

HIGH PRESSURE FOAMING MACHINE MODEL: SPH-100



INTRODUCTION:

All those polyurethane moulders using low pressure foam technology, with the need to fully eliminate the problem for solvent disposal, and showing great attention to environmental problems in the respect of standards in force, may rely on this new generation of high-pressure metering machines combining first-rate characteristics such as:

- Low capital investment
- Best technical solutions
- Control panel with output self-adjustment
- Compactness
- Low consumptions

TECHNICAL DESCRIPTION:

The high-pressure foam machine is composed of the following main parts:

- POLYOL/ISOCYANATE METERING MODULE
- TANKS MODULE
- HEAD CONTROL MODULE
- HIGH PRESSURE MIX HEAD TYPE EKS
- CONTROL PANEL
- OPTION

A. POLYOL/ISOCYANATE METERING MODULE

The new concept high pressure metering module has been projected and carried out to meet easy maintenance and reliability needs.

EACH UNIT COMPRISES:

- High pressure pump having high accuracy, and 200 bar max working pressure;
- 3-phase asynchronous single speed drive motor, driven by frequency converter to ensure a wide range of working outputs;
- Motor/pump coupling through mechanical coupling by means of nylon star system;
- Pressure gauge for direct read of recycle and pouring pressures, c/w two-digit independent display, and setting of min/max working pressures;
- Tandem flow-valve to recycle the component inside the tank (short recycle), and to recycle the component in head directly through the nozzles (high pressure recycle).

B. TANK GROUP

POLYOL and ISOCYANATE storage tanks module (100l capacity each), pressure working certified, insulated from external temperatures, with thermoregulation's jacket complete with 1500 Watts heating resistors, cooling solenoid valves and PT 100 temperature's sensor connected into the tanks.

MOREOVER, THE TANKS ARE EQUIPPED OF:

- Visual levels
- 2 ways manual valves to separate the tanks from the dosing units
- Pressure safety valves
- Strong frame for the support of the tanks
- Pressurization systems complete with: pressure regulator, manometer, quick discharge valve for compensate the pressures variations during the filling phases.
- filters at metering pump suction

C. HEAD CONTROL MODEL

It is a hydraulic unit having a 35L capacity oil tank, and complete with:

- 16 l/min delivery gear pump with 200 bar max working pressure;
- 3-phase motor (4 poles – 4 kw) coupled to the pump by elastic coupling;
- Visual level
- Thermometer to visualise the working temperature of hydraulic oil;
- Oil loading mouth and pertaining anti-contamination filter;
- 5l capacity hydraulic accumulator with 100 bar pre-load to ensure the proper working of the pouring head;
- Oil filter at the pump suction port.
- Rapid relief manual valve for pressure in line, to permit any service action;
- Manometer to visualise the pressure inside the circuit with relevant excluding device;
- Solenoid valve for oil dispensing in pressure to the line;
- Valve for manual adjustment of the working pressure.
- Manual valve for empty the unit

D. HIGH PRESSURE MIXING HEAD TYPE EKS

TYPE	ALLOWABLE FLOW RATE		DAMPENED FLOWRATE		WEIGHT	END CAP
	Min gr/sec	Max gr/sec	Min gr/sec	Max gr/sec	kg	dia
EK24	700	3000	700	1000	20.0	35

The EKS mixing head of new concept keeps unchanged all the main features of compactness and work.

THE HEAD IS COMPLETE WITH:

- Hydraulic system for head opening/closing;
- Adjustable pressure nozzles group for the components;
- Proximity sensors for keeping controlled the pistons' position;
- Flexible hoses at 475 bar pressure, type FLEX R7;
- Independent adjustment of pouring and recycle pressures, carried out on each nozzle (type static of spring-operated modulating) of components directly;
- Possibility of having the control of flow rates in head directly.

A remote push buttons panel manages the recycle-pouring operations and the choice of times.

MAIN FUNCTION:

- choice of pouring programs by selector 12 position
- luminous button for cycle start;

- button for cycle stop;
- 2-pcs. key selector to select machine either recycle or pouring;
- Emergency push-button;
- Handle (M643/140 B-M8);
- Head holder boom (160° rotation angle, 2800mm length)

E. CONTROL PANEL

The electrical panel with IP55 protection is sited over the basement of metering unit, and comprises:

- power switch with fuses protection, 3-phase;
- PLC to check the functions, the timers, counters and process analogical functions;
- Inverters to control and manage the motors coupled to the metering pumps and interfaced to PLC;
- graphic operator board with keyboard and integrated displays, touch-screen to set and control all the parameters regarding the pouring, and to manage the alarms;
- automatic thermoregulation of components with setting of working values and pertaining alarms;
- automatic enabling of metering pumps and hydraulic unit during the working phases;
- automatic safety control on components pressures;
- setting and visualisation of 12 working programs;
- visualisation of any possible alarm that may occur during the working cycle, on operator board;

ALARM LIST:

- Minimum polyol temperature Minimum isocyanate temperature
- Maximum polyol temperature
- Maximum isocyanate temperature
- Emergency pressed
- Hydraulic power pack pump thermal protection
- Fault inverter polyol pump
- Fault inverter isocyanate pump
- Polyol minimum pressure
- Polyol minimum pressure during pouring
- Isocyanate minimum pressure
- Isocyanate minimum pressure during pouring
- Polyol maximum pressure
- Isocyanate maximum pressure
- Mixer piston not opened
- Mixer piston not closed

F. OUT OF SUPPLY

- Anything other not specified listed in the present offer and in the enclosed technical descriptions;
- All civil engineering and constructive work to be done in the building for positioning the machine and relevant connections to energetic sources;
- Machines for unloading and emplacement of the machines/devices;
- Assembly and support of the transferring piping;
- Raw material for cleaning and commissioning the machine;

G. TECHNICAL DOCUMENTATION

All required manuals, as below specified, will be issued in English and delivered with the goods:

- 1 complete operator's instruction manual regarding all the parts of the machine on paper sheets format.
- 1 complete operator's instruction manual regarding all the parts of the machine on CD format.
- Electrical diagram, flow diagram, and detailed mechanical drawings for a rapid recognition of the spare parts, both paper sheets format and CD format.