The WEGENER transfer of know-how

Application technology advice

Feasibility study

Training courses and seminars



The WEGENER service

Worldwide support

Commissioning on site

Spare parts service

WEGENER ONLINE

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