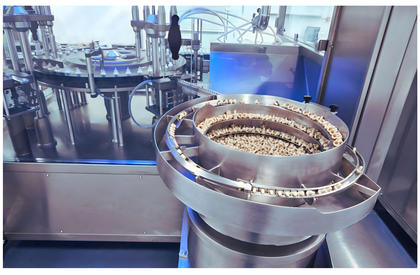
Multi-Purpose Glass and Plastic Bottle Filler

About

The Multi-Purpose Glass and Plastic Bottle Filler is a versatile, automated filling system engineered and manufactured by Machinelab for regulated manufacturing environments requiring high-accuracy filling of liquids into both glass and plastic containers. Designed as part of a primary packaging automation solution, this machine supports a range of free-flowing to medium-viscosity products and integrates seamlessly with downstream capping and secondary packaging systems.



Key Features

- **Multi-Format Filling Architecture –** Supports both glass and plastic bottles with change part modularity.
- **Volumetric Dosing Technology –** Precision control of fill volume across a wide range of viscous and non-viscous liquids.
- **Quick Changeover System –** Rapid format adjustments for varying bottle sizes and shapes.
- **Integrated Control System –** PLC and HMI interface for recipe management, fill settings, and diagnostics.
- **Automated Bottle Handling –** Sensor-based bottle detection with “no bottle, no fill” logic and conveyor integration.
- **Regulatory Compliance Design –** GMP-aligned construction and stainless-steel contact parts suitable for cleanrooms and controlled environments.

Technical Specifications

Parameter	Specification
Filling Range:	Flexible (e.g., 5 ml–1000 ml+) depending on model and change parts.
Filling Accuracy:	Typically ±1% depending on product and volume.
Throughput:	Application dependent; machine variants can achieve high outputs with multi-head configurations.
Construction:	SS316 contact parts and SS304 frame for hygiene and durability.
Control:	PLC + HMI with recipe management, error handling, and diagnostics.
Safety:	Integrated sensors and safety interlocks for “no bottle, no fill” and operator protection.

Real-World Benefits

The machine eliminates manual filling variability, reduces contamination risk, and improves dosing consistency compared to manual or semi-manual methods. It addresses challenges such as handling diverse container types (glass and plastic), high throughput demands, frequent product changeovers, and compliance with GMP and quality assurance standards. Automation of these functions also reduces operator dependency and supports regulatory readiness in pharmaceutical, diagnostics, life sciences, and other regulated environments.

Integration and Modularity

The Multi-Purpose Bottle Filler is designed to integrate with upstream bottle feeding and orientation systems, as well as downstream capping (servo torque capping), labelling, inspection, and case packing systems. It supports modular expansion and line architecture changes with minimal downtime.

Compatible with robotics, vision inspection, and PLC based supervisory systems, the machine can be configured for full automation or partial automation based on production needs.