



■ 产品描述 / Product Description

BXGF系列啤酒灌装机采用内置式机械阀，双导杆对中，具有液位精度高、两次抽真空，设计合理、简洁等特点。

Tecreat's beer filling machine has convenient operation, maintenance and high degree of autoimmunization realized by PLC, it adopts internal mechanical valve centered by double guide rod, high fill level accuracy, double vacuumzing, it is the ideal machine for beer brewery.



■ 主要技术参数 / Main Technical Parameters

型号 / Type	BXGF12	BXGF24	BXGF32	BXGF40
生产能力 / Capacity: 600ml	3000BPH	6000BPH	8000BPH	12000BPH
特点 / Features	真空激泡系统 / Equipped with vacuum& foaming system			
瓶身尺寸 / Glass Bottle: (mm)	(Bottle Diameter): φ50-φ110mm (Height): 150-340mm			
瓶盖 / Cap	金属瓶盖 / Metal crown cap			
灌装形式 / Filling Form	等压（二次抽真空） / Fsobaric (Double Evacuation)			
功率 / Main Power (KW)	12kw	15kw	18kw	21kw
尺寸 / Overall size	2450*1800*2350mm	2780*2200*2350mm	3600*2650*2350mm	3800*2950*2400mm
重量 / Weight	4500kg	6000kg	8500kg	10500kg

BXGF Beer Filling Monoblock



1.1 Description

This Beer Filling Machine Wash-filling-capping 3-in-1unit is used to produce glass bottled beer. The BXGF Wash-filling-capping 3-in-1unit:beer Machinery can finish all the process such as press bottle, filling and sealing, it can reduce the materials and Outsiders touch time, improve the sanitary conditions, production capacity and economic efficiency.

Beer Filling Capping Monoblock uses internal mechanical valve centered by double guide rod, featured by high fill level accuracy, double evacuation, optimized design and simple structure. PLC control system to realize high grade automation.

1.2 Technical characteristics

- Use high precision mechanical filling valve.
- Capable of double vacuumize and no-bottle-no-vacummize.

- In case of bottle explosion due to bottle quality during gas charging or filling, filling valve closes automatically, broken glass will be flushed automatically.
- Equipped with high pressure hot water foaming device to reduce bottle neck air and dissolved oxygen.
- Drive system uses modular design. Variable frequency speed adjusting realized wide speed adjusting range. Drive system is equipped with automatic grease lubrication system, sufficient lubrication ensures high efficiency, low noise and long using life.
- Uses guide rod for centering oriented to ensure smooth bottle infeed and discharge.
- Filler bowl counter-pressure automatic control, with operation status and parameters displayed on control panel.
- Filler bowl beer level controlled automatically by electric probe to ensure stable beer level and reliable filling.
- Height of filler bowl and control ring can be adjusted to suit different bottle size.
- Fully stainless steel cap sorter. Reliable cap sorting, cap distribution and cap transfer. Cap distribution is fluent and smooth with minimum deformation, capping reliable. Capable of automatic load relief to reduce bottle breakage.

1.3 Washing part

Except the down framework, the transmission parts and some parts that must be made of special materials. Other parts are all made of stainless steel 304.

The roller bearing is made of stainless steel, the sealing ring is made of EPDM material, and plastic is made of UMPE.

The gripper is made of stainless steel, the position where hold the bottleneck is made of food standard rubber;

Rinsing time can be guaranteed for 4 seconds.

1.4 Filling part

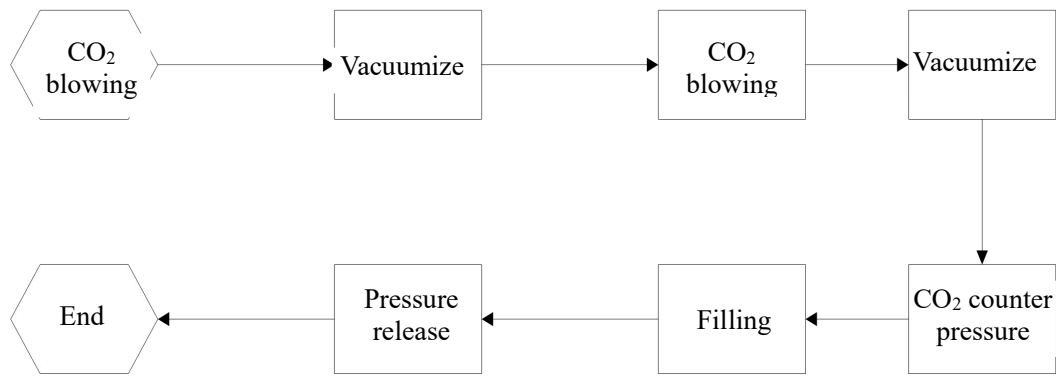
Worktable part (including Capping Machine part)

- Filler part: Main reducer drives slewing bearing via gear to rotate the filler movement
- Worktable part:

Main drive include: infeed screw drive; infeed starwheel drive; intermediate transfer starwheel drive; Capping Machine drive; discharge starwheel drive, and main motor.

Filler & Capping Machine drive system mainly consists of:

- **Filling valve Working flowchart**



- Filling valve is mounted inside filler bowl and remains closed under filler bowl internal pressure.
- When bottle is sent onto bottle platform, centering guide device raised by cam will fall down, centering cup will center bottle mouth. When filler bowl rotate further, vacuumize device will be pushed open by cam to connect vacuum passage to vacuumize the bottle.
- After finishing vacuumize, and filler bowl continue to rotate, vacuumize device will disengage from the cam to restore original position to close vacuum passage. External valve operating stem is operated by valve opener to rotate internal valve operating stem, which further act to raise gas charging valve and connect gas charge passage. Gas (CO₂) inside filler bowl flows into bottle via gas charge passage until equal pressure is established between bottle and filler bowl.



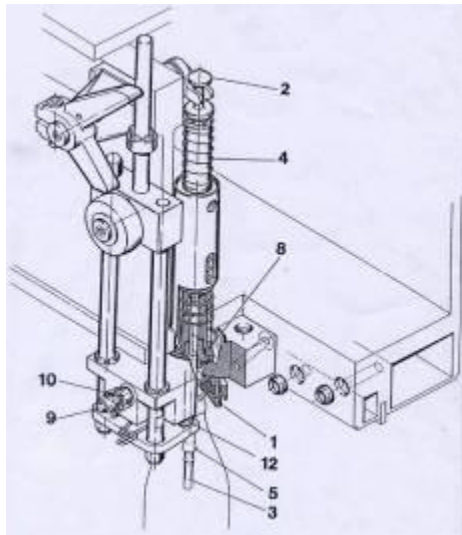
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- Filler bowl continue to rotate and beer valve is opened by spring. Beer will flow into bottle via beer passage and valve chamber. When beer level inside bottle rises, gas inside bottle will return to filler bowl via gas return passage. When beer level reaches vent tube

mouth to form beer seal, filling will stop. When filler bowl rotates further, external operating valve stem is reversed by valve closer to force down gas charging valve stem and beer valve stem to close beer passage and gas return passage to finish filling process. Then Pressure release device is pushed open by cam to connect Pressure release passage to relieve bottle neck gas into atmosphere (length of vent tube shall be determined according to required fill level). Then filled bottle is sent out for capping.

- In case of bottle breakage, gas pressure inside bottle will disappear suddenly. Filling valve will close automatically to avoid further beer loss. In case of bottle absence under individual valve, electric control system will not open filling valve.

1.3 Main parts and characteristics:

A. Filling valve



1. Centering cup with guide frame: ensure bottle mouth sealing, and bottle transfer smoothly.
2. Roller cam: Guide to keep the guide frame to move along requested track.
3. Vent tube: Close filling valve when beer level reaches vent tube bottom.
4. Filling control: Start vacuumize when valve 10 & 12 are opened; start Pressure release when valve 10 is closed and valve 9 is opened.
5. No #9, #10 & #12 using Italy plastic slide bearing for location

B. Lifting cylinder:



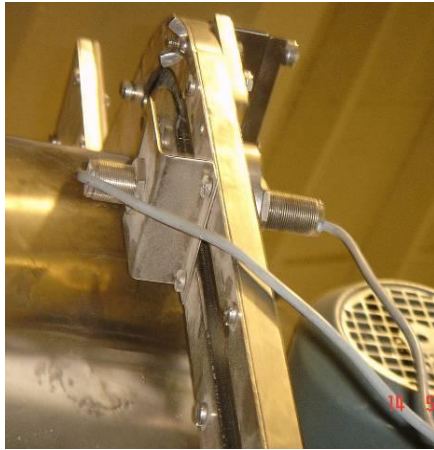
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- Lifting cylinder function to move bottle up and down. Bottle lifting is realized by compressed air while bottle decline is realized by roller cam acts on lifting cylinder . So both bottle lifting and decline are smoothly and accurate.
- Lifting cylinder consists of outshell, bottle tray, inside housings and roller. Cylinder outshell is made of stainless steel, roller uses high grade nylon of long time using life. Inside of cylinder is lubricated by mix of lubricate and compressed air to ensure good lubricate performance and using life.

C. Capping Machine

- Imported engineering plastic bearing is used between Capping Machine plunger and plunger seat to realize long life and lubrication free operation.



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- Capping Machine plunger uses hygienic stainless steel open structure. Imported engineering plastic slide bearing is used to facilitate cleaning.
- Magnetic stainless steel cap sorter is used to avoid cap damage. Cap chute is equipped with two detectors to control start/stop of cap sorter, as well as to ensure cap supply during normal operation. Cap sorter can be provided with cleaning device.
- Capping Machine discharge is equipped with cap absence detector to ensure caps continuous supplying.

Bottle transfer parts adopts hygienic open design



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- Starwheel seat uses stainless steel stream-lined structure, transition part is made of round shape; starwheel is hollowed out for easy cleaning and elimination without dead corner.

1.4 Vacuumize system



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- Vacuumize system is used to minimize air inside of bottle, reduce oxygen in filling process and oxygen of bottle neck.
- Vacuumize in three steps:
- Step 1: first vacuumize
- Step 2: CO₂ replacement
- Vacuum valve opens, CO₂ inlet valve also opens (bottle inside purification). Closed again after valve 1-2 exchanged.
- Step 3: second time vacuumize

1.5 High pressure foaming system

Inject high pressure deoxygenized water into filled bottles to make CO₂ overflow for removal of bottle neck air.

1.6. Technical parameters

1) Nos. of rinsing valves:	16
2) Nos. of rinsing valves:	12
3) Nos. of capping heads:	6
4) Rated capacity (500ml):	2000BPH (500ml)
5) Suitable bottle type:	Glass/aluminum (based on customer sample)
6) Suitable bottle size:	Bottle height: H=150-260mm
7) Bottle dia.: 50mm-100mm	
8) Fill level accuracy:	±4mm
9) Air consumption:	2m ³ /h(0.4~0.6Mpa)
10) Aseptic water consumption:	1.2m ³ /h
11) Installed capacity:	~8kW
12) Operating power supply:	415V, 50Hz, 3-phase-5-wire system

13) Control voltage:	DC24V
14) Infeed/discharge conveyor height: to be decided by client's warehouse	
15) Dimensions:	L×W×H≈2250×2150×2600mm

1.7. Equipment Configuration

Reducer	JIE-ASIADRIVE-Hangzhou
Main bearing	NTN
Plastic bearing	Igus (Germany)
Pneumatic elements	SMC, AirTac
LV circuit breaker	Schneider
Contactors	Schneider
Intermediate relay	Honeywell
Frequency inverter	Danfoss
PLC	Siemens
Touch screen	Siemens
Proximity switch	Turck
Photoelectric switch	Omron
Button, indicator	Schneider

1.8. Spare parts delivered with machine

S/N	Name	Q'ty
1.	Clamp	1
2.	Shifter	6
3.	Spray nozzle	3
4.	Left clamp jaw	3
5.	Right clamp jaw	3
6.	Cap mould	1
7.	Vent tube	4
8.	Shunt umbrella	6
9.	Valve rod head	2
10.	External operating valve rod	1 set
11.	Centering cup	2
12.	Roller cam	2
13.	Bottle mouth seal	4

1.9. Remarks

1. Make sure that the filling environment is sterile.
2. Make sure that bottles and caps are aseptic
3. Make sure that beer supplied is aseptic.
4. Clean and sterilize the machine each shift.
5. The user must supply dry and aseptic CO₂.
6. The user must supply dry and aseptic air.
7. Foaming device water must be aseptic deoxygenized brewing water.

8. The machine reserves CIP connector of 1" size.
9. Beer infeed pipe of 1" size.
10. Please inform conveyor height.(by client's warehouse)