ALXI-III Ampoule Washing-Drying-Filling-Sealing Production Line

The ALXI-III model ampoule washing-drying-filling-sealing production line is composed of the QCL series vertical ultrasonic bottle washing machine, ASMR tunnel hot air circulation sterilizing oven and AGF series vertical filling-sealing machine, whilst the three component machines can also be used independently. Suitable for production of ampoules of 1-20ml, it can complete more than 20 pharmaceutical procedures such as spray and water filling, ultrasonic rough washing, bottle exterior wall washing, bottle interior wall continuous twice circulation water washing, primary blowing, primary fresh water washing, continuous twice blowing, bottle exterior wall blowing, preheating, drying, sterilizing, pyrogen removing, cooling, front gas charging, filling, rear gas charging, preheating, sealing, and etc. The production line is a new-type line which is researched and developed by us after years of efforts through integrating our proprietary patented technologies on the basis of digesting and absorbing advanced domestic and overseas technologies.

The whole line adopts PLC main control, frequency converter and touch screen control technology whilst the production process is stable and reliable. The touch screen can display running dynamics of each single machine, water pressure, air pressure, wind pressure and temperature at each control point. The display of each on-off status and faults, fault self-diagnosis, fault analysis and eliminating methods realizes automatic control during the whole production. The production line is provided with the three-machine automatically control and balancing device to ensure the balanced and reliable production.

Features

◆ The bottle washing machine adopts mechanical hands to clamp the bottles, suitable for ampoules of 1-20ml;
◆ The water-gas spray needles adopt the reciprocating tracking insertion method for bottle washing, featured by excellent washing effect and energy saving. It is also provided with a device that prevents the needle holder from shaking to enhance the accuracy of the spray needle's insertion into the bottle and reduce the occurrence of needle breakage;
◆ The water and gas pipes are totally separable from the spray needles, so that cross contamination is avoided and GMP requirements are satisfied;

◆ The buffer block is installed before the bottle feeding screw of the bottle washing machine to protect the screw and reduce bottle breakage;
◆ Bottle discharging is realized by the integral imported synchronous belt that is connected to the bottle pushing block to convey ampoules, a structure that ensures stable and reliable operation ;
◆ The oven adopts hot air circulation heating to achieve even temperature and energy saving;
◆ The oven is provided with the function of protecting against sudden power-off to ensure safe running;
◆ The oven can be equipped with the circulation water cooling device that does not consume wind volume in the room, whilst reducing the risk of unbalanced differential pressure in the room and achieving good cooling effect;
◆ The oven can be equipped with the differential pressure automatic balancing and regulating system to reduce the problems of deviation at the high temperature section caused by unbalanced differential pressure in the room and oven, temperature rise in the filling room, washing and drying room, and etc;
◆ The oven is provided with DOP inspection ports (including inspection ports for wind pressure, wind speed and dust particles);
◆ The cooling section in the oven can be provided with the sterilization function (selective for FDA);
◆ The oven mesh belt can be equipped with the ultrasonic and CIP cleaning systems;
◆ The oven cavity can be subject to all-round, multi-angled high pressure water washing;
◆ In the vertical filling-sealing machine, bottle feeding is carried out by using the constant speed pushing wheel instead of the sector pushing block to reduce the bottles' breakage rate;
◆ The filling-sealing machine adopts the imported synchronous belt and bottle turning gearbox instead of the old-fashioned bottle turning box, featured by low wear rate and reliable operation;
◆ The filling-sealing machine is equipped with the needle holder and clamping stand automatic locking device;
◆ The filling-sealing machine can be equipped with the ceramic pump, stainless steel pump and peristaltic pump;
◆ The filling-sealing machine can be equipped with the servo filling system.

Optional Add-on

According to customers' requirements, the production line can also be equipped with the following:

◆ Control system of such brands as Siemens, Schneider, Mitsubishi, Delta, and etc;
◆ Water pressure, air pressure, water temperature, ultrasonic strength, dust particles and wind speed online inspection, alarming, recording and printing systems;
◆ ORABS, CRABS, aseptic isolator system.

Technical Parameters

Product Model	**QCL100+ASMR620+AGF8/1-20**	**QCL100+ASMR620+AGF10/1-20**
Applicable specifications(ml)	1-20ml (GB standard ampoule)	1-20ml (GB standard ampoule)
Capacity(pcs/h)	1-2ml: 22,000 5ml: 16,000 10ml: 11,000 20ml: 6,000	1-2ml: 24,000 5ml: 18000 10ml: 15,000 20ml: 8,000
Cleanness(%)	> 99	> 99
Qualified rate(%)	≥ 99 (standard solution)	≥ 99 (standard solution)
Filling accuracy(%)	≤ ±2.5	≤ ±2.5
Fresh water consumption and pressure	Consumption:0.4-1.0cbm/h Pressure: 0.2mpa	Consumption:0.4-1.0cbm/h Pressure: 0.2mpa
Purified compressed air consumption and pressure	Consumption:30-75cbm/h Pressure: 0.15mpa	Consumption:30-75cbm/h Pressure: 0.15mpa

Sterilizing temperature(°C)	300-350	300-350
Exhaust volume(m3/h)	4100	4100
Gas fuel consumption and pressure	Consumption: 1.5-2.5cbm/h Pressure: 0.2-0.3mpa	Consumption: 1.5-2.5cbm/h Pressure: 0.2-0.3mpa
Oxygen consumption and pressure	Consumption: 1.2-1.5cbm/h Pressure: 0.2-0.3mpa	Consumption: 1.2-1.5cbm/h Pressure: 0.2-0.3mpa
Overall dimensions(LxWxH) (mm)	9940 × 2003 × 2445	10100 × 2260 × 2455
Weight(kg)	7500	7500
Power capacity	380V50hz, 71kw	380V50hz, 71kw

Product Model	**QCL100+ASMR620+AGF12/1-10**	**QCL100+ASMR620+AGFD12/1-20**
Applicable specifications(ml)	1-10ml (GB standard ampoule)	1-20ml (GB standard ampoule)
Capacity(pcs/h)	1-2ml: 28,000-30,000 5ml: 20,000	1-2ml: 12,000-30,000
Cleanness(%)	> 99	> 99
Qualified rate(%)	≥ 99 (standard solution)	≥ 99 (standard solution)
Filling accuracy(%)	≤ ±2.5	≤ ±2.5
Fresh water consumption and pressure	Consumption:0.4-1.0cbm/h Pressure: 0.2mpa	Consumption:0.4-1.0cbm/h Pressure: 0.2mpa
Purified compressed air consumption and pressure	Consumption:30-75cbm/h Pressure: 0.15mpa	Consumption:30-75cbm/h Pressure: 0.15mpa
Sterilizing temperature(°C)	300-350	300-350
Exhaust volume(m3/h)	4100	4100
Gas fuel consumption and pressure	Consumption: 1.5-2.5cbm/h Pressure: 0.2-0.3mpa	Consumption: 1.5-2.5cbm/h Pressure: 0.2-0.3mpa
Oxygen consumption and pressure	Consumption: 1.2-1.5cbm/h Pressure: 0.2-0.3mpa	Consumption: 1.2-1.5cbm/h Pressure: 0.2-0.3mpa
Overall dimensions(LxWxH) (mm)	10100 × 2260 × 2455	10100 × 2260 × 2455
Weight(kg)	7500	7500
Power capacity	380V50hz, 71kw	380V50hz, 71kw