

RFC8-8-3 INTEGRATED RINSING FILLING CAPPING MACHINE

MANUAL BOOK

CONTENT

1.MACHINE EXPLANATION.....	2
2.MACHINE MAIN STRUCTURE.....	2
3.MACHINE PARAMETER.....	8
4.DIMENSION, WEIGHT.....	8
5.INSTALL AND ADJUST	9
6.OPERATION INTRODUCTION.....	9
7.ERROR HAPPEN AND SOLVEMENT.....	10
8.MAINTANCE.....	11

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1.MACHINE EXPLANATION

1.1 Machine character

The XGF8-8-3 integrated rinsing filling capping we produced include the function of rinsing bottles, filling water into bottles, and capping the bottles after filling, and it is transmitted by the transmission motor. With the character of automatical operation, compact structure, beautiful appearance, easy maintance, reliable and safety, our machine is an ideal equipment for the liquid beverage production.

1.2 Main usage

Our machine is mainly used in filling and sealing PET bottled mineral water, pure water, juice and other beverages, and the bottles can be round or other form.

All the pneumatic element will use international famous brand, and the main motor is controlled by transducer.

Bottle details: Bottle volume: 250-2500ml
 Bottle diameter: ϕ 50-130mm
 Bottle height: 150-320mm
 Bottle neck diameter: ϕ 20-40mm

1.3 Security

Our machine is produced according to the international security standard, to ensure the safety running during adjust, maintance, repairing, and error clearance. When the machine is under the adjust, maintance, repairing and error clearance situation, the machine can only run with manual operation, instead of automatical running.

During the maintenance and repairing process, if need to operate without the safety protection system, only trained and authorized engineer can operate the machine.

Everytime before connecting to the power, pls inspect whether the bottle tunnel have any repairing tool and cleaning tool left and whether every running structure is clean.

2.Machine main structure

2.1 Machine component

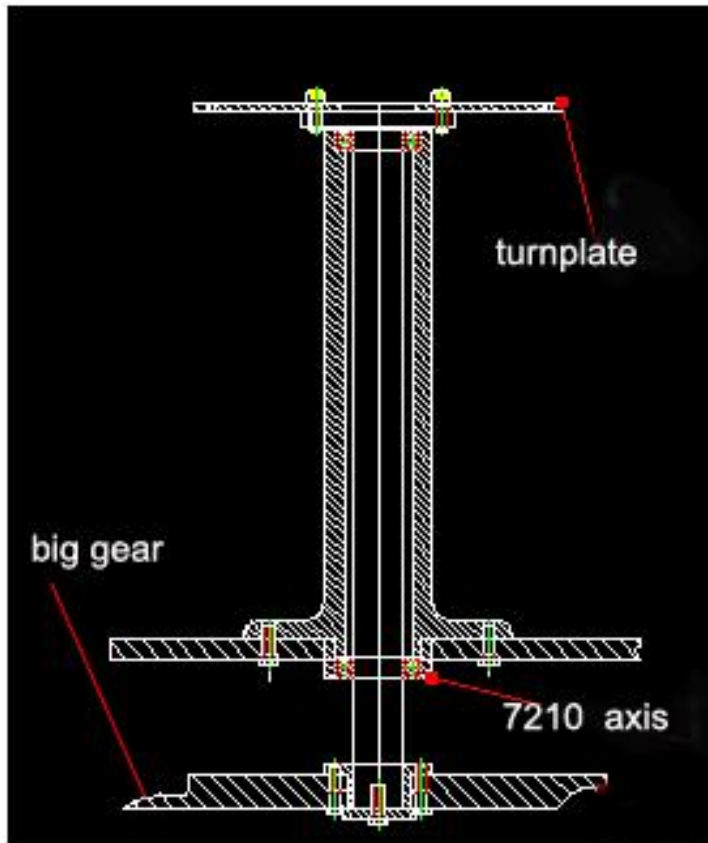
- a. rinsing part
- b. filling part
- c. capping part
- d. pneumatic part
- e. main transmission part

f. electrical element part

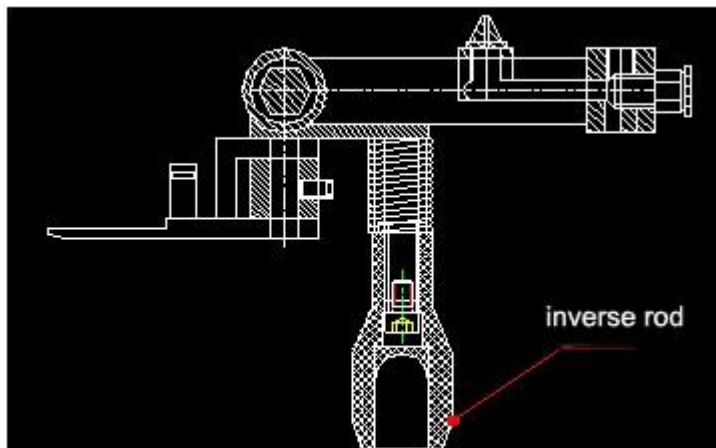
g. frame part

2.1.1 Rinsing part

The rinsing machine is composed of main axis, fixing frame, liquid admeasure device and bottle gripper. And the main transmission gear will drive the big gear to finish the synchronization with other parts, to finish the bottle feeding.

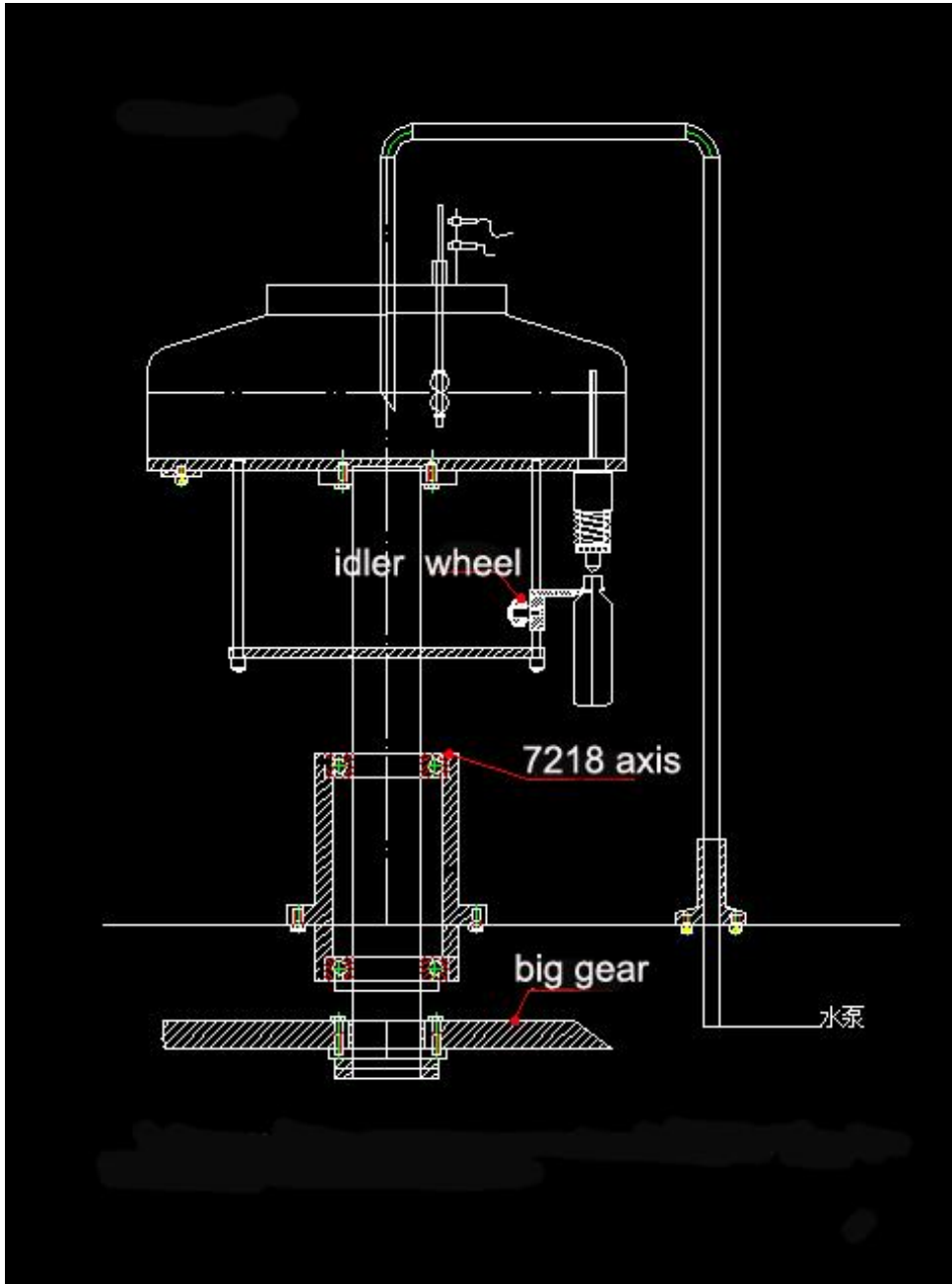


Following is the main structure for the rinsing mechanical hands:



The gripper in the rinsing machine will turn over the bottle with 180 degree, and then the aseptic water will be sprayed into the bottles, to finish the rinsing process.

2.1.2 Filling part



After long time and high speed running, the nylon idler wheel will wear and tear, and it will affect the bottle out of the filling machine , so pls check the nylon idler wheel regularly, when need to change, pls change in time.

2.2 .1 Bottle up-down section

This section is composed of idler wheel and concave wheel curve, when the turnplate turn back, the up-down axis will move up according to the cam working curve, this action will make the bottle up and contact with the filling valve to finish the filling, and then the bottles will move down after filling.

In this section, the supporting and position cap are replacement accessories, when bottle shape and bottle volume changed, change these two accessory and related parts can finish following production.

In this section, the small idler wheel, idler wheel axis is easy consumption parts, should be changed regularly.

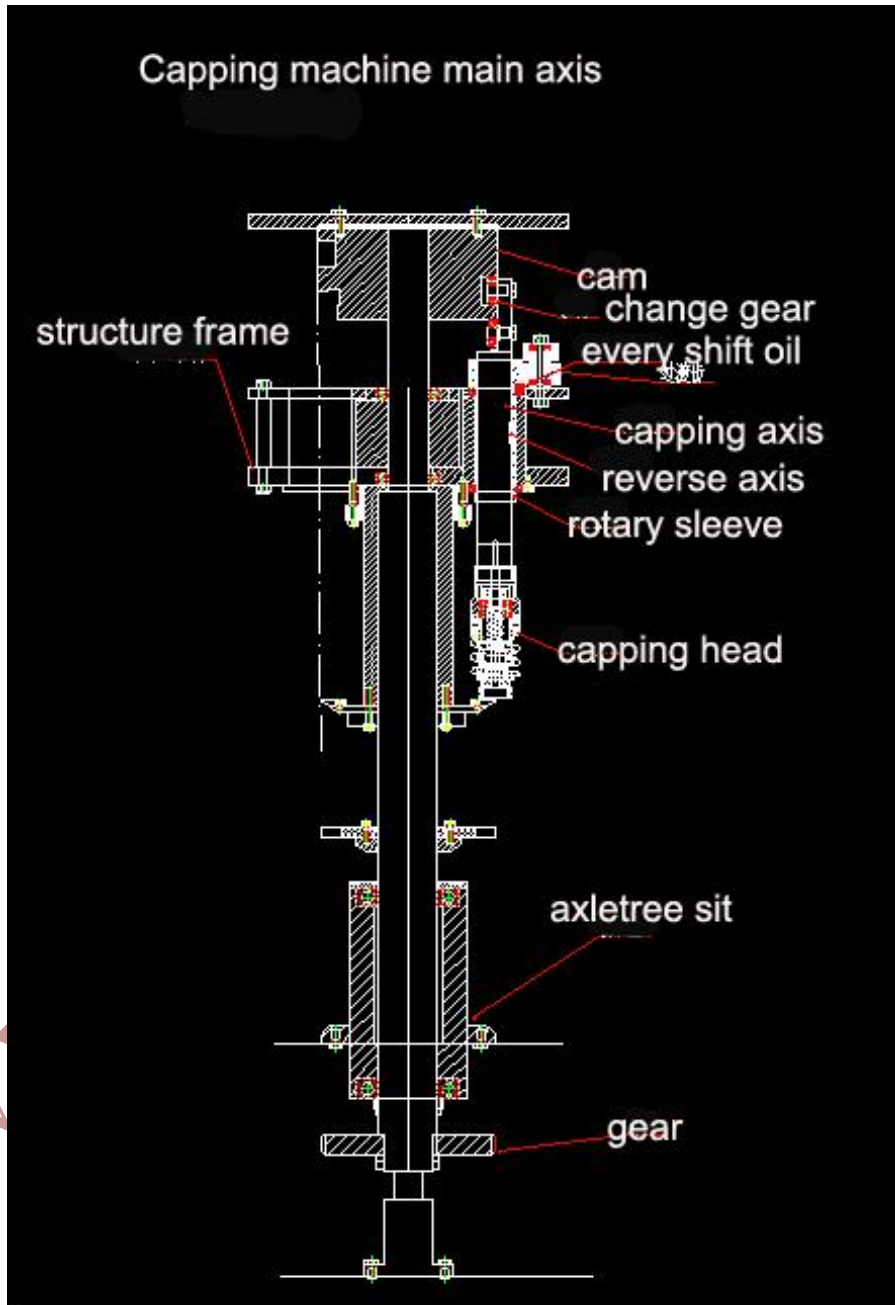
2.2.2 Filling valve parts

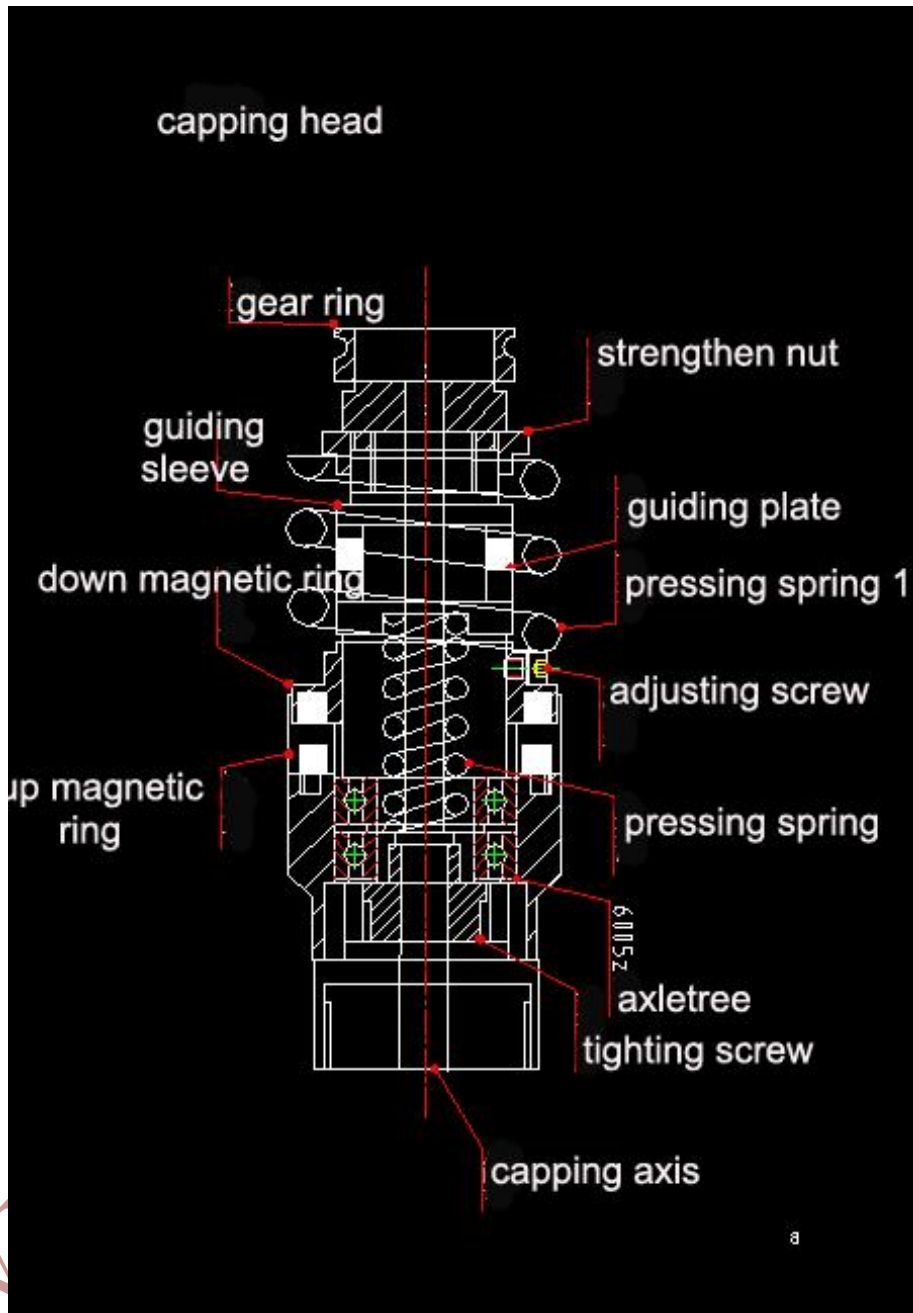
The filling valve is a main component of the filling machine, and it will decide the filling speed and filling quality, all the material will adopt the high quality stainless steel or food grade rubber, inside and outside of the filling valve is smooth, and all the O ring , spring in the filling valve is the easy consumption parts , should be replaced regulately

2.3 Capping machine

The capping machine is composed of main axis, capping head and cap unscramble, with the character of high quality, compact structure, low noise and easy maintenance.

2.3.1 Capping machine main axis parts





2.3.2 Capping head and slide bushing

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When the cap changes , the capping rinsing should be changed

Capping error happen and the way to solve:

Caps fall down---Checking the O ring(Size: 36*3.65mm), whether it is too loose, and then make the three steel ball not lock the cap, change the O ring;

If the capping result is ok , and then check the capping sleeve, and see whether it can run well , if can not, pls take apart the sleeve and check.

2.3.3 Cap Hopper

When the cap hopper run corotation, the caps will move into the cap tunnel , and preparing for the capping process, if the cap hopper reverse, the cap will turn over in the cap hopper.

Start the cap hopper motor, if the caps quantity fall into cap tunnel is small , so make the distance between up and down turnplate bigger, if some of the caps are not in the right direction , we have to make the distance between up and down turnplate smaller.

3. Machine parameter

3.1 Producing capacity : 2500BPH (500ml)

3.2 Parameter

3.2.1 Rinsing head : 8

Filling head: 8

Capping head: 3

3.2.2 Power

Main power: 3KW

Main motor: 1.5 KW

Filling pump: 0.55KW

Cap unscramble motor: 0.18KW

Convey belt motor: 0.37KW

Rinsing pump: 0.37KW

3.2.3 Water consumption

Rinsing water consumption: 0.8 MT/H

Filling water consumption: Max. 2MT/H

3.2.5 Raw water pipeline size

Rinsing water pipeline: Dg15, 1/2" screw stainless steel pipeline

Filling water pipeline: \varnothing 38 stainless steel pipeline

PVC pipeline for waste water out

4. Dimension , weight

4.1 Dimension L*W*H 1900*1450*2200(mm)

4.2 Weight ≈2000kg

5. Installation & adjusting

5.1 Installation requirement

The place to put the machine should be even, and the bearing power should be more than 10KG/CM² , the workshop should be higher than 3.5 meter;

5.2 Installation procedure, method and details need to attention

5.2.1 The machine is heavy, so normally no need to fix the machine in the ground. But the machine should be put in the area which have enough bearing power, and the area should be even and flat enough. Make the machine running height same as the whole line height (H=1200-1250mm), checking whether the adjusting and connection part is tight, and the sports accessory can run required.

5.2.2 Connecting the conveying belt, and adjust to the suitable height and position.

5.2.3 Connecting to the other equipment and pipeline

1. Main liquid pipeline (filling machine feeding beverage using);
2. Pressed air line
3. Rinsing bottle feeding pipeline
4. Rinsing bottle recycle pipeline

6. Operation

6.1 Preparation work and checking

Machine cleaning principle and purpose

All the cleaning purpose is to make the final products arrive international drinking standard.

The cleaning liquid will flow all the parts which the filling products will pass through, to arrive the cleaning purpose.

And the machine cleaning have two style, mechanical cleaning or sterilizing with hot water or steam.

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6.2 Machine operation

1. Machine operation preparing work

1.1 Before running the machine, the operator should be familiar with this manual book, know the main structure of the machine, and also the main character and function, and also know the control function of the machine

1.2 Connecting to the power, running the machine slowly without bottles (front direction, reverse direction), check the whether the security insurance device is reliable ;

1.3 When the machine running slowly without bottles, pls oil the parts which need to be oiled (the parts which need to be oiled have been explained), and also check the worm wheel gearbox, whether the lubrication arrive the level required, and in the gearbox it will add #20 lubrication;

6.3 Operation

1. Connecting to the power, and open the air compressor, and adjust the pressed air with pressure 0.6Mpa

2. Reset the emergency switch (emergency switch is red button in the controlling board)

3. Setting the machine to “ Manual operation”

Press the “liquid feeding” switch, let the beverage be feed into the machine;

Press the “ cap feeding “ switch, let the cap be feed in to the cap unscrambler

Press the “ cap unscramble” switch, let the cap tunnel be filled with caps;

Press the “ cap reverse” switch, let the caps be reversed into the hopper;

Press every related button, to see whether every part of the machine is running normally before automatical running, and then setting the machine into “automatical “ running condition.

4. After the machine in the automatical running condition, the “ speed” switch will control the machine running speed, put the bottles into the convey belt, and start to produce with little quantity, check the final products filling and sealing result, if have any problem , pls solve in time.

If every detail is under control, pls start to run the machine in low speed and then to high speed .

7. Problem & Way to solve

Problem	Reason	Way to solve
Rinsing gripper not tight	The spring in the gripper is not powerful	Change the spring in the gripper

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The water spraying out not in the rinsing valve	The sealing position changed between admeasure device and position plate	Loose the screw in the admeasure device and position plate ,adjust the position till suitable place
The rinsing liquid spray out in the admeasure device	The admeasure device moving plate not sealed well with fixing plate	Tight the screw in the admeasure device
Spraying pipeline spray little water	The water pressure is lower or the pipeline have some block	Add the water pressure, and check the pipeline whether it is bending
The liquid level is different after filling	The air pipeline is different length, the sealing mat is broken, the bottle mouth is not airproof	Make the liquid cylinder more vacuum
Dripping in the filling valve	The sealing ring in the filling valve is broken or the liquid level is too high	Change the sealing ring, check whether the control ball have any problem
The capping is not tight, and water dripping	The twisting power too small	Strengthen the twisting power
The caps have scratch	The twisting power too big	Cut down the twisting power

8. Maintenance

8.1 Daily maintenance, adjusting

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8.1.1 Maintenance after everyday operation

1. Clearing the residue in the machine pipeline, clear the residue in the filling liquid cylinder, and also clear the cap in the hopper;
2. Clearing bottles and sundries in the working table and conveying belt;
3. Checking the star-wheel , screw, bottle guiding plate, any parts need to be replaced , pls kindly check and replace in time;
4. Checking the medium transition device in the rinsing machine, and also check whether the transition valve is working normally;
5. Checking whether the gripper in the rinsing machine have any problem
6. Checking whether the filling valve have any problem
7. Checking whether the hopper slideway have any problem
8. After producing , pls clean the inside and outside of the machine, and also lubrication the machine.

8.1.2 Every week Maintain

1. Checking whether the machine height adjust parts are neatly;
2. Checking the abrasion situation for the plastic parts in rinsing gripper;
3. Checking the spring flexibility in the filling valve, and whether the sealing mat is ok or not;
4. Cleaning and checking the pipeline in the filling machine
5. Checking the medium admeasuring device in the rinsing machine, admeasuring device in the filling machine;
6. Checking the oil level in the gear box, if possible add some oil;
7. Checking and cleaning the hopper

8.1.3 Every month maintenance

1. Check the abrasion situation for the bottle guiding plate, bottle neck position steatite;
2. Checking the abrasion situation for the gripper cam in the rinsing machine, idler wheel which is for pulling bottles in the filling machine, slide bushing in the capping machine, adjust and replace any parts which is necessary;
3. Checking and maintain the machine sports accessory, adjust , amend or replace in time ;

8.1.4 Every six month maintenance

Except the above maintenance, we advice every 6 month or after the producing hot season, pls maintain the machine, such as adjusting , cleaning , oiling , or replace the related accessory;

8.1.5 Maintenance Notice

1. When do the cleaning, please do not send the water into the gear wheel, axis, sealing component, working table inside. And the leftover liquid in the machine should be cleaned;
2. When do the maintenance to the machine, please do not destroy the machine parts surface, sealing component and other connecting parts;

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3. The parts which need to add the lubrication, should supply and add enough lubrication for following producing;
4. All the accessory maintenance should follow the manufacturer's manual book, if necessary, pls apply the help from the manufacturer;

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