



Potting

Low Pressure Dosing Unit for Cast Resins Process

Cannon, world leader in polyurethane processing technologies, has developed a new special low pressure polyurethane/epoxy casting resin dosing unit specifically designed to work with special formulations related to the production of cast components.



In particular, epoxy resins offer excellent strength, toughness, long-wearing, chemical resistance, adhesive and electrical properties.

The electrical, electronic, automotive, appliance industries are some of the most important users of cast foaming processes which meet the most stringent requirements in terms of physical and mechanical properties, sealing and insulating, preventing dust, moisture, water penetration, dampening-out of vibration and sound and a complete protection.

The new Cannon system is able to handle formulations with a wide working ratio (up to 10:1), high viscosity components and very small outputs.

The dosing machine comprises the **C2P** metering unit with relevant low pressure mixing head. The mixing of the chemicals is mechanically driven directly inside the mixing chamber and the mixing head has the possibility to mount either a static or a dynamic disposable mixer (with remote driving motor).

The thermostatisation of the chemicals is a key point of the complete process. Afros experience in managing these chemicals leads us to use small jacketed tanks of 40 litres capacity, with temperature controlled by water supplied from a dedicated thermoregulator.

Accurate level controls are able to maintain a constant quantity of material in the tank.

Precision is one of the main requirements for low output machines. The Cannon **C2P** is provided with a high precision dosing gear pumps group mounted downstream the tanks with the possibility to modify output and ratio according to the used formulation.

The chemicals are storage in dedicated insulated tanks with a different configuration depending from the materials used.

The metering system of the machine is provided with a dedicated metering groups as follows:

- metering pump group, operated by 'closed loop' control DC motors fitted with tacho generators, which guarantee maximum precision and repeatability; fully adjustable output and ratio by automatically varying each DC motor via machine control panel. The pumps are mounted on a dedicated frame placed over the control panel



- low pressure gauges showing chemical pressure and provided with safety cut-outs for metering pumps
- low pressure filters on suction line

The special designed low pressure mixing head, has the following features:

- separate isocyanate and polyol injectors, driven by a dedicated pneumatic cylinder;
- chemical injection pressure manually adjustable by using conical injectors which are externally positioned and adjusted;
- small size static mixer

The mixing system is mainly composed by:

- multi-injection head with mechanical mixer of the components
- driving motor with flexible transmission controlled by inverter
- transmission shaft with special coupling system for plastic mixer
- valves for opening/closing mixing head pneumatically operated
- disposable mixer and mixing chamber, plastic made and available on the market, with limited use



The electrical control panel for the control of the whole unit is directly mounted on metering unit frame. It includes a Siemens PLC to control all working sequences and programs.

The hardware configuration allows the storage of several pouring programs each one consisting of:

- program number
- pouring time
- polyol/isocyanate ratio
- polyol + isocyanate total output

The PLC is interfaced with a Siemens Touch-Screen Panel to control and manage the pouring parameters. All the data are presented in a graphic mode.

Each function, from activating a cycle to entering some values, can be performed by just touching the corresponding part of the screen.

On request, it is possible to equip the C2P low pressure dosing unit with: automatic tanks refilling system and one zone thermoregulator for the accurate control of the temperature of the chemical components.

The application fields of Potting technology can cover a wide range of products for electrical, electronic, automotive, appliance industries.



For Example:

- circuit boards
- door lock
- electrical components in general
- electronic components in general
- insulators
- magnetic valves
- micro switches
- plug components
- potted circuits
- power tools
- proximity switches
- relays
- sensors
- transformers
- valve timing block

