

» High Pressure

DOSING MACHINES

06



HIGH PRESSURE
Dosing Machines

SP2 SMART



SPB



SPBS

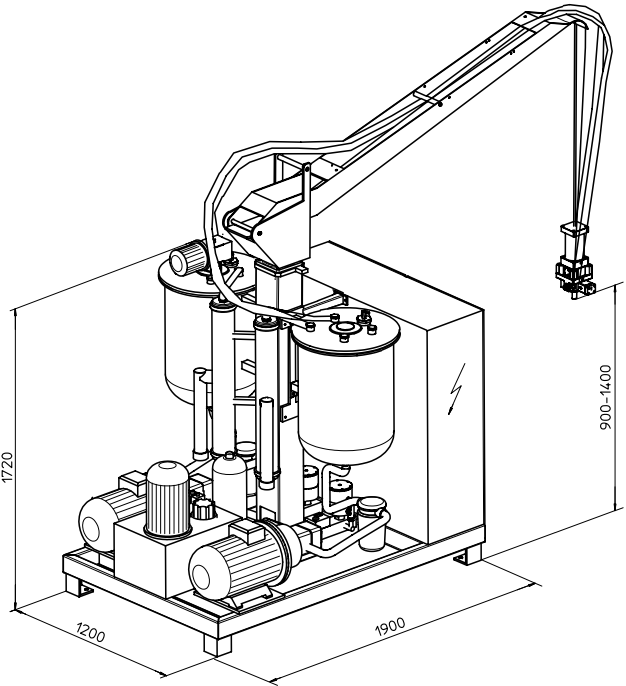


SP2 SMART
H.P. DISPENSING MACHINES

Designed and developed to dispense all kinds of polyurethane foams in environment friendly conditions, SP2 SMART machines easily meet any production requirement thanks to their sturdy construction and their simplicity of use. With all in one frame, they are ideal for newcomers who are approaching the high pressure technology.

SP2 SMART machines are available in a wide range of models with an output from 10 to 60 kg/min. and a components ratio variation from 1:3 to 3:1. The SP2 SMART machines are equipped with a PLC and touch screen operator control board to set and display the working parameters.

SP2 SMART machines allow the output variation of each component in closed loop circuit and consequently the total output and the working ratio variation by simply setting the required output value on the touch screen operator control board.



MIXING HEAD



HYDRAULIC UNIT



COMPONENTS METERING GROUP

TECHNICAL
CHARACTERISTICS

MODEL	RATIO	OUTPUT		OUTPUT		TANKS CAPACITY EACH/LT		INSTALLED POWER KW	WEIGHT KG	
		A+B KG/MIN min	max	A+B GR/SEC min	max					
SP2 smart 10	1:1	3	11,5	50	192	50	100	11	1000	1100
SP2 smart 20	1:1	5	22,5	83	375	50	100	16	1000	1100
SP2 smart 30	2:1	7	32,5	116	540	50	100	21	1050	1150
SP2 smart 40	1:1	10	45	166	750	50	100	27	1050	1150
SP2 smart 60	1:1	15	72	250	1200	50	100	35	1100	1200
SP2 smart 60	2:1	14	69	233	1150	50	100	34	1100	1200

The machines outputs refer to materias with a viscosity not exceeding 2000 cps at 20°C, polyol average specific weight of 1,05 gr/cc and isocyanate average specific weight of 1,20 g/cc. Output values valid for a main frequency of 50 cycles.

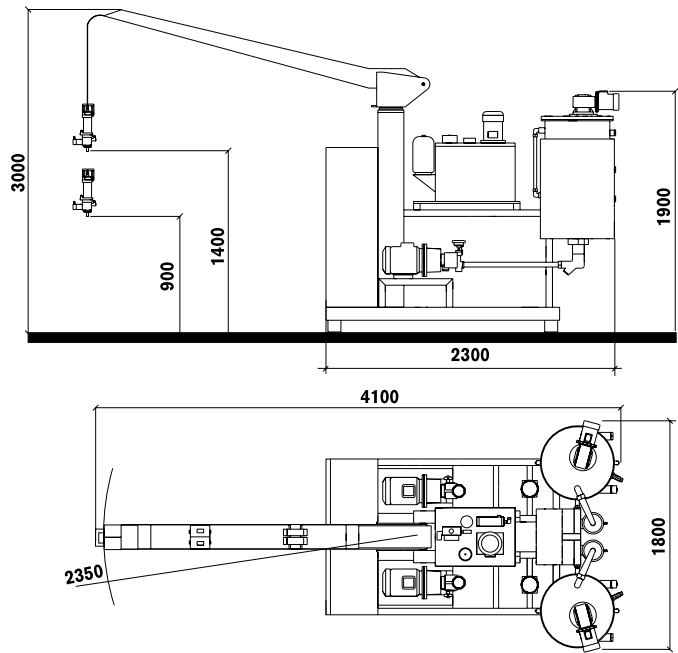
SPB

H.P. DISPENSING MACHINES

SPB machines are designed for industrial use and for any productivity need and equipped with a full range of accessories, to maximize control and to guarantee a correct operation.

SPB machines are available for output from 20 to 200 Kg/min and variable ratio between 1:5 to 5:1. SPB machines feature components flow rate manual adjustment and ratio; the units are powered either by a PLC and Saip touch screen operator panel or by an industrial PC, to set and display the working parameters. As an option, it is provided the supply of inverters for the endless output and ratio variation.

SPB machines are suitable to process polyurethane foams based on HCFC's, HFC's, HFO's, methyl formate and water blown with or without co - blowing agent. A connector to dry lines for full automated solutions is provided.



DOSING GROUP WITH MAGNETIC COUPLING



STORAGE AND DOSING GROUP

MODEL	RATIO	OUTPUT		OUTPUT		TANKS		INSTALLED POWER		WEIGHT KG	
		A+B KG/MIN		A+B GR/SEC		CAPACITY		KW			
SPB 20	1:1	4	19,5	66	325	100	250	20	30	2000	2200
SPB 40	1:1	7,5	38	125	630	100	250	27	37	2000	2200
SPB 40	2:1	5,5	28	90	465	100	250	22	32	2000	2200
SPB 60	2:1	12,5	63	210	1050	100	250	36	45	2000	2200
SPB 100	1:1	18,5	91,5	305	1525	100	250	43	52	2000	2200
SPB 200	1:1	36	178,5	595	2975	250		82		2600	

MODEL	RATIO	OUTPUT		OUTPUT		OUTPUT		OUTPUT		TANKS		INSTALLED POWER		WEIGHT KG	
		1° motor speed		1° motor speed		2° motor speed		1° motor speed		CAPACITY		KW			
SPB 20/10	1:1	A+B KG/MIN		A+B GR/SEC		A+B KG/MIN		A+B GR/SEC							
SPB 20/10	1:1	4	19,5	66	325	2	10	33	170	100	250	20	30	2000	2200
SPB 40/20	1:1	7,5	38	125	630	4	19,5	65	325	100	250	27	37	2000	2200
SPB 40/20	2:1	5,5	28	90	465	3	14,5	50	240	100	250	22	32	2000	2200
SPB 60/30	2:1	12,5	63	210	1050	6,5	32,5	110	540	100	250	36	45	2200	2200
SPB 100/50	1:1	18,5	91,5	305	1525	9,5	47,5	160	790	100	250	43	52	2000	2200
SPB 200/100	1:1	36	178,5	595	2975	18,5	92,5	310	1540	250		82		2600	

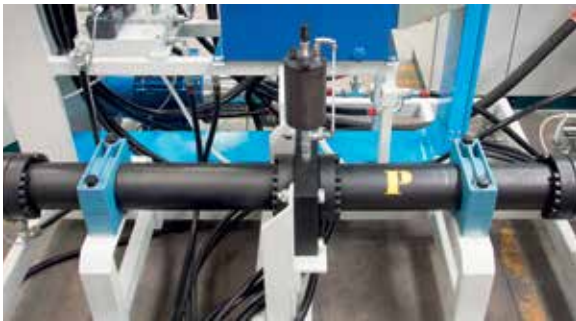
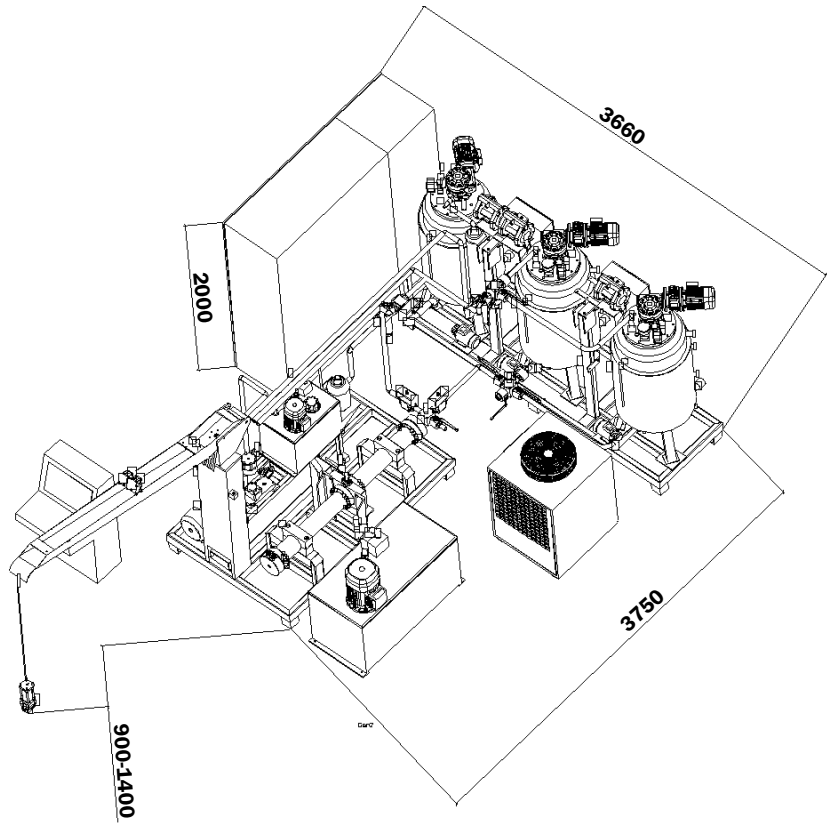
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SPBS

H.P. DISPENSING MACHINES

SPBS machines are specially designed for application fields where RIM, RRIM fillers, infusion and other technologies are required. Thanks to a special designed dosing cylinder, Polyol could be mixed with special additives and charges without any issue on the machine components life and obtaining parts with outstanding physical and mechanical characteristics. A closed loop output and ratio variation permits an endless adjustment of working parameters in order to reach the desired hardness and density.

Multicomponent dosing tanks with relevant valves permit metering and mixing with the maximum accuracy of different materials and colors without the need to clean the whole line. Special software assures recycling mode during non-working times and weekends. SPBS machines can be easily coupled to anthropomorphic robots or multi-axis manipulators and work fully automatically with rotary tables, oval carousels and any system where a high degree of automation is required.



DOSING CYLINDER



MULTICOMPONENTS DAILY TANKS

MODEL	ISO PUMP CAPACITY CC	CYLINDER CAPACITY LT	TANK CAPACITY A+B LITRES	WEIGHT KG
SPBS 8	12 cc	8 lt	250	2400
SPBS 16	28 cc	16 lt	250	2600
SPBS 20	55 cc	20 lt	250	2800

The machines outputs refer to materias with a viscosity not exceeding 2000 cps at 20°C, polyol average specific weight of 1,05 gr/cc and isocyanate average specific weight of 1,20 g/cc. Output values valid for a main frequency of 50 cycles.

INDUSTRIAL SOLUTIONS



HIGH PRESSURE MACHINE FOR PENTANE AND OTHER BLOWING AGENTS

Saip high pressure machines can be designed in order to premix pentane and other flammable blowing agents with safety features and configuration or new generation ones with relevant conversion kits and pre-mixing unit.



PIPE JOINT SYSTEM

High pressure foaming machine specially designed for the insulation and reinforcement of pipes' joints. High level customization in order to be easily fitted into containers with fast plug connections. Sturdy construction and special components to work in very severe weather conditions.



KLINKER FAÇADES SYSTEM

High pressure unit with multiple-axis manipulator for the automatic foaming of klinker façades. A special recognition system, interfaced to the control panel, permits the possibility to inject different articles assembled on mold support presses.



ROTARY TABLE

Full automated stations with double print molds are the best solution when short cycle times and high productivity is required. A special device permits a quick changeover of the molds in order to guarantee very high flexibility during operational hours.

HIGH PRESSURE MIXING HEADS



Saip designs and manufactures high pressure mixing and pouring heads in different models and sizes covering all polyurethane foams applications in open and close mould pouring. The mixing head is the core of the high pressure foam dispensing machine and it must be well engineered, reliable, accurate and durable. Saip high pressure mixing heads, thanks to their reduced weight and size can be easily used for manual operation or can be adapted for the use with robots and manipulators in case of an automated operation. Saip high pressure mixing heads, mix the components by impingement at dampened flow in a mixing chamber then mechanically cleaned by a hydraulically operated self - cleaning piston. Saip guarantees quality, high performance and the best balance between advanced technology and price.

HP THIRD STREAM Saip new generation of mixing heads which allow the dosing of a third component directly in the head with radial mixing. Due to the simultaneity of the components input in the mixing chamber you will have better mixing and homogeneity for higher quality results.

High pressure mixing head Calibration
Saip mixing head design allows the direct calibration of the components without the use of any additional devices for calibration operations.

Operating principle for components calibration
Selecting from machine control panel the polyol calibration mode automatically the polyol component switch over valve close from short recycle to high pressure recycle while the isocyanate sectioning valve open to short recycle so that only the polyol component flow to the mixing head through the polyol nozzle. Now the isocyanate nozzle into the mixing head is closed. The operation for polyol calibration directly on the mixing head is done with a pouring shot timed controlled having the result of shot weight of the poured polyol quantity in a certain time. The isocyanate calibration follows the same procedure. The sum of the polyol and isocyanate calibration correspond to the machine selected output. This system gives the following advantages:
- the calibration values are the real components delivery
- the calibration pressure values are the real component pressures.

OPERATING PRINCIPLE

Low pressure recycle
The low pressure recycle, essential to keep the components at the optimum working temperature, is done through switch over valves mounted on the components feeding lines. The switch over valves are opened and switch the components flow through the components tanks, the recycle time is controlled and powered by the machine PLC. When the pouring cycle starts the switch over valves close and switch the components flow through the mixing head nozzles.

High pressure recycle
The components flow through the mixing head nozzles and the mixing piston scores and return to the component tanks. This phase permits pressures stabilization prior to pouring cycle.

Pouring cycle
At the end of the high pressure recycle, the components are mixed by impingement in a small size mixing chamber. The mixing chamber special design reduces the turbulence and allows laminar flow pouring. The pouring time is set and powered by the machine PLC.

End on the cycle
At the end of the pouring cycle the self-cleaning piston removes the Pu mixture in the mixing chamber, so that a new cycle starts.

HP THIRD STREAM



D/DD



2DD



DDP



A / AP



MODEL	FLOW RATE GR./SEC. MIN. AND MAX RECOMMENDED
DD 10	50-250
DD 14	90-600
DD 18	180-1100
DD 24	500 - 2000
DDP 18	180 - 1100
DDP 24	500 - 2000
A/AP 24	500 - 2000
DD 18 - 2DD	90 - 600



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Management
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