

HQ-ZYF12C10 口服液系列灌封机

Oral Liquid Series Filling cap-sealing Machine:



一.工作原理 Operational principle:

本机符合“GMP”要求，采用 304 不锈钢材料制作，与药液接触部分采用 316L 不锈钢材料制作，是口服液联动生产线中的计量灌装主机。用于口服液瓶的计量灌装和轧盖封口。

This machine meets the requirements of "GMP", made of 304 stainless steel material, and the contact part with the liquid is made of 316L stainless steel material. It is the metering and filling host in the oral liquid linkage production line. Metrological filling and capping for oral liquid bottles;

本机由渐进式拦边网带进瓶、大直径慢速拨瓶盘配与不锈钢泵跟踪灌装、简洁式输盖管与振荡器、柔性三刀滚压跟踪轧盖、滚轮式收瓶装置等组成。

This machine is composed of progressive edge-blocking net, large diameter slow-moving bottle tray and stainless steel pump tracking filling, simple cap pipe and oscillator, flexible three-knife rolling and rolling cap, roller bottle collecting device;

整机采用触摸屏全中文菜单动态显示，PLC 控制，人机界面操作，变频无级调速；还具有无瓶不上盖、不轧盖等功能。

Dynamic display, PLC control, man-machine interface operation, variable frequency stepless speed regulation, no bottle without cap, no rolling cover and other functions;

本机形结构紧凑新颖，节省占地面积；大直径拨瓶盘慢速送瓶灌装，不滴漏；托盘式走瓶轨道减少了支承、模具压制的独特梯形式台边集水槽更便于清洗；柔性三级微调滚压刀使瓶不转动



的封口，更严密而光滑，更适宜国产口服液瓶；本机产量大，既可单机生产，又可联入生产线。

This machine has compact and novel structure and saves the area; large diameter dials the bottle slowly to send the bottle filling, does not drop the leak;The tray type walking bottle track reduces the support, the mold pressing unique ladder form platform side collecting trough is more convenient to clean; the flexible three-stage fine-tuning roller knife makes the bottle not rotating seal, more tight and smooth, more suitable for domestic oral liquid bottle; this machine produces large quantity, can be produced on a single machine and can be connected to the production line;

经灭菌后的瓶子输送到灌装机的进瓶网带，瓶子经进瓶网带的推力进入中心大拨轮，在中心大拨轮的带动下进入灌装工位，此时灌装针同步跟踪插入瓶内进行液体灌装。灌装完毕后由中心大拨轮带动，将瓶子送入过渡拨轮，在过渡拨轮的带动下送上盖工位自动上盖。自动上盖后的瓶子在过渡拨轮的带动下进行轧盖中心转盘，此时轧盖头下压，十组三刀式轧刀头开始工作，轧盖完成，瓶子经中心转盘转至出瓶拨轮，由出瓶拨轮将成品瓶送出灌封机，完成本机工作。

The sterilized bottle is transported to the bottle feeding area of the filling machine. The thrust of the bottle entering the bottle net belt enters the center big dial wheel and enters the filling station under the drive of the center big dial wheel. After filling, the bottle is fed into the transition wheel and sent to the upper cover automatically. At this time, ten groups of three-knife cutter heads began to work, the lid was finished, the bottle was transferred through the center turntable to the bottle wheel, and the finished bottle was sent out of the filling machine by the bottle wheel to complete the work;

二、结构特点 **Design feature :**

(1)、本机为全自动匀速运动。玻璃瓶传输及定位装置准确可靠，并在高速运行时不碎瓶，更换清洗方便。进瓶、灌装、出瓶速度可无级变频调节且各速度可根据灌装速度相互协调。

This machine is automatic uniform motion. Glass bottle transmission and positioning device accurate and reliable, and in high-speed operation without breaking the bottle, easy to replace and clean. The speed of entering, filling and exiting bottles can be adjusted by stepless frequency conversion, and each speed can be coordinated according to filling speed;

(2)、本机外露部位采用 304 不锈钢材料制作，接触药液部分采用 316L 不锈钢材料、硅胶等材料制作。所有拨轮、栏栅、等塑料件采用聚甲醛材料进行制作。

The exposed part of this machine is made of 304 stainless steel material, and the contact liquid part is made of 316L stainless steel material, silica gel and other materials. All wheels, fences, and other plastic parts are made of polyformaldehyde;

(3)、灌装采用不锈钢计量泵灌装，灌装管路系统不渗漏，各工序动作协调、准确、可靠。灌装管路系统无死角、盲管，且易于清洗和消毒，个连接部位采用快装方式。采用上下不同活塞，控制由于灌装针头来回甩动造成的滴液情况。

The filling adopts stainless steel metering pump, The filling pipeline system does not leak, and the action of each working procedure is coordinated, accurate and reliable. The filling pipe system has no dead angle and blind pipe, and is easy to clean and disinfect. Using different pistons up and down to control the drop caused by the back and forth movement of the filling needle;



(4)、铝盖振动盘及轨道采用不锈钢材质（304）制作，可方便拆卸灭菌。理盖振动工位可快速拆装设计，可灭菌。

Aluminum cap vibration disc and track made of stainless steel (304), easy to disassemble and

sterilize. The vibration station of the cap can be quickly disassembled and designed, and can be sterilized;



(5)、轧盖采用三刀式柔性轧盖头，定位中心正确，轧好的瓶子美观、轧紧，铝盖端正，无假锁、翘边、歪盖现象，达到锁口部位光滑、平整，无毛刺、豁口、褶皱，铝盖无转动，具有缺瓶不下盖、不轧盖功能，达到产品合格率符合要求，提高了产品的质量。

The rolling cap adopts three-knife flexible rolling head, the positioning center is correct, the rolled bottle is beautiful and tight, the aluminum cap is correct, there is no false lock, edging, crooked cover phenomenon, the lock part is smooth and flat, no burr, gouge, fold, aluminum cap is not rotated, it has the function of missing bottle and not rolling cap, it meets the requirements of the qualified rate of the product and improves the quality of the product;



(6)、整机台面密封无废液渗入设备内部，台边集水槽更便于清洗，无死角，易清洁，且设置集中收集口及导流接管。

The whole machine table seal no waste liquid seeps into the equipment interior,



the side collecting trough is more convenient to clean, no dead angle, easy to clean, and sets up the centralized collection port and the diversion pipe;

(7)、本机采用高精度彩色触摸显示屏操作监视，PLC 自动控制，主机变频调速。能对主传动系统、进出瓶系统的控制保护和整个系统的监测及与后道的互控连接，实行机电一体化。

High-precision color touch operation monitoring, PLC automatic control, frequency conversion speed control. It can control and protect the main transmission system, the inlet and outlet bottle system, monitor the whole system and control the connection with the rear channel, and electro-mechanical integration

(8)、本机可单独使用，也可与超声波清洗机、隧道烘箱等组成洗、烘、灌装联动线，实现生产过程全部自动化。

This machine can be used alone, and it can also be used with ultrasonic cleaning machine, tunnel oven and other components of washing, drying, filling linkage line, to achieve full automation of the production process;

三、主要技术参数 Main technical parameters:

稳定生产能力 Stable produce capacity:	150 瓶/分 Bottles/minute
适用规格 Filling specification:	10ml 口服液瓶 Oral liquid bottles
灌装泵 Filling pump:	12 头不锈钢计量泵 12Heads SS metering pumps
装量精度 Filling accuracy:	±1%
轧盖头数 Capping heads:	10 头 Heads
轧盖封口合格率 Capping qualified rate:	≥99.9%
电源 Power supply:	380V 50Hz 三相五线制 3Phases 5Wires
功率 Total power:	2.5KW
外形尺寸 Machine size:	2200×1200×1600 (mm)



四、主要配置清单 Main configuration list:

序号 No.	构件名称 Parts' name:	型号 Model:	生产厂家 Manufacturer:	备注 Note:
1	灌封机主体 Filling cap-sealing machine	ZYF12C10	本公司 Our factory	外壳不锈钢拉丝板,其它为不锈钢及 1010 尼龙 Shell stainless steel wire drawing plate, other stainless steel and 1010 nylon;
2	主要控制系统 Main control systems		正泰电器股份 CHNT	性能稳定,动作可靠 Stable performance, reliable operation
3	计量泵 Dosing pumps	定制 Customized	本公司 Our factory	不锈钢 Stainless steel
4	输液管 Perfusion tube	8mm	上海密乐橡塑五金 Shanghai Mile Rubber Plastic Hardware	硅胶,弹性好,耐压,使用寿命长 Silica gel, good elasticity, pressure resistance, long service life
5	减速电机 Reducer motor	100YYJT120	杭州友邦 Hangzhou Youbang	噪声小,温差小 Small noise, small temperature difference
6	传送网带 Transmission network	380*19.05	南通拓新传送设备 Nantong Tuoxin Transmission Equipment	塑料 Plastic
7	等分盘 Equi-index plate	18 等分 18Grades	上海瑞欣机械设备 Shanghai Ruixin Machinery Equipment	尼龙 1010 Nylon 1010
8	出瓶盘 Bottle tray		上海瑞欣机械设备 Shanghai Ruixin Machinery Equipment	尼龙 1010 Nylon 1010
9	旋盖系统 Cap system		本公司 Our factory	组装件 Assembly parts
10	送盖器 Cap feeder	400 型 Type 400	本公司 Our factory	不锈钢 Stainless steel
11	送盖线圈 Cover coil	220V, 1.2KW	海门 Haimen	性能稳定 Stable performance
12	减速器 Reducer	WPA60	杭州博宇减速机 Hangzhou Boyu Reducer	
13	电机 Motor	380V, 1.5KW	上海华滨机电 Shanghai Huabin Electrical Mechanical	
14	变频器 Transducer	VFD015S21D	希望森兰科技股份 Hope Senlan	质量好,体积小 Good quality, small size



			Technology	
15	触摸屏 Touch screen		台湾台达 Taiwan Delta	性能稳定, 动作可靠 Stable performance, reliable operation
16	PLC		台湾台达 Taiwan Delta	性能稳定, 动作可靠 Stable performance, reliable operation
17	主要传动部件 Main transmission components		本公司 Our factory	按标准制作 Standard production
18	主要零部件 Main components		本公司 Our factory	按标准制作 Standard production