

DXGF16-16-5

Isotonic filling three-in-one machine

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I Summary

DXGF16-16-5 type filling three-in-one machine is specified for filling of carbonated beverage, it concentrates rinsing, filling and capping on one machine. the machine is designed on base of absorbing advanced technique and technology from abroad and home in terms of filling technology of carbonated beverage. it is mainly applicable to rinse, fill carbonated water, cola, beer and mineral water and cap the plastic bottles. The machine has advantages of reasonable structure, safe operation , reliable working and easy maintenance ,it is ideal device for beverage factory

Main characteristics:

- 1. The machine has advantages of Compactable structure, beautiful appearance, easy to operate, high automatization and small labor force.*
- 2. The bottle-conveying adopts bottleneck-clipping technique, when change the bottle size, the users only have to exchange the arc guide and thumb wheel to the corresponding ones according to the bottle mouth and diameter.*
- 3. The newly designed bottle clamps made of stainless steel are stable and durable and don't touch the screw section at the bottle mouth, so the second pollution can be avoided.*
- 4. The section touching the material is made of foodstuff grade stainless steel , there is no dead angle and it is easy to rinse.*

5. *With the pneumatic buffer-valve controlling the feeding flux, the level can be kept in the small fluctuate so that the filling accuracy is ensured*
6. *The valve opener is driven by cylinder, it can open the valve timely in terms of opening signal, the performing is accurate and reliable.*
7. *With high speed and big flux, high accuracy filling valve, high filling speed, the liquid level is accurate and there is no liquid loss.*
8. *The capping heads adopt magnetic constant-torque device to ensure the capping quality and won't damage the caps*
9. *The machine is equipped with the high efficiency Unscrambler and auto-feeding system, perfect caps-loading and cap-shortage protection device.*
10. *The bottle bottom splint is helix descend type, so it doesn't have to adjust the conveyor height when bottle size changes*
11. *The machine is matched with consummate overload protection device which can prevent device and operator from hurting*
12. *The main parts including the electric components, electric control valves, frequency converters are all from abroad to ensure the whole machine's functions.*
13. *The pneumatic elements are all well-known brand.*

II.Components

the machine is composed of following six main parts:

- 1、 *Rinsing system: this part is made up of rinsing clip turntable, water-separating table, water tank and others.*
- 2、 *Filling system: this part is made up of liquid tank, filling valves, control rings, hoisting device and others*
- 3、 *Capping device: this part is composed of capping machine, Unscrambler and caps guide .*
- 4、 *Transmitting system: this part is gearing concentrating type and made up of lubricating system.*
- 5、 *Conveying system: this section consists in guide, thumb wheel and conveying chain.*
- 6、 *Electric controlling system: this part adopts frequency converter to adjust the speed and PLC auto-control.*

Working description:

Bottles are transmitted to the “Washing machine” of the Triad Isobaric Filler by the “Bottle-turning star wheel” via the “Bottle feeding screw”. The “Wash gripping dial” of “Washing machine” grips bottleneck and turn 180° along a guide rail that makes bottleneck adown. The special nozzles spray wash water to clean interior of bottles in the given area. After cleaning and drying the “Wash gripping dial” turns bottles 180° again along the guide rail that makes bottleneck up. These cleaned bottles are put out from

the “Wash machine” and transmitted to the “Filling machine” via the “Bottle-turning star wheel”. The bottles entered in the “Filling machine” which are folded by bell jars and elevated up to touch with filling valve recur to the lifter cam. Whereupon it makes bottleneck contact with the rubber pad of the filling valve and be sealed due to compaction. And then open the valve handle by bumping post and turn the air injection position simultaneously under the action of the special mechanism according to the rule of no bottle no filing. The filling shall be started while air injection is reached to state of equal pressure. The filling can be stopped automatically when the liquids level reach to the height of air return pipe. The filling valve is closed recur to valve-closing mechanism after filling. Then air discharging and the completed filling process are finished. Bottles full filled come down to be off filling valve under the function of cam and be put into the “screw capper” via transitional thumb wheels. The bladed stopper on the “screw capper” locks the bottleneck to keep bottles erectly and avoid rotating. The “screw cap head” keeps revolution and rotation on the “screw capper” and carries out these movements of cap picking, cap covering, screw capping and cap unhitch etc. after that whole capping process is finished. The “cap aligner” is situated above the “screw capper”, it is connected with the cap pan of “screw capper” via the cap sliding rail. The finished bottles are transmitted to the bottle output conveyor chain via the bottle output thumb wheels. And which are transmitted out from the Triad Isobaric filler by conveyor chain and put in the

next process.

III. Main technique parameters

1. Type: DXGF16-16-5
2. Rinsing positions: 16
3. Filling positions: 16
4. Capping positions: 5
5. Bottle material: polyester bottle
6. Bottle height: 150-320mm
7. Bottle diameter: $\phi 50$ - $\phi 120$ mm
8. Pneumatic pressure: 0.7MPa
9. Air consumption: 1M³/min
10. Rinsing water pressure: 0.2~0.25 MPa
11. Rinsing water consumption: 1T/H
12. Filling mode: isotonic filling
13. Filling height: $\leq 5^{\circ}\text{C}$
14. Main motor power: 2.2KW
15. Motor capacity: 3.5KW
16. Max output :
 - (1) 500mL 4800BPM
 - (2) 330ml 6000BPH
17. Overall size: 2850×2150×2700 (L×W×H)
18. Total weight: 3500KG

IV. Installation

- 1. It is recommended to open the package at the spot. Check the packages if they are not damaged before opening them.*
- 2. Check if all machines are well after opening the packages and look over the machines referring to the packing list. If there is damage and shortage. Analyze the failures and report to the relative departments In form of letter. If it is in our service range, please let us known on phone.*
- 3. The machines should be located in the place where there are no shaking resource and indirection sunshine.*
- 4. The machine must be installed on the smooth and firm foundation and check if the machine is smooth and conveying chain is on the same line.*
- 5. The suitable cable must be chosen to connect the cabinets with the power—380V/50Hz./5.5Kw.the total power is 3.5KW. The specification of input cable is the triphase / five wire system in which are assigned as 3 phase line, 1 zero line and 1 earth wire. The earth wire can be fixed at the bracket screw inside of cabinets ,Be carefully that the phase wire must be chosen as 6mm² and earth wire can be chosen as 4mm².*
- 6.The power and earthy line must be reliable.*
- 7.Be recommended to use suitable compressed air for the air inlet at the gas control box, the compressed air should be cold dry, filtered and reached the instrumental level of use.*
- 8.Be recommended to use suitable CO₂ pipe for the CO₂ inlet at the gas*

control box.

9. Be recommended to use suitable wash water pipe for the inlet of water pump on the “bottle washing machine”.

10. Be recommended to use suitable media pipe connecting between the outlet of mixing machine and the inlet of filling machine.

11. You must be ensured that all these pipelines are firmly connected without slack and any leakage.

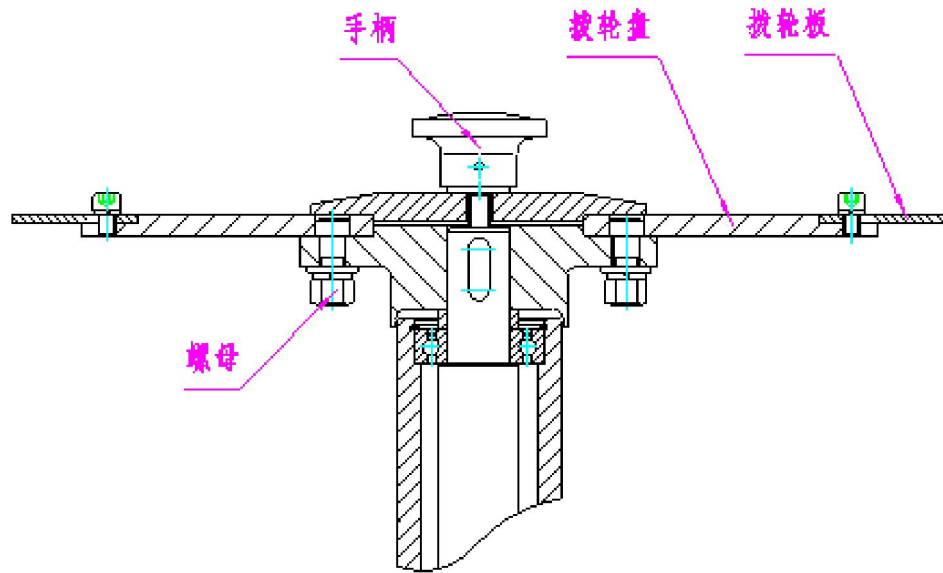
V . The adjustment of machine

1. Set the air pressure value as 0.5~0.6MPa by turning the air adjust handle at the air control box.

2. Setting the CO₂ pressure value as 0.2~0.3MPa by turning the CO₂ adjust handle at the gas control box. The best the differential pressure is 0.01 ~ 0.02MPa between the liquids barrel and the mixing machine, and the liquids inlet pressure should be slight higher 0~0.02MPa than the gas inlet pressure.

3. Cap aligner air pressure: Turning the adjust handle of regulator to get the same point at 0.2MPa for the 3 gauges.

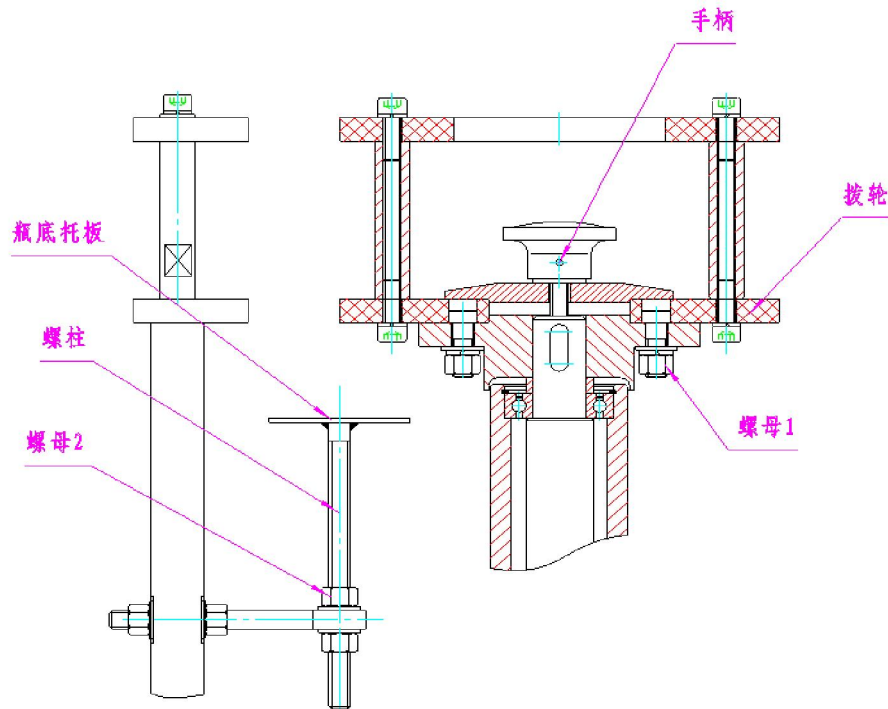
4. Bottle feeding and Transition thumb wheel: If the thumb wheels are whirled out of step, it must be adjusted. Unscrewing fixed bolt and turning thumb wheels until which are corrected. See figure (1)



图(一)

5. Bottle output thumb wheel: If the thumb wheels are whirled out of step, it must be adjusted. Unscrewing fixed bolt and turning thumb wheels until which are corrected. See figure (B)

6. Height of support table of bottom of bottle: It should be done that adjusting the height of support table. Unscrewing nuts at the 2 fixed bolts until get the adequate height and then tight nuts. See figure (B)

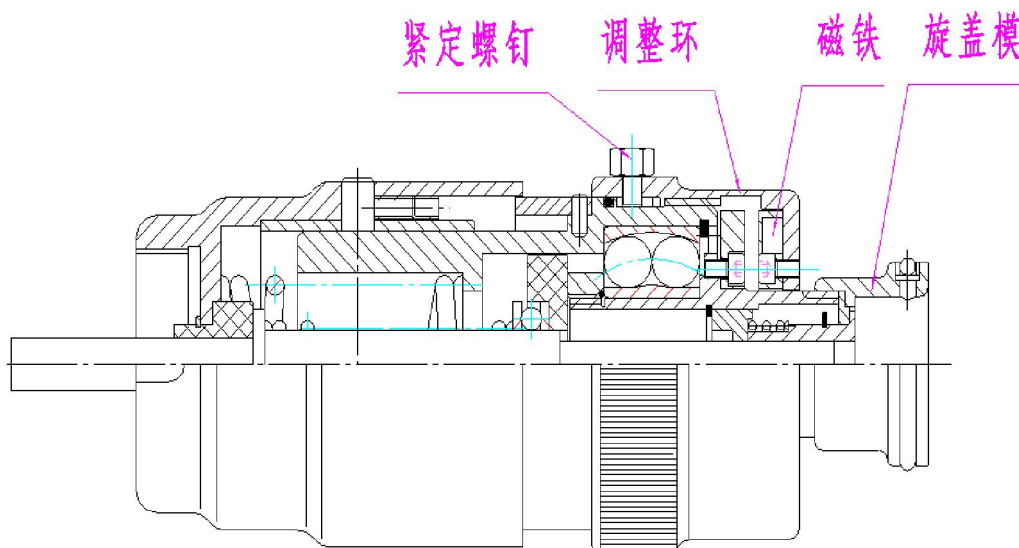


图(二)

8. Valve open/close: The limit positions for filling valve's open and close which should be finalized according to the conditions of process during trial run. Anyway must follow the ruler that opening the valve after empty bottles are elevated to be compacted to the filling valve and closing the valve in time after filling is finished.

9. Air discharge cam: To move the start position of air discharge device carefully, the elevation cylinder will down after air inside of bottles is out. And adjust the cam's position according to the time and amount of air discharge.

10. The torque on Cap screw head: Unscrewing the nuts and fixed bolts at the magnetic adjustment ring, then turning it right to increase the torque and to the contrary turning left to decrease the torque.



图（三）

VI. Working principle and common failures

1. filling procedures and principle

1.1 The bottle entered the filling motor keeps by the bottle mouth of the bell housing, the bottle rise contact filling valve under the promotion of hoisting cam, causes the bottle mouth and the rubber packing contact, contracts and seals strictly.

1.2 The bottles entering into the filling machine will open the filling valves with the help of valve-opener.

1.3 Open the valve handle impetus operating lever in fluid cylinder to open the gas injection pole, in the cylinder the CO₂ gas through the hatch of air jacket aperture, again passes through in the valve core in the hole and the exhaust fumes tube the hole breaks in the bottle.

1.4 When the pressure inside of bottle be reached equilibrium with the filling pressure, the liquids control valve is opened due to the spring force, and

liquids be poured into bottles alone bottle wall via the distributor, simultaneously the gas inside of bottle be forced back into the Solution barrel from gas hole.

1.5 When the level inside of bottles be up to the height of gas return pipe, the back air route can be clogged, then stop filling. Customers can adjust the filling level by replacing the length of gas return pipe.

1.6 After filling finish open the valve handle in to shut filling valve under the valve cam function.

1.7 Will fill will install at the same time which the valve will shut down, the exhaust cam exhausts the mast top to open, causes in the bottle the decompression, prevented will appear the froth aversion phenomenon.

2、Faults due to damage of the parts on filling valve see figure (5)

2.1 Part No.24: cause of the damage of the O-ring gas leak between filling valve and filling jar.

2.2 Part No.25: ause of the damage of the O-ring gas leak between filling valve and filling jar.

2.3 Part No.1: If the gas return pipe is bent, it can make the liquids flow in a disturbed condition that can produce air bumbles to cause lack of filling amount even damages of bottles or filling valves.

2.4 Part No.6: if the seal pad is damaged, although the valves are already closed, liquids still can leak around.

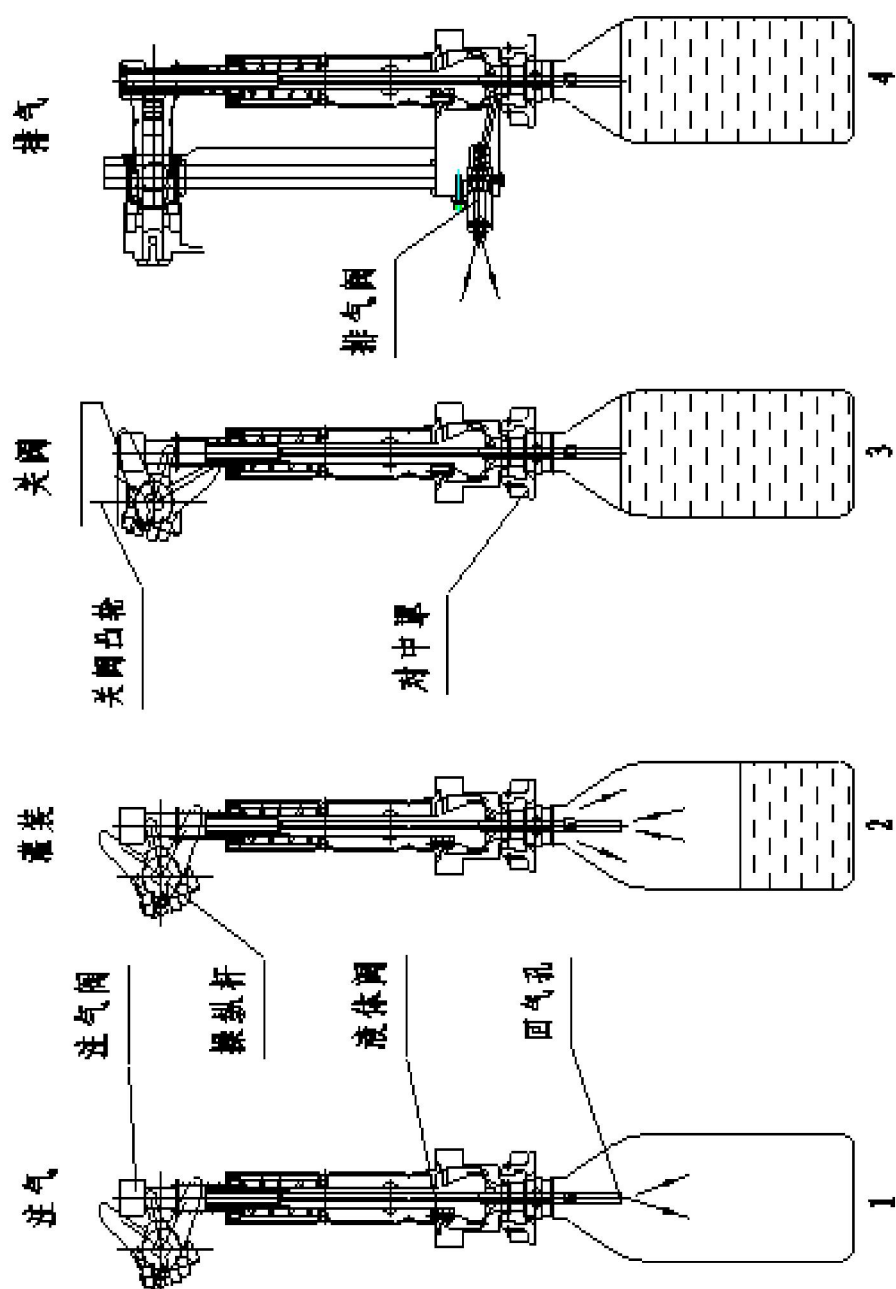
2.5 Part No.8: the gas injection spring is damaged , that can make

injection valve failure and cause lack of filling amount because of the gas return route clogging.

2.6 Part No.14: The return line leak due to damage of gas injection gasket that can produce gas bubbles after be free of bottle.

2.7 Part No.19: The damage of gas discharge gasket can cause gas leak, sequentially cause overfull bottle.





进气阀	打	开		打	开	关	关
液体阀	关	闭		打	开	关	闭
排气阀	关	闭		关	闭	打	开

图(四)

序号	代号	名称	数量	材料	重量		备注
					单件	总量	
30	EXM	O形圈 1512.5	1	三元乙丙			
29		Y形圈 911423.5	1	三元乙丙			
28	GB95-85	垫圈 5	1	304			
27	GB70-85	螺钉 M5112	1	304			
26	EXM	O形圈 1711.5	1	三元乙丙			
25	EXM	O形圈 1012	2	三元乙丙			
24	EXM	O形圈 4213	1	三元乙丙			
23							
22	TDF101-00-17	对中杯	1	304			
21	TDF101-00-16	瓶口垫	1	氟橡胶			
20	TDF101-00-15	排气螺钉	1	304			
19	TDF101-00-14	排气垫圈	1	三元乙丙			
18	TDF101-00-13	排气杆	1	304			
17	TDF101-00-12	排气套	1	304			
16	TDF101-00-11	岩泥	1	304			
15	TDF101-00-10	排气弹簧	1	304			
14	TDF101-00-09	排气垫圈	1	三元乙丙			
13	TDF101-00-08	卡套	1	304			
12	TDF101-00-07	排气套	1	304			
11	TDF101-00-06	排气弹簧	1	304			
10	TDF101-00-05	弹簧挡块	1	尼龙1010			
9	TDF101-00-04	排气杆	1	焊铸件			
8	TDF101-00-03	节流弹簧	1	304			
7	TDF101-00-02	阀座	1	304			
6	TDF101-00-01	密封垫	1	三元乙丙			
5							
4	TDF101-04-00	阀保	1	焊铸件			
3	TDF101-03-00	阀芯	1	焊铸件			
2	TDF101-02-00	密封套	1	焊铸件			
1	TDF101-01-00	回气管	1	304			

图(五)

VII. Debugging and test

1. Test the machine without loading

Start the machine without supply rinsing water, material, caps

1.2 First adjust the speed at the lowest one and examine the motors, bearing and gear if there is noise, soufflé and radiation.

1.3 Connect the compressed air to check the pipeline system if there is air-leaking.

1.4 Feed the empty bottle when machine runs normally and check if there is bottle-locking and bottle dropping, then speedy the machine to reach up to the highest speed.

2. filling trial-running

Test the machine after every parts of machine runs normally.

2.1 Joint CO₂ into the Solution barrel to expel waste gas inside, holding the slight lower pressure opposite the filling pressure.

2.2 joint the ice water into the Solution barrel and watching the change of liquids level.

2.3 Start the machine and fill at the lowest speed and examine the filling

2.4 The trial-running time is 10-15 minutes.

3. Filling

the machine can be put into production after trial-running. The operation procedures is as follows:

3.1 Connect the power resource and Adjust the filling speed

3.2 open the gas inlet valve to blow gas into the Solution barrel for expelling all waste gas inside. Notice the pressure gauge at the Solution barrel to see whether the value can be raised to a stable point.

3.3 Be opened the media inlet valve and adjusted to a good position that can make the inside pressure of barrel lower than the one inside of frozen store barrel. The differential pressure is 0.01~0.02MPa.

3.4 Start main machine, water pump, cap sorter and transmission chain to fill.

3.5 pay attention to these states in order to maintain the continuous running:

- a. the lift of hoisting device
- b. the flexibility of switches and valves ,filling quality
- c. The fluctuate of liquid level

3.6 The operators should focus on the working and remove the failures to reduce the stopping times, otherwise the filling quality won't be ensured

3.7 When restart the machine after the machine stopping, the speed should be increased from lower one to normal gradually.

4. do as follows after finishing operation

4.1 Shut up the liquid-in let valve and air inlet valve to empty the liquid in the tank at low speed.

4.2 Shut up the electric switches and all valves to stop the filling machine's working

4.3 Open the filling valves and exhaust all vapors

VIII. Operation

- 1、 *Read the operation manual before operating the machine and master the structure and principle of the machine, the adjusting position and function, machine transmitting principle and sequence.*
- 2、 *The users must learn the symbols and functions on the electric cabinet and operation menu*
- 3、 *The machine can only be operated by these who has been well trained*
- 4、 *Check the supply of power resource, compressed air, rinsing water is normal*
- 5、 *Check the turn handle of filling valve is in the condition of close before starting the machine.*
- 6、 *Check if there is substance on the machine, don't start the machine until confirming everything goes well.*
- 7、 *Close the power switch ,press the touch screen to start operation*
- 8、 *Click the touch screen lightly, don't use with strong force.*
- 9、 *Firstly start the machine at low speed and check if the transmitting section is running normally. If there is abnormal, press the emergency stop button.*
- 10、 *The bottles may be broken out because of the pressure filling , the head can't approach the filling valves in the process of filling and don't disassemble all guide when machine is running.*

11、 *Don't start the machine if there is malfunction till it is removed.*

12、 *Shut up the power and compressed air and stop the rinsing water and material supply.*

13、 *Electric operation*

(1) *Close the air switch , the touch screen indicating light and power indicating light will be on, the users can select automation-operation or manual operation.*

(2) *When stop the machine, firstly retard the main machine's speed to 0, In the condition of auto-operation, turn to manual position. If the GP is in manual position, press the main machine again to stop it. Finally shut up the machine in terms of normal stop.*

IX. Maintenance

1、 *The machine should be cleaned each a certain time. When clean the machine, don't get the water touch the electric and motors.*

2、 *Break the power when repair the machine*

3、 *Complement the lubricating grease (2# or 3# lithium base grease) or lubricating oil (20# machinery oil) to the machine on scheduled time*

① *The oil nozzle under the machine table is lubricating point inside the bearing, it is recommended to add oil every 48 hours.*

② *The hollow shaft of the capping machine and upper rolling wheel are matched with oil nozzles which is recommended to add oil each 24 hours.*

- ③ *Check the lubricating of gear under the machine table each week and lay on the lubricating grease after a certain time.*
- 4、 *Frequently check the sealing parts of filling valve, exchange it in time if there is damage.*
- 5、 *Check the material, compressed air, CO₂ pipeline if there is leakage and repair it in time.*
- 6、 *Don't rinse the machine surface with venomous drug, organic solvent.*
- 7、 *The disassembly of the machine must be performed by professional stuff and use the reasonable hoisting device.*
- 8、 *The electric must be kept clean to prevent the immerge of oil and water.*
- 9、 *The PLC, frequency converter, touch screen and other electrics have been set well before leaving factory, the users should not shift them at will.*
- 10、 *The machine is equipped with the guide door to protect the operators from the hurting caused by spatter of liquid. The users are not allowed to uninstall it or we will not be responsible to the accidents because of it.*
- 11、 *Check the grounded wire and joint the power after checking it. The manufacture won't be in charge of the damaged caused by false electric connection*
- 12、 *The electric system must be maintained by those who have professional knowledge.*

X. Failures and removal

<i>NO</i>	<i>failure</i>	<i>Possible reason and removal</i>
<i>1</i>	<i>The machine doesn't work</i>	<i>1、 the machine is locked, restart it after removal the failure.</i>
		<i>2、 no caps on the guide, restart after loading.</i>
<i>2</i>	<i>Machine stops while running</i>	<i>1、 thermo relay starts, restart after reset</i>
		<i>2、 no caps on guide, restart after loading.</i>
<i>3</i>	<i>Transition thumb wheel locks bottles</i>	<i>1、 displacement of transition thumb wheel, reset according to the adjusting method</i>
		<i>2、 thumb wheel doesn't conform to the bottles , exchange the bottles or thumb wheel.</i>
<i>4</i>	<i>The filling valves don't work</i>	<i>1、 The valve-opener didn't work or not enough</i>
		<i>2、 the spring lose function because of O type ring' damage, exchange the O type ring</i>
		<i>3、 the distance between splint and valve is large, the bottle is not sealed</i>
		<i>4、 The air injecting valves are completely jammed.</i>
<i>5</i>	<i>Filling quantity isn't enough</i>	<i>1、 The circulated pipe curves and transformative or blocked, exchange and dredge</i>
		<i>2、 the injecting spring is damaged to cause the exhausting jam, exchange the spring.</i>

		3、 the opening is not enough, check if the filling valve is flexible。
6	Filling excessive	1、 the exhausting gasket is damaged and bring about the leaking ,exchange the exhausting gasket.
		2、 the sealing gasket of valve core are damaged or not close well, exchange the sealing gasket.
		3、 the bottle mouth and sealing gasket can't seal well ,exchange the sealing gasket
7	Foam excessive	1、 the temperature of beverage is high , check and lower the temperature.。
		2、 the liquid and the air pressure is not proper。 Adjust the pressure
		3、 valve closing and exhausting is not proper , the exhausting is insufficient.
		4、 the injecting gasket is damaged and circulated pipe occurs leakage, exchange the injecting spring.
8	Inclined caps	1、 the capping torque is not proper. Adjust the torque force
		2、 the capping mode and stop blade are not concentric, adjust the position
9	Capping	1、 the caps are not proper。 Exchange the caps。

	<i>tightness is false</i>	<i>2、 the capping torque force is not proper。 Adjust the torque force</i>
<i>10</i>	<i>Convey chain reverses bottles</i>	<i>1 、 speed of bottle-outlet convey chain is too high. Adjust the convey motor。</i>
		<i>2、 the bottom of bottle is not smooth。 Exchange the bottles。</i>

XI. Bearing list

NO	code	name	quat	Belong to
<i>1</i>	<i>GB276-94</i>	<i>bearing60000-FStype6228/140X250X42</i>	<i>2</i>	<i>Bearing unit</i>
<i>2</i>	<i>GB301-95</i>	<i>Bearing51000type51228/140X200X46</i>	<i>1</i>	<i>Bearing unit</i>
<i>3</i>	<i>HSM-1820-25</i>	<i>Sleeve cylinder</i>	<i>64</i>	<i>Hoisting unit</i>
<i>4</i>	<i>GB276-94</i>	<i>bearing60000type6206/30X62X16</i>	<i>8</i>	<i>Thumb wheel</i>
<i>5</i>	<i>GB276-94</i>	<i>bearing60000type 6309/45X100X25</i>	<i>1</i>	<i>Capping system</i>
<i>6</i>	<i>GB276-94</i>	<i>bearing60000type 6005/25X47X12</i>	<i>2</i>	<i>Cap-pulling unit</i>
<i>7</i>	<i>GB276-94</i>	<i>bearing60000type 608/8X22X7</i>	<i>1</i>	<i>Caps guide</i>
<i>8</i>	<i>GB276-94</i>	<i>bearing60000type 6203/17X40X12</i>	<i>10</i>	<i>Capping</i>

				<i>assembly</i>
9	GB276-94	bearing60000type 61812/60X78X10	5	<i>Capping assembly</i>
10	NAKD30	bearing 30X14X12	5	<i>Capping assembly</i>
11	NAKD47	bearing47X24X20	5	<i>Capping assembly</i>
12	GB297-94	bearing30000type32018/90X140X3 2	2	<i>Capping shaft</i>
13	GB276-94	bearing60000type6004/20X42X12	1	<i>Unscrambler</i>
14	GB301-95	bearing51000type51102/15X28X9	5	<i>Capping head</i>
15		Bearing 3206B/30X62X23.8	5	<i>Capping heads</i>
16	GB276-94	bearing60000-FStype6310/50X110X 27	2	<i>Rinsing unit</i>
17	GFM-1012-10	Flange bearing	32	<i>Rinsing clamps</i>

XII. Sealing parts list

NO	code	name	material	quan	Belong to
1	GB3452.1-8 2	O type ring 33.5X3.55	Fl rubber	6	Filling unit
2	GB3452.1-8 2	O type ring 16X1.8	Fl rubber	6	tank
3	GB3452.1-8 2	O type ring 58X3.55	Fl rubber	1	Liquid-Feeding unit
4	GB3452.1-8 2	O type ring 41.2X3.55	Fl rubber	2	Liquid-Feeding unit
5	GB3452.1-8 2	O type ring 61.5X3.55	Fl rubber	2	Air feeding unit
6	GB3452.1-8 2	O type ring 37.5X3.55	Fl rubber	1	Air feeding unit
7	GB3452.1-8 2	O type ring 80X3.55	Fl rubber	1	Air feeding unit
8	GB3452.1-8 2	O type ring 5X1.8	Fl rubber	3	Air feeding unit
9	GB3452.1-8 2	O type ring 11.2X2.65	EPDM	32	Handle unit
10	GB3452.1-8 2	O type ring 23.6X2.65	EPDM	32	Handle unit

11	GB3452.1-82	O type ring 122X5.3	Fl rubber	4	Thumb wheel
12	GB3452.1-82	O type ring 33.5X3.55	Fl rubber	8	Guide
13	GB3452.1-82	O type ring 33.5X3.55	Fl rubber	2	Thumb wheel
14	GB3452.1-82	O type ring 33.5X3.55	Fl rubber	3	Capping unit
15	GB3452.1-82	O type ring 85X2.65	Fl rubber	1	Capping shaft
16	GB3452.1-82	O type ring 65X2.65	Fl rubber	5	Capping head
17	GB3452.1-82	O type ring 30X1.8	Fl rubber	5	Capping head
18		X type ring 40X3.6	Fl rubber	5	Capping head
19	EKM	O type ring 42X3	EPDM	16	Filling valve
20	EKM	O type ring 10X2	EPDM	32	Filling valve
21	EKM	O type ring 17X1.5	EPDM	16	Filling valve
22	EKM	O type ring 15X2.5	EPDM	16	Filling valve
23		V type ring 9X14X3.5	EPDM	16	Filling valve
24	GB3452.1-82	O type ring 200X5.3	Fl rubber	1	Rinsing unit

	2				
25	GB3452.1-82 2	O type ring 165X3.55	PU	1	Rinsing unit
26	GB3452.1-82 2	O type ring 109X3.55	PU	1	Rinsing unit
27	GB3452.1-82 2	O type ring 33.5X3.55	Fl rubber	3	Water tank

XIII . Standby parts list

NO	code	name	material	quantity	Belong to
1	GB3452.1-82	O type ring 41.2X3.55	Fl rubber	2	Air Feeding unit
2	GB3452.1-82	O type ring 61.5X3.55	Fl rubber	2	Air Feeding unit
3	GB3452.1-82	O type ring 37.5X3.55	Fl rubber	1	Air Feeding unit
4	GB3452.1-82	O type ring 80X3.55	Fl rubber	1	Air Feeding unit
5	GB3452.1-82	O type ring 11.2X2.65	EPDM	4	Valve-opener

					<i>handle</i>
6	GB3452.1-82	<i>O type ring</i> 23.6X2.65	EPDM	4	<i>Valve-opener</i> <i>handle</i>
7	TDF102-00-0 5	<i>spring</i>	304	2	<i>Valve-opener</i> <i>handle</i>
8	TXG104-00-0 4	<i>Balance spring</i>	304	5	<i>Capping head</i>
9	TXG104-00-0 5	<i>Clip spring</i>	304	5	<i>Capping head</i>
10	TXG104-00-1 7	<i>marble</i>	304	6	<i>Capping head</i>
11	TXG-01	<i>Stop blade</i>	304	1	<i>Capping</i> <i>machine</i>
12	EKM	<i>O type ring 42X3</i>	EPDM	4	<i>Filling valve</i>
13	EKM	<i>O type ring 10X2</i>	EPDM	8	<i>Filling valve</i>
14	EKM	<i>O type ring 17X1.5</i>	EPDM	4	<i>Filling valve</i>
15	EKM	<i>O type ring 15X2.5</i>	EPDM	4	<i>Filling valve</i>
16		<i>V type ring 9X14X3.5</i>	EPDM	4	<i>Filling valve</i>
17	TDF101-00-0 1	<i>Sealing gasket</i>	EPDM	2	<i>Filling valve</i>
18	TDF101-00-0	<i>Feeding spring</i>	304	2	<i>Filling valve</i>

	3				
19	TDF101-00-0 6	Inject spring	304	2	Filling valve
20	TDF101-00-0 3	Inject gasket	EPDM	2	Filling valve
21	TDF101-00-1 4	Exhaust gasket	EPDM	2	Filling valve
22	TDF101-00-1 6	Bottle mouth gasket	Fl rubber	2	Filling valve
23	TDF101-01-0 0	Circulated pipe	304	1	Filling valve
24	GB3452.1-82	O type ring 200X5.3	Fl rubber	1	Rinsing unit
25	GB3452.1-82	O type ring 165X3.55	PU	1	Rinsing unit
26	GB3452.1-82	O type ring 109X3.55	PU	1	Rinsing unit
27	GB3452.1-82	O type ring 33.5X3.55	Fl rubber	5	
28	HSM-1820-2 5	Sleeve cylinder	Igus	8	Hoisting device
29	PJD-00-05	Slide fork	nylon	2	Rinsing clip
30	GFM-1012-1 0	Flange bearing	Igus	4	Rinsing clip

31		tools		ISE T	
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