



Dalian Grosper

No.287 Zhuangda Road Lingang  
Industrial Zhuanhe China  
Zip Code: 116400  
TEL: 0411-88255559  
ray@bjgaochang.com  
www.gflaker.com

## Steam Corn Flaking Solution Equipment Configuration List



Grosper

**Eqpt. Name: Bucket Elevator**

**Eqpt. Type: Conveying Equipment**

**Process Code:C01,C09,F01,P01**

- Features: low-speed anti-crushing.
- The head and tail of the machine are made of 4mm steel plate by laser cutting, and the head wheel is made of belly rubber technology. Squirrel cage tail wheel, equipped with modular speed measurement; wear-resistant plates are added to the inlet and outlet.
- The barrel is made by a two-side occluding process, and the wall thickness is 2mm.
- The machine head is equipped with an explosion-proof port, a special explosion-proof membrane, and the machine head is equipped with a backstop.
- Adopts Guomao reducer.



**Eqpt. Name: Scraper Machine**

**Eqpt. Type: Conveying Equipment**

**Process Code:F16**

- Features: low-speed anti-crushing.
- Guide rail structure; the shell is made of carbon steel. The wall thickness is 4mm.
- Configure anti-blocking device.
- Adopts GuoMao reducer.



**Eqpt. Name: Screw Conveyer**  
**Eqpt. Type: Conveying Equipment**  
**Process Code:W02,F02**

- Features: low-speed anti-crushing.
- Made of 201 stainless steel with a wall thickness of 3mm.
- Equipped with anti-blocking device.
- Adopts Guomao reducer.



**Eqpt. Name: Vibration Screen**  
**Eqpt. Type: Cleaning Equipment**  
**Process Code:C02**  
**Eqpt. Brand: COFCO MaoSheng**

- Remove large and small impurities in the material. High strength and good sealing performance. The sieve grid is easy to install and take out.
- Select a high-quality cold plate from Shanghai Baosteel. Good toughness.
- The steel plate is cut by a laser cutting machine and formed by a CNC bending machine, with high precision, smooth appearance and beautiful appearance.
- Famous brands of vibration motors.



**Eqpt. Name: Cycle Wincwing**

**Eqpt. Type: Cleaning Equipment**

**Process Code:C03**

**Eqpt. Brand: COFCO Maosheng**

- It is used to separate light impurities and dust from grain, and has the characteristics of large air volume, good effect of closed air and dust reduction, etc.
- The high-quality cold plate of Shanghai Baosteel is selected, with high strength and good toughness.
- The steel plate is cut by laser cutting machine and formed by a CNC bending machine, with high precision, smooth appearance and beautiful appearance.
- The effect of separating light impurities such as leather shells and dust is ideal. It can be used alone or in conjunction with vibrating screens and other equipment.
- With its own fan, the air can be circulated to effectively settle and remove impurities.
- The grain outlet is equipped with pressure, and the pressure door is opened considering the weight of the material.
- Adjusting the wind plate can effectively adjust the strength of suction.
- The wind wheel is calibrated by precise dynamic balance, so it runs smoothly and has low noise.
- Guomao cycloid reducer.



**Eqpt. Name: Gravity Destoner**

**Eqpt. Type: Cleaning Equipment**

**Process Code: C05**

**Eqpt. Brand: COFCO Maosheng**

- It is mainly used in the grain cleaning and purification process to remove impurities such as sand, cinder, mud, dust, and leather shells contained in the grain. This machine has the characteristics of high production efficiency, good impurity removal performance, no dust, low noise, convenient operation and maintenance, etc.
- The plates used are all high-quality cold plates from Shanghai Baosteel, with high strength and good toughness.
- All materials are cut by laser cutting machine and bent by CNC bending machine, with high precision, smooth appearance and beautiful appearance.
- The thickness of the sieve box plate is greater than 2.5mm, and the purchased sieve plate is a stainless steel woven stone removal net, which has a good stone removal effect, and the stone removal efficiency reaches more than 98%.
- The sieve plate is straight, the ash sieve frame is smooth and beautiful, and it is treated with varnish.
- The vibration motor is selected by Jiangsu Baofei Company.



**Eqpt. Name: Permanent Magnet Cylinder**

**Eqpt. Type: Cleaning Equipment**

**Process Code: C04**

- Remove iron filings and larger ferromagnetic impurities.
- Small, power-free magnetic separation equipment that can be directly installed at the entrance of other process equipment, and can also be connected in series to the material chute.
- The working process of the permanent magnet cylinder is that the magnet cone head makes the incoming material flow evenly along the circumference, and the magnetic separation is realized when the material flows through the magnet.
- The magnet device is on the inspection door, and the door can be opened for cleaning during work.



**Eqpt. Name: Soaking Tank**

**Eqpt. Type: Grouped Equipment**

**Process Code: W04**

- Made of 201 stainless steel with a wall thickness of 3mm.



**Eqpt. Name: Steam Chest**

**Eqpt. Type: Core Equipment**

**Process Code: F04**

- Introduce advanced technology. Research and develop according to the characteristics of corn flakes.
- The steaming time is 45-60 minutes, and the gelatinization degree is adjustable at 65-78%.
- Set up a steam balance system to ensure that the corn is evenly matured during the steam process.
- Made of 201 stainless steel with a wall thickness of 4mm.



**Eqpt. Name: Flaked Corn**

**Eqpt. Type: Core Equipment**

**Process Code: F07**

- Output: 240 tons/24 hours, corn.
- Flakes thickness: 1.2-2.0mm (adjustable).
- Weight: 16.7 tons
- Feeding unit:
  - Steam exhaust device, German EMKA high temperature resistant sealing strip.
  - Balanced feeder, mixing device, stainless steel bearing.
  - SS304 stainless steel feeding roller.
  - Reducer: SEW reducer, 1.1kw\*1.
- Flakes unit:
  - Hydraulic tightening roller adopts square bearing base and is equipped with wear-resistant sliders.
  - The parts in contact with materials are SS304 stainless steel.
  - Roll: CFHI high-nickel-chromium-molybdenum alloy roll blank, alloy layer thickness 30-40mm.Grosper exclusive wire drawing process.45# forged roll shaft head.
  - Bearing: Grosper high temperature resistant bearing.Detachable technology.
  - On-line adjustment of the thickness of the flakes, no need to stop the roller.The fine-tuning adjustment technology of the slider gap.
  - Anti-leakage device for shoulder baffle.
- Basic unit:
  - 45# steel welded base. After a high temperature annealing process, the structure is stable.
  - The scraper technology can be disassembled and adjusted to remove sticky materials from the roll.
  - Fully enclosed structure with cooling nets on both sides.
  - Hydraulic system: PLC automatic hydraulic pump station, 2.2kw, high-pressure oil pipe.
  - Motor: Domestic motor, 110kw\*1.



**Grosper**



**Eqpt. Name: Flaked Corn**

**Eqpt. Type: Core Equipment**

**Process Code: F07**



### **CFHI roller**

The roll technology of CFHI originated from the German Walzen-Irle roll company. Grosper has cooperated with CFHI for 25 years, and the FC series flaker can process up to 65,000 tons per time. The result is very high performance and operational reliability. The thickness of the alloy layer is above 35mm.



### **Fully enclosed system**

Inheriting Grosper's 26-year flaking technology, and investing resources in the flaking production line for self-optimization and upgrading every year, now the FC series flakers can achieve zero steam overflow.

Depending on the plant, it needs good routine maintenance.



### **Fully automatic PLC hydraulic control system**

Easy to operate, can realize automatic control, feeding frequency conversion speed regulation.



### **Online regulation**

The thickness of the flakes can be adjusted in production state. The slider gap fine-tuning adjustment technology.

**Eqpt. Name: Manual Electric Gate**  
**Eqpt. Type: Grouped Equipment**  
**Process Code: W06**

- The material is 201 stainless steel.
- Adopts Guomao brand reducer.
- Water and material separation design.



**Eqpt. Name: Off-wind Feeder**  
**Eqpt. Type: Core Equipment**  
**Process Code: F09**

- Carbon steel material.
- Adopts Guomao reducer.



**Eqpt. Name: Heat Exchanger**  
**Eqpt. Type: Grouped Equipment**  
**Process Code: F15**

- Made of seamless steel pipe.
- Aluminum fins.



**Eqpt. Name: Cyclone**

**Eqpt. Type: Cleaning Equipment**

**Process Code: C06**

- Carbon steel.



**Eqpt. Name: Distributor**

**Eqpt. Type: Conveying Equipment**

**Process Code: W03**

- The contact material is made of 201 stainless steel.
- Guomao reducer.



**Eqpt. Name: Hot Water Tank**

**Eqpt. Type: Grouped Equipment**

**Process Code: W01**

- The water tank is made of 3mm-304 stainless steel.
- Outfit: the solenoid valve, copper ball valve, pipeline hot water pump.



**Eqpt. Name: Drying And Cooling Box**

**Eqpt. Type: Core Equipment**

**Process Code: F10**

- Head and tail box: Made of 8mm carbon steel.
- Cabinet: 2.5mm aluminum-zinc-clad plate made by laser numerical control.
- Bottom row ventilation panel: 2mm, 201 stainless steel one-time stamping. Dry evenly without leakage.
- Equipped with observation window, maintenance material door and hand hole.
- Chain: 304 stainless steel.
- Square tube: Galvanized steel tube material.
- Material level switch: Jiuling brand.
- Temperature sensor: PT100
- Reducer: Guomao hardened gear reducer.0.75kw\*1
- Equipped with uniform turning system.0.75kw\*2



**Eqpt. Name: Automatic Control System**

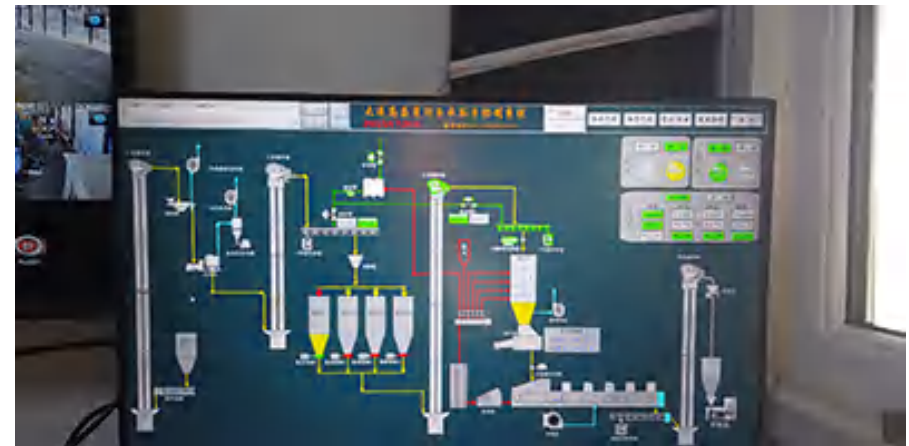
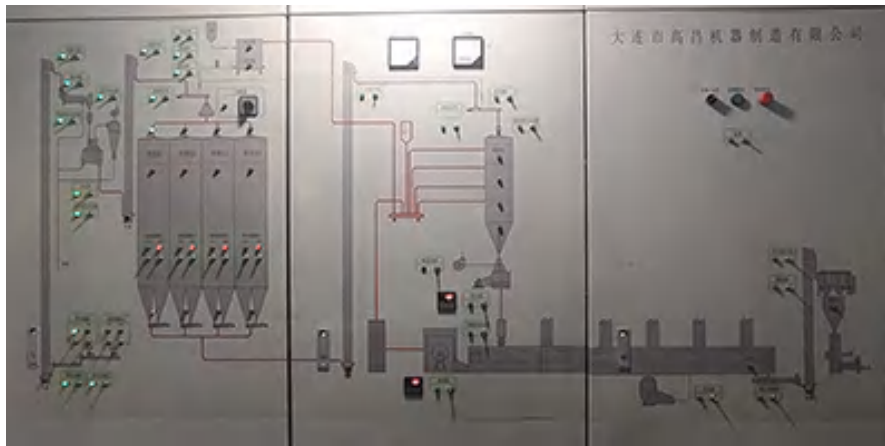
**Eqpt. Type: Automatic Control System**

**Process Code: G01**

**SIEMENS**

Siemens IT Solutions and Services

- Operating system: The automatic remote control system of the steam flaked corn production line jointly developed by Grosper and Siemens. The main page displays the process flow, can display the operation status of each motor, display the material level and the temperature of key equipment.
- Equipped with three control cabinets and a schematic diagram of the process flow.
- The control cabinet is equipped with a local manual control system, which can be exchanged and controlled with the automatic remote control system (computer in the central control room), and can control the start and stop of each motor on the control cabinet to ensure the normal operation of the equipment.
- Electrical configuration: The main component PLC control module adopts Siemens brand. The electrical components are all Chint brand.
- The 55kw fan motor is started by frequency conversion.
- Flaker motor 110kw adopts soft start.



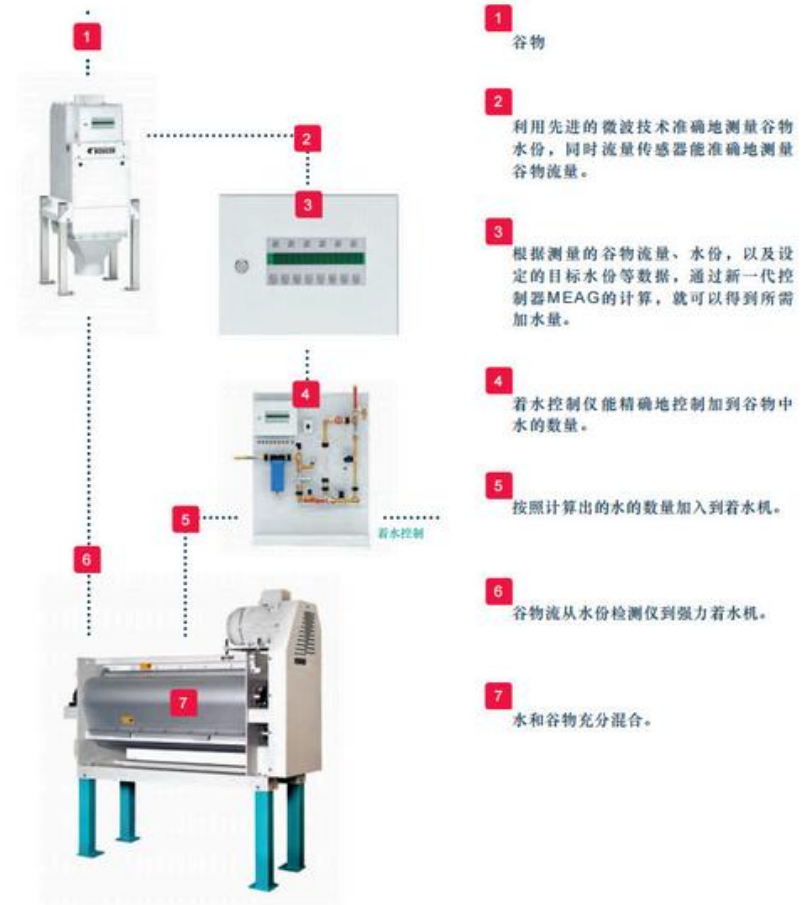
**Grosper**

## Eqpt. Name: Moisture Control System(Optional)

### Eqpt. Type: Grouped Equipment

### Process Code: W02

- Raw grain enters the controller. Use advanced microwave technology to accurately measure the moisture content of corn, and the flow sensor can accurately measure the flow of corn.
- According to the measured grain flow, moisture, and the set target moisture and other data, through the calculation of the new generation controller MEAG, the required amount of water can be obtained.
- The water impingement controller can accurately control the amount of water added to the corn. According to the calculated amount of water, it is counted into the water dispenser.
- The corn flows from the moisture detector to the strong water machine, so that the water and corn are fully mixed.



**Eqpt. Name: Fan Equipment**

**Eqpt. Type: Grouped Equipment**

**Process Code: C07,F08,F13,F14**

- Adopt domestic famous brand motor.
- With adjustable damper, equipped with high temperature resistant waterproof soft connection.



**Hot air fan**



**Cold air fan**



**Dust fan**



**Moisture absorption fan**

**Eqpt. Name: Single Cylinder Cleaning Screen**

**Eqpt. Type: Grouped Equipment**

**Process Code: P04**

- Cleans lumps from corn flakes to prevent mildew.



**Eqpt. Name: Packing Scale**

**Eqpt. Type: Grouped Equipment**

**Process Code: P03**

- Working range: 40-50kg, precision 0.2 grade, packing capacity 10 tons/h, feeding power 2.2kw (double reducer), air source 0.4-0.6Mpa, air consumption 0.3nm<sup>3</sup>/min.
- Sewing bag system: It can be adjusted up and down through the handle, sewing method: seam, sewing machine thread: strong vinylon, automatic thread cutting machine head.
- The operating system adopts: 7-inch Chinese and English touch screen





**Eqpt. Name: Platform + Chute**

**Eqpt. Type: Installation Materials**

**Process Code: G04**

- The installation materials are mainly used for hoist maintenance platform, equipment connection pipes, wind net, etc.
- Adopt double-layer hoop-lined wear-resistant chute to convey materials .The slide pipe for conveying material is made of 2.5mm carbon steel lined with 2.0mm wear-resistant manganese steel plate, and the part for conveying impurities is made of 2.5mm carbon steel. Clamp connection is adopted.
- The grain passing through any chute or slope can flow by gravity, the minimum slope angle for dry grain is 40°, the minimum slope angle for impurities is 55°, and the support structure of the chute is stable.
- After using for a certain period of time, it can be fixed again through the rotation direction of the clamp, and the slide tube is durable and wear-resistant, and can be used many times.



**Service Name: Engineering Installation Service**

**Eqpt. Type: Installation Service**

**Process Code: G01**

- Standardized installation team installed more than 50 corn flaking production lines.
- The installation team with the most experience in steam corn flakes production line installation in China.
- Grosper's own construction standards and installation specifications.
- All personnel entering the venue are insured with personal insurance of more than RMB 1 million.



## Cables And Trays: Cable National Standard, Galvanized Bridge.

Eqpt. Type: Supporting Materials

Process Code: G03

- Use galvanized plate bridge .Color separation of power line and control line.
- Use national standard copper core cable.

