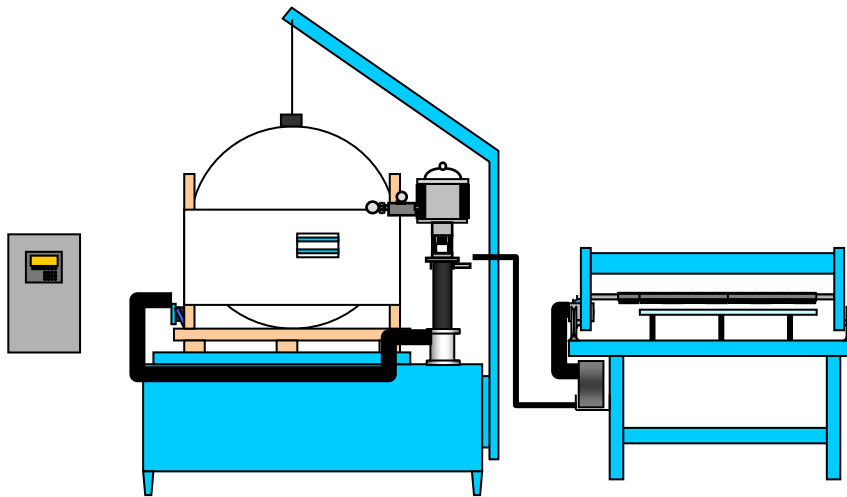


System Engineering



Machine Specification

Machine Type: 820A

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1 820A Machine description

Adhesive spreader type 820 Automatic for door application.

The machine is designed as a moving spreader beam working on a lay-up table.

The control panel consists of a PLC controller with an operator panel and a frequency inverter for the drive unit. The control of the machine is performed through an operator panel with graphic display. Configuration of essential machine parameters can be done from the HMI.

The coat weight is controlled by measuring the flow of adhesive from the adhesive pump. By calculating the amount of adhesive per second and comparing with the set point value, the pressure to the adhesive pump is controlled and adjusted by a control valve in order to achieve the desired coat weight.

The application modules consist of 3 spreader modules. One 500mm, one 400 and one 100mm width. The width can be selected to 500, 900 and 1000 mm from the control panel. Individual nozzles can be blocked with blind nozzles to accommodate a specific application width, for instance 890 mm or 895 mm.

The machine speed is typically between 10 to 20 m/min.

In order to prevent blockage of the spreader, the machine is supplied with oil trays for dipping the tip of the nozzles when the machine is not in use.

The adhesive is supplied from a Fluid-bag.

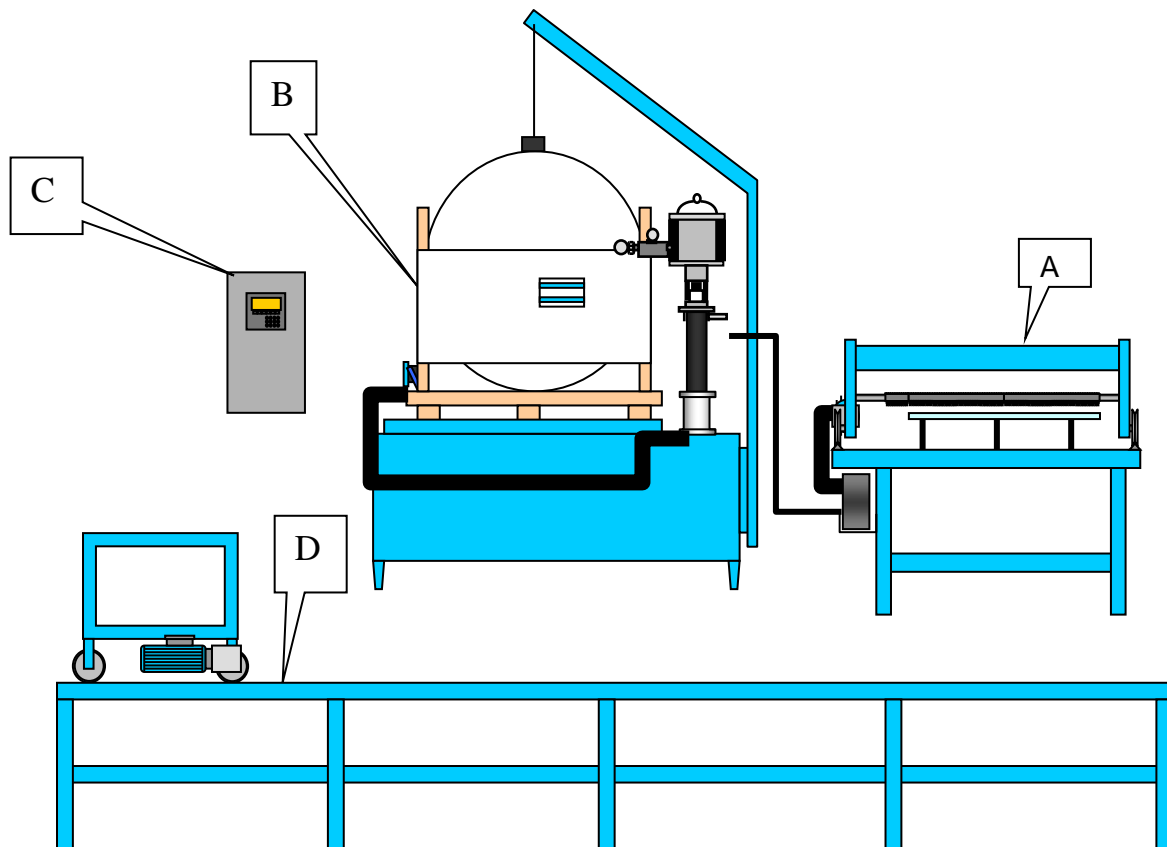
The max. Adhesive capacity is approx. 6 kg/min. giving a maximum coat weight of more than 300 g/m² with a panel width of 900 mm and a conveyor speed of 20 m/min.

The water systems consist of a water-spraying unit for each direction. In order to make a uniform distribution, each spraying unit consist of 4 nozzles.

The water flow is controlled by adjusting a manual water regulator. A mechanical flow indicator measures the flow.

2. Basic System Components

Application System Type 820 with Fluid bag



Pos	Description
A	Application units Adhesive spreaders on a moving frame. Spreader unit built up by with one 500 mm, one 400mm and one 100 mm spreaders with adhesive valves. 1 pneumatically actuated oil tray of 1000mm length.
B	Pump system & Fluid bag stand The system consists of a pump type 84904 for adhesive with air motor. Fluid-bag stretcher with hose to the pump.
C	Control system The control system is based on PLC technology and the operator interface is based on a graphic operator panel (HMI). Configuration of essential machine parameters can be done from the HMI. The coat weight is controlled by measuring the adhesive flow through the adhesive pump. By calculating the amount of adhesive and comparing with the set point value, the airflow to the pump is controlled and adjusted by a proportional control valve in order to achieve the desired coat weight.
D	Lay-up table Table with rails for laying up the core material. The cores are laid up on wires suspended from the frame.

3. Electrical Specification

The adhesive application machine type 820 has a control panel, which contains PLC, Motor control unit and Operator interface for local operation (Preparation of spreader, adhesive valves, oil tray, mechanical calibration etc.).

See Instrumentation diagram fig 3.1

The following central units are used:

Unit	Manufacture	Type	Remarks
PLC System	Mitsubishi		
Operator panel	TBA		Display language : Danish, German, English, French (Selectable from Operator panel)
Pilot valves	Norgren		

The complete system is in conformity with the Machine Directive 89/392, EN 60204-1 and EN 50 081-1

1. Supply specification:
 - Power supply min.: 3x320V, 50 Hz + PE
 - Power supply max.: 3x528V, 50 Hz + PE
 - Consumption max.: ~6 A
 - Recommended fuses: 10 A

2. The hardware documentation will be supplied in paper version with the following documents:
 - System block diagram – language: English
 - Instrumentation diagram – language: English
 - Operator instruction – language: Local
 - Circuit diagram – language: English
 - Parts lists/Spare parts list – language: English
(Electrical and mechanical)
 - Lay-out/Location drawing – language: English

- All communication between VETACS and Customer control system is done hard-wired. VETACS will provide the necessary relays in the control panel with potential free contacts to be connected to the Customer control system.
- A sensor is placed on the conveyor in front of the applicator. When the sensor is detecting a skin, the adhesive valve opens after a pre-adjusted time. Another timer secures that the water valves opens after a pre-set time. The timer is adjustable from the operator panel. When the skin leaves the sensor the adhesive valve and water valve closes after a set time. These timers can also be adjusted from the control panel.

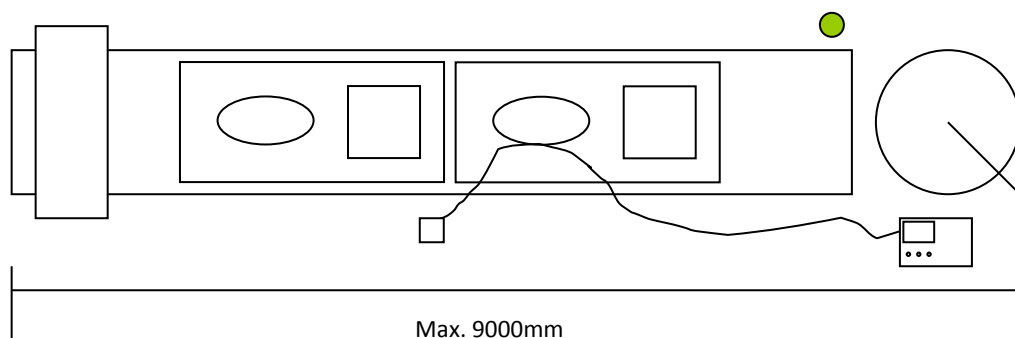
- VETACS emergency stop system is foreseen to be interconnected with the emergency stops on mechanically interconnected systems. The emergency stop system is designed as a category 4 system (2 potential free contacts). One emergency stop connection point (2xNC contacts) for the main emergency stop system has been foreseen. The emergency stop will be controlled by 2 potential free contacts from the main emergency stop relay.
- All internal cabling between the units is included, and have been connected and tested prior to shipment.

4.Capacities

Technical Data:

Pump capacity	: Max. 6.0 kg/min.
Adhesion speed	: Line speed up to 20 m/min. corresponding to a pump capacity of 6 kg/min.
Coat weight	: Adjustable from 100 to 500 g/m ²
Accuracy	: ± 10% or 20 g whichever is the highest
Air supply	: 1000 l/min at 6 bar

Installation Layout:



URS' data:

Materials	PVC skin and XPS foam
Dimensions	Max. Length 2100mm Width 480, 900, 1000mm. Thickness 20-25mm.
Adhesive	4920
Coat weight	150g/m ²