PU foam dispensing machine for Electric enclosures

We would like to represent the technology and equipment for dosing, mixing and further automatic applying of the 2-component polyurethane foam, used for the doors of electric boxes or electric enclosures as sealing and gaskets.

The reached seamless sealing is characterized by excellent adhesion and mechanical features. Provides reliable protection against penetration of dust and moisture, improves noise and sound insulation properties, reduces vibration.

Other advantages

• Ability to apply the seal on the various surfaces – inclines, flanging, edges, slots etc;
• Great adhesion features to any materials, substrates, painted surfaces, steels, polymers etc;
• The seal is ready to be used in 10-15 minutes after applying;
• The price of the cast seal in average is 3-10 times less than pre-formed one (lower raw material costs, no additional works for bonding and assembling; reduced labor costs – only one operator required)
• quick recoupment;

This technology of polyurethane gaskets is widely used for sealing contour production using polyurethane foam mixture or expanded silicone, which provides the IP65 tightness class in electric panels and cabinets, radio equipment, junction boxes, switches, filters for industrial vacuum cleaners, air conditioning, sealing for household appliances, optical systems, glass, etc.
The estimated consumption of material on 1 linear meter:

<table>
<thead>
<tr>
<th>The cross section of the contour L x H, mm</th>
<th>Density of the sealing material kg/m³</th>
<th>Price of the 1 kg of the sealing material, Euro</th>
<th>Weight of the 1 linear meter of the contour, gr</th>
<th>Price 1 linear meter, Euro</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 x 4</td>
<td>220</td>
<td>10,0</td>
<td>5</td>
<td>0,05</td>
</tr>
<tr>
<td>10 x 5</td>
<td></td>
<td></td>
<td>8</td>
<td>0,08</td>
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<tr>
<td>12 x 6</td>
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<td>12</td>
<td>0,12</td>
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<td>14 x 7</td>
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<td>17</td>
<td>0,17</td>
</tr>
<tr>
<td>16 x 8</td>
<td></td>
<td></td>
<td>22</td>
<td>0,22</td>
</tr>
<tr>
<td>18 x 9</td>
<td></td>
<td></td>
<td>30</td>
<td>0,30</td>
</tr>
<tr>
<td>20 x 10</td>
<td></td>
<td></td>
<td>35</td>
<td>0,35</td>
</tr>
</tbody>
</table>

Polyurethane foam dispensing equipment

GlueStream s.r.o. 📞 +421233046965 🌐 gluestream.eu ✉️ office@gluestream.eu
PU foam gasket machine composition:
1. Table with guides and stops (can be for one or more products, stationary or conveyor);
2. Portal type carriage (or console) that moves along the guides according to a predetermined program;
3. Polyurethane mixing unit with applicator;
4. Pumping stations for A and B components;
5. Control panel;

Stationary table for single sample with length up to 2500mm:
Conveyor working table for 3 samples positioning up to 2500mm each:

Working table is design provides area with the capacity for cleaner drain after cleaning and purging the chamber of the mixing device.

The working desk is equipped with angular stop tool for door elements fixing in the certain point under the mixing head providing the accurate positioning any kind of element and giving the ability to adjust the machinery from the zero point for all dimensions kinds.

Also, machinery could be equipped with rollers or ball field to provide more easy manual way of doors feeding to the glue mixing applying zone and further. The balls of the ball field are coated with special plastic to avoid the door's surface damage.
**Portal or consol-type carriage**

Provides the applying function of the polyurethane mixture on single or several details, which are placed on the working table surface:
- Mixing unit automatic moving according the predetermined path with start/end sound indication;
- Moving performance without applying;
- Automatic moving of the mixing head to the cleaning dock;
- Applying contour setup, with controller or with CNC rack for complex contours;

**COMPOSITION OF THE Enclosure seal machine:**

**Mixing Unit (250-P Mixing head):**

- Mixing type: dynamic
- Number of components: two
- Productivity: 2-20 g/sec
- Cleaning tool with air purge: yes
- Anti-drop tool: yes
- Components valve drive: pneumatic
- Mixer drive: electric

**Applying performance video:**

[https://www.youtube.com/watch?v=gm71JLGz-3Q](https://www.youtube.com/watch?v=gm71JLGz-3Q)
Components dosing supply unit:

Dosing unit is performed by:

- Two 80L stainless tanks for components;
- Specialized dosing high-precision gear pumps with electric reducer drives;
- Stainless tank for cleaning liquid;
- Pneumatic system;
- Specialized chemical-resistant pipes and valves set;

All components are mounted on the welded profile metal frame. Components dosing is occurred by precision gear pumps. The control panel providing the ability to adjust the components rates, flow and speed rate of head’s movement.

Control panel is equipped with controller which greatly expands the adjustment possibilities of the working process and provides the diagnosing of the system right from the operator’s panel.
Operator abilities:

- Choose one of 10 programmed applying contours, adjust the dimensions between the main points (length, width) in each program;
- Adjust the rates of the components feed with the frequency converter system that is equipped with vector adjustment;
- Adjust the feeding rate per minute;
- Adhesive level indication in the buffer tanks;

PU gasket dispensing Machine is equipped with remote control system via internet connection that allows diagnosing the condition and to adjust the parameters directly from the office of the technical department of our company, which eliminates the need for on-site visit of technicians. The only requirement is the ability to connect the machine to any internet source.
Main specification*:

<table>
<thead>
<tr>
<th>№</th>
<th>Name</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adhesive system type</td>
<td>Two component polyurethane foam Kleiberit 522.3 or similar</td>
</tr>
<tr>
<td>2</td>
<td>Mixing system type</td>
<td>Dynamic mixing</td>
</tr>
<tr>
<td>3</td>
<td>Applying zone, mm</td>
<td>2500x1250x100</td>
</tr>
<tr>
<td>4</td>
<td>Performance, l/min</td>
<td>1,0</td>
</tr>
<tr>
<td>5</td>
<td>Applying speed, m/min</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Axis positioning accuracy, mm</td>
<td>0,2</td>
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<tr>
<td>7</td>
<td>Cleaning system</td>
<td>automatic</td>
</tr>
<tr>
<td>8</td>
<td>Power supply: V/Hz</td>
<td>380 / 50</td>
</tr>
<tr>
<td>9</td>
<td>Power consumption, kW</td>
<td>Up to 5,0</td>
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<tr>
<td>10</td>
<td>Pneumatic system pressure, bar</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>Air consumption, l/min</td>
<td>до 50</td>
</tr>
<tr>
<td>12</td>
<td>Materials processing optimal temperature, °C</td>
<td>18-25°</td>
</tr>
</tbody>
</table>

*the data could vary according the customer's needs

The price level depends from configuration of working tables, productivity and the level of automation.

In case of interest we could prepare a quotation taking into account possible changes in the technical specifications according to your requirements.

Best regards, Gluestream team.