

PUR foam SIPs manufacturing line with high pressure PU foam injection machine



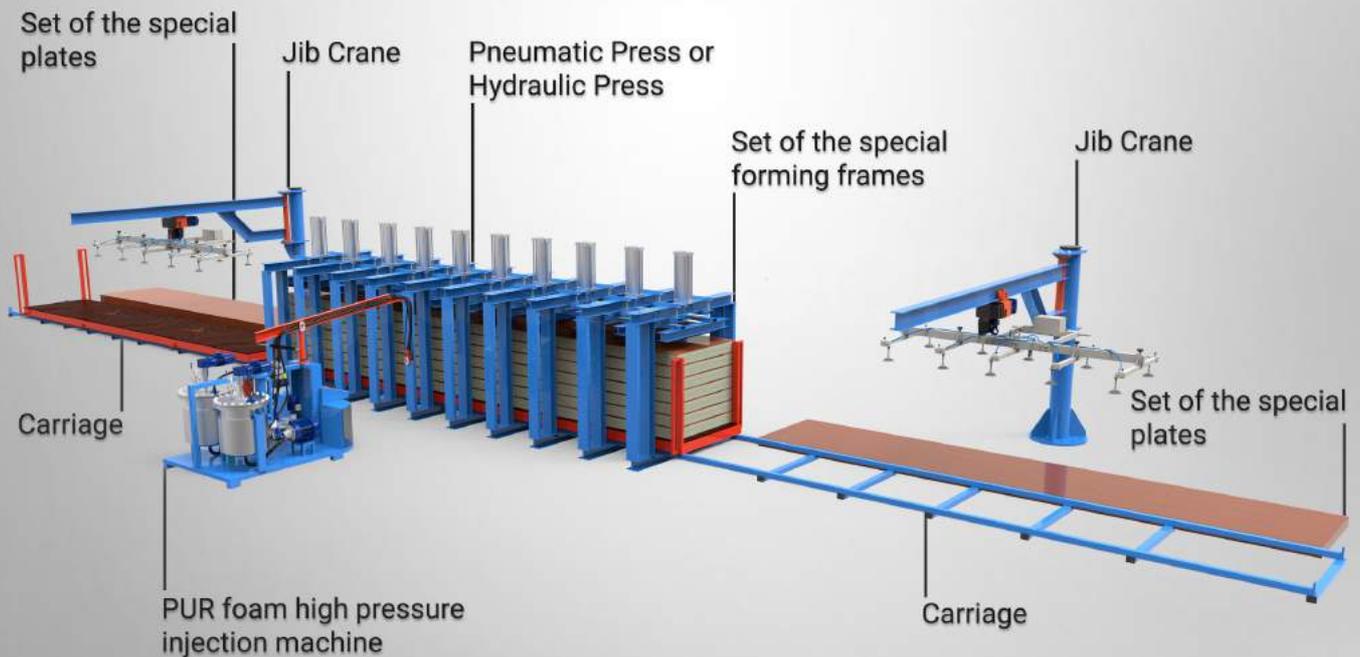
Gluestream SIPs Manufacturing Line with HP PU Foam Injection Machine

Gluestream produce turnkey manufacturing lines for many types of Structure Insulated Panels (SIPs). Many types of faced materials such as MgO boards, OSB boards, Fibre Cement Boards may be used for SIPs, depends from the requirements of the building market and region.

New requirements for thermo insulation of the buildings require to use insulation materials with high level of thermo resistance, they are PUR and PIR. Here we would like to represent High Pressure Polyurethane foam injection machine.

Sandwich Panel production line consists from:

1. PUR foam high pressure injection machine.
2. Chiller (optionally).
3. Pneumatic Press for the panels with max length 3000 mm
4. Hydraulic Press for the panels with length 6000 mm
5. Two carriages, moved manually.
6. Set of the special forming frames, depended from the sizes (thicknesses) of the panels (optionally).
7. Set of the special plates, made of plywood, placed between the panels in the press.
8. Two Jib Cranes (optionally).
9. Automatic feeding pumping station of materials, for automatic feeding materials from the barrels to the tanks.

GLUESTREAM SIPS MANUFACTURING LINE CONSIST FROM

High pressure PU foam injection machine Gluestream GS.PU2M FOAM HP.S.M.



Gluestream GS.PU2M FOAM HP.S.M. is designed for automatic dosing, mixing and pouring of two-component polyurethane foam systems, the machine is certified according to CE directives.

The machine has a wide range of basic functions that allows to completely automate the task of dosing and mixing components of the polyurethane system and to obtain finished high quality products by the free-casting method to the both opened and closed forms:

1. The software allows to adjust all working parameters of the machine.
2. Control the consumption and the mixing rate of components with special volume sensors.
3. Controlled mode of thermo stabilization of components.
4. Component recirculation and mixing to ensure homogenization and thermal stabilization.

TECHNICAL DESCRIPTION

Consumables for components Components are filled in painted metal tanks in volume:

- Polyol — 500 L , the tank is equipped with an electrical driven mixer.
- Isocyanate - 500 L.

The tanks are also equipped with:

- Sensors of minimum level of the materials, with light and sound indication
- Medium and high level sensors for automatic refueling of components
- Hand throat for material loading
- Inlet filter for materials
- Moisture separator
- Ball valve for draining of materials.



The axial-piston pumps are used for dosing the components A and B. The dosing pumps are electrically operated, their speed is regulated by a frequency converter, which receives commands from the control panel. The accuracy of the dosing and the mixing ratio is controlled by flowmeters. Dosing pumps are located in the tanks of the components.

Working pressure is 150-180 bar, controlled by pressure sensors with indication on the operator panel.

There are two circulation circuits:

- low pressure tank-pump-tank
- high pressure: tank-pump-mixing head-tank.

Switching of the circulation circuits occurs with high pressure pneumatically controlled ball valves.

Mixing head consists of a housing where are located two nozzles with adjusting elements. A self-cleaning piston, driven by a hydraulic cylinder, and a piston stroke limiting sensor. Gluestream mixing heads are specifically designed to be compact and easy to operate.



Remote Control

On the remote control panel are located:

- Selecting the program of injection;
- Timer of injection;
- Switching of the circulation circuits;
- Emergency stop button;
- Start button;
- Sensor Control Panel.

On the front side of the cabinet there is the operator sensor panel, with a touch screen LCD monitor. The operator sets and controls all parameters of the operation. The main controlled parameters are :

- Mixing ratio of the components A and B;
- Capacity;
- Adjusting of the injection programs.



The interface language of the control panel can be installed according to the customer's requirements. The front part of the electrical cabinet also includes thermostats of the components, for temperature control and thermo stabilization control, light indication of the sensors of the minimum level of components, emergency stop button.

Thermal stabilizers

Tubular heat exchangers equipped with electric heaters and automatic valves in the cooling circuit to maintain the set temperature of the components. Hydrostation.

- Productivity 15 l / min
- Drive from the electric motor 4 kWt
- Working pressure 150 bar



Resources required for the installation:

- Voltage - 400 V, 50 Hz, 60 kW
- Compressed air, pressure 7 ± 1 bar, capacity up to 200 L / min
- Running water 10-15 ° C (if it is necessary to cool the materials) or chiller machine.

| Mixing component rate A:B | Consumption gr/sec, min | Consumption gr/sec, max |
|------------------------------|----------------------------|----------------------------|
| 1:1 | 1000 | 5000 |
| 1:2 | 1250 | 4500 |
| 1:3 | 1400 | 4100 |