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Note:The picture is for reference, the actual one may differ.

TSE-65D Water Strand Pelletizing Twin-Screw Extruder



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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-65 twin screw extruder L/D=40

Process	Thermoplastic
Output	About 400-600kg/h , according to the raw material, formula and processing condition, etc.



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1. Scope of supply

Quantity	Designation	Remarks
1	Premix & Feeding system Consisting of:	
	Twin-screw metering feeder	
	Two stage side feeder	
1	TSE-65D Consisting of:	
	1 AC MOTOR ,P=160kw for max.600rpm screw speed.speed regulated by ABB inverter.	
	1 MECHANICAL NYLON PIN CLUTCH	
	1 REDUCTION AND DISTRIBUTION GEAR made in China,main bearing is NSK Japan total torque 2 x 1273 Nm	
	1 PROCESSING SECTION L/D = 40 bimetallic liners for barrels (hardness HRC=60~62) and screw elements high-speed steel W6Mo5Cr4V2(hardness HRC=58~60)	
	1 SOFT WATER COOLING SYSTEM	
	1 VACUUM SYSTEM	
	1 HYDRAULIC SCREEN CHANGER	
	1 ELECTRICAL CONTROL CABINET	
1	WATER STRAND PELLETIZING LINE	
	1 WATER TROUGH	
	1 AIR KNIFE	
	1 PELLETIZER	
	1 BLOWER	
	1 VIBRATION SIEVE	
	1 PRODUCT HOPPER	
1	SPARE PARTS	

FOB Shanghai for whole set of extrusion line.

Payment: 40% down payment, then contract takes effect. 60% upon the acceptance of the machines by the Buyer's inspector at the Seller's factory and before transportation.



3.Configuration for TSE-65D Twin-Screw Extruder

No	NAME	QUANTITY	REMARK
1.0	Feeding system		
1.1	Twin-screw metering feeder:	1set	



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	motor power is 1.5kw. Speed regulated by ABB transducer.		
			
1.2	Two stage side feeder	1set	
	<p>Forced feeder power: 2.2kw Barrel material: α 101+45# steel Feeding screws: twin screw, material of high speed anti-abrasion steel W6Mo5Cr4V2.</p> 		
2.0	Twin screw extruder		
2.1	Main extruder:TSE-65/600-160-40	1set	
	<p>1) Screw diameter: 62.4mm. Screw length(L/D):40 Screw speed:600rpm Barrel number:10 The individual barrel section are designed as: Barrel#1-10 made of bimetallic liners(45#steel+α101), processing heat treatment.HRC=60-62.</p> <p>A pair of screw shafts, complete with screw elements: Screw elements are made of high speed tool steel W6Mo5Cr4V2, HRC=58-60.</p> <p>All barrel sections heated electrically and cooled by water. All the heating power:~37kw</p> <p>Barrel arrangement:</p> <ol style="list-style-type: none"> 1) Barrel#1: open barrel for feeding 2) Barrel#2-3:closed barrel, casting copper 3) Barrel#4-5: closed barrel, casting aluminium 4) Barrel#6: open barrel for side feeder,casting aluminum 5) Barrel#7-8: closed barrel,casting aluminum 		

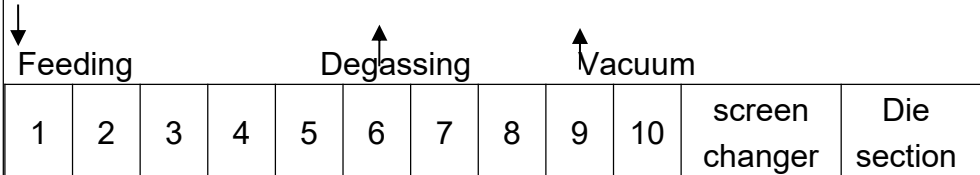


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6) Barrel#9: open barrel for vacuum, casting aluminum

7) Barrel#10: discharge barrel connect to the screen changer



2) AC Main Drive Unit

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 WANNAN
- Inverter ABB inverter
- Ambient temperature $\leq 40^{\circ}\text{C}$
- Installation height $\leq 1000\text{m}$
- Power 160kw
- Speed 1500rpm
- Cooling method by a fan mounted on the shaft

Converter cabinet

The converter is suitable for installation in a dry room where air is not polluted with fine dust, e.g. product fines.

The cabinet consists of:

- Main switch
- Main contactors
- Control power transformer
- Operator push buttons integrated in door

3) Clutch

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

The clutch consist of two couples linked with nylon pins

4) High torque type D Reducing and distributing 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 1273 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
- Equipped with water plate condenser



5) Processing section

Description

Screw barrel

The flexible modular principle is realized with screw barrel sections from the wide range of different designs possible. Fast, intensive and uniform heating of the screw barrel section is ensured by electrical heaters. The barrel sections are cooled with water, by means of an internal bore system, with bores arranged close to the inside barrel wall.

Barrel sections are available as:

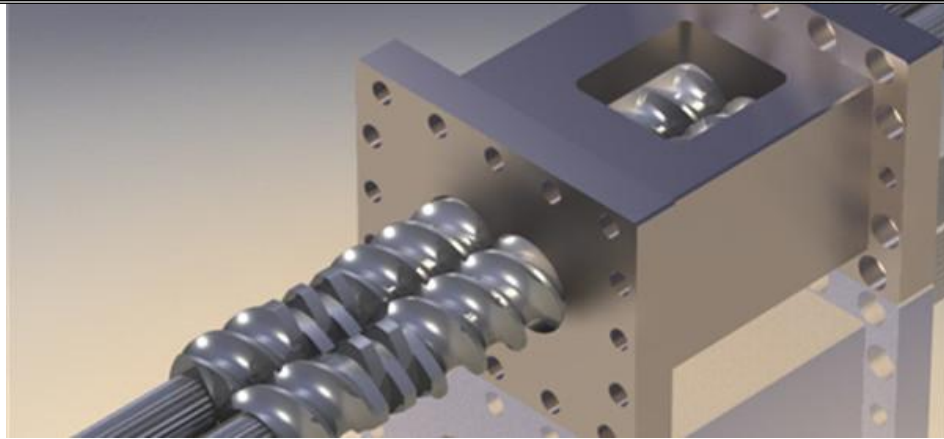
- Closed barrel section
- Barrel section with opening for material feed or for devolatilization
- Barrel section with top open for venting

The processing section is provided with stainless steel plates as a protection against accidental contact.

Screw shafts/Screw elements

The intermeshing screws co-rotate and wipe each other with narrow clearance so that no residues are left in the screw flight and clean effort is thus reduce.

- Screw elements with various pitches and lengths
- Kneading blocks with various angles of stagger, numbers of kneading disks and disk widths.
- Screw tips to fix the screw set axially
- Gear teeth connection to ensure power flow between the screw shaft and screw elements.



6) 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 0.55kw..

The soft water is distilled water.

7) Vacuum System

Vacuum pump motor is 1.5kw. 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.



2.2	Hydraulic screen changer	1set	
	<p>Screen changer is used to filter trash from melt. It consist of</p> <ul style="list-style-type: none"> ● Hydraulic screen exchanger, pistol/cylinder type ● pistol screen changer with big filter area ● Two position for hydraulic re-move ● Oil station ● Motor power: 1.5kw 		
3.0	Water strand pelletizing line		
3.1	Water trough	1set	
	Length of 4 meters, materials of stainless steel, equipped with 5 sets of trough auxiliaries.		



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3.2	Air knife	1set	
	Motor power of 2.2kw, with water collection function.		
3.3	Granulator	1set	
	Motor power of 7.5kw, speed controlled by ABB transducer.		
3.4	Vibration sieve	1 set	
	Motor power 0.22kw, vibrating area 0.35m ² .		
3.5	Blower	1set	
	Motor power 3kw, to convey granules to silo.		
3.6	Product silo	1set	
	Material of stainless steel, volume of 1.5M ³ , equipped with conveying tube.		
4.0	Electric control cabinet	1set	
	For indoor installation within 5m to the extruder in non-hazardous atmosphere, under normal ambient conditions. Essential components as per machine specification: <ul style="list-style-type: none"> ● Max. Ambient temperature: 40℃ 		



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- Measuring circuits with digital display for
 - Motor speed
 - Motor current
 - Melt temperature
 - Melt pressure
 - Die head temperature
 - 10 zone temperature control
- Temperature controller adopts Omron
- Main replays 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;

- Push buttons, 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



5.0	Spare Parts		
5.1	Wheel box input and output shaft oil seal	6 pcs	
5.2	Screw component	300 mm	
5.3	Casting aluminum heater	1 pc	
5.4	O-ring seals	3pcs	
5.5	Solid state relay	2 pcs	
6.0	Instruction and tools	1pc	
6.1	Instruction for assembling and operation	1pc	
6.2	Instruction for electrical control cabinet	1pc	
6.3	List of machine delivered	1pc	
6.4	Toolbox	1set	

3. 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.
- 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



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- 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 equipment and services which are not expressly stated in our quotation.

4. Explanations

1) Validity of quotation

The quotation is valid until 1 month after date of its generation.

2) Warranty:

Since the formal acceptance of users, from the date, the warranty period is one year. 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.

3) Delivery:

Delivery time is within 50 working days after contract takes effect.

The transportation inside China is undertook by supplier, and unload cargo is done by the customers. According to the cargo list, customer signs the cargo list. The transportation and insurance is undertook by customer from board of Nanjing port to the factory. After the whole line transport to the factory, lay the machines according to the layout drawing, then inform the supplier for commissioning.

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

4) Packaging:

Supplier will follow the customer's requirements (ordinary sea worthy) to package the production line.

5. Engineering condition

- Electricity power: **3-phase, 380V, 50Hz(Any difference, please tell us)**
- Control voltage (transformed): 220V AC
- Total consuming power: ~230kw
- Cooling water: 4-6bar, ≤25°C
- Industrial soft water: 150L/tank, ≤25°C



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- Compression air : 4-8bar
 - Temperature of electrical control cabinet : $\leq 38^{\circ}\text{C}$, free of conductive dust
 - No necessity to make special base, the machine put on even load-bearing ground

6. After-sales & tech-service

- Offer installation and operation guide
- Offer acceptance check and trial
- Train service to the operator from buyer
- Spare parts supply for long-term
- Long-term technical consult service
- Warranty period for one year (for free) No contain the quick-wear parts.