

*Leading the global wire and cable industry with intelligent manufacturing and new materials.*

## 1、ADVANTAGE



### ADVANTAGE

- 1、 Competitive price
- 2、 No installation, no foundation, take model design including electrical wire 、 water pipe and air pipe . only connected can start to work because already test running before shipment.
- 3、 Local after sales service because shineworld set up aboard after sales office and has 4-5 local engineer.
- 4、 En-joyful buying because professional team

## 2、 How to choose model

Cross Section	Material	Extruder Model	Extruder Speed	Coiler Speed	Printer Speed	Line Speed	
1.5-6 mm <sup>2</sup>	PVC	70/80+1246	600-1000	350	500	200	
10mm <sup>2</sup>	LSZH	80+1246					
1.5-10mm <sup>2</sup>		80+1246					
10-35 mm <sup>2</sup>	Copper	80/90+1860					
10-95 mm <sup>2</sup>	Aluminum						
1.5-6 mm <sup>2</sup>	PVC	70/80	600-1000		500	500	
10mm <sup>2</sup> - 35mm <sup>2</sup>	LSZH	80					
1.5-10mm <sup>2</sup>		80					
10-35 mm <sup>2</sup>	Copper	80/90					
10-95 mm <sup>2</sup>	Aluminum						
10-240 mm <sup>2</sup>		90					
50-630 mm <sup>2</sup>		120					
5X240 mm <sup>2</sup>		120					
5X630 mm <sup>2</sup>		150					300-500

## 3、QUOTATION

SN	DESCRIPTION	QUANTITY	FOB SHANGHAI UNIT PRICE/USD	FOB SHANGHAI AMOUNT/USD
1	100 high speed Jacketing line Model: SW100	1.00SET	151,150.00	151,150.00
TOTAL:				151,150.00

**REMARK:**

- 1, The detailed specification will be integral part of this quotation.
- 2, Price basis: Price are for delivery FOB shanghai, China according to INCOTERMS 2010. And the exchange rate for USD: RMB is 1:6.60. If the exchange rate is changed over 0.5%, the quotation will be adjusted accordingly even in the validity time.
- 3, Validity of quotation: the quotation is validly within 30 days after issue date.
- 4, Delivery period: the delivery time is 30 days after receipt of your down payment and clarification of all technical and commercial details. The agreed delivery period is subject to the punctual receipt by us of all equipment, documents approvals release and services to be furnished by buyer for the performance of the order.
- 5, The quotation is based china standard material and package.
- 6, The buyer should provide:
  - λ The water pipe, compressed air pipe used in site. And response to connect with the machine corresponding connectors.
  - λ All the Wire and cable between transformers to the electrical cabinets.
  - λ Installation.
- 7, The following are not included in the scope of our supply:
  - λ The preparation of the site with all the necessary foundation work and ceiling openings etc.
  - λ The connection cables from the mains to the switch unit and from this to the various motors and auxiliary units of our equipment.
  - λ The electrical installation including the required safety devices outside the machine and switch unit.
    - λ The connection pipes, gravity feed hoppers etc., between the various units supplied by us.
    - λ Any required frames, platforms, suspension devices, etc., the operation media such as oil, grease etc., as well as raw material for the stating up and operation.
- 8, The parties agree that any claim to compensation for loss of profit as well as for indirect damage and consequential damage, on the basis of whatever legal ground, are excluded. This shall not apply if legal.
- 9, All equipment and technical service technical training are expressly stated in our quotation.
- 10, All supervision of installation & commissioning charge (include visa cost, insurance, round tickets, subsidy worked in the buyer's factory; around 2-3 engineers include 1 project manager, worked around 1 months). But the buyer bears expenses of accommodation, local transportation, food, sim card & Wi-Fi for the seller's engineers for installation commissioning & technical training. Because of COVID-19, these cost will be charged separately.

- 11, all the bank charge is paid by buyer .
- 12, all the options device is not included in the above offer.

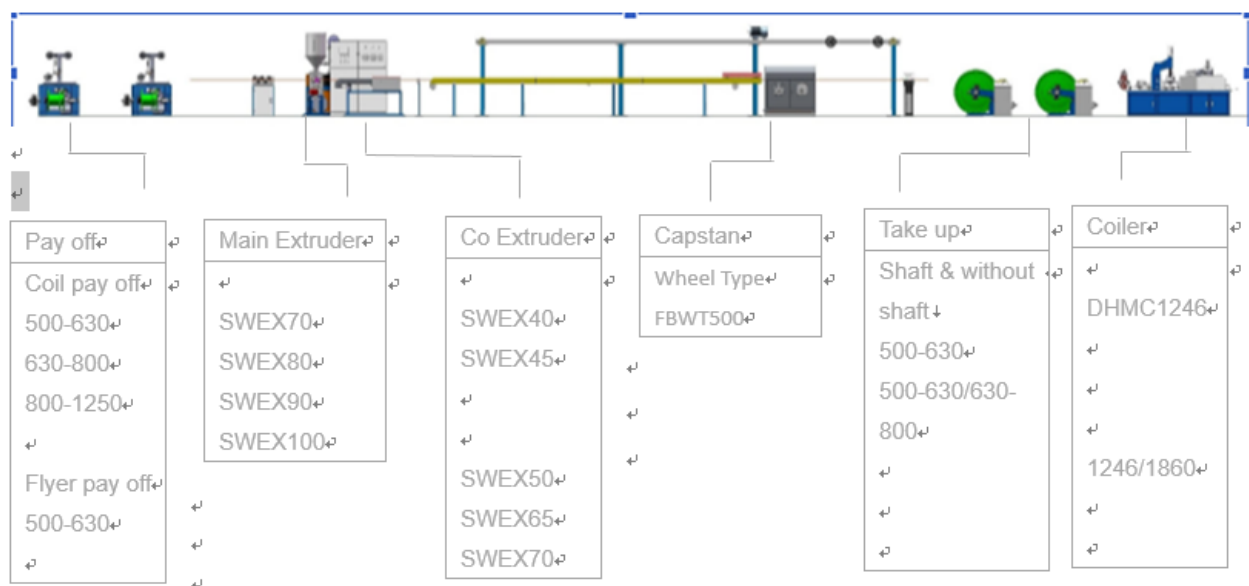
#### 4、SPECIFICATION

### SW 100 extruder insulation and sheathing line

#### 4.1. General description

This machine is used for PVC and PE cable insulation and sheathing extrusion, mainly use for flexible cable/hard wire/building wire/housing wire/power cable.

#### 4.2. Product lay out drawing Line direction



#### 4.3、Main Technical Parameter

4.3.1	Process materials			<b>XLPE</b>		<b>PVC</b>	
4.3.2	Line speed	0 ~ 100m/min (25mm <sup>2</sup> --100m/min)					
4.3.3	Screw rotate speed	0-80RPM/min					
4.3.4	Maximum extruding capacity	Soft PVC:480kg/h					
	<b>Size</b>	<b>Conduct or OD</b>	<b>Thickness mm</b>	<b>Finished OD</b>	<b>XLPE SPEED</b>	<b>LSZH SPEED</b>	<b>PVC SPEED</b>
	25mm <sup>2</sup>	6.3	1.2	9mm			100m/min
	50mm <sup>2</sup>	8.9	1.4	11.9mm			80m/min

	150mm <sup>2</sup>	15.7	1.8	19.5mm			65m/min
	3*25mm <sup>2</sup>	25	1.8	28.6mm			50m/min
	3*150mm <sup>2</sup>	36	2.0	42mm			40m/min
4.3.5	Max output		1 screw for 100		350kg	320	480kg
4.3.6	Motor Power						110kw
4.3.7	Conductor size range		compacted & flexible copper conductor 25mm <sup>2</sup> -3*150mm <sup>2</sup> for insulation process, Input Dia. (mm) Φ8mm-Φ35mm				
4.3.8	Cross section area(mm <sup>2</sup> )		25mm <sup>2</sup> -3*150mm <sup>2</sup>	Cross head size		Adjustable type	
4.3.9	Finished cable diameter		Output Dia.(mm) Max Φ45 mm				
4.3.10	Applicable cable type		jacketing				
4.3.11	Axis cable height		1000mm				
4.3.12	Voltage		3 phase -5 wires. AC380/415V (±10%),-50/60HZ, according to customer's standard.				

#### 4.4、 Production line specification

SN	Item	Technical data	
4.4.1	Line direction(based on customer's requirements)	A. Left pay off , Right take up or B. Right pay off , Left take up	
4.4.2	Coating Color	machine body	RAL5015
		Rotation parts	RAL2004, orange
		Electrical cabinet	RAL7035
4.4.3	Consumption	Power consumption	170KWh
		Water consumption	Circulation
		Air consumption	20m <sup>3</sup> /h
4.4.4	Bobbin	Pay off	Take up
	Flange	PN800-1600mm	PN1250-2500mm
	Barrel	630-1500	630-1500
	Bobbin width	900-1900	900-1900
	Traverse width	800-1600	800-1600
	Bobbin Bore	80 -166	80 -166
	Bobbin Material	Steel	Steel
4.4.5	Lubricant	220# for all gear box	
4.4.6	Electrical control cabinet	PLC+HMI	
4.4.7	Engine	2 workers for one line	

4.4.8	Heating	Heating/cooling zone	6
		Heating power	54kw
4.4.9	Cooling system	Material	SUS 304
		Type	Single layer
			Single Spraying
4.4.10	Caterpillar	7.5KW, frequency motor (front) 11KW, frequency motor (back)	
4.4.11	The water trough length	4 movable +28m single layer	
4.4.12	Take up	11KW, frequency motor	
4.4.13	Operator	1 or 2 Operator	
	Maintenance duration	Every structure of the shafts ,chained wheels and chained piece should add Ca n°3 lubrication, one time per month	
		Bearings of the idler pulley should add Ca n°2 lubrication grease every three months	
4.4.15	Complete set of production-line installation length of the 38-42 meters		
<b>4.5、Electrical Technical Parameter</b>			
4.5.1	Making Norm	EN 60204	
4.5.2	Safety level	EN954-1	
4.5.3	Working voltage	AC380/415V (±10%),-50/60HZ,	
4.5.4	Power frequency	50/60HZ ±1%	
4.5.5	Voltage fluctuation	-10% +5%	
4.5.6	Zero wire	3 phase with neutral ,without earth	
4.5.7	Control voltage	24V DC	
4.5.8	Solenoid Valve Voltage	24V DC	
4.5.9	Lamp Voltage	24V DC	
4.5.10	Cabinet inlet	According to customer's standard	
4.5.11	Power supply	According to customer's standard	
4.5.12	Control	Main switch SIEMENS 3VT type	
4.5.13	Driven	SIEMENS, all closed loop control	
4.5.14	Environment Temp	10-40°C	
4.5.15	Air humidity	DIN 40040 F level	
4.5.16	Assemble height	Till 1000mm	

4.5.17	Heating Resistance zone insulation instruction	NO
4.5.18	Electrical control cabinet	Electrical control cabinet

**4.6、 Configuration**
**4.6.1、 Main configuration**

No	QTY	Unit		
4.6.1.1	1	set	PN800-1600mm portal type pay off	PN800-1600mm
4.6.1.2	1	set	1250 Kg Belt Pneumatic Caterpillar	1250kg
4.6.1.3	1	set	Main extruder with loading system	EX100*25
4.6.1.4	1	set	Automatic Material Drying Hopper Loader	200kg/600kg
4.6.1.5	1	set	Cross head	Adjustable type
4.6.1.6	1	set	32m Stainless steel water trough	Movable+ single layer
4.6.1.7	1	set	Online diameter (laser)	DDM2050
4.6.1.8	1	set	Sparker tester	25KV
4.6.1.9	1	set	Meter counter	Belt Type Meter Counter
4.6.1.10	1	set	1600 Kg Belt Pneumatic Caterpillar	1600 Kg
4.6.1.11	1	set	PN1250/2500mm portal type take up	1250/2500mm
4.6.1.12	1	set	Electric control system	Automatic by PLC+HMI

**4.6.2、 Parts list**
**4.6.2.1.Motors and Inverter**

	Motor Type/Power	Inverter Type/Power	Manufacture
PN800-1600mm Pay off	4.1 kw AC	Siemens or Yaskawa	Siemens Beide
1250kg caterpillar	7.5 kw AC	Siemens or Yaskawa	Siemens Beide
Main extruder 100mm	110kw AC	Siemens or Yaskawa	Siemens Beide
1600kg caterpillar	11kw AC	Siemens or Yaskawa	Siemens Beide
PN1250-2500mm take up	11kw AC	Siemens or Yaskawa	Siemens Beide

**4.6.2.2.Other**

	Manufacture		
Gear box	Chinese famous brand		
Main Low-voltage components	Schneider and Chinese famous brand		
PLC (all)	SIEMENS S7-1200		
Touch screen	Siemens or MCGS		
Temperature unit	RKC		
Solid relay	Fotek or Chinese famous brand		

#### 4.7. Specification for the main components (Scope of supply Specification)

##### 4.7.1.PN800-1600 porta type pay off

	Name of product	Type/None		
4.7.1..1	Bobbin size:	PN800-1600mm		
4.7.1.2	Loading/unloading	Motor movements, safe and quick		
4.7.1.3	Clamping	Pneumatic		
4.7.1.4	Brake	Pneumatic		
4.7.1.5	Applicable cable Dia.	Φ15-Φ80mm		
4.7.1.6	Max. loading	12T		
4.7.1.7	Clamping motor	1.1 KW AC Motor + reducer driving		
4.7.1.8	Closing speed	1.8m/min		
4.7.1.9	Loading/U nloading	1.5KW AC Motor + reducer driving		
4.7.1.10	Lifting speed	0.37m/min		
4.7.1.11	Moving motor	1.5KW AC Motor + reducer driving		
4.7.1.12	Tension: by Mechanical friction tension control			
	Portal self-traverse type Payoff is made of steel construction and has strong body.			
	Pintle open-close motion is made by AC motor			
	Towers will be able to move both side separately or together			
	The payoff device uses portal type and ground rail moving, upper of device is sleeve type, the body is bent and welded to the frame. Two pintle thimbles of the both side are driven by two			



motor through cyclical reducer to screw nut, and can move together or alone, with mechanical and electrical dual protection, operator can change the pintle for different section reel when necessary.



#### 4.7.2 1250KG front Belt Pneumatic caterpillar

4.7.2.1	Cable dia:	Max: $\phi 50\text{mm}$
4.7.2.2	Max traction:	1250KG
4.7.2.3	Traction speed:	100m/min
4.7.2.4	Tract length of the contact:	1500mm
4.7.2.5	Caterpillar specification:	20*120*4930mm
4.7.2.6	Box	Open door all-sealed box
4.7.2.7	7.5Kw AC motor	Tension control:
4.7.2.8	Cylinders quantity:	5pairs
4.7.2.9	Equipment center height:	1000mm
4.7.2.10	Structure: The traction machine for the pneumatic compression and automatic tensioning traction belt, driven by 7.5Kw AC motor + K87 series of spiral bevel gearbox to achieve, traction speed and the former traction, extruder speed synchronous control, stable and reliable. Traction belt for the two seamless reinforcement within the belt, configure the instantaneous line speed and cumulative length of the display instrument. Traction machine power section with guardrail.	
	Structure: The traction machine for the pneumatic compression and automatic tensioning traction belt, driven by 7.5Kw AC motor + K87 series of spiral bevel gearbox to achieve, traction speed and the former traction, extruder speed synchronous control, stable and reliable. Traction belt for the two seamless	



reinforcement within the belt, configure the instantaneous line speed and cumulative length of the display instrument. Traction machine power section with guardrail.



#### 4.7.3 EX100 High speed extruder

<b>4.7.3.1</b>	<b>Screw data</b>	
	Diameter	100mm
	Length-diameter Ratio:	25: 1
	Screw structure	PVC-BM
	Max speed	0-80RPM
	Screw rigidity	reach HV900
	Material	38CrMoA1A, nitrogen treatment; (Nitride depth:0.6)
	Output with PVC	480kg/h $\pm$ 5%
	Output with XLPE	$\leq$ 350KG/H
<b>4.7.3.2</b>	<b>Barrel data</b>	
	N. of heated/cooled zones	6
	Heating power for each zone	9KW
	Total heating power	54KW
	Material	38CrMoA1A, nitrogen treatment; (Nitride depth:0.6)
	Temperature adjustment up to	0-300°, $\pm$ 2°; Japan PKC thermometer + relay control;
	Heating system	electric resistances

	Cooling system	air flow with electro fans
<b>4.7.3.3</b>	<b>Electric parameters</b>	
	Driven motor	110KW , Siemens AC motor
	Barrel cooling electric fan	750W/AC380V
	Temperature controller	RKC
<b>4.7.3.4</b>	<b>Others</b>	
	Gearbox	nodular cast iron
	Gear	Gearbox built up with helical toothed gears in Ni Cr steel, casehardened and ground.
	Gear lubrication	Oil feed forcibly by gear
	Clamps	The machine is composed by a heated clamp having manual closing to be coupled to the crosshead.
<b>4.7.3.5</b>	<b>Hopper &amp; Loading system</b>	
	Dryer capability:	200kg/h
	Loading capability	600kg/h
	Material	stainless steel container
4.7.3.6	Hopper loader made up of stainless steel plate, placed on the material inlet zone, provided with gates, material level controlling lamp and minimum level alarm.	



#### 4.7.5 Crosshead

4.7.5.1	The main characteristics	Single layer
4.7.5.2	Extrusion thickness(mm)	0.5-1.8
4.7.5.3	Fix and Centering	Manual centering
4.7.5.4	Finished wire range	25mm <sup>2</sup> -3*50mm <sup>2</sup> (8-35mm)

4.7.5.5	Heating	3 heating zones for a neck, for a crosshead and for a die, natural cooling.
4.7.5.6	Crosshead is made of imported S136 heat-resistant anti-corrosion alloy steel. After oxidation treatment, the surface is plated with hard chrome	
		

#### 4.7.6. Diameter gauge

4.7.6.1	Model	DDM-2050
4.7.6.2	Measurement range	Max. OD 50mm
4.7.6.3	Recommend measurement range	Max 45mm
4.7.6.4	Measurement precision	+/-0.003
4.7.6.5	Measurement resolution ratio	0.001mm
4.7.6.6	Overall dimension	440*100*100(without support)
4.7.6.7	Centering height	1000mm

#### 4.7.7. Ribbon hot printer

4.7.7.1	Print type:	Ribbon print
4.7.7.2	Dia. range	Φ6-50mm;
4.7.7.3	Max line speed	100m/min
4.7.7.4	Power	380V, 50Hz
4.7.7.5	Heating power	0.4Kw
4.7.7.6	Heating temperature	80-120℃
	Center height	1000mm, up-down adjustment
Hot-press printing ribbon printing, clear script, good adhesion, not apt to erase and superior to the ink printing method;		

4.7.7.7

Meter figures of printing alphabet blocks adopt electric heating and temperature control regulation system is equipped for convenient adjustment, high precision of temperature control and stable printing quality;



#### 4.7.8. Cooling trough

4.7.8.1

4m primary moving water trough and tank

Suitable for wire diameter	Max 80mm
Centering height	1000mm
Material	SUS304 stainless steel
Total length	4m
Moving range	500mm
Cooling way	For spray and water immersion, with wire hold trough

4.7.8.2. Single layer fixed water trough

Suitable for wire diameter	Max 80mm
Centering height	1000mm
Dimension	U type: 300(L)*280(W)*2(T)
Material	SUS304 stainless steel
Total length	28m
Cooling way	For spray and water immersion, with wire hold trough. Stainless steel U-type single layer water tank;
Blow type	Multi-head claw-type blow-drying of the blow-drying head, which is placed in the stainless steel box and connected to the water tank.

	Drying type	Dry with vortex fan (the vortex air pump uses Wuxi Zhongce products)
	There are supporting guide wheels inside, and guide wheels need to be added before and after each section of water tank. All water tanks ensure that the cable is submerged in water.	

#### 4.7.10. Belt Type Meter Counter

4.7.10.1	Suitable cable Dia.:	Max.Φ80mm;
4.7.10.2	The meter counter adopts upper & lower timing belts, clamped by pneumatic system.	
4.7.10.3	The meter counter is controlled by encoder + Siemens S7-200PLC TD200	



#### 4.7.11. Spark tester

4.7.11.1	Model	ST-25A
4.7.11.2	Dia. range	Max Φ55 mm;
4.7.11.3	Voltage:	2.0-25.0KV
4.7.11.4	Voltage indication error	<5%
4.7.11.5	Detection sensitivity	<600uA
4.7.11.6	Detection resolution	0.05s
4.7.11.7	Max detection speed	350m/min
4.7.11.10	Conform to Japan, the United States, European countries standard or the Great Wall of China certification;	





#### 4.7.12. 1600Kg Belt type Pneumatic caterpillar

4.7.12.1	Max design speed	100m/min
4.7.12.2	Center height	1000mm
4.7.12.3	Motor	11kw AC motor
4.7.12.4	Max Force	1600kg
4.7.12.5	Cable size	<math>\Phi 90\text{mm}</math>
4.7.12.6	Qty of cylinders	6 pairs
4.7.12.7	Working length	1500mm
4.7.12.8	Top bottom flat belt haul off, compression and tensioning by air actuation.	
4.7.12.9	Entrance and exit equips with wire guide rollers.	



#### 4.7.13. PN1250-2500mm Portal type take up

4.7.13.1	Max design speed	100m/min
4.7.13.2	Suitable wire OD.	Max 110mm
4.7.13.3	Suitable bobbin size	PN1250-2500mm



4.7.13.4	Motor	11KW Siemens AC motor
4.7.13.5	Control	11KW inverter
4.7.13.6	Max. loading weight	10T
4.7.13.7	Bobbin lifting motor	1.5KW AC Motor + reducer driving
4.7.13.8	Bobbin clamping motor	1.1KW AC Motor + reducer driving
4.7.13.9	Traverse motor	1.0kw Mitsubishi AC servo motor.
4.7.13.10	Portal rail type structure, reel lifting, clamping or relaxing is by motor	
	Pintle open-close motion is made by AC motor	
	Main electrical panel and suspended control panel are on the machine	
	Take up moves for traversing, driven by AC motor, frequency inverter control, traversing speed follows take-up speed, traverse pitch is step-less. Portal take up has fast traversing function	



#### 4.7.14. Electrical control system

4.7.14.1	<b>Control system overview</b>	
	Control cabinet	Rittal design, painted colors RAL 7035
	Cabinet size	L(3200)*H(2000)*W(500)mm
	Cable inlet	Main power supply cables and all extruder cable entering from the bottom; All other part's control and power cable enter from the top.
	Power supply three phases	AC 380V 50Hz
	Low control power supply	AC 220V 50Hz
	Lamps, buttons, sensors	24 Vdc
4.7.14.2	<b>Auxiliaries circuits brands</b>	
	Motors	SIEMENS Beide brand

	Drivers	SIEMENS or Yaskawa
	PLC + HMI	SIEMENS or MCGS
	From the most recognized international brands: Schneider or Chinese famous brand	Main circuit breaker, Contactors, Auxiliary relays, Safety gates control block, Push buttons (Ø 22 mm), Proximity switches, Limit switches, Terminals, Encoders, Lamps
<b>4.7.14.3</b>	<b>Control Function Description</b>	
	Operation	Manual, Synchronous or automatic mode
	Main PLC	Connect with drivers and HMI by profinet; It takes all the controls and inspections of the whole line, provides strong and complete control capabilities
	Main HMI	HMI for all single part; HMI for all production data; HMI for Alarm message; HMI for control when button broken; HMI for maintainance; HMI for production monitor
	Alarm information	Motor driver fault; Cooling fan overload; Motor fan overload; E-stop alarm; Wire OD. Overflow alarm;
4.7.14.4	PLC Siemens S7-1200 connected in Profinet with external and internal components as drives, video-keyboard, and remote PLC, or any other.	
4.7.14.5	Safety relays for emergency kept electro-mechanical outside the PLC.	
4.7.14.6	Operator panel, to be fit in a suitable position close to the drawing machine, with all push buttons and lamps needed for the easy and correct use of the line supplied with a HMI Display.	
4.7.14.7	The software used is custom made to suit all needs for an easy use by the operator or by the technician.	
4.7.14.8	Cooling fan is controlled by the temperature control meter to make the temperature curve straight.	
4.7.14.9	The counter receives the pulse signal sent by the meter counter. The ratio of code length to pulse number can be adjusted freely, which can count the length conveniently and accurately. At the same time, it also has the meter prediction function to make the operator more comfortable.	
4.7.14.10	Automatic process control: operated by touch screen and assisted by buttons.	



## 5. SPARE PARTS

SN	Description	Qty.
5.1	Barrel heater for Big extruder head Crosshead heating circle and rod	1Set
5.2	Thermocouple	1pc each model
5.3	Solid relay	1pc each model
5.4	Auxiliary relay	2pcs
5.5	Crosshead wrench	1pc
5.6	Inner hexagon wrench	1set
5.7	Monkey wrench	1pc
5.8	Slot type screwdriver	1pc each model

	Cross screwdriver	
5.9	Tool box	1pc
5.10	Foundation screw and fixed screw	1set
5.11	Honeycomb sample	1pc
5.12	Whole machine V-BELT	1
5.13	Whole machine synchronous belt	1
5.14	Pneumatic clamp rubber	2
5.15	Steel wire rope	1
<b>6、ENGINEERING DOCUMENTS</b>		
6.1	Lay-out drawing in printed and CAD Version	1 set for each
6.2	foundation drawing in printed and CAD Version	1 set for each
6.3	Operation Manual in printed & digital copy	1 set for each
6.4	Sourcing Equipment Operation Manual	1 set for each
6.5	Electric Drawing in Digital and Printed Copy	1 set for each
6.6	Wire Diagram list in Digital	1pc
6.7	Maintenance Plan	1set
6.8	Certification of Test Equipment	1pc

**SHANGHAI SHINEWORLD ENGINEERING CO., LTD.**

**2022.06.17**