

# Meat Slicer

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绞肉机  
JR-160

OPERATION

MANUAL

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## 1. Overview of Equipment

Meat slicer is one of the essential device in the meat processing industry. This device is a dedicated of chunk frozen meat grinder. Screw rotate then drive reamer and the orifice plate to do the opposite movement, the raw meat be cutted into particle shape to ensure the uniformity of the minced meat.

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The main equipment which contact with food made of stainless steel, beautiful appearance, reasonable structure, reliable performance, smooth operation, easy to operate, clean, low noise. Applicable to all kinds of meat cutting, is necessary meat processing equipment.

In order to use the equipment properly, pls familiar with this manual before using.

### 1.1 Equipment Use

The equipment make the raw meat to be particle shape to ensure the uniformity of the minced meat.

This equipment can process large pieces of frozen meat (- 18 °C).Users can be equipped with different specifications orifice plate according to their technical requirement to work out the ideal minced meat, in order to satisfy different meat products processing.

### 1.2 Working Principle

Screw rod shaft rotate then drive reamer and the orifice plate to do the opposite

movement, the raw meat in hopper box be pushed forwarder, raw meat be cutted into particle shape minced meat

### 1.3 Main Technical Parameters

Name Model	JR-100	JR-120	JR-130	JR-160	JR-200	JR-250
Overall size(mm)	860×580×900	960×800×1080	1150×960×1200	1320×900×1430	1650×1000×1550	1680×1000×1570
Power	4KW	7.5KW	11KW	22KW	37KW	45KW
Frequency	50HZ	50HZ	50HZ	50	50	50
Voltage	380V	380V	380V	380	380	380
Screw rotary speed	235r/min	235r/min	220r/min	200r/min	170r/min	150r/min
Meat temperature	-5~ -13	-5~ -13	-5~ -13	-5~ -13	-5~ -13	-5~ -13
capacity	0.5T/h	1T/h	1.5-2T/h	2-3T/h	3-4T/h	4-5T/h
Weight	190Kg	258Kg	480Kg	740Kg	920Kg	1200Kg
Outer casing	1.2mm	1.5mm	1.5mm	2mm	3mm	3mm
Feed trough	3mm	3mm	3mm	3mm	4mm	5mm
Frame	40*30*3mm	40*30*3mm	60*40*3mm	80*40*3mm	80*40*4mm	100*50*5mm
Hole plate diameter	100mm	120mm	130mm	160mm	200mm	250mm
Orifice plate pore diameter	5.6.8.10	5.6.8.10	5.6.8.10.13	8.10.13.16.20	8.10.13.16.20	13.16.20.25.30
Screw diameter	84mm	95mm	102mm	125mm	155mm	180mm
Feeding size	≤30mm	≤40mm	≤50mm	≤70mm	≤90mm	≤120mm

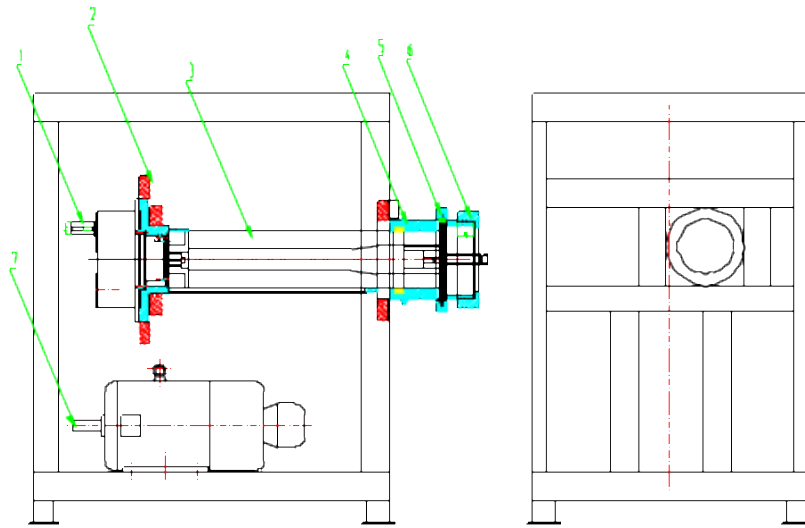
Note:

1. This equipment service life is ten years
2. The user can customized orifice plate size according to need.

## 2. Structure of Equipment

2.1 This equipment is mainly composed by control system, frame, driving system,

outer casing and screw assembly, etc.



No.	Name	Quantity
1	Reducer	1 set
2	Rear fixed flange	1 set
3	Screw shaft	1 set
4	Non-return shaft sleeve	1 set
5	Join clamp	1 set
6	Compression nut	1 set
7	Motor	1 set

## 2.2 Brief Introduction of Structure

### 2.2.1 Drive System

Mainly include motor, reducer, pulley and V-belt, etc. Power transmission from the motor output power, through the driving wheel, v-belt via driven wheel then transmit power to reducer, then from reducer to screw, screw drive the reamer turns, there is relative movement between reamer and orifice plate, complete to cutting working of

raw meat.

5	Motor pulley	1 set	JR300-02-02-00
4	Motor	1 set	Y25-4-55-B3
3	Driving belt	5 pcs	SPB1850
2	Reducer pulley	1 set	JR300-02-03-00
1	Gear reducer	1 set	Speed rate 1:25
No.	Name	Qty	Remark
Transmission system schematic diagram (figure 2) parts list			

### 2.2.2 Rack construction

Mainly by machine body, reinforcing rib plate, hopper box, pedal, screw shaft dismounting hanger, anchor, etc. Frame is the main body framework of this equipment, all parts of this equipment are supported and fixed by it

8	Pedal	1 set
7	Dismounting hanger	1 set
6	Anchor	4 sets
5	Wrapper sheet	1 set
4	Rear axle housing	1 set
3	Hopper	1 set
2	Frame body	1 set
1	Screw jacket	1 set
No.	Name	Qty

Frame structure parts list (figure 3)

**2.2.3 Mince system**

Mince system is made up of screw shaft, orifice plate fixing sleeve assembly, clamping device, bearing block assembly, reamer, pre-cut plate, orifice plate, gland nut, etc.

The system is through the rotation of screw shaft, send raw meat from the hopper box to the middle of reamer and orifice plate, at the same time drive the reamer and orifice plate, make them to produce relative movement, then cutting raw meat, and push minced meat to discharging mouth, finish the cutting working of raw meat.

Warning:

- 1, the clamping device must lock, otherwise will cause equipment damage.
- 2, such as frozen fish mud, pork skin and tendon material, should choose  $> \varnothing 20\text{mm}$  orifice plate, fish mud, pork skin and tendon temperature not less than  $-13\text{ }^{\circ}\text{C}$  temperature.
- 3, after locking the gland nut must turn around  $1/6$  circle.

8	Screw shaft	1 set
7	Pre-cut plate	1 pcs
6	Locking chain device assembly	1 set

5	Reamer	1 pcs
4	Orifice plate	1 set
3	Screw jacket assembly	1 set
2	Lock nut component	1 set
1	Bearing block assembly	1
No.	Name	Qty
Mince system schematic diagram (figure 4) parts list		

### 2.2.4 Electrical Control System

Mainly by the control cabinet box, electrical components, operation panel, etc. The operator through the button switch to carry out start, run, stop, sudden stop and other functions.

## 3. Installation and commissioning

### 3.1 Site Preparation

Restriction on the installation site at an altitude of <2000m, there must be enough space for operation, maintenance and transport. The ground should smooth, strong, anti-skidding. Frame to ensure that the level condition Installation position size as shown (figure 6)

Installation site requirements: clean, dustproof, gas defense, ventilation. No inflammable, explosive, corrosive gas, liquid and solid matter and strong



electromagnetic interference exists. Must by power grid, power frequency and voltage change value in  $380\text{V} \pm 10\%$ ,  $50\text{Hz} \pm 1\%$ . The field room temperature control between  $-5\text{ }^{\circ}\text{C} \sim 20\text{ }^{\circ}\text{C}$ .

Note: according to the requirements of users, provides the special configuration of the voltage and frequency.

**Safety tip:**

**prohibit to install equipment on uneven or soft ground, otherwise easily lead to equipment movement or incline!!**

**Safety tips:**

**In the equipment installation dimension space, the ground has antislip requirement. To prevent the operator to get hurt!!**

**Safety tips:**

**the field which equipment be used may not have inflammable, explosive, corrosive gas, liquid and solid matter and strong electromagnetic interference exists, prevent worker injuries, equipment damage and food unsanitary accident!!**

### **3.2 Equipment Carry, Transportation and Storage**

3.2.1 Lifting it for moves, the cable should be close to machine frame leg root, cable length uniformity.

3.2.2 If use forklift to carry, fork plate should be near the frame and support leg root respectively. When fork should slow rising steadily, when move equipment shall be

maintained steady, touch down gently.(figure 7)

**Safety tips:**

**A: it is forbidden to hang the cable on screw shaft for hoisting, otherwise will damage equipment damage or personal accident!!!!**

**B: when handling equipment must maintain the level condition of equipment, it is strictly prohibited equipment tilt, or will have an accident!!**

3.2.3 Long-distance transportation, be sure to use steel wire to fastening packaging and equipment, to prevent dumping and vibration causes the damage of equipment.

Shall not directly put other heavy equipment on the surface, prevent surface damage and unsteady center of gravity caused by equipment dumping. During transportation storage temperature limits between - 25 °C ~ 55%, when close to 70 °C for 24 hours storage at most.

### **3.3 Equipment Installation**

After Installation site is determined, please install refer to installation fixed figure (figure 6).When installation can adjust the movable anchor bolt to make equipment level (allow discharging mouth end inclined downward 1 °, so as to drainage when cleaning).Four anchors of device must be fully contact with the ground.

### **3.4 Electrical Installation**

By the professional electrical engineer to installation and debugging equipment, and study operation manual expertly.

#### **3.4.1 Power Connection**

Use bracket or wire pipe to connect and laying, power supply adopts three phase four wire system, connecting cable sectional area specifications BV -  $3 \times 25 + 1 \times 16$  mm<sup>2</sup> (see electrical diagram).

**Safety tip: equipment metal shell to connect reliable grounding line, to ensure the personal safety!!!!**

#### 3.4.2 Electric Protection

Control cabinet protection grade reaches IP65. Push button switch with waterproof hood, protection grade for IP67. Power distribution cabinet door is equipped with electric interlock function. When open cabinet door power disconnected, when turned off can be connected to the power supply, cabinet door cannot be opened.

3.4.3 With screw discharging safety cover switch.(note: export products equipped with safety cover.)

3.4.4 Cabinet door has a safety switch.

### 3.5 Equipment Commissioning

3.5.1 After the whole installation of equipment, all the mechanical parts lubrication point should be oiling (figure 9).

3.5.2 Check all screws of equipment whether are tightened. tension motor and reducer v-belt. Users should be to do comprehensive inspection according to requirement of the operation manual, When everything looks good do electricity debugging.

3.5.3 Put through power supply, turn the “power switch "to”on "position, power on, the power indicator light, prepare for debugging.

3.5.4 Inching "forward" minced meat switch, observe whether meat slicer motor direction of rotation is consistent with rotation direction of the arrow, if rotating in opposite directions, should disconnect the power supply, transpose power supply sequence, make rotating in the right direction.

3.5.5 Forward startup delay setting: press the button "forward", motor forward slow rotation .Set the time- delay relay KT1, time delay between 4 s ~ 6 s, motor from forward slowly turning into forward quickly. Press the "stop" button, the motor stops running, set time-delay stopping relay KT2, time delay between 3 s ~ 5 s.(electricity delayed)

3.5.6 Reverse inching delay setting: inching “Reverse” start button, motor reverse rotation. Inching “Reverse” button restoration, motor stop rotation. Set the time-delay relay KT3, time delay between 3 s ~ 5 s

3.5.7 Sudden stop switch debug: start the "forward" or "reverse" switch, motor rotation, press the "sudden stop" switch, motor stop running. (power outages delay)

3.5.8 Safety switch debug: press the "forward" button, motor running, test discharge safety cover, box cover safety hood, electric control cabinet door, cabinet rear door open, machine should be power failure and stop running.

**Safety tips:**

**In the debug equipment room, it is forbidden to install screw system debug!!**

## 4. Operating Instructions

### 4.1 Operational Requirement

Operators should read manual, should do correct operation and maintenance equipment.

### 4.2 Preparation of Operation

Use of meat slicer for the first time must be do thoroughly cleaned, especially the box inside, screw system, use detergent or hot water to clean, and then rinse off with clear water. When per shift use the equipment should do cleaning and maintenance, guarantee the equipment clean.

**Tip: if cutting frozen fish mud, pork skin and tendon material, should choose  $> \varnothing$  20mm orifice plate, frozen fish mud, pork skin and tendon temperature is not less than  $-13^{\circ}\text{C}$ .**

### 4.3 Dismantling Instructions of Minced Meat System

4.3.1 In order to dismounting screw jacket, screw shaft safely, the machine with the mounting frame.

See the assembly sequence (figure 8).

Will wring screw shaft (4) into the material box of machine frame (1), install pre-cutting orifice plate (5) into the orifice plate fixing sleeve (6) then on the spiral drum (2), lock the chucking device (3), then install reamer (7), orifice plate (8), front axle sleeve (9), supporting seat (10) into the orifice plate fixing sleeve (6), then lock compression nut (11) with the hand slightly (Excessive locking will affect the service life of the reamer, orifice plate). Disassembly process of parts is contrary to the assembly process.

13		Hook spanner (320-370)	1 set
12	JR300-06-00	Lifting device assembly	1 set
11	JR300-03-03	Compression nut	1 set
10	JR300-03-01-00	Supporting seat	1 set
9	JR300-03-02	Front axle sleeve (	1 set
8	JR300-03-06	Orifice plate	1 set
7	JR300-03-06	Reamer	1 set
6	JR300-03-04-00	Orifice plate fixing sleeve	1 set
5	JR300-03-07	Pre-cutting orifice plate	1 set
4	JR300-03-09-00	Screw shaft	1 set
3	JR300-03-08-00	Tension chain device	1 set
2	JR300-01-06-02-08-00	Spiral drum	1 set
1	JR300-01-00	Machine frame	1 set
No.	Drawing code	Name	Qty

Disassembling schematic diagram of minced meat system (figure 8) parts list

4.3.2 Setting the "power" switch to "open" position, the power supply switch on.

4.3.3 No-load and load test run

All adjustment be finished, no-load and load commissioning should to be done

No-load test run:

Lock locking nut (11) slightly, press “reverse” minced meat button, run about 3 s to stop, waiting delay about 5 s, press the “reverse” button, run about 3 s to stop.

**Note: prohibit run idle for a long time; prohibit press counter-rotating button when screw rotate, otherwise will damage the orifice plate, reamer and reducer!!**

Load test run:

Put a small amount raw meat about 25 kg at the entrance of the hopper box, press "forward start" button, when the meat is turning to the outer side orifice plate, press the "stop" button to stop, waiting delay about 5 s, inching "reverse" button, make screw shaft inversion for 5 turns, press the "stop" button to stop. Then tighten the compression nut (11), make reamer and the orifice plate to achieve the best clearance. Then put the raw meat into hopper box, press "forward start" button again, begin to normal mince work.

Before stop the mince work, should take about 10 kg meat had been minced into hopper box for mincing again, this makes all raw meat out of the machine.

When blocking phenomenon appeared in the process of mincing, should press the

"stop" button to stop about 5 s, then press "reverse" button, the material to be exit.

#### 4.3.4 Stop

Press "stop" button or press "sudden stop" button, could stop.

Note:

A; Each time to assemble screw system should add edible oil outside the shaft sleeve

(9)

B:Frozen meat temperature should in the range of  $\leq 18^{\circ}$ , avoid damage equipment.

C: it is strictly prohibited to mix bone or other debris into the material, avoid damage equipment.

D: if cutting frozen fish mud, pork skin and tendon materials, should choose  $> \varnothing$

20mm orifice plate, frozen fish mud, pork skin and tendon temperature is not less than  $-13^{\circ}\text{C}$ .

#### 4.4 Alarm Indication

4.4.1 During the running of the machine, it is forbidden to put arm into the hopper box, avoid personal accident!!

4.4.2 During the running of the machine, it is forbidden to put arm into the screw jacket safety enclosure, avoid personal accident!!

4.4.3 During the running of the machine, it is forbidden to open the hopper box cover safety cover, avoid personal accident!!

4.4.4 It is strictly prohibited to no-load running meat slicer for a long time, avoid



damage to equipment!

4.4.5 Clamping device must be locked, otherwise will cause equipment damage.

4.4.6 Should always check the locking device (3), prevent fall off damage to equipment!!

4.4.7 Materials such as frozen fish, should choose  $> \varnothing 12\text{mm}$  orifice plate.

4.4.8 After compression nut be locked must turn around 1/6 circle.

4.4.9 If have abnormal sound during equipment operation process, it is necessary to stop the machine immediately to check!!

4.4.10 Tread on or off the pedal should prevent missed step or slip, avoid personal accident!!

4.4.11 When cleaning equipment should cut off power supply first!!

## 5. Repair and Maintenance

Maintenance operators should wear the protective gloves when repair, maintenance, cleaning, and to cut off the power supply.

### 5.1 Cleaning operation

Cut off the equipment power supply, wear working gloves, open the safety cover, remove the surplus material in the discharging mouth. Per shift should clean the equipment after work, to guarantee the equipment cleaning and hygiene.

#### 5.1.1 Screw system cleaning

Remove all parts of screw system to do cleaning, make a good job of cleaning.

Disassembling method as shown in figure 8.

### 5.1.2 Screw system parts oiling

Clean the reamer, orifice plate, pre-cutting plate, front shaft sleeve, screw shaft, wipe the limescale, and then oiling on the parts surface, prevent parts to rusting.

### 5.2 Orifice plate, reamer grinding

Orifice plate, pre-cutting orifice plate, reamer were used for a certain period of time should be grinding on a regular basis.

Grinding methods: should grinding orifice plate, pre-cutting orifice plate, reamer on grinding machine, the parallel difference should guarantee within 0.04 mm after grinding. Otherwise will affect the particle effects of meat.

### 5.3 Driving belt tension adjustment

Over a period of operation equipment shall check and adjust the tensioning situation of driving belt, if discover skid phenomenon of the driving belt, should timely adjust the belt tension and ensure the normal operation of the equipment. Check the adjustment tension method see below (figure 9)

#### Safety tip:

**It is strictly prohibited to inspect and adjust tension of the driving belt when equipment operation, or else accidents will happen!!**

5	Tighten lower nut	2 sets
4	Tighten upper nut	2 sets

3	Spannspindel	2 sets
2	Motor	1 set
1	Driving belt	5 pcs
No.	Name	Qty
Driving belt tension adjustment parts list (figure 9)		

## 5.4 Dismounting of the tension type belt pulley

### 5.4.1 Disassembly

- a: Exit 1.4 bolt.
- b: With wood bar or copper bar knock lightly upon A surface of parts 5, symmetric alternating knock until parts 2.5 to separate.
- c: Removed tension type belt pulley from parts 3 shaft.

### 5.4.2 Assembly

- a: Wipe 2, 5 combined surface to clean, put the parts of 2, 5 together.
- b: Add a little lubricating oil in parts 1, 4, threaded hole place, put parts 1, 4 easily.
- c: Install key, tension type belt pulley on the shaft and confirm axial position of tension type belt pulley, screwing in parts 1, 4 bolts, alternating screw up bolt, and then use wood bar or copper bar to knock B surface of parts 5 lightly, on the symmetric alternating screwing in parts 1,4 bolts, alternating screw up bolt, repeatedly done until parts 5 cover parts 2 firmly.
- d: Loading drive operation after a period of time, shutdown inspection screw tighten

degree. tension type belt pulley installation instructions to see (figure 10)

5	Belt pulley	1 set
4	Inner hexagon screw	1 set
3	Shaft	1 set
2	Tension pulley	1 set
1	Inner hexagon screw	2 sets
No.	Name	Qty
Tension type belt pulley disassembly diagram (10)		

16		Hexagon bolt m16×70	4
15		Hexagon nut m16	4
14		Reducer	1
13	JR300-02-04	Reducer connecting sleeve	1
12		Hexagon bolt m16×190	24
11		Hexagon nut m16	24
10		Skeleton type sealing ring b120×150×12	1
9		Thrust self-aligning roller bearing 29324	1
8	JR300-02-07	Drive shaft	1
7	JR300-02-06	Closing ring	1
6		Cylindrical roller bearing	1
5	JR300-02-08	Nylon closing ring	1
4		Skeleton type sealing ring b120×150×12	1

3		O type sealing ring200×5.3	1
2	JR300-02-09	Bearing cover	1
1		Sunk screw M16×10	3
No.	Drawing code	Name	Qty
Drive system decomposition diagram parts list (figure 11)			

## 5.5 Dismantling instructions of driving system (figure 11)

### 5.5.1 Disassembly of driving shaft and bearing

Take out part 1 screw, remove part 2 bearing gland, take out part 5 nylon closing ring, take out part 8 drive shaft, then can take out the bearing closing ring 6, 9.

### 5.5.2 Disassembly of reducer

Take our driving belt, put support frame with suitable high into the bottom of reducer, take out part 11 and part 15 nuts, after take out the part 16 bolt, reducer can be take out.

## 5.6 Electrical equipment maintenance

A: Electrical components, each terminal point should be checked once a month.

B: Each earth point should be checked once a month.

C: Clean electrical control cabinet once a week, keep clean, dry of the electrical control cabinet.

**Safety tips: repair and maintenance the electrical equipment, must cut off the total power of equipment, prevent to get an electric shock accident!!**

**5.7 Lubrication**

- 5.7.1 Before per shift work and finish should paint cooking oil in orifice plate, reamer, pre-cutting orifice plate, front shaft sleeve, bearing block inner hole, screw front shaft
- 5.7.2 Per shift should check the oil level windows before starting work, observe whether lack of oil, oil level should be in the middle position of the window. Every six months to replace lubricating oil at a time. Note: first time to use or reuse after long downtime, should replace new lubricating oil after a week running.
- 5.7.3 Motor bearing lubricating oil should be replaced every half year.

Lubrication is shown in figure (figure 12)

4	Connecting bearing	Potassium base lubricating oil	One year
3	Mincing system	Cooking oil	Per shift
2	Motor bearing	Potassium base lubricating oil	One year
1	Reducer	l-ckc Medium Load industrial gear oil	One year
No.	Lubrication locations	Lubricating oil	Period

**5.8 Warning**

- 5.8.1 It is strictly prohibited to do maintenance or repair in the equipment operation, avoid personal and equipment accident!!
- 5.8.2 When making equipment maintenance or repair, must first cut off the device total power supply then make operation, prevent accidents!!

5.8.3 When equipment operation, it is strictly prohibited to put the hands or other hard objects into the hopper box or insert in the discharging mouth; the hands, other parts of the body or other hard objects mustn't near or between the driving belt and belt pulley, orelse will cause personal and equipment accident!!

### 6. Fault and Analysis

Fault	Analysis
Meat slicer don't work	Power phase shortage Null line or parts short circuit Automatic switch failure Safety interlock switch failure Motor or reducer breakdown
Abnormal sound	Reducer oil shortage or reducer malfunction overload operation Front shaft sleeve grinding, replace the sleeve Foundation bolts loose
Reamer effect is poor	Adjust the clearance between the orifice plate and reamer Reamer and the orifice plate should be grinding

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