

Under-Cap (Refrigerant) Filling Machine

I. Features

This equipment finishes filling and aeration under vacuum. It integrates the functions of vacuum pumping, air (nitrogen) compression and closing. A remainder recycle system is optional. This machine is fast in operation, accurate in filling volume and excellent in air-tightness. The pressure of aerated gas is adjustable to the value as needed. Particularly, it applies to refrigerant (F12, F22 & 134a) and air-conditioning lubricant, etc. Also it can be used for medical oxygen filling.

II. Composition and parameters

1. Composition:

This equipment consists of closing machine, metered filling cylinder, vacuumizing cylinder, delay cylinder, feeding booster pump, recycle booster pump, work benches, racks and pneumatic components.

2. Parameters

Outline of host (L*W*H) (mm)	970*510*1500
Height of aerosol can (mm)	≅ 280
Diameter of aerosol can (mm)	Customizable depending on aerosol cans of different size
Closing diameter (mm)	27.5
Closing contact height (mm)	4.7
Capacity (cans/hr)	300-500

Max. gas consumption (L/min)	1000
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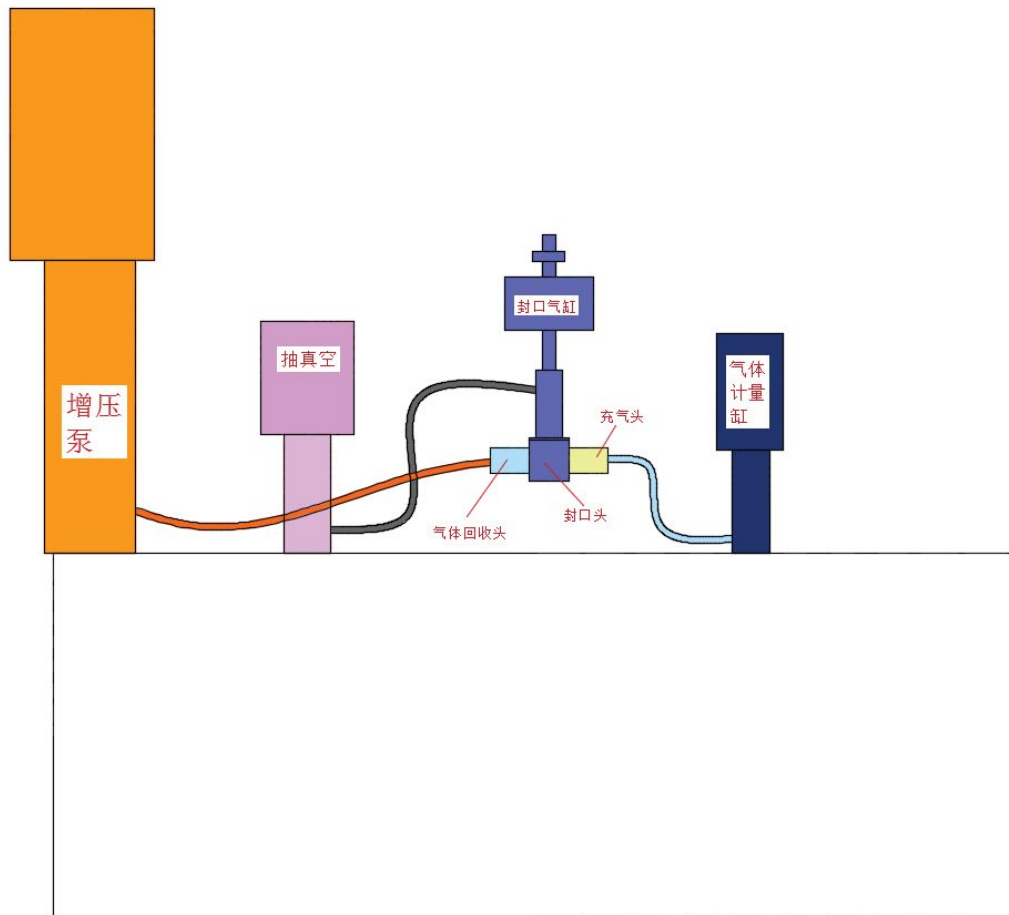
III. Basic structure and working principle

Many kinds of aerosol are inflammable or explosive when filling containers with them. Therefore, this unit employs a mechanical structure under full gas-pressure transmission, which can avoid electric spark caused when using electricity.

This unit consists of closing machine, metered filling cylinder, vacuumizing cylinder, delay cylinder, feeding booster pump, recycle booster pump, work benches, racks and pneumatic components.

By use of the under-hood filling approach, this equipment injects liquefied gas (e.g. refrigerant) into the can before valve closing.

Closing and aeration: Turn on the switch, press the foot valve slightly, the lifting cylinder of the closing machine descends, and the closing claw holds down the valve cover. Meanwhile, the vacuum pump starts work so that the lifting cylinder ascends to the limit after the valve cover is adsorbed by the closing claw. At this time, the valve is separated a little from the can mouth and the metered filling machine begins simultaneously to feed liquefied gas (e.g. refrigerant) through the gap between the valve and the can mouth. After aeration, closing is finished by the closing cylinder.



增压泵：Booster pump

抽真空：Vacuumizing

封口气缸：Closing cylinder

气体回收头：Gas recycler

封口头：Closing end

充气头：Aerating end

气体计量



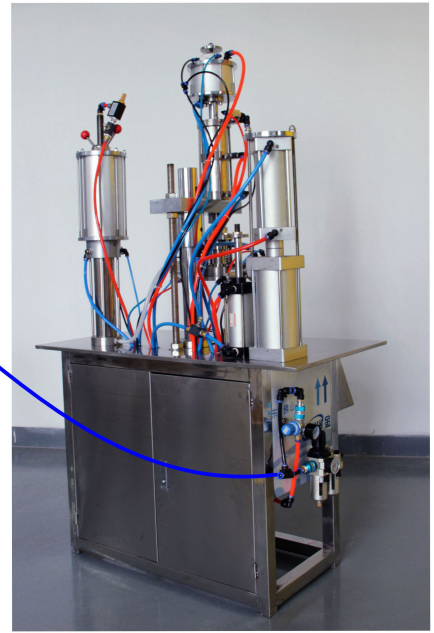
空压机



回收增压泵



进料增压泵



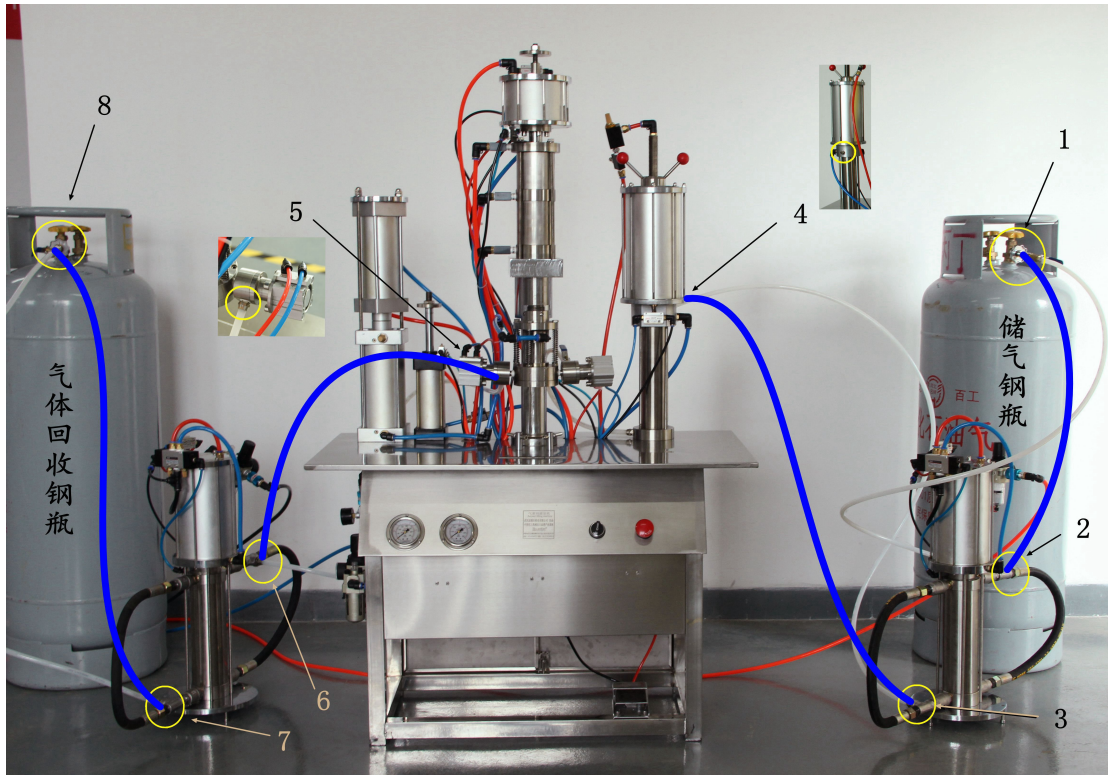
灌装主机

空压机： Air compressor

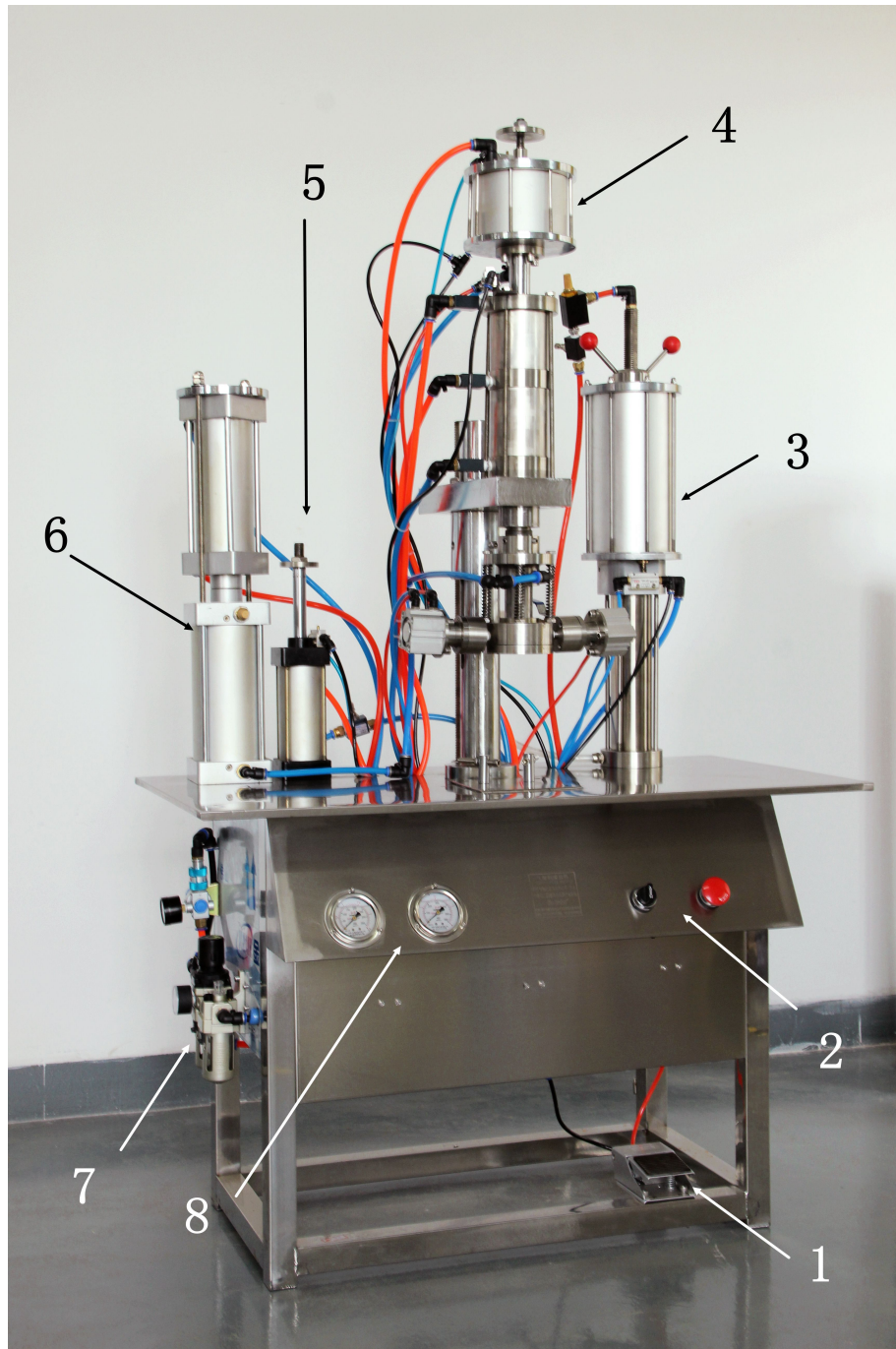
回收增压泵： Recycle booster pump

进料增压泵： Feed booster pump

灌装主机： Filling host



1. Liquid outlet of gas holder; 2. Inlet of aerating booster pump; 3. Outlet of aerating booster pump; 4. Inlet of metered aerating machine; 5. Recycled gas outlet of closing end; 6. Inlet of recycle booster pump; 7. Outlet of recycle booster pump; 8. Gas inlet of recycle holder
 How to connect: 1--2; 3--4; 5--6 & 7--8. Pressure proof tube is used (as shown by the thick blue lines in the above figure).



1. Foot valve; 2. Switch control area; 3. Metered aerating machine; 4. Closing & filling machine; 5. Delay cylinder; 6. Vacuumizing cylinder; 7. Gas supply to host; 8. Pressure gage area