



## MLF60A Automatic Filling System

### About

The MLF60A is a fully automated high-speed vial filling and capping system engineered and manufactured by Machinelab for pharmaceutical, diagnostics, and life sciences production environments. Designed as a primary packaging automation platform, the system delivers precision liquid filling, controlled vial handling, and validated closure performance within regulated manufacturing workflows.



### Key Features

- **High-Speed Automated Filling** – Continuous production capability up to 60 parts per minute.
- **Precision Positive Displacement Dosing** – Piston pump technology ensures accurate, repeatable fill volumes.
- **Servo-Controlled Filling and Capping** – Stable, repeatable performance with controlled torque closure.
- **Integrated Vision Inspection** – In-line quality verification and defect detection.
- **Advanced Vial Handling** – Scroll infeed and FlexLink conveyor systems for controlled glass vial transport.
- **GMP-Aligned Construction** – Hygienic materials and surface finishes for regulated manufacturing.
- **Digital Control Architecture** – PLC-based control with touchscreen HMI and recipe-based operation.
- **Compliance & Data Integration** – Prepared for 21 CFR Part 11, MES connectivity, and batch reporting.

### Technical Specifications

Parameter	Specification
Output Capacity:	Up to 60 parts per minute
Filling Method:	Positive displacement piston pump
Container Type:	Glass vials
Infeed System:	Scroll infeed with FlexLink conveyors
Capping System:	Servo-controlled torque capping
Inspection:	Integrated full vision inspection
Construction Materials:	AISI 304 stainless steel, anodised aluminium, POM
Surface Finish:	GMP-compliant design and finishes
Control System:	PLC-based control with colour touchscreen HMI
Compliance Readiness:	Prepared for 21 CFR Part 11
Data Systems:	MES integration, batch reporting, batch control
Utilities:	Variable speed drives, eco-mode power management
Changeover:	Quick size change capability

### Real-World Benefits

The MLF60A eliminates manual filling variability, reduces contamination risk, removes dosing inconsistencies, and addresses validation challenges associated with semi-automatic processes. By automating vial filling and capping within a controlled, servo-driven architecture, the system improves batch consistency, reduces operator dependency, supports regulatory compliance, and enables repeatable, validated production performance in GMP-regulated environments.



### System Functionality

The MLF60A receives empty glass vials via a controlled scroll infeed and FlexLink conveyor system, transfers units through precision filling and inspection stations, performs positive displacement piston dosing, and executes servo-controlled torque capping. The system manages vial transport, filling, inspection, and closure as a single integrated process, ensuring stable product flow and controlled production conditions. The machine operates as a fully automated primary packaging system within pharmaceutical and diagnostics production lines, supporting consistent dosing, controlled closure, and stable line performance across continuous operation cycles.