SCF-A SEMI-AUTOMATIC CAPSULE FILLING MACHINE

OPERATION INSTRUCTIONS

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Contents

1. Overview 3

2. Main Technical Parameters 3

3. Introduction of Main Component: 4

1) Broadcasting organizations 4

2) Filling Institutions 6

3) Locking Mechanism 6

4) Air Control System 6

5) Electronic Control System 7

A. Brief Introduction 7

B. Electronic Control System Principle 8

4. Debugging and Operation 9

Pre-test preparation: 9

Commissioning and operation 9

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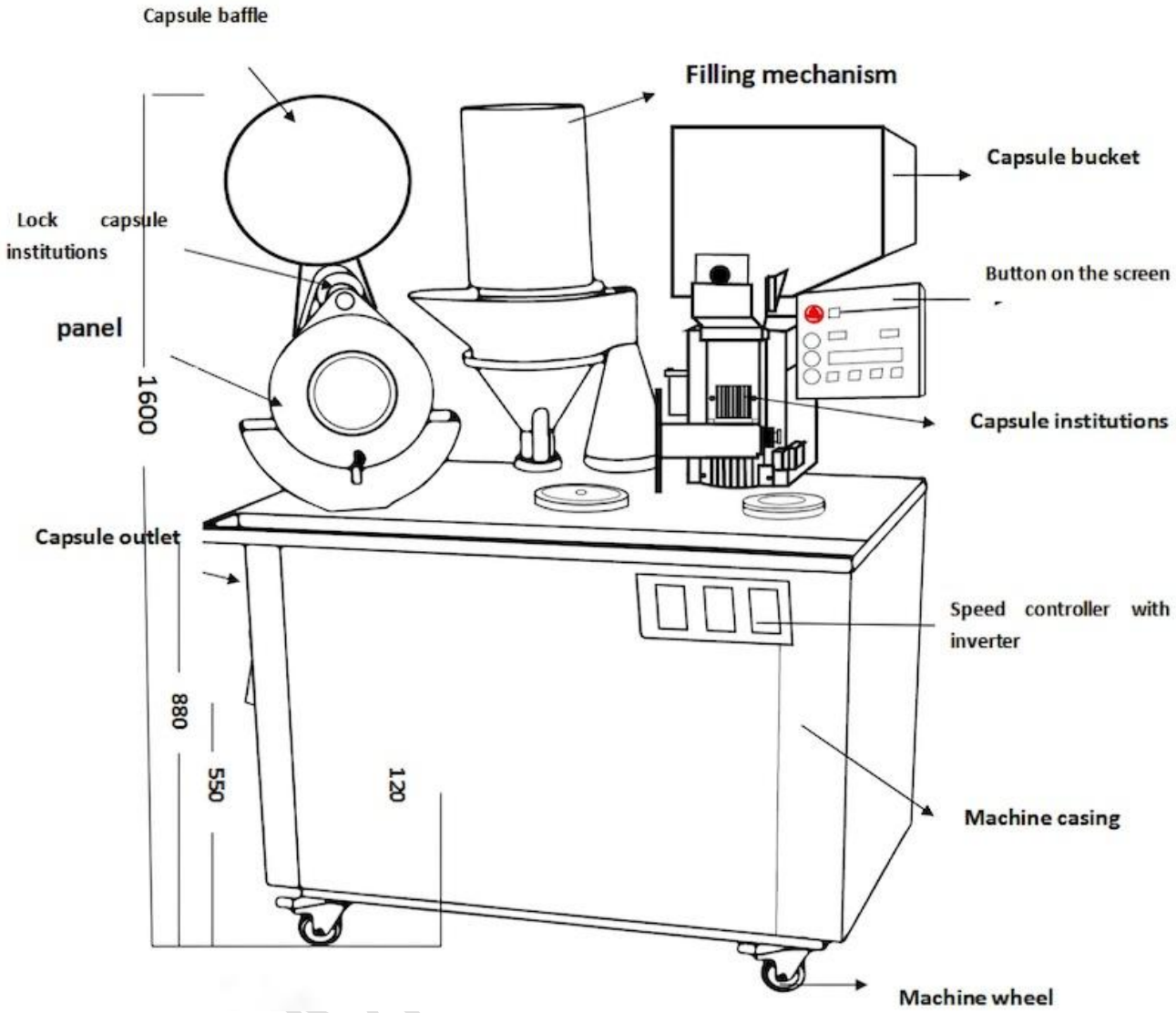
1. Overview



SCF-A semi-automatic capsule filling machine is a new type of medical machinery with novel structure and beautiful appearance.The machine is equipped with electrical and pneumatic joint control, electronic automatic counting device and speed control device,which can complete the In separation, filling, locking and other actions of capsules.Instead of manual filling, the new machine can reduce labor intensity, improve production efficiency, filling dose accurately, in line with pharmaceutical hygiene requirements.

This machine is composed of delivery and dispensing mechanism, medicine filling mechanism, locking mechanism, frequency control mechanism, pneumatic control and electrical control system, protection device and other components as well as vacuum pump and air pump accessories.

Domestic or imported mechanism capsule can be applied, the finished product pass rate reached 97%.

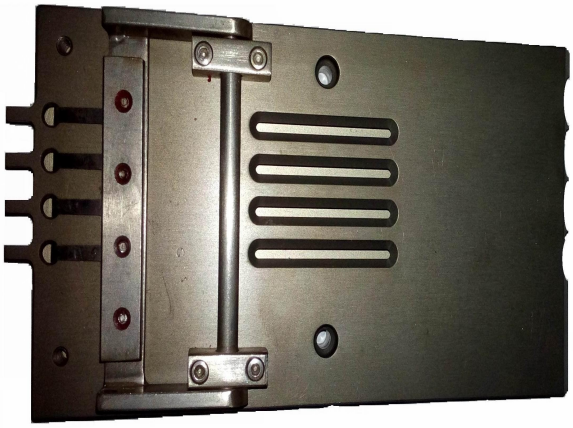
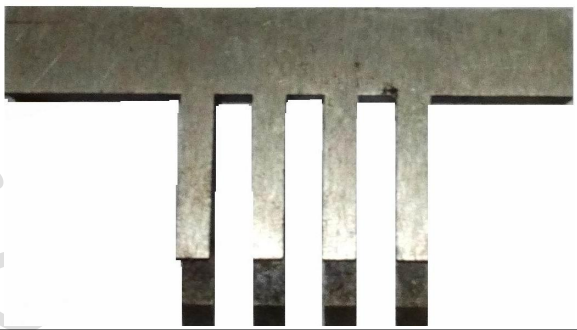
2. Main Technical Parameters

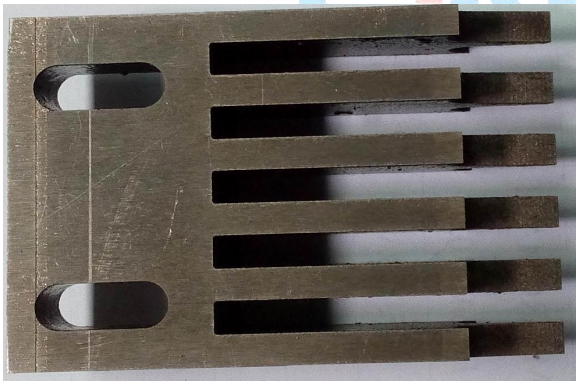
Model	SCF-A

Capacity	1-2.5 thousand / hour
Capsule type	0 #, 1 #, 2 #, 3 #, 4 #mechanism standard capsules
Filling formulations	Non-stick wet powder, small granules
Total power	2.12kw
Air pressure	0.03m3/min 0.7Mpa
Vacuum pump	Pumping rate 40m3 / h
Overall dimensions	1.8 × 0.8 × 1.75 (m 3)
Total Weight	330kg

3. Introduction of Main Component:

1) Broadcasting organizations

	Broadcasting tube（000#）
	Sowing comb（000#）
	Pouch head（000#）
	Capsule comb

	Tweaker

The mechanism is the hollow capsule inserted into the pod tube from the hopper, broadcast cymbal tube with reed switch below, when the capsule tube driven by the sector gear down to the bottom, the switch by a touch of iron release a row of capsules (#1, # 7 in row # 2 and # 6 in row # 6), the switch immediately switches off the pod control when the pod control is up.The capsule that has fallen on the capsule comb is pushed forward by the push plate action to the turn-up position. The capsule is pushed down by the capsule head and is turned upside down at the same time When the capsule is pressed by the capsule head under the pressure of the capsule comb, the capsule is inhaled into the mold by the air flow in the mold hole. Since there is a small step in the upper die hole to prevent the capsule cap from staying in the upper mold, the capsule body continues to slide down to the lower mold under vacuum Hole, which completed the agency capsule capsule, U-turn, separation work.

The mechanism consists of a single variable speed motor drive cam, rocker, ratchet mechanism to operate, each cam rotation, the ratchet to promote a tooth (that is, the use of a mold to promote a row of holes), while the cam-driven rocker sector fan operation cycle.

The mechanism is equipped with counting automatic control, when the mold is full of capsules, the body automatically shut down, you can stop manually in the middle of downtime. The speed of the machine is regulated by the continuously variable speed knob on the console, and is equipped with the meter display speed.

In case of incomplete separation of some capsules, the hand can be used to move the mold 2-3 turn, prompting it to achieve complete separation under vacuum adsorption.

The machine factory equipped with a random mold, the other with a separate subscription by the user according to parts catalog.

Differences: #0 device is 6 holes per row, the capsule mold is 6 x 60 = 360 holes, thimble plate is 360 thimble, the corresponding pouch head, push pouch board, capsule comb, switch, Trench are 6 rows.

#1 , #2, #3 device is a row of 7 holes, capsule mold has 7 x 60 = 420 holes, thimble plate is 420 thimble, the corresponding accessories are also 7 rows.

Dressup: Use different types of capsules, should be replaced by the appropriate capsule mold and delivery device.

Delivery switch capsule adjustment: Tune the tank each time the capsule is sent #0 # is 6, #1, #2, #3 is 7. If you find that a trough slot that the capsule is sent more than one or a capsule can be used J-type wrench or pliers for adjustment.

Adjust the capsule push plate position, first release the connection screw, and then move the push plate, adjust the pressure to the head of the capsule just press the half of the total length of

the capsule, you can tighten the connection screw.

2) Filling Institutions

The function of this body is to automatically pack the medicine into the empty capsules in the capsule mold in sequence. The hopper is equipped with a stepless speed regulation motor (the instrument shows the rotation speed), which drives the propellant to force the medicine into the empty capsule. The lower turntable drives the mold to rotate. The lower turntable is also driven by a stepless speed regulating motor to run the mold under the feeding mouth for one week. The counter is controlled by photoelectric count (counter set 30 times). When the start button is pressed, Cylinder into the mold, the hopper in place after the motor and hopper motor motor automatically start. When the mold rotation a week after the automatic stop, while the cylinder pull the hopper to exit the mold.

In case of hopper forward or backward too fast or too slow to adjust the solenoid valve interface at the two one-way throttle to make it suitable speed. Another case of hopper into the motor is not yet in place to start, or delay in place after start, you can adjust the time box on the electrical relay, so that it is in place within 1 second after the start.

Filling volume adjustment Depending on the amount of filling and pharmaceutical poor fluidity adjustable hopper motor speed and turntable motor speed, in case of more difficult to charge the drug, you can adjust the counter settings 60 or 90, the factory set to 30.

3) Locking Mechanism

This mechanism is used to lock the capsule which has been filled with medicine (the upper and lower mold together) , through the valve to the top of the cylinder valve action, and then manually push the capsule mold, the thimble reset, the capsule out, inflow In the box.

4) Air Control System

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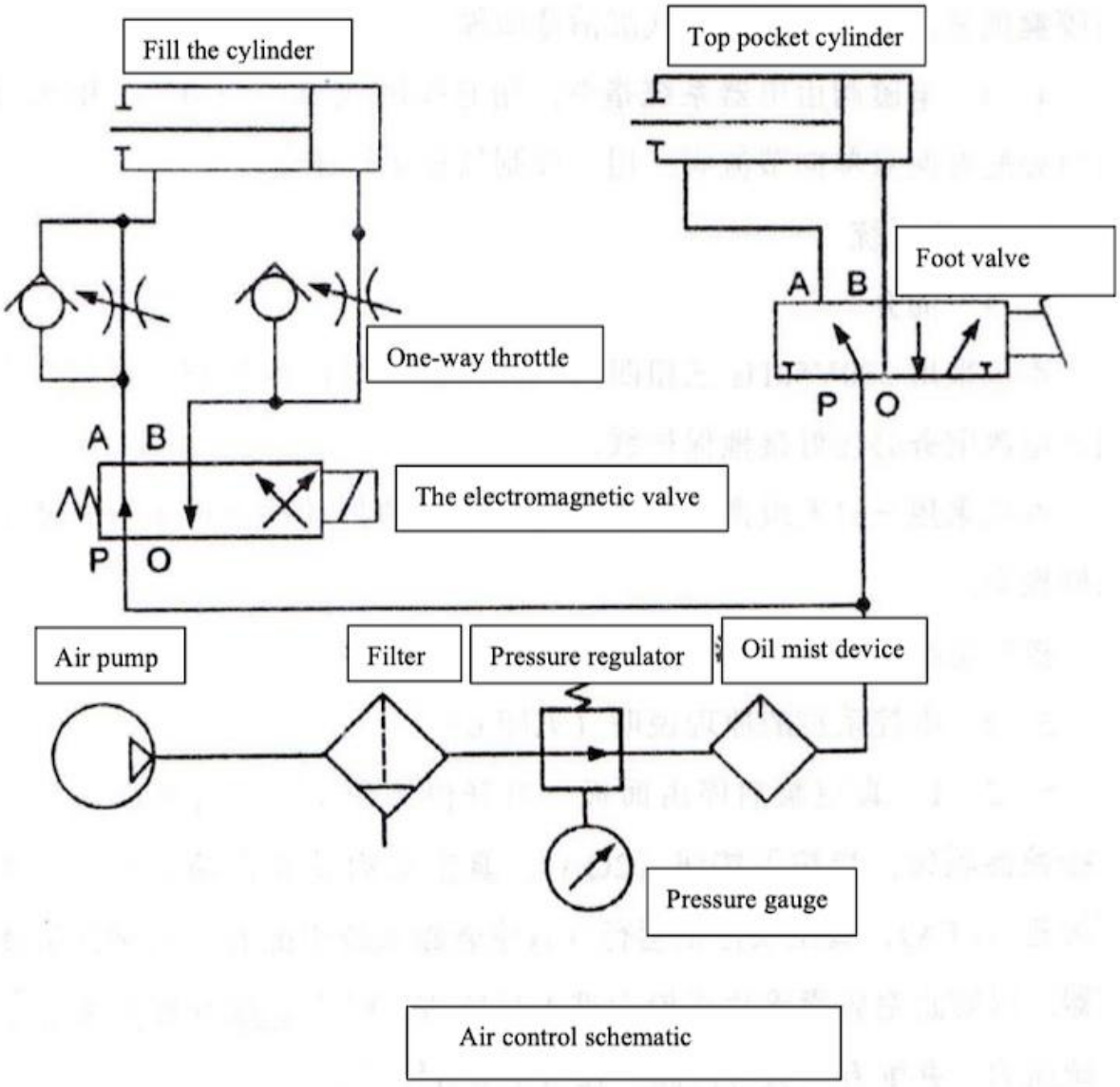


Air control schematic

The series uses the pressure of 0.4-0 .7 Mpa, sent by the compressed air pump by the triple piece processing and sent to the foot valve and solenoid valve.

The first step of the triple is to air filtration; the second step pressure; the third step gasification gas supply lubrication system lubrication, fuel injection regulation is generally 1-3 minutes to spray a drop of oil (ordinary oil).

Foot valve control locking cylinder action, when the foot pedal, the locking cylinder is pushed out to lock the capsule, when the foot is released, the cylinder piston retracts.

Solenoid valve by the electrical system commands, use it to control the filling hopper action, solenoid valve outlet is equipped with two one-way throttle valve, used to control the cylinder speed.

5) Electronic Control System

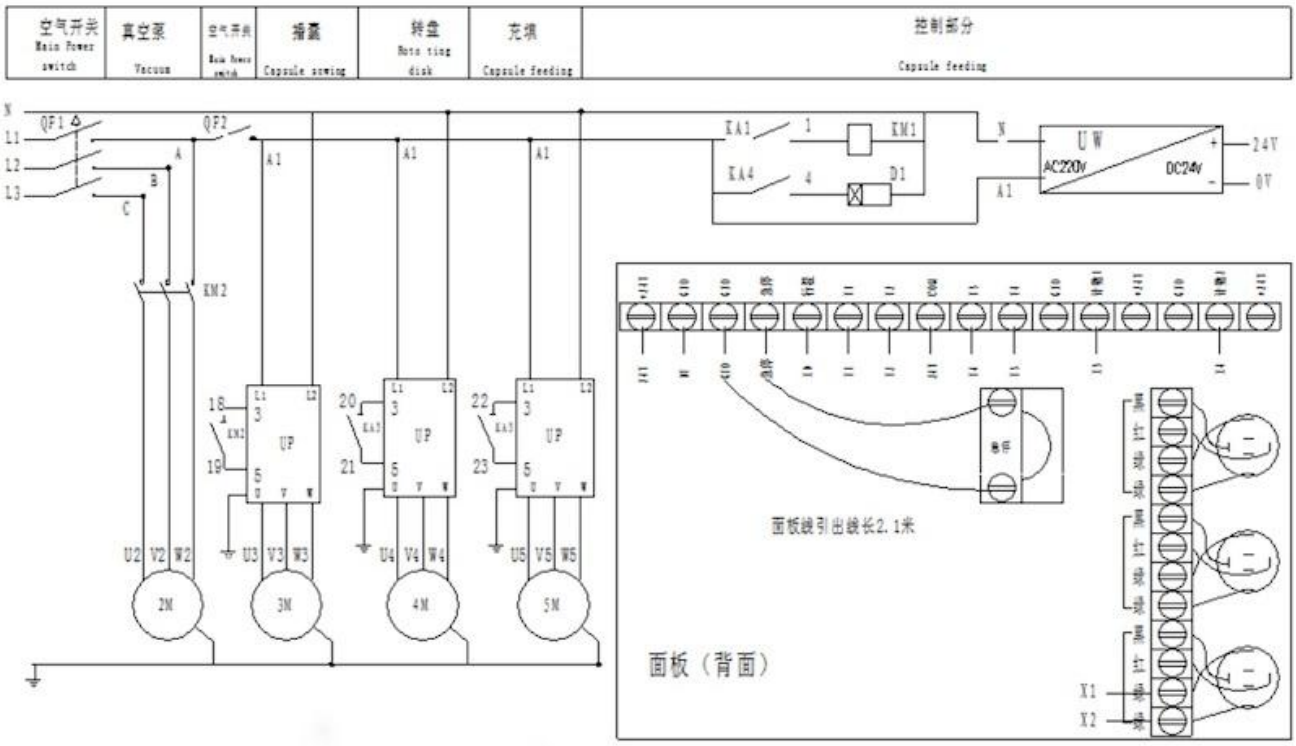
A. Brief Introduction

The machine uses 380V50Hz three-phase four-wire system, plus a first-line ground protection,

users must be connected to the ground before the access line protection.
Note: The power supply voltage can be customized as follows:
Single-phase 220V.50 / 60
Single phase 110V.50 / 60
Three-phase 220V.50 / 60
Three-phase 380V.50 / 60
Three-phase 415V.50 / 60
The machine uses three stepless speed motor drag the automatic drive parts to run, easy maintenance operation.
Control power supply DC24V.

B. Electronic Control System Principle

a. Vacuum pump start and stop by the panel a switch button instructions, and the box with an AC contactor interlock, when the button is pressed, the vacuum pump to start and self-locking operation, and then press the button, the vacuum pump to stop running (The vacuum tubing is fitted with a cylindrical filter to prevent empty capsule debris or dust from entering the vacuum pump and a vacuum gauge on the top of the cartridge to show system pressure and a throttle to regulate system pressure).



b. The capsule mechanism is powered by a separate motor, and the tachometer shows the speed of the capsule, and the speed of the capsule is adjusted by the knob (3). When the button is pressed, the mechanism of the capsule is activated and then the mechanism of the capsule is stopped when the button is pressed. Automatic operation after starting a week (ie, 60 times) set by the counter control 60 times automatic shutdown.

c. Filling start and stop:

The filling mechanism is composed of two stepless speed regulating motors which respectively

drive the hopper part and the turntable part, and the cylinder, the solenoid valve and the counter cooperate with the circulation operation. The hopper and the turntable respectively display the running speed by a tachometer.

When the button is pressed, the solenoid valve opens and opens the gas path to supply air to the cylinder. The cylinder pushes the hopper into the turntable. When the cylinder is operating, the delay timer counts the time (the delay time is 2 seconds After the hopper reaches the position, the delay timer is finished, that is, the command turntable and the hopper motor start running, start the counter to count the turntable, when the turntable to the set position (factory commissioning set 30 times, that is turntable operation week) The turntable motor and the hopper motor stop at the same time, and the solenoid valve also returns to make the cylinder move to pull the hopper backwards.

d. Protective device

The protection device is to prevent the hand or hard object into the operation of the pod head mechanism, the structure is a protective cover against the pachinko head face, the bottom of the door shaft (fuselage) is equipped with a pod control circuit interlocking limit Bit switch, when the door is opened when the broadcast capsule motor stops.

4. Debugging and Operation

Before the test machine requires the operator familiar with the contents of this manual to understand the working performance of the various parts of the machine, and the role of the button on the control panel.

Pre-test preparation:

The use of the machine should have three-phase 380V50Hz AC power supply, according to local power supply system requirements, reliable grounding or zero.

Check all parts of the machine is intact, and to the lubrication part of the required fuel.

Turn on the power and turn the air switch on the electric control box to "close". Press the vacuum start button to check whether the direction of rotation of the vacuum pump motor is the same as that indicated by the arrow.

Commissioning and operation

Start the vacuum pump, the direction of rotation must be consistent with the direction of the arrow. Turn the knob ① ② ③ to the low position. Then start the broadcast capsule motor. Turn the knob ③ so that the broadcast capsule gradually escalate until the highest speed, there should be no signs of institutional stagnation and abnormal noise. The material into the empty capsules, first in low-speed test broadcast sacks, in the normal state of gradual increase in speed, according to the quality of empty capsules to determine the speed of its operation, the good capsules high speed.

The next template buckle on the turntable, and to the hopper dosing, press the fill button, the hopper that line to the capsule charge.

Cover the upper template back to the charged lower template and move them simultaneously to the lock station. Insert the thimble into the die hole, turn the locking cover to the bottom, and use the foot to lightly pedal the valve so that the capsule locks and flows into tank.

See the relevant section above for performance understanding and adjustment methods.