

Automatic Single-Head Filling Stoppering Capping Machine With enclosure and HVAC

1. Equipment Introduction

This rotary automatic filling and capping machine is a product independently developed and manufactured by our company in 2025. It is suitable for automatic filling, stopper pressing, cap crimping or screwing of vials, essential oil bottles, and perfume bottles. The complete set of equipment consists of bottle unscrambling, filling, stopper pressing, cap feeding, and capping modules. It features stable production and strong versatility for packaging materials. Additionally, our company offers high-speed filling and sealing equipment with a capacity of 50-70 bottles per minute.

1. Advanced Servo Indexing System

The turntable drive is equipped with a self-developed servo indexing system, offering significant advantages over traditional cam-driven mechanisms. It features a compact footprint, reduced weight, and simplified installation. The indexing angle can be freely adjusted, and the integrated auto homing (return-to-origin) function ensures precise positioning and repeatability. This design enables high-speed operation with user-friendly control.

2. Premium European & American Components

All critical electrical and control components are sourced from leading European and American manufacturers, including Siemens, Honeywell, and ABB.

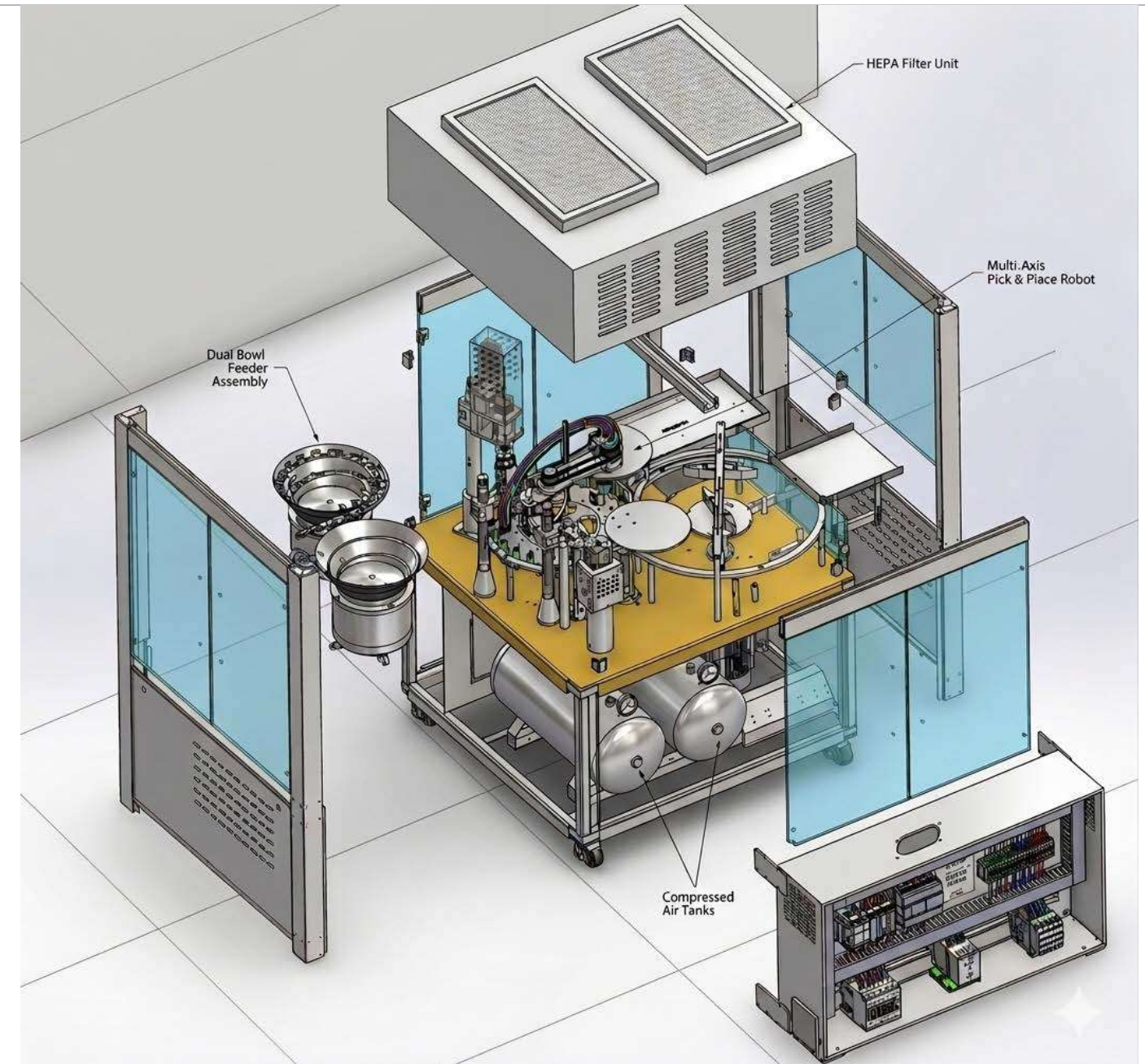
This ensures high reliability, long operational life, and global serviceability, meeting international industrial and pharmaceutical standards.

3. Durable & Versatile Capping Module

The capping system utilizes high-grade imported steel components, internally engineered and manufactured, and treated through quenching and hardening processes for extended durability. The system is compatible with multiple cap materials and formats, and compared to conventional high-speed cutter-type systems, it significantly reduces particle generation and minimizes risk of damage to packaging components.



Automatic Single-Head Filling Stoppering Capping Machine Without enclosure



4. Flexible Height Adjustment & Smart Safety Controls

For containers of the same diameter, the capping height can be easily adjusted to accommodate different formats. The system is equipped with intelligent sensors that trigger automatic alarms in the absence of inner stoppers, ensuring process integrity. Additionally, in-line loading and unloading (same-direction flow) enhances operator convenience and workflow efficiency.

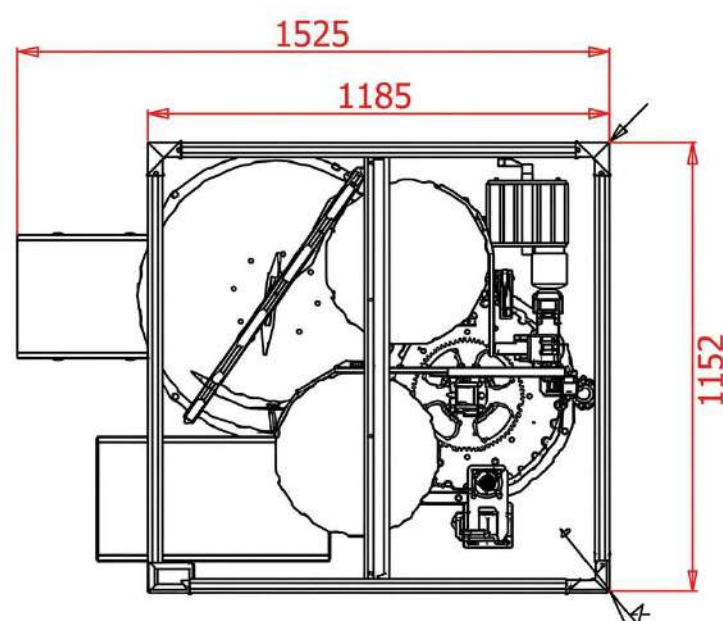
5. Precision Vibratory Feeding System

The vibratory feeder is designed with an exclusive variable frequency control system, ensuring consistent and stable feeding performance. It is particularly optimized for handling soft materials such as white silicone (non-butyl rubber) stoppers, preventing misfeeds and ensuring smooth operation.

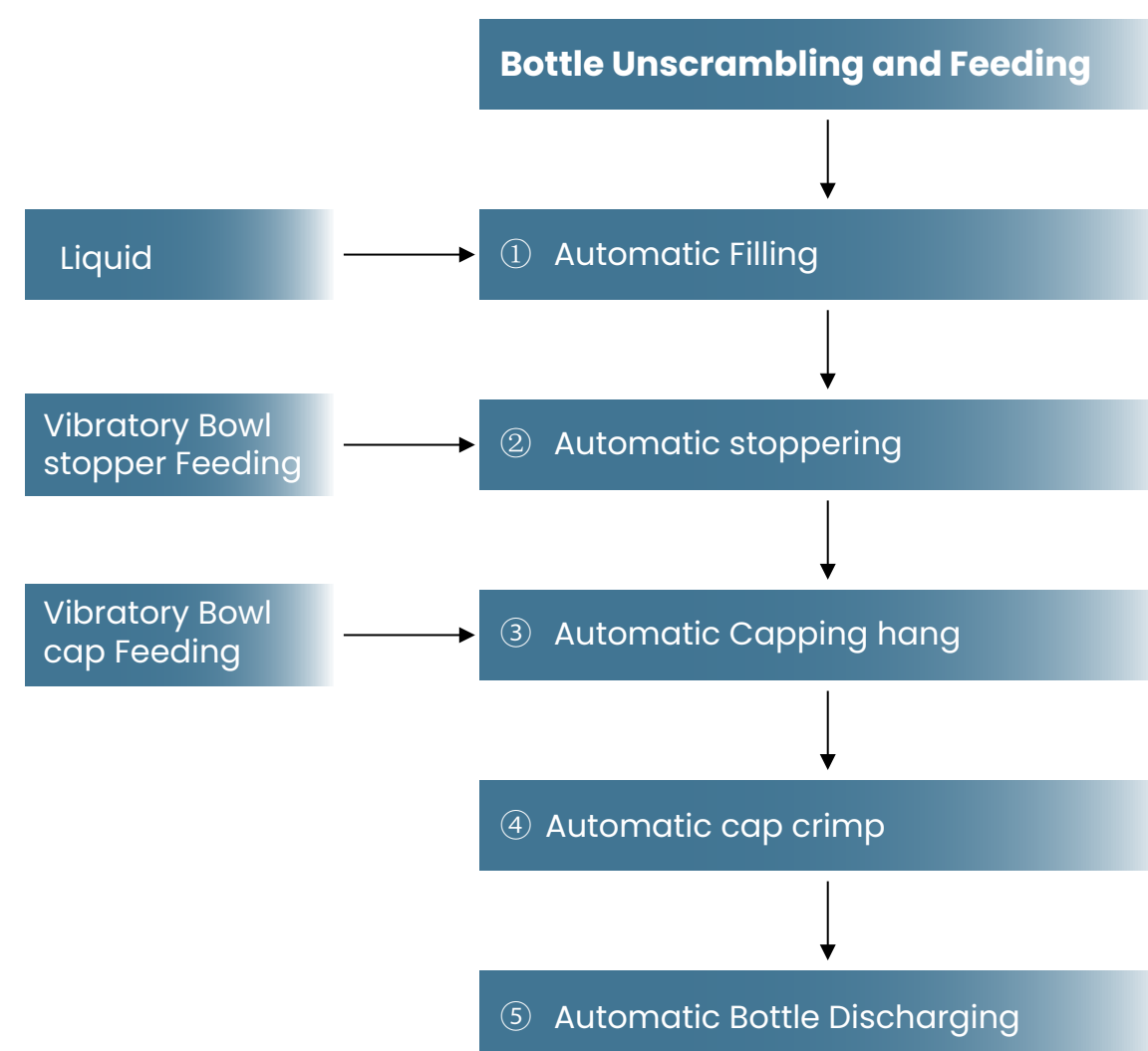
2. Equipment Features

1. Peristaltic pump is used for filling, enabling aseptic filling and easy cleaning.
2. Four-piece capping design ensures no scratches during sealing.
3. Bottles are fed and discharged in the same direction, facilitating operator operation.
4. The bottle collection tray can be removed to connect with a labeling machine or other conveyor belts.
5. Alarms and shuts down automatically when there is a lack of stoppers or caps.
6. All height adjustments can be completed within 20 seconds.
7. Complies with GMP certification standards.

3. Equipment Dimensions



4. Production Line Process Introduction



5. Equipment Parameters

Main Machine Components	Vial Unscrambler, vial feeding Conveyor Line, Filling, stopper inserting, Capping, Cap Crimping
Total Machine Power	2.2 kw
Voltage	220V 50HZ (Customizable to 110V 60Hz)
Air Supply	0.45-0.6Mpa
Air consumption	40-50 L/min
Transmission Structure	Servo Indexer (with Automatic Reset Function)
Plugging Mode	single stopper insert and Press
Capping Mode	Cap Hanging
Cap Crimping Mode	Pneumatic
Turntable Plastic Parts	POM
Bottle Unscrambler	500mm Diameter, 304 Stainless Steel
Cabinet Material	304 Stainless Steel (316 Stainless Steel for Filling Part)

Filling System

Number of Filling Heads

1 Heads (316 Material)

Three types of filling heads are available. We will configure the appropriate one based on the customer's materials, not all three.



Filling Head Grade

Type 1 & 2: Pharmaceutical Grade

Liquid Filling Volume

3-30ml (Requires Uniform Bottle Diameter)

Filling Accuracy

1% Accuracy; For 1g, the error is less than 0.02g

Liquid Filling Speed

40-50 Bottles/Minute

Filling Method

Peristaltic Pump (with Stepping Motor)
Optional: Magnetic Pump (Servo Motor), Ceramic Pump (Stepping Motor)

Cap Crimping Method

Cap Crimping Head

Two Options: rotating blade & Pneumatic Cap crimper

CrimpingThe pictures do not mean all are provided; we will select the most suitable one based on the customer's packaging materials.



切刀式



轧盖式

Vibratory Bowl Structure

304 Stainless Steel



Sensors application



Photoelectric detection at the bottle infeed detects missing bottles and stops the machine automatically



Photoelectric detection after stoppering checks for missing stoppers and stops the machine automatically

Other detail picture



Photoelectric detection on the cap feeding track checks for missing caps and stops the machine automatically.

bottle unscrambler



Siemens HMI



7. Main Configuration of the Equipment

Name	Origin	Brand	Main Function
Touch Screen	Germany	Siemens	Control
PLC	Germany	Siemens	Programming
Pneumatic Components	Taiwan, China	Airtac	Transmission
Photoelectric Sensor	Japan	Keyence	Positioning
Solenoid Valve	USA	Honeywell	Transmission
Servo Motor	Shenzhen, China	Inovance	Transmission
Whole Machine Material	Guangzhou, China	Huangzhi Brand	304 Stainless Steel

8. Precautions

1. The machine cannot be used for bottles of different diameters.
2. If the height difference of bottles of the same type exceeds 2cm, please inform us in advance.
3. The thickness difference of inner stoppers shall not exceed 0.2mm, and the material must be confirmed.
4. The material of outer caps must be confirmed in advance, and the dimensions cannot be changed afterward.

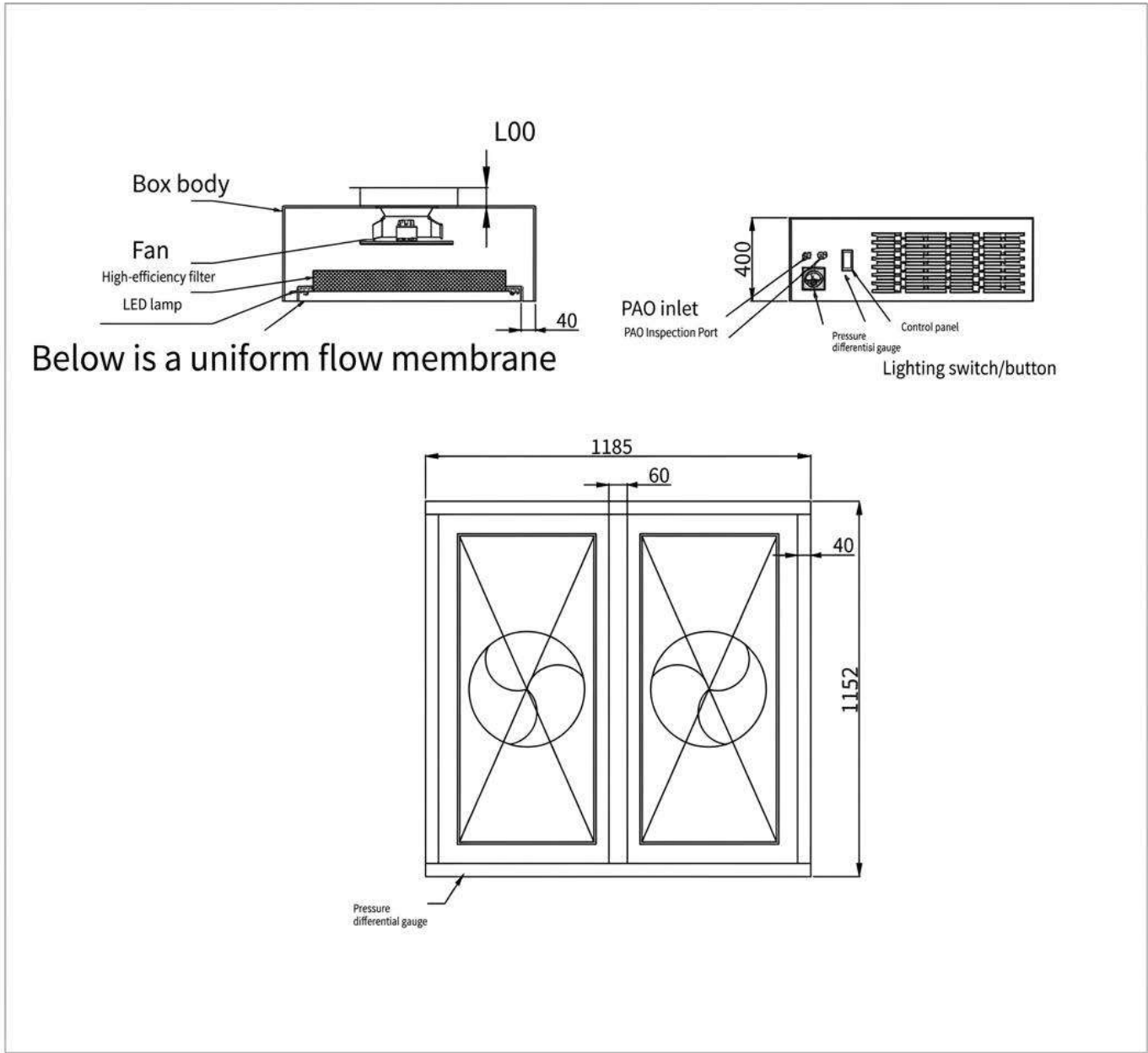
8. Wear Parts List

No.	name	picture	Qty	UNIT
1	Capping Head		1	SET
2	Silicone Tube		1	SET

9. Warranty Period (Calculated from the date of receipt)

1. One-year warranty for the whole machine.
2. Two-year warranty for the motor and touch screen.

Laminar Air Flow Hood Specifications and Parameters



Below is a uniform flow membrane

Category	Subcategory	Specification Details
Basic Information	Brand	Team 4 AutoFiller
	Product Dimension	customize according to the machine
	Total Power	Approximately 0.5 KW
	Frame Size	40 mm
Core Configuration	PAO Test Pass Rate	100% (Compliant with the latest GMP testing standards)
	Cabinet	Formed by bending 1.2mm 304 stainless steel sanded brushed plates, with uniform grain direction on four sides
	Fan	XM355 centrifugal fan
	High-Efficiency Filter	Reverse-flange liquid-tank sealed non-partition type, H14 filtration efficiency
	Auxiliary Components	Duweii Differential Pressure Gauge (0-500 Pa)
		PAO Injection Port & Detection Port (with stainless steel quick connectors)
		200-Mesh Air Outlet Flow Equalization Membrane
		Independently controlled LED lighting
		Lighting button
		Control panel
Performance Parameters	Single Motor Noise	< 65 dB
	Overall Machine Vibration Amplitude	≤ 5 μm (X, Y, Z axes)
	Cleanliness Level	ISO 5 (Class A, @ ≥0.5 μm particle count ≤ 3.5 particles/L) (Note: "≥um" is supplemented with "0.5" as the standard particle size for ISO 5; confirm if actual particle size differs)
	Air Return Mode	Clean air Filter from top
	Air Outlet Velocity	0.36 m/s ≤ V ≤ 0.54 m/s