



Configuration

BUYER:	SELLER: Nanjing Kairong Machinery Tech Co., Ltd
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Fax:	
Mobile:	
E-mail:	
Legal representative:	
Contact Person:	
Bank information	Bank Information:

Dear Sirs,

We refer to your requirement, and thank you for the confidence in our equipment and service. Now we quote you:
One(1)co-rotating TSE-20 twin screw extruder L/D=44

Reference Application	biopolyester blends and compounds
Output	1-10kg/h, according to the raw material, formula and processing condition, etc.
Extruding&Pelletizing Flow&Scheme	Pre-mixing>>>Feeding>>>Twin screw extruder>>>>Water Strand pelletizing line



Our Advantage:

- More than 20 years of rich experience in twin screw extrusion, ranging from process development, application, to manufacturing technologies.
- Extensive experience in manufacturing key parts used in twin screw extruders.
- CNC centered manufacturing platform for high accuracy parts
- Partnering with the largest metal forging base in Nanjing to assure quality and efficiency.
- Located in world largest center for twin screw products with easy access and quality supply chains.
- Our independent and innovative talents to work closely with you on most challenging processing needs.

Our company has established a complete quality assurance system. We have certificate of CE, ISO9001, SGS, TUV.

On the following pages, you can find a list of the TSE twin screw extruder can accomplish to meet your specific needs.

- Appendix I:Quotation
- Appendix II:Configuration

Appendix I: Quotation

1.Commercial Condition

1.1 Scope of supply and pricelist

Quantity	Designation	Price (USD)
1	Plastic mixer 50L	



1.0 FEEDING SYSTEM		
2	Twin screw volumetric feeder	
2.0 TSE20 (L/D=44) Co-rotating Twin Screw Extruder, AC5.5KW, 600RPM, 380V, 50HZ		
1	AC Motor, P=5.5 kw for max.600rpm screw speed.Speed regulated by ABB inverter.	
1	Clutch	
1	Reduction and distribution gear	
1	Processing section L/D=44	
1	Soft water cooling system	
1	Vacuum system	
1	Die head	
3.0 WATER STRAND PELLETIZING LINE		
1	Water trough	
1	Air knife	
1	Pelletizer	
4.0 Spare Parts		Free
5.0 Documentation (English version)		Free
TOTAL PRICE (FOB NANJING)		

1.2 Price base

Price are for delivery FOB NANJING,CHINA according to Incoterms 2010.

1.3 Validity of the quotation

The quotation is valid for 1 months after generation.

1.4 Delivery period within 40 working days

after contract takes effect.

1.5 Payment terms

40% of the order value is payable by T/T as down payment within 7 days after signing the contract;

60% of the order value is payable by T/T 10 days after the notification from the Seller that the equipment is ready to dispatch.

Bank fee, commission, tax and other payments due in the connection with the payment in the respective country are to be paid by the party in that country.

In the event Buyer fails to make the payment 10 weeks later than time period stipulated above, Seller have the right to dispose the ordered equipment and the right to claim further damages is reserved.



1.6 Package

Plastic film or customized.

The whole line may need 1x20HP containers (estimated).

2.Explanations

1) Warranty:

- Since the formal acceptance of users, from the date, the warranty period is one year.
- During after-sales service, the customer should supply the fee of round tickets, room and board to engineers, and should pay 100 USD per day for the engineers within 7 days.
- After the warranty period, spare parts are provided at cost price.
- If the damage is caused because of incorrect operation of customer self, we are not responsible for this damage.
- Some spare parts such as screw component and electric heaters, are kind of consumer good. If need more, customers could purchase them from our company at cost price.

2) Delivery :

The transportation from maker's factory to board is undertook by maker. And the unload cargo is done by the customer. According to the cargo list, customer signs the cargo list. Customer should undertake the insurance and fee of sea freight from board to port of destination and the transportation to customer's factory.

After the whole line transport to the factory, lay the machines according to the layout drawing, then inform the maker for commissioning.

Customer should supply the water & electric cooperation. The maker will make a course to teach the customer to operate the machines.

3) Commissioning


Maker will send two or three commissioning engineers. The customer should supply the fee of round tickets, room and board to the engineers. Customer should pay 100 USD per day for each engineer during commissioning within 15 days.

Customer should sign the receiving report upon the acceptance of commissioning .

Appendix II: Configuration


1. Scope of supply and configuration for TSE-20Twin-Screw Extruder

No	NAME	QUANTITY	REMARK
	Plastic Mixer		

	<ul style="list-style-type: none"> ● Container capacity:50L ● Mixing capacity:20L <p>It is mainly suitable for mixing all kinds of granulated plastics and is the one of essential equipments for plastic extruder. It is simple in structure, easy in operation even in mixing.</p> <div align="center">  </div>
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1.0	Feeding System
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	1) Twin-screw volumetric feeder	2 sets	
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	<ul style="list-style-type: none"> ● The twin-screw volumetric feeder allows feed in pellet form. ● The feeding capacity can regulated by changing the screw speed. ● The co-rotating screws are largely self-cleaning. ● The feeder on barrel number 1, with AC motor drive power 1.5kw, inside with a horizontal agitator, speed control by ABB frequency converter. ● Screw material: carbon steel with chromium plated; <ul style="list-style-type: none"> ● This unit consists of: ● 1 Gear motor ● 1 distributing gearbox ● 2 carrying screw shafts <div align="center">  </div>
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2.0	TSE20 (L/D=44) Co-rotating Twin Screw Extruder, AC5.5 KW, 600RPM, 380V, 50HZ
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	1) AC Main Drive Unit
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The extruder main drive unit is a three phase AC motor. Cooling of the motor is ensured by a fan mounted on the motor shaft. **Technical data-motor**

- | | |
|-----------------------|-------------------------------|
| ● Motor maker | Siemens |
| ● Inverter | ABB inverter |
| ● Ambient temperature | ≤40°C |
| ● Installation height | ≤1000m |
| ● Power | 5.5kw |
| ● Speed | 1500rpm |
| ● Cooling method | by a fan mounted on the shaft |

2) Clutch

The clutch is used to transmit the power from the motor to the gearbox

3) Reduction and distribution gear

Gearbox:

The gearbox reduces the motor speed to the speed of the screw shafts and distributes it to the two output shafts. Screw torque is 43 N.m per shaft The gearbox consists of:

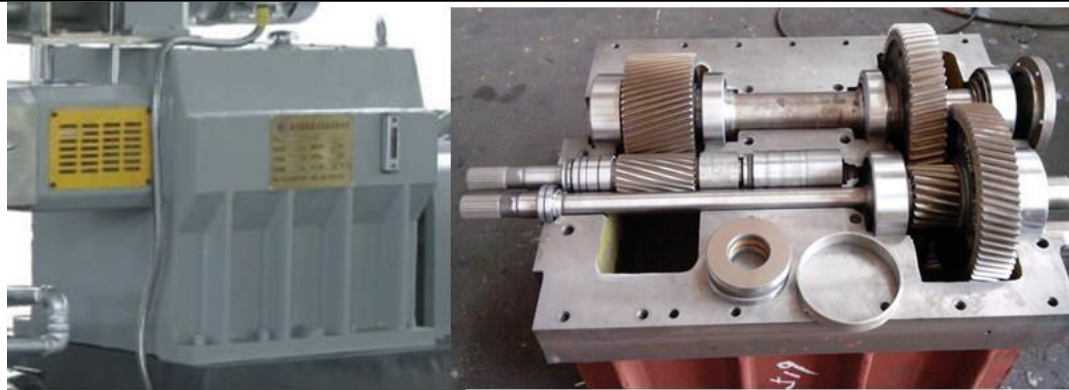
- Involute gear teeth couplings between the output shafts and screw shafts
- Integrated thrust bearing assembly, radial bearings of the output axis are NSK

products Bottom part of casing designed as oil sump Specification for gearbox:

- Material of the gear: 20CrNi2MoA
- Hardness of the gear surface: HRC58-60
- Shaft output:2*43N.m
- Bearing: NSK
- Ratio: 2.5

Lubricating System:

Lubricating system cool the oil inside the gearbox and lubricate the bearing and the gear inside the gearbox.
 Forced Lubricating system with oil pump
 Oil-filter and heating exchanger equipment
 Analog pressure meter and interlocked with the host machine
 Integrated assembled in the frame.



4) Processing section

Screw diameter: 22mm.

Screw length(L/D):44:1

Screw speed: 600rpm

Barrel number: 7

The individual barrel section are designed as:

Barrel#1-6made of bimetallic liners (45#steel+ α 101), processing heat treatment. HRC=60-62.

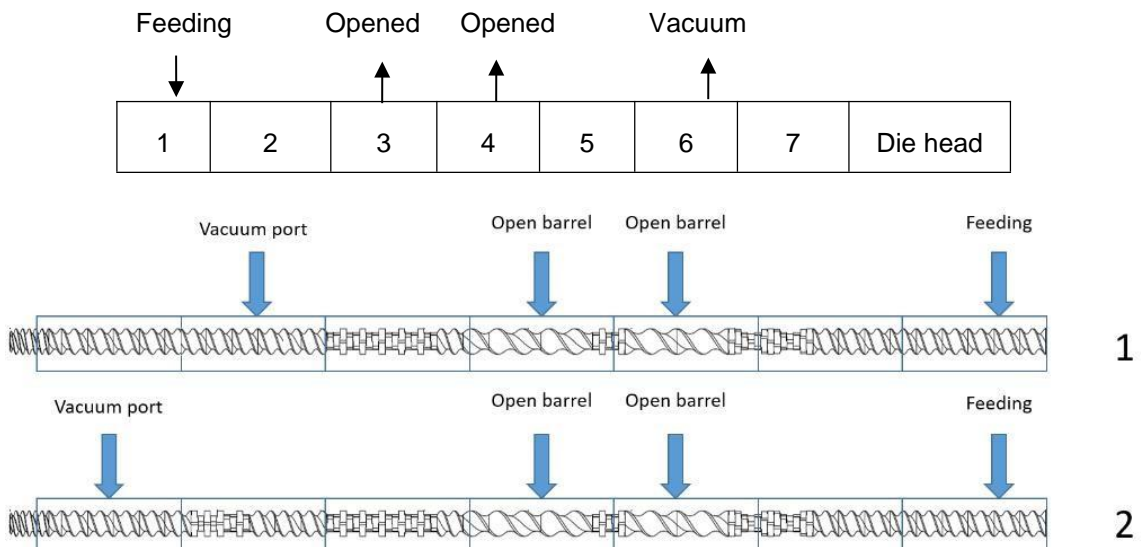
A pair of screw shafts (40CrNiMo) complete with screw elements:

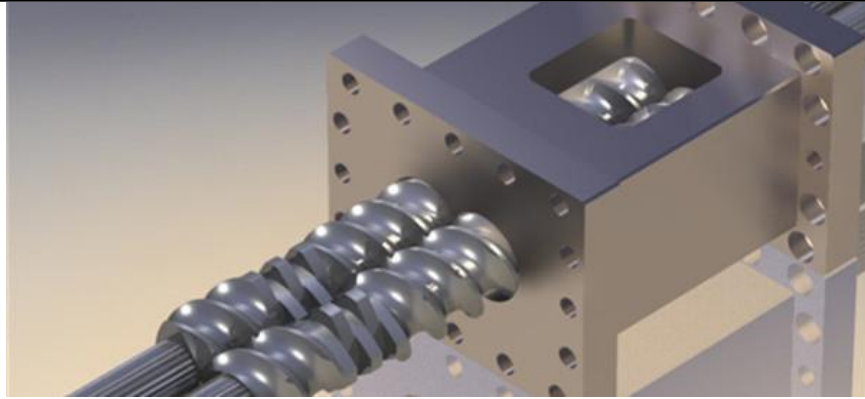
Screw elements are made of high speed tool steel 38CrMoALA,

All barrel sections heated electrically and cooled by water.

Barrel arrangement(opened barrel with lids,you can change combination as your requirements):

- 1) Barrel#1: open barrel for feeding, casting copper
- 2) Barrel#2-3:open barrel , casting aluminum
- 3) Barrel#5:closed barrel, casting aluminum
- 4) Barrel#6:open barrel for vacuum , casting aluminum
- 5) Barrel#7:closed barrel, casting aluminum





5) Soft water cools the barrels with condenser

Material of input and output pipes is stainless steel
 Solenoid valve: imported **Danfoss** products
 Manual valve: stainless steel
 The water pump motor in the soft water system is 0.5kw.
 The soft water is distilled water.



6) Vacuum System

Vacuum pump motor is 0.75KW,
 The flexible vacuum unit is used for the removal of volatile matter from the product.
 Including vacuum pump, vacuum tank, valves and gauges and pipes etc.



8) Die Head

The die head is for direct connection to the screen changer.
 Design:

- Casting copper heater
- Material: nitrided steel
- 1 measuring point for housing temperature incl.one sensor
- 1 measuring point, direct installation, for melt temperature incl.one sensor.



9) Electric control system(PLC:Siemens)



Essential components as per machine specification:


- Max. Ambient temperature: 40°C
- Measuring circuits with digital display for
 - Motor speed
 - Motor current
 - Melt temperature
 - Melt pressure
 - Die head temperature
 - 5 zone temperature control
- Temperature controller adopts RKC
- Main relays and switches are SIEMENS or Schneider brand
- Each motor run/stop is controlled by light button
- The electrical control system consists of: temperature control system, drive system, and interlocking control system
- The control cabinet is with large space for aeration, abstraction of heats and maintenance; forcing aeration equipment, filter in the inlet air; the light in the cabinet will be turned on when the door is opened, easy for maintenance at night.
- Power supply: 380V \pm 5%, 3 phase/N/PE 50Hz ● Interlock protection for the extruder
 - Main machine is interlocked with the oil pump of the gearbox for the protection; the main machine can't start before the start of the oil pump;
 - The main machine is interlocked with the blower of the main motor; the main machine can't start before the start of the blower;
 - The main machine is interlocked with the volumetric feeder, the volumetric feeder can't start before the start of the main machine;

- Protection of over current, phasing, voltage insufficient;
- Automatic stop when melt pressure over the set value;

Essential built-in components in the cabinet door;

- Pushbuttons, illuminated keys, switches
 - Emergency
 - Alarm reset
 - Main motor run/stop
 - Oil pump run/stop
 - Water pump run/stop
 - Vacuum pump run/stop ● Signal lamps
 - Oil pump
 - Water pump
 - Vacuum pump
 - Over current
 - Over pressure
- Digital indicators and controllers
 - N zone temperature control
 - Die head temperature control
 - Main motor current
 - Twin screw speed
 - Melt temperature
 - Melt pressure
- 1 handle for main circuit breaker

3.0 Water cooling strand pelletizing line

1) Water trough	1set	
Length:2m; width:500mm With 2 sets of stainless steel carry over pinch rolls(pull roll),with stainless steel bearing inside;		
		
2) Air knife	1set	
Power: 0.55kw; good effect of dry blowing		
3) Pelletizer	1set	

2. Exclusions

The following are not included in the scope of our supply

- The preparation of the site with all the necessary foundation work, ceiling openings etc.

Motor power: 0.75kw,
Hopping cutter: overall alloy materials; outline border: stainless, reducing noise; inner shaft and two arms: stainless steel
Cutting materials: tidy and no burr;
Base: equipped with footboard,easy to clear materials.



4.0 Spare Parts

Screw elements	500mm	
Aluminum heaters	2pcs	
O-ring for venting room	3 pcs	
Oil seal for gearbox	3 pcs	
Lifting ring for screw	2 pcs	
Fuse	5 pcs	
Solenoid valve	2 pcs	
Solid state relay	2 pcs	
Assembling tools	1 pc	

5.0 Document (English version)

Instruction for assembling and operation	1pc	
Layout drawing of the production	1pc	
Screw configuration drawing	1pc	
Instruction for electrical control cabinet	1pc	
List of machine delivered	1pc	
Certification	1pc	

- The connecting cables from the mains to the switch unit and from this to the various motors and auxiliary units of our equipment.
- The electrical installation including the required safety devices outside the machine and switch unit
- The connection pipes, gravity feed hoppers etc. between the various units supplied by us
- Any required frames, platforms, suspension devices, covers for feed hoppers etc
- The operating media such as oil, grease etc. as well as raw materials for starting up and operation □ All equipments and services which are not expressly stated in our quotation.

3. Engineering condition

- Electricity power:**3-phase,380V, 50Hz(if different, please tell me)**
- Control voltage (transformed):220V AC



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ADD:7#ZHONGXING EAST ROAD,LISHUI ECONOMIC DEVELOPMENT ZONE,NANJING

- Cooling water: 4-6bar, $\leq 25^{\circ}\text{C}$
- Industrial soft water: 150L/tank, $\leq 25^{\circ}\text{C}$
- Compression air : 4-8bar
- Temperature of electrical control cabinet : $\leq 38^{\circ}\text{C}$, free of conductive dust



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ADD:7#ZHONGXING EAST ROAD,LISHUI ECONOMIC DEVELOPMENT ZONE,NANJING

- No necessity to make special base, the machine put on even load-bearing ground

~~The Above spare parts should be offered to the buyer for free when the buyer orders the complete appliance.~~

Nanjing Kairong Machinery Sales Department
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