

Article Overview

A Fiber Optic Patch Cord Injector is a precision machine used to inject epoxy into fiber optic connectors, ensuring high-quality, consistent patch cord assembly.

Overview

A fiber optic patch cord injector is a specialized device designed to accurately dispense epoxy into the ferrules of fiber optic connectors such as SC, LC, FC, ST, MU, and E2000. This process is critical for creating strong, low-loss connections in fiber optic patch cords and pigtails, which are essential for high-speed data transmission networks .

Key Features

- o Precision Control: Modern injectors use microcomputer or Japanese micro-step motors to achieve movement accuracy as fine as 0.01mm per axis, ensuring consistent epoxy volume and placement .
- o Automation Options: Machines can operate in manual, semi-automatic, or fully automatic modes, often with digital timing controllers to regulate injection time and flow, reducing material waste and operator fatigue .
- o High Efficiency: Injection speeds can reach up to 3600 pieces per hour, making them suitable for mass production environments .
- o Multi-Connector Compatibility: Most injectors support a wide range of connector types, including SC, LC, FC, ST, MU, and E2000, allowing flexibility in production .
- o Durability and Reliability: Designed for industrial use, these machines operate effectively in controlled temperature and humidity ranges, with long-lasting components like linear guides, synchronous belts, and precision motors .

Applications

Fiber optic patch cord injectors are used in:

- o Patch Cord Manufacturing Lines: Integrated into production lines alongside cable cutting, crimping, polishing, and testing equipment to produce high-quality patch cords and pigtails .
- o Telecommunications and Data Centers: Ensuring low insertion loss and high return loss in fiber optic networks.
- o Custom Cable Assembly: For specialized fiber optic assemblies requiring precise epoxy injection and curing.

Complementary Equipment



Fiber Optic Patch Cord Injector

To complete the patch cord production process, injectors are often used with:

- o Curing Ovens: To harden the epoxy inside the connector ferrules .
- o Polishing Machines and Jigs: For precise end-face finishing of fiber connectors .
- o Insertion Loss (IL) and Return Loss (RL) Testers: To verify optical performance .
- o Crimping Machines and Strippers: For preparing fiber cables and securing connectors .

Maintenance and Operation Tips

- o Ensure air pressure does not exceed manufacturer specifications (typically 5.5 bar working pressure) to avoid damage .
 - o Stir epoxy thoroughly before loading to maintain consistent viscosity and prevent clogging.
 - o Regularly clean and inspect dispensing needles and fixtures to maintain accuracy and prevent contamination.
- In summary, a fiber optic patch cord injector is a critical tool in the production of high-quality fiber optic patch cords, providing precision, efficiency, and consistency in epoxy injection for various connector types, and is typically integrated into a full production line with complementary equipment for polishing, curing, and testing .

An optical fiber connector is a device used to link optical fibers, facilitating the efficient transmission of light

It fit for any non planar 3D injection path. It used for injecting glue to ceramic ferrule. The machine has

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Fiber Optic Patch Cord Injector

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