

Principle of Automatic Pigtail Dispensing Machine



Article Overview

An automatic pigtail dispensing machine operates by transporting liquid from a storage source to a dispensing valve, which is precisely controlled to deposit material along a programmed trajectory using motion control and feedback systems.

Working Principle

The automatic pigtail dispensing machine functions through a combination of liquid transport, valve actuation, and motion control:

- **Liquid Transport:** The liquid material is moved from a storage tank or pressure barrel through hoses to the dispensing valve. This ensures a continuous supply of material to the dispensing point (Chencai Machine) .
- **Valve Control:** The dispensing valve is actuated by air pressure or electrical current, allowing the liquid to be released in controlled amounts. Different types of valves, such as positive displacement pumps, spray valves, jet valves, or stream pumps, are used depending on the viscosity and precision requirements of the material (ITWEAE) .
- **Motion Control:** The machine's movement platform is controlled by a computer or servo system to follow a preset trajectory, which can be linear, circular, or arc-shaped. This ensures the dispensing occurs at precise locations and speeds, improving accuracy and consistency (Chencai Machine) .
- **Feedback and Adjustment:** Vision systems or sensors monitor the position and quality of the dispensed material. Feedback allows real-time adjustments to maintain high precision and reduce errors (Chencai Machine)

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Multiple Dispensing Modes: Capable of performing point, line, area, arc, and irregular curve continuous gap filling

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For more information, pricing, or custom solutions, please contact us:

Website: <https://www.greatpremiersolutions.co.za>

Email: sales@greatpremiersolutions.co.za

Phone: +27 82 914 3675

Address: Unit 5, Silicon Heights, 22 Electron Avenue, Cape Town, 8001, South Africa

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