

100A Semi-automatic liquid filling, sealing & gas filling machine

Usage and features

HDC-100A aerosol filling machine is featured with three functions in one working table and semi-automatic operating. You will get liquid filler, sealer and gas filler in this line, and they are combine to one table.

As it's semi-automatic aerosol filling machine, you need one operator in filling process. It fits the need for small scale aerosol filling production.

For application, this aerosol machine can be used in filling mousse, hair spray, air freshener, pesticide, disinfectants, fire extinguishing agents and etc.

Equipment components and main parameters

Equipment components:

The machine mainly constitutes by filling machine, sealing machine, gas filling machine, booster pump, working table, frame and pneumatic components. Liquid filling machine, sealing filling and gas filling machine integrate on one working table, using linkage work.

Main parameters:

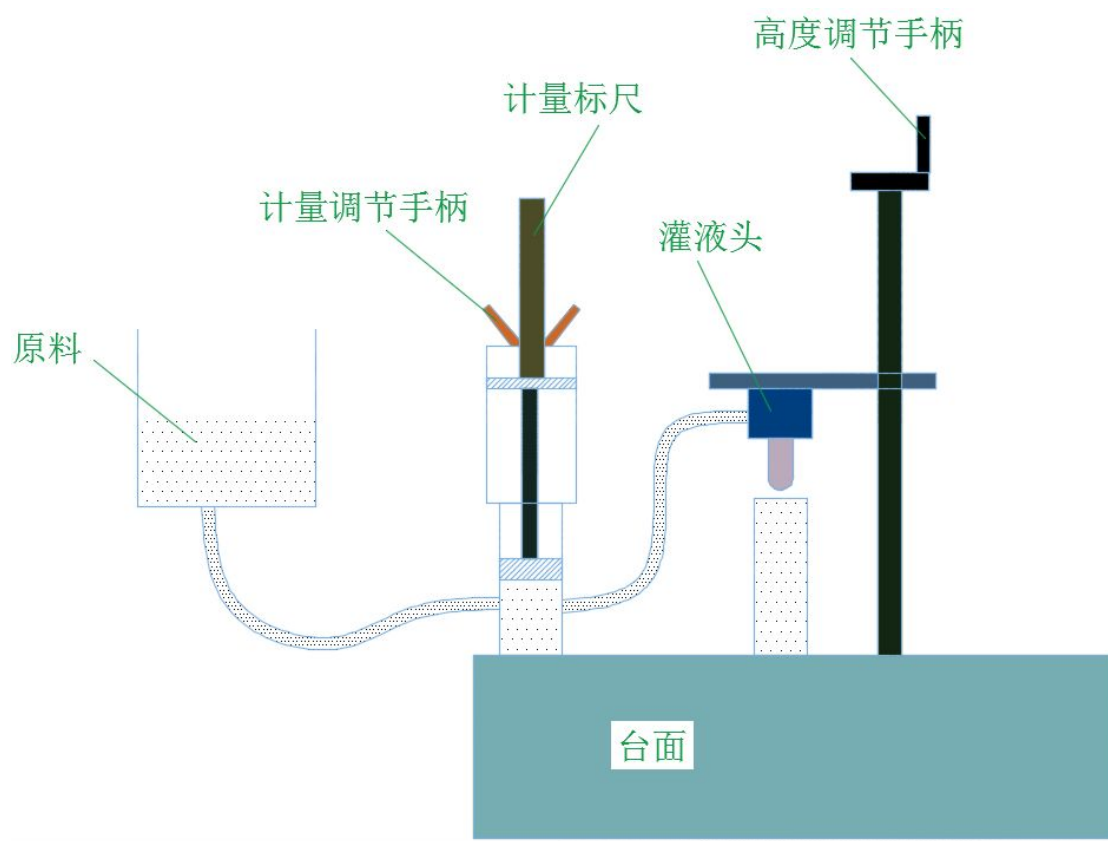
Mainframe size (length*width*height) (mm)	970*510*1500
Booster pump size(length*width*height) (mm)	800*220*700
Applicable aerosol can height (mm)	120~320
Applicable aerosol can diameter (mm)	Can be customized
Sealing diameter (mm)	27.5
Sealing contact height (mm)	0~10 Adjustable
Single max liquid volume (ml)	530
Single max gas volume (ml)	350
Production capacity(hr)	500-1000
Max air consumption (L/min)	900

Basic structure and working principle

For many aerosol products in the production often filing flammable and explosive substances. This machine adopts full pneumatic structure models to eradicate unsafe factors caused by the spark of electricity, so as to achieve the requirements of fire and explosion.

This machine mainly constitutes by liquid filling machine, sealing machine, gas filling machine, booster pump, working table, frame and pneumatic components. Liquid filling machine consists of liquid metering cylinder and irrigation fluid head, gas filling machine consists of gas metering cylinder and inflator head. Liquid and gas metering cylinder is fixed at a position rearward of the table, irrigation fluid head, sealing machine and inflator head is mounted on the lifting column platen, depending on the different can height adjust up and down. The booster using the lasted double-in and double-out code, and expand the pipe diameter.

Liquid filling: open the irrigation fluid rotary switch, step on the foot valve, the liquid metering cylinder pneumatic control valve changes direction, the irrigation fluid head valve under the action of the smaller cylinder is opened, while the power cylinder's higher chamber intake and the lower chamber exhaust, the power cylinder piston drives the liquid cylinder down pressure, the liquid fills into the aerosol cans through the irrigation fluid head, the power cylinder valve down presses touch the signal valve, the signal valve output pressure applies to the liquid metering cylinder's double pneumatic valve so that the valve control changes direction, thereby the into and outlet direction of irrigation fluid head smaller cylinder and power cylinder reversed, so that the irrigation fluid head valve is closed, while the metering cylinder is reset and the same amount of liquid sucked from the container, waiting for the next filling. You can spin the handle on top of the metering cylinder to adjust the height the cylinder positioning the piston, thereby changing the piston track to eventually change the measurement size of filling.



原料 raw materials

计量调节手柄 metering adjustment handle

计量标尺 measurement scale

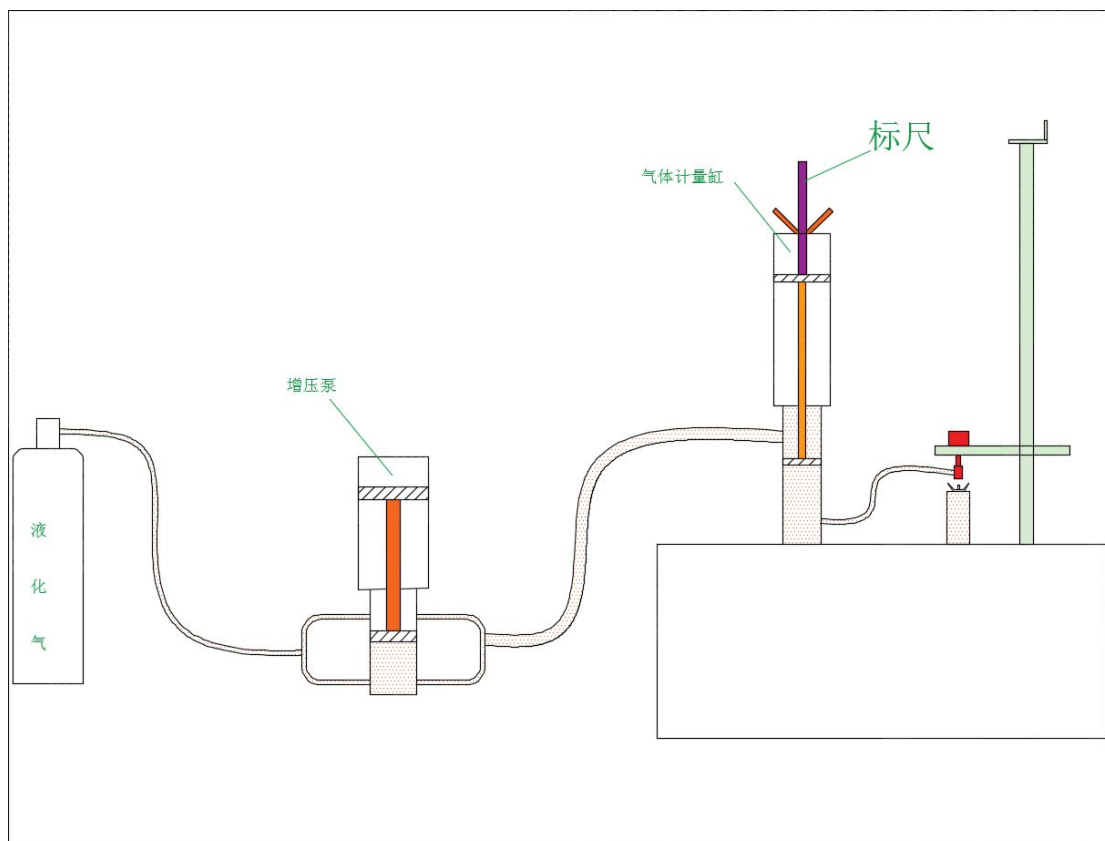
灌液头 irrigation fluid head

高度调节手柄 height adjustment handle

As shown, the liquid metering cylinder extract raw material from raw material barrel pressed into the irrigation fluid head, by filling liquid poured into the bottle through the irrigation fluid head, with ruler and adjustable handle on the liquid metering cylinder, you can accurately measure the capacity of liquid by the ruler and adjust the size of capacity by the handle.

Sealing: open the sealing rotary switch, step on the foot valve, the sealing machine double pneumatic valve changes direction, the sealing machine lifting cylinder's higher chamber intake and the lower chamber exhaust, drives the lifting cylinder piston moves downward, the sealing head pressing can valves, at the same time, sealing cylinder moving downward touches the sealing signal valve, signal valve output pressure is applied to a single pneumatic valve, so that the sealing cylinder's higher chamber intake and the lower chamber exhaust, the piston move downward, the sealing claws open seal the bottle, thereby the stopper on top of the sealing machine touches the reset signal valve, the signal valve output pressure applies to the double pneumatic valve to make it change direction, and the lifting cylinder piston rises reset, at the same time, the single air control valve reverse so that the cylinder piston seal up, the seal claws shrink reset.

Gas filling: the booster pump automatically inhale propellant aerosol from the cylinder or gas storage container under the control of compressed air and pneumatic components, the aerosol pressurized to high pressure liquid and be input to the gas metering cylinder to prepare for filling. By adjusting the air pressure of the booster pump can control the pressure of liquid propellant aerosol. Open the inflatable rotary switch, step on the foot valve, the gas metering cylinder double pneumatic valve changes direction, the gas filling head presses the gas cylinder under the action of smaller cylinder, the nozzle will automatically open. while the power cylinder's higher chamber intake and the lower chamber exhaust, the power cylinder piston drives the aerosol piston down pressure, the liquid aerosol propellant in aerosol cylinder fills into the closed aerosol cans through the inflatable head. The power cylinder valve down presses touch the signal valve, the signal valve output pressure applies to the gas metering cylinder's double pneumatic valve so that the valve changes direction, thereby the into and outlet direction of inflatable head smaller cylinder and power cylinder reversed, so that the inflatable head valve and metering cylinder is reset, and the same amount of gas sucked from the container, waiting for the next filling. You can spin the handle on top of the metering cylinder to adjust the height the cylinder positioning the piston, thereby changing the piston track to eventually change the measurement size of filling.



Gas in liquid gas bottle flows into the booster pump, the booster pump pressurized, eliminate the air-bubbles, and the gas be pressed into gas metering cylinder, the gas metering cylinder can be measured adjust capacity and finally into the bottle through inflatable head.

Application

This equipment can be used filling international inch sized tinplate, aluminum aerosol cans, widely used, less labor, high automation. Widely used in family aerosol efficiency production and laboratory production.

Semi-automatic liquid filling machine structure diagram

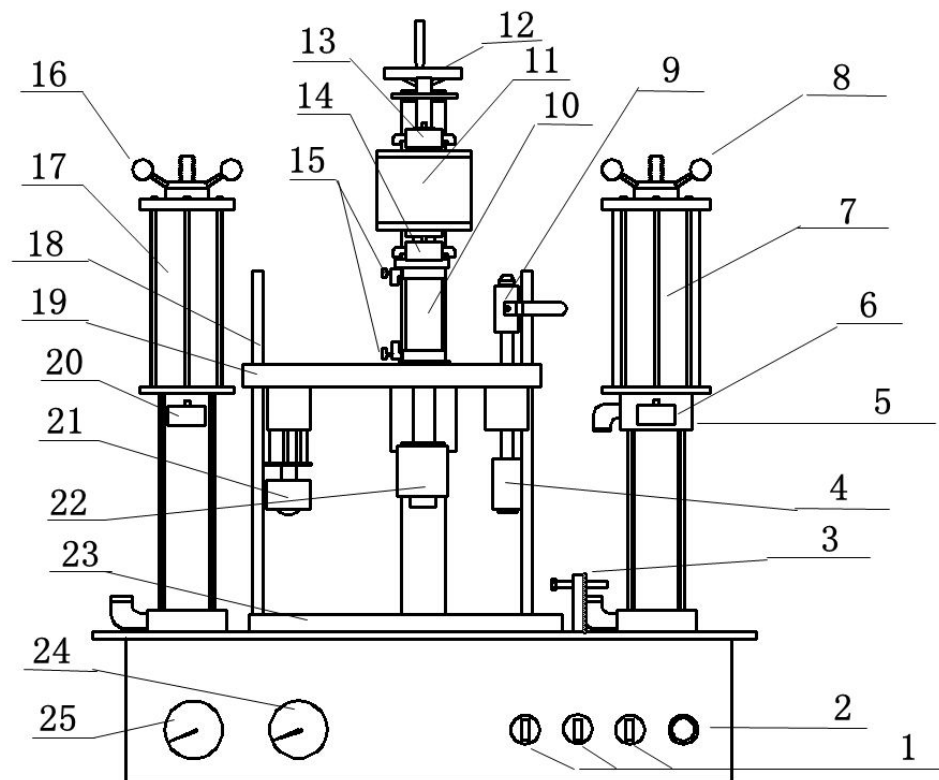


图 1-1 主机正视图

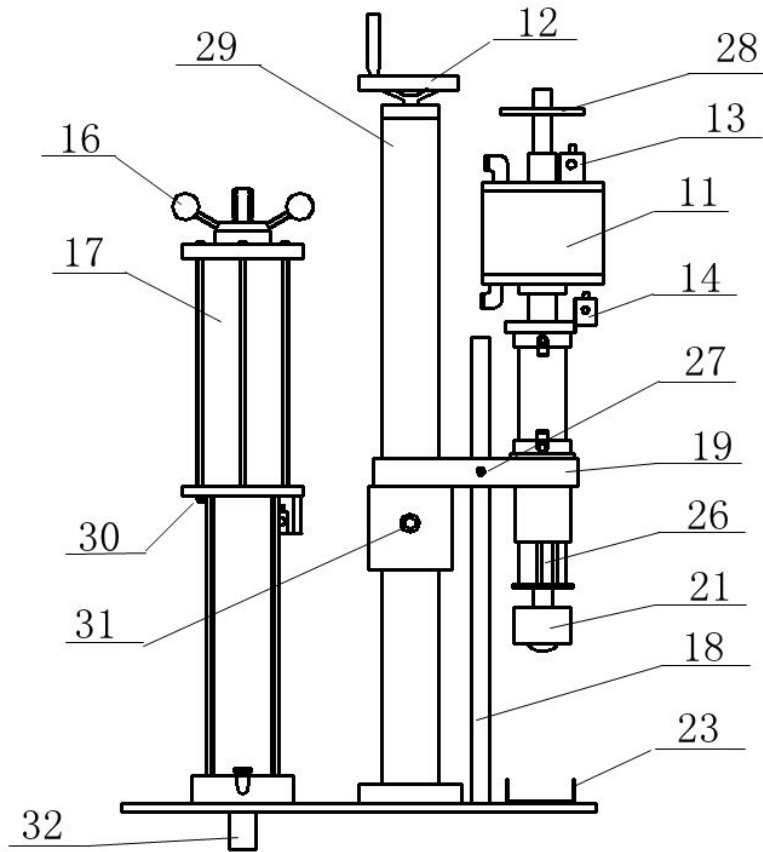


图 1-2 主机侧视图

1.liquid filling, sealing, gas filling rotary switch
2.reset button switch
3.tin positioning screws
4. inflatable head
5.gas metering cylinder propellant inlet connector
6. gas metering cylinder signal valve
7. gas metering cylinder
8. gas metering adjustment screw
9. ball valve
10. lifting cylinder
11. sealing cylinder
12. platen lift adjustment rotary handle
13. sealing machine reset signal valve
14. sealing machine sealing signal valve
15. lifting cylinder upper and lower intake throttle adjustment elbow
16.liquid filling metering adjustment rotary handle
17. liquid metering cylinder
18. platen lift guide rod
19. platen
20. liquid metering cylinder signal valve

21. liquid filling head
22. sealing head
23. guide
24. aerosol propellant pressure gauge
25. compressed air pressure gauge
26. liquid filling head small cylinder
27. platen guide fastening wire
28. sealing diameter adjusting block
29. column
30. liquid filling metering cylinder power cylinder upward gas interface
31. platen column fastening screw
32. liquid metering cylinder inlet

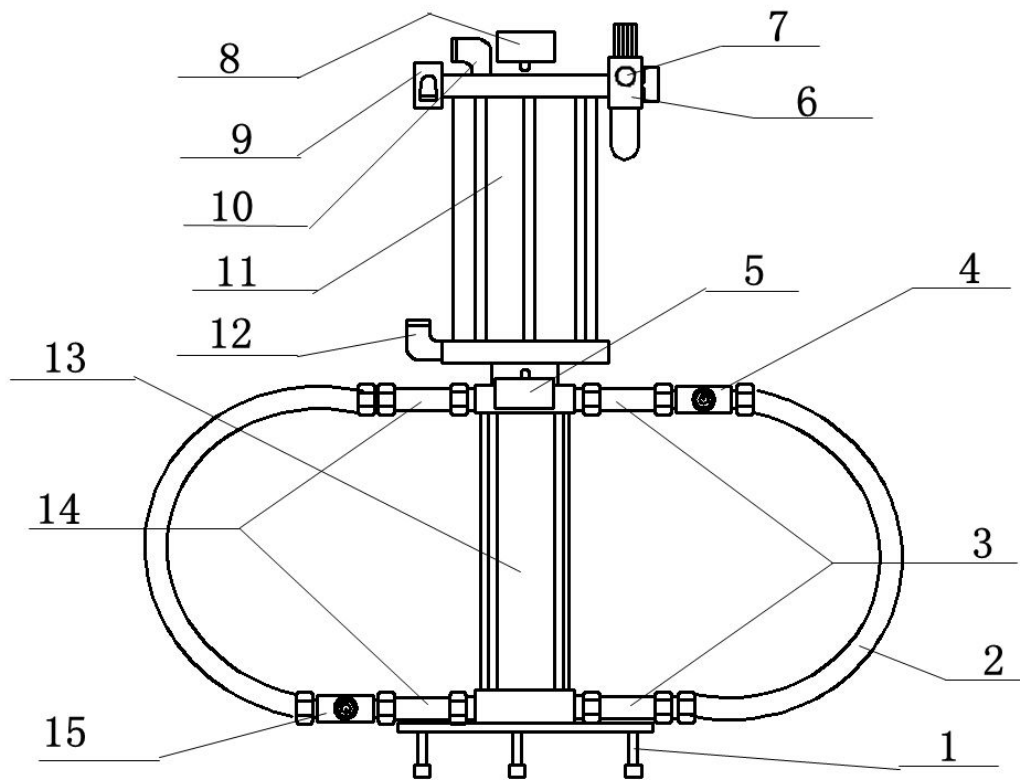


图2 增压泵结构示意图

1.anchor bolt
2. high-pressure pipeline
3. intake side single valve
4. aerosol propellant inlet side
5. lower signal valve
6. gas source
7. hand slide valve
8. upper signal valve

9. single gas pneumatic valve
10. downward gas inlet connector
11. power cylinder
12. upward gas inlet connector
13. aerosol cylinder
14. outlet side single valve
15. aerosol propellant outlet side

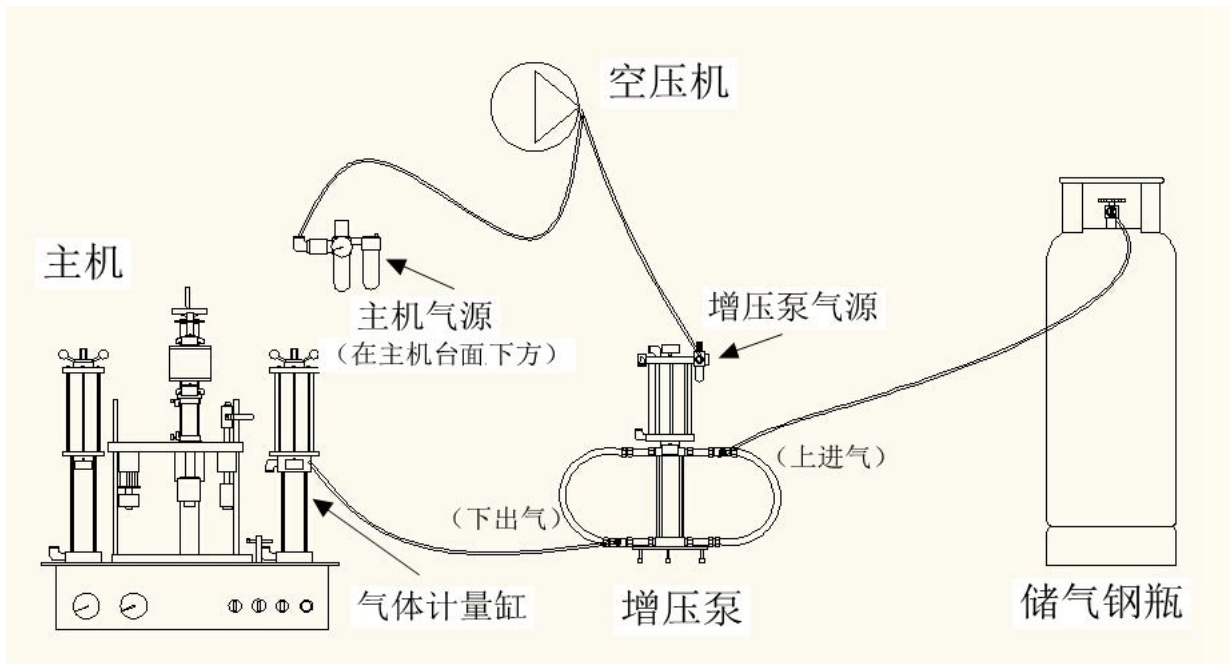


图 5 气路连接示意图

Semi-automatic liquid filling, sealing & gas filling machine accessories list

名称 name	规格 size	数量 quantity
扁平圈	125*110*5.6	2
扁平圈	100*85*6	2
骨架圈	16*20.5*3.6	1
骨架圈	50*40.6*7.1	1
Y型圈	16*24*5	4
Y型圈	32*40*5.5	1
Y型圈	40*50*6	1
O型圈	10*1.9	3
O型圈	9*1.9	2
O型圈	12*1.9	2

○型圈	14*1.9	2
○型圈	16*2.4	2
○型圈	16*1.9	1
○型圈	18*2.4	2
○型圈	20*2.4	2
○型圈	30*3.1	1
○型圈	32*2.4	2
○型圈	41*1.8	1
○型圈	45*3.1	2
○型圈	50*3.1	2
○型圈	60*2.4	1
○型圈	80*2.4	2
○型圈	90*3.1	2
○型圈	125*3.1	2
耐压气管		2
煤气头球阀		1
地脚		4
内六角扳手		1
消音塞	2分	2
增压泵活塞片		2
气体计量缸活塞片		1
充气头四氟垫片		2
灌液头四氟堵头		1
快接弯头	G1/4 φ 10	2
快接弯头	G1/8 φ 6	1
快接头	G3/8 φ 10	1
快接弯头	G3/8 φ 10	1
三通快接	φ 10	1
三通快接	Φ 6	1