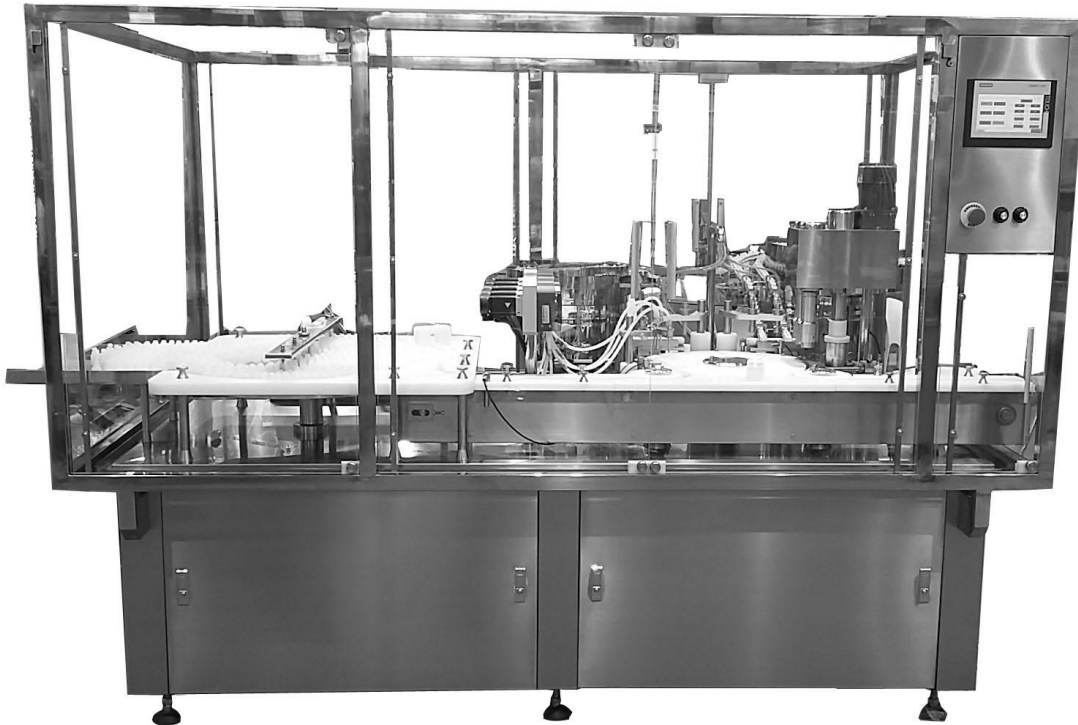


HQ-DYJ2 Eyedrop filling plugging capping machine:



1)Working principle: The bottle after unscrambler bottle machine into the filling part, using 4 head servo ceramic pump filling on the turntable, after filling enter into the plugging capping part;Loading stoppers and caps part adopts the electromagnetic vibration feeding stoppers and caps, using advanced mechanical hand loading stoppers and caps, Finally, capping.

2)Part review:

a.Frame structure:Structure using the overall steel frame (previously welded forming frame, easy deformation), nut positioning.Features: to prevent deformation of hard enforce,Surface coating anti rust paint.

Frame structure diagram

Laser cutting and shaping hole

Driver



b.Bottle feeding mechanism: Use of imported POM material production, the bottle is light then easy to pour, friction force, resistance to reduce the rate of inverted bottles. After entering into the pathway with inverted-bottle removal device,Make sure the bottle goes smoothly into the filling station.

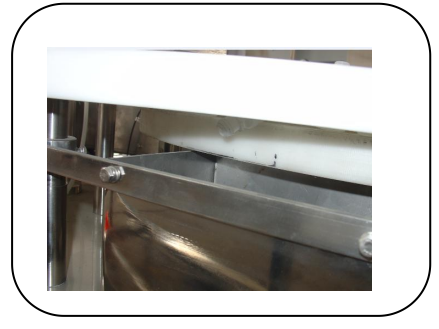
Buffer turntable



Inverted bottle rejection



Bottle collecting device

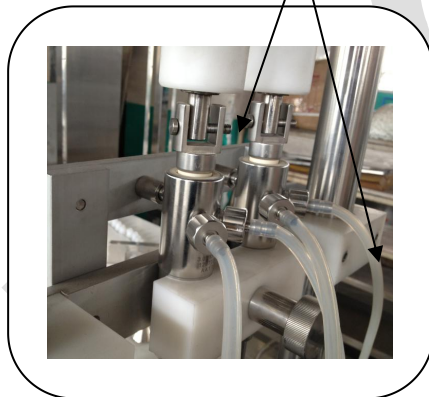


c.Servo filling mechanism:Servo filling, MITSUBISHI configuration, high precision. Pump and needle free removal tools can be completed disassembly, needle using 316L material. No bottle no filling function, avoid liquid overflow.This reduces the trouble of disassembly sterilization.

Disassemble

Disassemble

Disassemble



d.Oscillator mechanism:Stopper capper oscillator track and positioning block made of 316L material,the pathway is also free disassembly tool to complete the disassembly.

Free removal tool

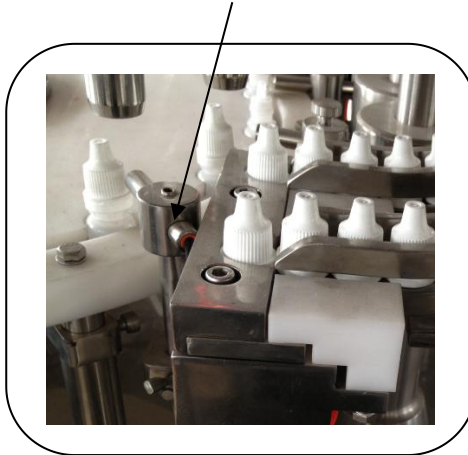


e.Loading stopper and cap structure: Using the manipulator to load stoppers and caps,positioning precisely, plugging rate is high.With no bottle no stopper, without external cap function. Each station has separate optical fiber (optical fiber protective cover) position control.Adjust the manipulator is also through free removal tool.

Manipulator loading stopper,cap



Optical fiber protective cover

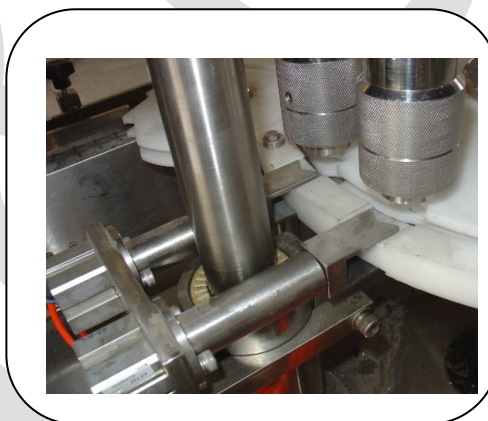


f.Screw cap and bottle holding mechanism: Capping with our third generation of screw head, with automatic sliding device, capping beneath the bottle holding device, avoid the bottle turning,will not hurt the cap.

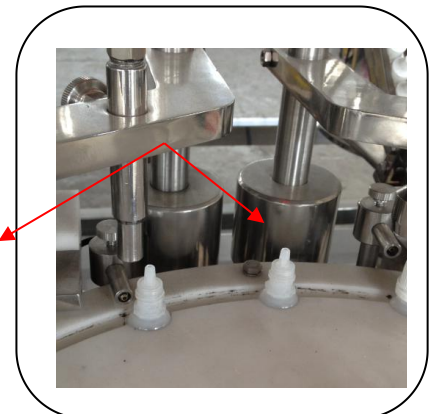
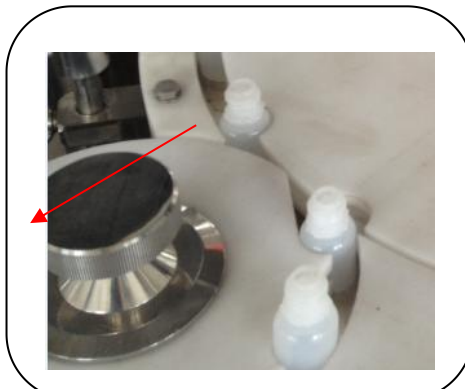
Screw cap



Bottle holding mechanism



g. Replacing mould disassembling mechanism: Pathway、Dial bottle plate、Filling pump (b)、Filling needle(b)、Manipulator of loading stopper,cap(d)、Optical fiber electric eye、Pathway of stopper,cap(d) Etc.

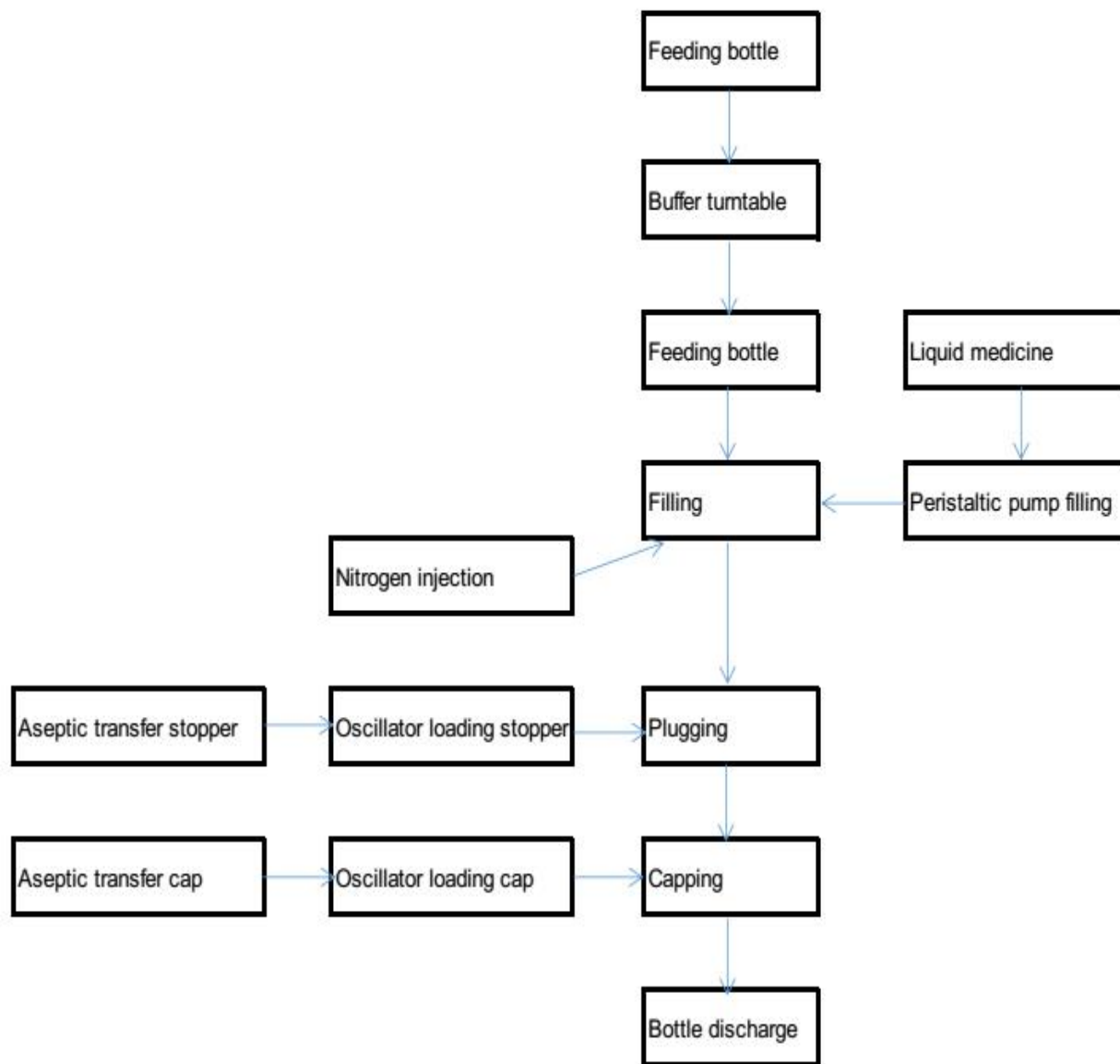


(Laminar flow, this needs extra pay RMB30000) oRABS is a small environment composed of hard wall structure, it covers the entire filling, plugging, capping the production process, the formation of structural and aerodynamic barrier between the product, operator and the surrounding environment, reduce the production process in the general clean room in artificial intervention. ORABS internal provides cleanliness A class environment, to ensure product safety and pollution control. Open isolation system mainly comprises a rigid wall, the top fan filter unit, anemometer Etc.

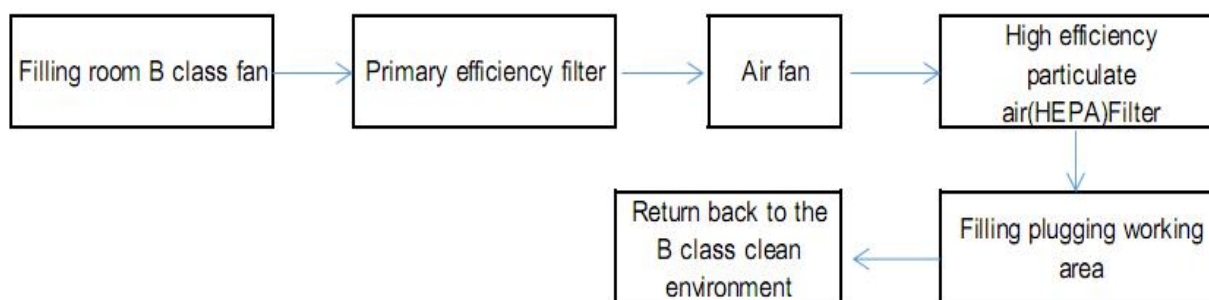


(Picture is only as reference, without gloves device)

1) System process flow chart:



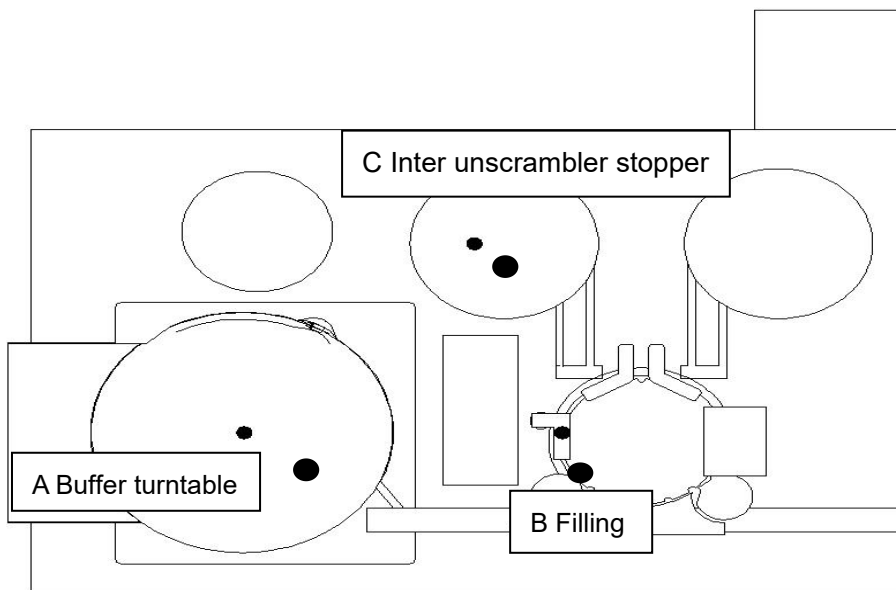
2) Process flow chart of isolation cover:



3) Test point

Buffer turntable zone, filling area, inter unsrambler stopper area, which were 3 test points, test point position as shown in the figure. The distance to the wind surface 150mm were measured and recorded. However, the suspended particle counting measuring instrument (light scattering particle counter) on the icon, the sampling hole is airflow direction, sampling quantity 1000L, close 20min to start counting to detect the particle size of 0.5μm and 5.0μm

particles. According to the area definition a planar which is equivalent with the operating surface , the plane is vertical as the laminar flow.



3)Situation of mechanical components:We are in the application of materials, processing precision, heat treatment quality inspection requirements and processing is very important. We spare neither labor nor money processing stability of excellence, with high precision imported machining center processing, material selection and optimization, in quality control, strict and best, ensures long-term use of stable high yield.

Equipment frame: carbon steel floor with 1.2mm SUS304 steel package,surface by 1.2mm stainless steel matt panel, column SS304 stainless steel plate.Pipe could choose silicone rubber hose,All piping is automatic argon arc welding and all internal and external surface mechanical polishing or electropolishing,All pipes in contact with the product are 316Lstainless steel material

4)Control system conditions:

The quality of filling machine is fully comply with EU CGMP standards, our company adopts advanced PLC control, frequency control and Chinese/English interface touch screen display, PLC controller and touch screen operation procedures are as follows: manual adjustment program, automatic control program, parameter setting procedure, safety control;

5)Technical parameter:

Model:	HQ-DYJ2
Produce capacity:	20-40Bottles/m
Suitable specification:	2~60mL Eye drop round bottle
Filling method:	Servo peristaltic pump
Filling head:	2heads
Filling accuracy:	$\leq \pm 1\%$
Plugging head:	1 head
Capping head:	1 head
Production qualification rate:	$\geq 99.8\%$
Power supply:	220V、50Hz
Air supply:	0.3~04kfg/ _{cm} 2
Air consumption:	8~10m ³ /h
Power:	1.5KW
Weight:	About 500kg
Machine size:	2000×1200×1800mm

6)Main configuration list:

Table, surrounding plate are imported 304/2B high quality stainless steel, and liquid medicine contact part is 316L stainless steel and silica gel, filling needle material 316L stainless steel.

HQ-DYJ2 Eye drop filling plugging capping machine			
No.	Name:	Model:	Origin:
1	2P Miniature circuit breaker	DZ47-63	Zhejiang people electric appliance
2	1P Miniature circuit breaker	DZ47-63	Zhejiang people electric appliance
3	AC contactor	3TB40	SIEMENS Germany
4	Switching Mode Power Supply	S-35-24	Taiwan Meanwell
5	Gear reduction motor	51K60R60W	Shanghai OTT
6	Servo driver	MR-J2S-40A	MITSUBISHI Japan
7	Servo motor	HC-KFS43	MITSUBISHI Japan
8	Fiber optic sensor	BF3RX	Korea Autonics
9	Proximity switch	PSN17—4DN	Korea Autonics
10	Miniature relay	MY2NJ	Omron Japan
11	Programmable control unit(PCU)	FX1N-40MT	MITSUBISHI Japan
12	Variable frequency speed governor	FR-S700SE-0.75K	MITSUBISHI Japan
13	Human-computer interface	6AV6640-0DA11	SIEMENS Germany
14	Cylinder	05-I-LTN10X20-S	Taiwan Airtac
15	Pneumatic two link	AW20-02G AL20-02	Taiwan Airtac
16	Solenoid valve	4V210-08 2w200-20	Taiwan AirTAC
17	Muffle	Spcv-20JB	Shanghai
18	Ceramic pump		Shenzhen
19	Silica gel tube		British Spirax Sarrco