

Automatic Flash Butt Welding Machines, type SVU

- for precision and mass production work

ESAB's machine programme comprises machines of different sizes and design with upsetting forces up to max. 1200 kN (120 Mp) and are convenient for welding workpieces with an area of approx. 100-30.000 mm².

Machine Frame and Machine Table

The frame is of a robust, welded construction and the vertical clamping devices are mounted on the top of the machine, one on the adjustable table and the other one on the upsetting platen. The machine table with its clamping unit is adjustable ± 10 mm vertically and horizontally in relation to the upset platen. The adjustment can be made after the workpiece to be welded has been clamped, which ensures a correct lining up of both ends of the workpiece.

Clamping device

The machines are equipped with two vertical hydraulically operated clamping devices. One is mounted on the machine table and the other one on the movable upset platen. The clamping force is adjustable and the motions are fast in order to promote high production rates. As standard, the machines are delivered with flat electrode dies made of special copper alloy.

On request, the electrode dies can be profiled (contoured) in order to suit a specific workpiece. In case the workpiece cannot stand clamping forces needed to avoid slipping tendencies without deformations, end stops can be fitted to the machines. Thereby the workpiece is upset towards a mechanical end stop. The electrode dies are effectively water-cooled.

Upsetting platen

The upsetting platen is made in a robust and rigid design and is provided with one round guide on one side and two flat guides on the other side. The guides are placed inside the platen where they are well protected against weld spatter and dirt by means of effective copper flash guards which are mounted between the platen and the machine frame. The upsetting platen is hydraulically operated by means of a servo-valve.



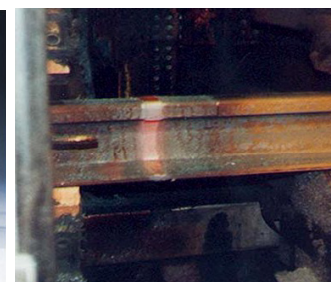
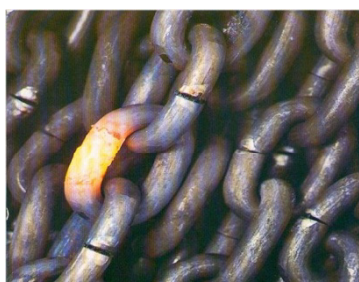
Transformer and Secondary Current Conductors

The machines are in general equipped with two welding transformers, designed for connection to the AC, mains. The secondary windings are made of high conductive copper. Effective cooling is ensured by water carrying copper tubes brazed onto the secondary windings in order to prevent from over-heating.

The secondary windings as well as the secondary current conductors are amply dimensioned and compactly arranged. This contributes to a very good power factor. The transformers with their conductors are adequately protected against welding spatter.

Applications

- Chains
- Rings
- Rails



Welding Control FBW 2012.

- The control unit is housed into a cabinet standing directly on the floor, separate from the machine. It is built around a welding control that controls both the welding sequence and the auxiliary functions of the machine.
- The welding control can save and handle 100 different welding programs, each recognized by a unique name.
- All programs will be created and edited by means of the welding control. It will be done by means of pop-up menus.
- The programming phase is an easy-to-learn easy-to-use procedure starting with the adding of wished modules (pre-flashing, pre-heating, flashing and upsetting). Later every module will be "opened" in order to set the parameters and choose the working modes.



Technical data	5883-K	6883-K	7883-K	8883-K	9883-K
Transformer rating, 50% duty cycle, kVA	2x80	2x110	2x150 (2x250)	2x250	2x250 (2x350)
Max welding input, kVA	320	330	490 (650)	650	650 (880)
Max secondary voltage, V	8	8	10 (12)	12	12 (14)
Number of transformer steps	20	20	20	20	20
Max clamping force, kp	7000	22000	25000	35000	60000
Max clamping opening, mm	110	212	140 (280)	240	440
Max upsetting force, kp	7000	10000	25000	35000	50000
Max platen stroke, mm	80	90	125	175	225
Max weldable outer tube dia, mm	90	130	160	190	285
Max weld area, mm ² :					
- at upsetting pressure 2.5 kp/mm ²	2800	4000	10000	14000	20000
- at upsetting pressure 5.0 kp/mm ²	1400	2000	5000	7000	10000
- at upsetting pressure 7.0 kp/mm ²	1000	1400	3500	5000	7100
Cooling water consumption, l/min	25 (37)	35 (50)	40-88	60 (90)	60-95
Approximate welding times for following weld areas, sec.					
- 1400 mm ²	20-25 *)				
- 2000 mm ²		25-30 *)			
- 5000 mm ²			75-90 *)		
- 8000 mm ²				110-160 *)	
- 10000 mm ²					140-160 *)
*) Figures based on upsetting force 5 kp/mm ²					
Standard dies:					
- Height, mm	55	60	75	75	85
- Width, mm	120	150	170	180	240
- Length, mm	90	113	135	145	170
Machine:					
- Height, mm	1840	2265	2485	3000	3410
- Width, mm	1590	1830	1980	2200	2260
- Length, mm	2380	3240	3530	4450	4440
Net weight, kg	3000	5000	7000	11000	16000

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MANAGEMENT SYSTEM
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