

# **QGF 5 Gallon Bottle Wash-Fill-Cap Machine**

## **Operational Manual**

Before operation, please read this  
operational manual carefully

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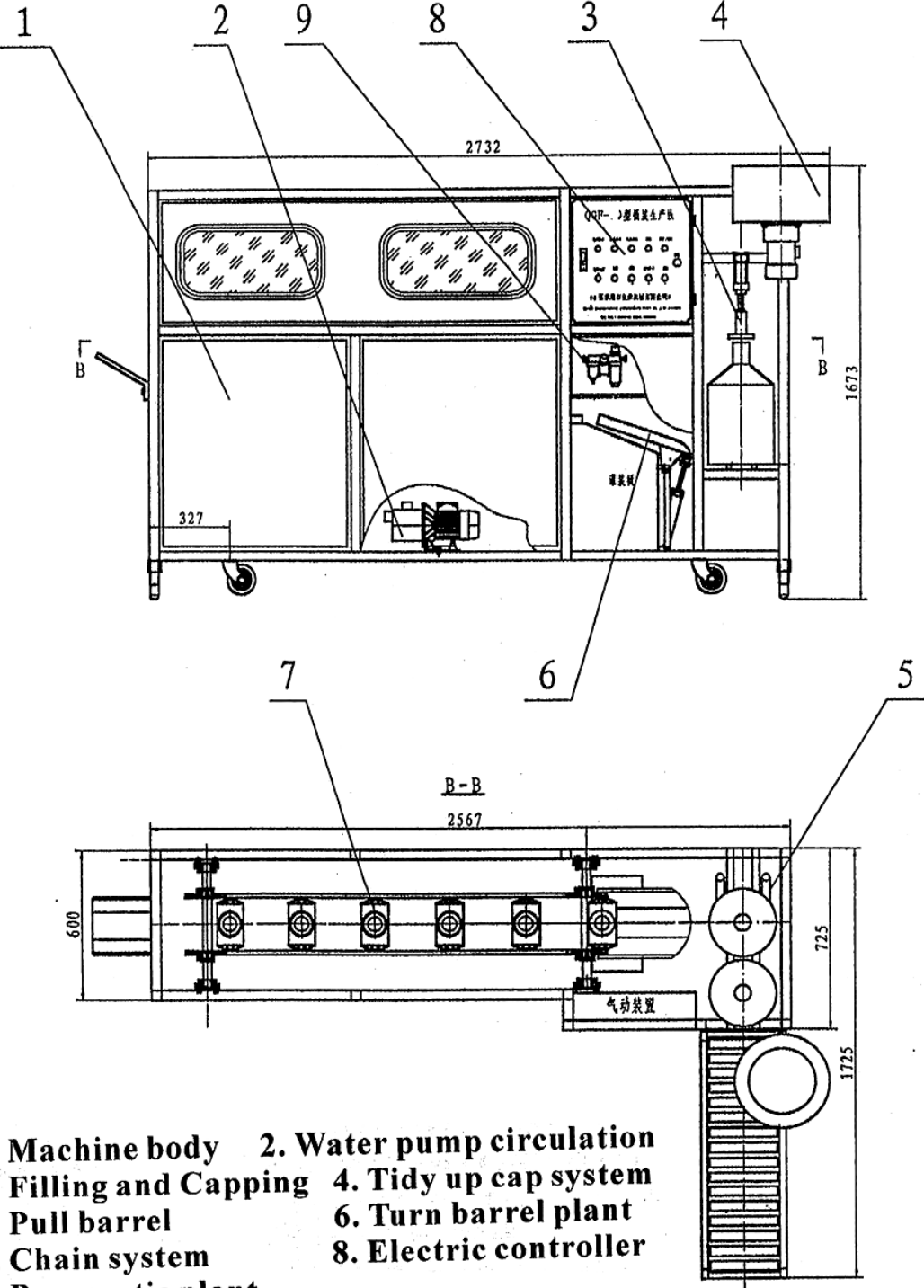
## **1. Purpose and character**

QGF model complete automatic barrel-filling production line is offering to barrel 3-5 gallon drinking-water, which is also applying to barrel wine, vinegar, medicine preparation and liquids without strong erode chemical & industrial reagent. It has characters of complete functions, low energy sources consuming, small invest scope and fast operating efficiency. The machine has following merits: novel design, tight structure, small and exquisite equipments, high pouring ration precision, large scope, the whole route is only take up 9 square meter, high automation grade, it is a new type drinking-water barreling equipment gathering together with machine, electric and gas.

## **2. Technical performance parameter**

1. Model no: QGF-240
2. Production capacity: 200 barrels per hour
3. Barrel specification: Round barrel  $\Phi 56 \times 270 \Phi 270 \times 490$ mm
4. Barrel volume: 5 gallon (18.925 L)
5. Water supply capacity: 3.8 ton/H for filling, 0.8 ton/H for washing.
6. Whole machine power: 220V 50Hz, 2KW.
7. Air sources: 250L/H, 8Bar
8. Size: L 326cm W 126cm H 170cm
9. Weight: 400 Kgs

**3. Equipment Structure: (See attached drawing 1)**



- 1. Machine body**
- 2. Water pump circulation**
- 3. Filling and Capping**
- 4. Tidy up cap system**
- 5. Pull barrel**
- 6. Turn barrel plant**
- 7. Chain system**
- 8. Electric controller**
- 9. Pneumatic plant**

#### **4. Operating principle:**

QGF type complete automatic barrel-filling production line divided into washing part, filling&capping part and transmission part according to its function, structure and controlling method.

##### **1. washing part:**

When operating, please put the recycle barrel horizontally on the interim paused transmit barrel frame, push the barrel into barrel pan pedestal. After finished, the plastic barrel in the barrel pan pedestal will turn 90 degrees upwards along with chain (2 distances from 304.8mm), here the plastic barrel positions itself from decumbent to handstand, let the upside down barrel go through the scour swashing, which held in the spray mouth on the 2 service position. In the whole course of cleaning, the plastic barrel will go through interim paused for five times. During processing first four steps, use different liquor to rinse. The first step is to rinse and scour inside and outside of the barrel, the second step is to drip water, the third and forth steps are flushing barrels' inside and outside with cycle water, the fifth step is rinsing by asepsis water, the whole course of rinsing and disinfecting takes 4 minutes 18 seconds per barrel.

##### **2. Filling part:**

After cleaning (rinsing and disinfecting, along with the chain turning 180 degree adown, here the plastic barrel positions from handstand to lean down, in the course of barrel's falling, (the barrel rolling cylinder moves ahead, pushes the plastic barrel to filling position. When the barrel reaches filling position,

computer will automatically control the filling pump and filling valve to get started to work.

The filling process applied with three grades miniature, stainless and multilevel centrifugal pump along with imported high precision timing implement electromagnetic valve.

After finishing filling, the process goes into capping position under driving of barrel cylinder, there is a cover install equipment. When the filled barrel moves over to the cover install equipment, the cover will automatically hitch on the barrel mouth, and slide down 8-10mm (almost hitch tightly), after reaching capping position, capping cylinder presses adown, press the cover tightly on the bottle neck, and stick the barrel inside tightly, time-lapse resume to the original position.

### 3. Transmission part:

QGF model barrel-filling machine uses cylinder transmission, capable of changing the transmission frequency freely according to output requirements.

## **5. Installation:**

### 1. Installation method:

It is moveable, its arms are not necessarily to be fixed, and the whole set of machine is combined with three parts, which can joined together to be a whole by bolts.

2. Installation requirement: After dismantling the packing, the whole machine

should be placed fixed in a prepared surrounding groove (the height is 50~60mm, where the sewage will not overflow; the width and length of pen should be 50~100mm larger than machine), and then adjust the height of arms, use level ruler to modify incline. Try to let the four arms burden the same pressure, connect the inlet water pipe, limber pipe, electrical source and gas source and stabilize all of them.

## **6. Equipment clearance:**

1. Because the drinking water filled must reach the food sanitation requirement, clean and disinfect drinking water equipment before production. QGF model barrel-filling production line has the manual button, can turns on any button when turns the switch to manual grade, which will expedite pipes to clean and disinfect them, and eliminate all left-over at last. (Clean and disinfect after every round)
2. Every gas-controlled valve can be turn on by hands to discharge the water.

## **7. Equipment operation:**

1. Before production:
  - (1) Put quantitative scour into the scour cylinder, the thickness of scour is depending on the cleanness of recycle barrel. The liquid height is 60-80 mm lower than cylinder rim.
  - (2) Inject sterile water into the sterile water revolving cylinder, the liquid height

is 60-100 mm lower than cylinder rim.

(3) Turn on filling pump and water source valve of cleaning water pump, check carefully if it is opened.

(4) Turn on air compressor, when the gas source reaches 4kg/square centimeter, check if the electromagnetic valve and cylinder are working well under manual mode, and check if the movement is not sensitive or have misplay and the gas road is jammed. If it has any above-mentioned situation, stop production until remove malfunction.

(5) Check if the malfunction signal and movement are effective.

(6) Open mainframe after checking every part has no problem and preparative work for 3-5 minutes.

## 2. During production

When paused, put the recycle barrel on the barrel feeding bracket and push the barrel pan pedestal on schedule according to the producing speed. When the machine is working, it will automatically clean, disinfect, fill, cover, cap and push the barrel. But the operators should strictly observe the motion of all parts in order to avoid the accidents (Pay attention to complement the detergent at any moment).

## 3. After production

(1) Discharge the all residue in the pipe. Open the three blow off valves and discharge the used detergent, circulative water and asepsis water.

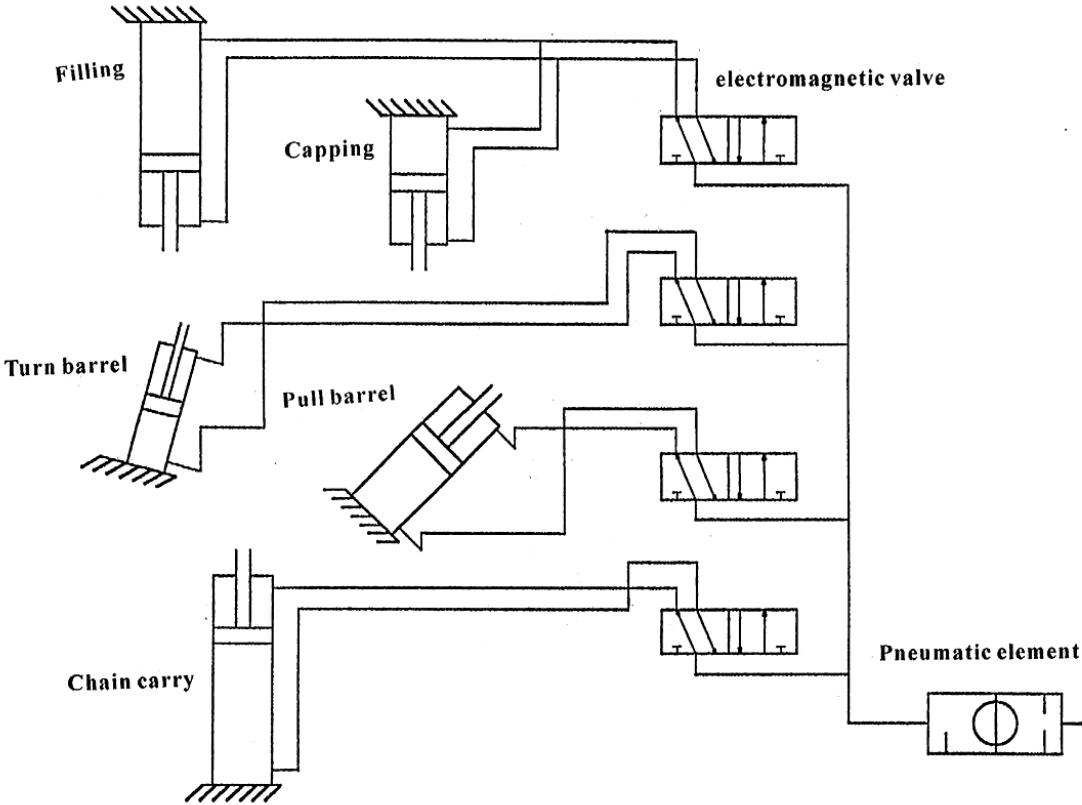
(2) Push the button to the manual position. Clean and disinfect it for one time.



- (3) Close the air compressor and discharge the remainder gases.
- (4) Cut off the tap of pure water pump.
- (5) Turn off the power supply (Forbid to put the plastic barrel on the equipments).
- (6) Broom around the equipments and put away the recycle barrel.

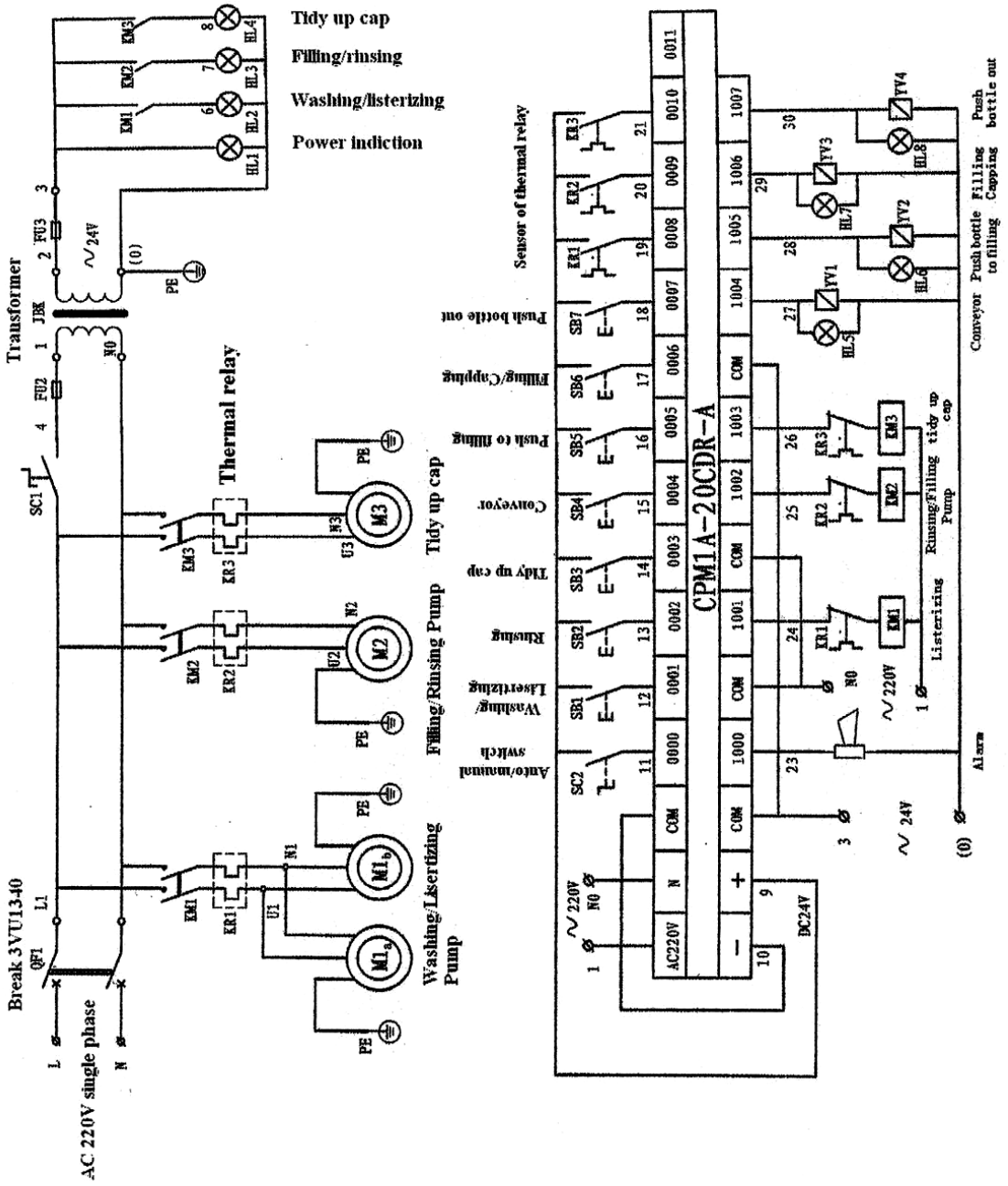
**8. Electric circuit diagram (Drawing 2)**

**circuit diagram (Drawing 2 )**



# 9. Electric principle diagram (Drawing 3)

## Electric principle diagram for single phase 220V



## **10. Maintenance and notice**

1. The pneumatic triple-expansion body should be poured with the lubricating oil of low viscosity into the atomized lubricator every two or three days. And discharge the sewage in the gas-water separator to avoid that the sewage corrodes the cylinder and reduces the useful life.

2. Frequently check the gas path for being unobstructed and check the valve, cylinder and speed control valve for being well (at least once a week).

3. Maintain and check the elements of electric apparatus once a week in order to ensure that they are all working well during using.

Forbid to disassemble the pipelines, elements and cylinders in the case of having gas.

PUSH OUT -- This is the cylinder which pushes bottle from filling position to capping position; also the bottle in capping will be pushed out of machine.

CONVEYOR — This is the cylinder which pushes the conveyor ahead one step.

LISTERIZING This is by two water pump working for washing and Listerining two bottles at one time.

PUSH BOTTLE&TIDY CAP --- This is the cylinder which pushes bottles from conveyor to filling position and motor for tidy up cap working at one time.

FILLING&CAPPING — This is where 3 parts working at one time,

1)capping cylinder presses cap,

2)filling cylinder comes down

3)water pump takes pure water for filling also for last rinsing.

Please note the filling time can be changed, when machine's power is on, the filling time will be set at 19s, during machine running at auto mode, you can press the button on panel to adjust filling as following:

1) Press button CONVEY and PUSH BOTTLE at one time, filling time added 2Sec.

2) Press button CONVEY and PUSH OUT at one time, filling time reduces by 2Sec.

3) Press button CONVEY and FILLING&CAPPING at one time, filling time returns to 19Sec.

When set successfully, machine will make a sound.

