



## **Professional Grade 1+6(630F)+12(800B) Double Twist Bunching Machine with 2 Year Warranty!**

The quality of our **1+6(630F)+12(800B) Double Twist Bunching Machine** is second to none. Can do conductor stranding from 2.5mm<sup>2</sup> to 6.0mm<sup>2</sup>. products are widely used in **IT communications, aerospace, military, medical, locomotives, automobiles, robots, ships, 5G cloud databases and other fields**

**1+6(630F)+12(800B) Double Twist Bunching Machine** apply for the bunching of aerospace, medical instrument, cellphone, notebook PC and ultra fine conductor (above seven pcs of alloy wires, tinned wires, silver jacketed wires and enamelled wires.

### **Merits:**

1. **1+6(630F)+12(800B) Double Twist Bunching Machine** is Our latest design to completely replaces 200 tubular stranding machine, mainly for BVR and high-temperature conductor wires (such as: 19/0.41, 19/0.52, 19/0.64) Stratified Stranding (according to customer needs S+S or S+Z ), since can do the 1+6 and (1+6)+12 at the same time, with large drum multi-wire pay-off, lower drum replacement frequency, reduced the cost, and improved the work efficiency. Capacity is 6 times of 200 tubular stranding machine, which saves 50% of electricity per hour. Meanwhile, it can be used for multiple purposes. The host of the high-speed stranding machine can be used for stranding multiple conductors separately, which is energy saving, small geographic location and low noise.
2. IoT(optional): **1+6(630F)+12(800B) Double Twist Bunching Machine** information of multiple devices can be integrated on multiple mobile phones or computers, and Monitor the machine status at real time, such as speed, stranding specifications, line speed, output, equipment maintenance, etc., and remote system do online Diagnosis, and maintenance, etc., to achieve refined management, reduce production and maintenance costs
3. Internal precision traverse(optional): **1+6(630F)+12(800B) Double Twist Bunching Machine** can use stepper motor + precision ball screw traverse, internal and external PLC data sharing through wireless communication module, collection of wiring data and take-up shaft speed, through PLC precise calculation, guarantee The wiring accuracy, and the wiring width and row spacing are set on the touch screen at real time, no need to stop adjustment, reduce downtime and improve production efficiency.



**4.Range:**

**1+6(630F)+12(800B) Double Twist Bunching Machine** for 2.5mm<sup>2</sup> - 6.0mm<sup>2</sup> 19/0.41;  
19/0.52; 19/0.64 (please refer to Page 5-14)

This **1+6(630F)+12(800B) Double Twist Bunching Machine** is CE approved



5.Can fit 380V to 440V,50HZ to 60HZ, color can be customize

3 phase 4 wires,R,S,T,PEN

3 phase 5 wires,R,S,T,PE,N

**6.Some option:**

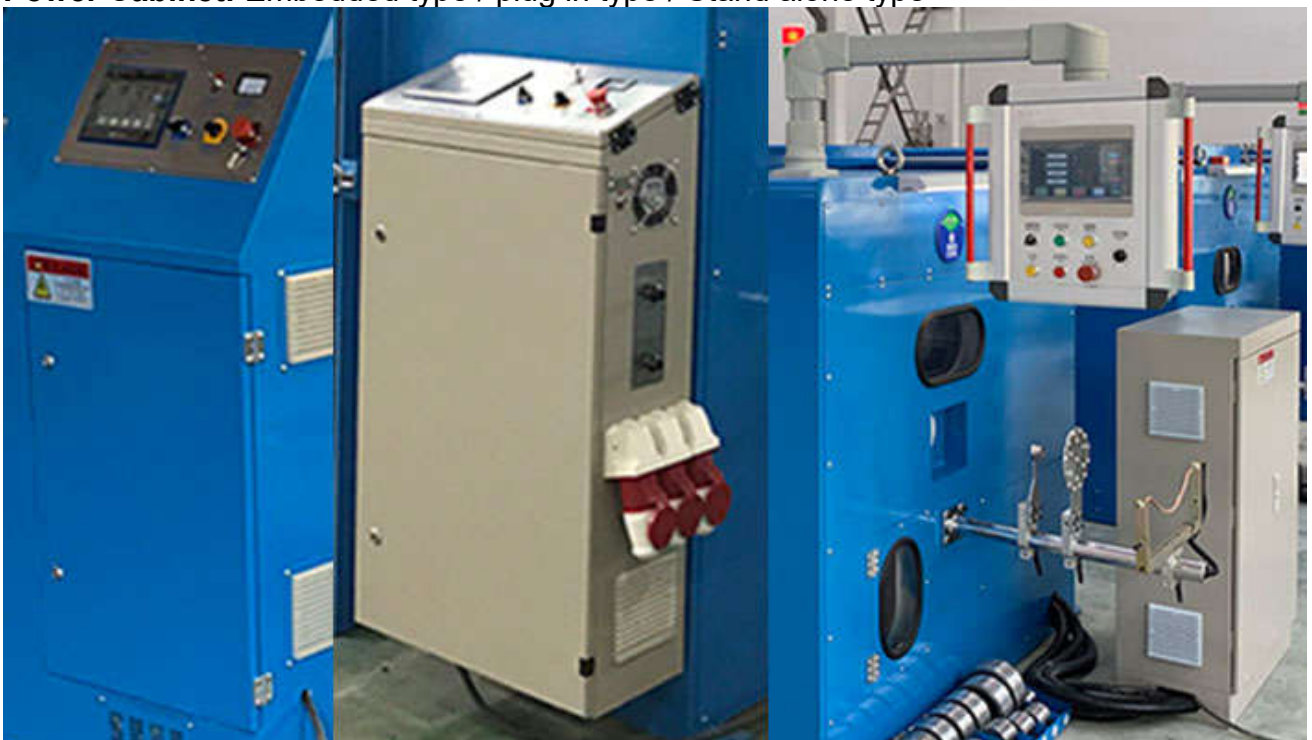
**Set-up:**

China standard: Veinview HMI + Inovance PLC & Invertor + Siemens Motor

Siemens standard: Siemens HMI & PLC & Invertor+Siemens Motor



**Power Cabinet:** Embedded type / plug in type / Stand alone type





Take-up tension type: Magnetic powder clutch / Hollow shaft clutch / Hysteresis clutch



IOT remote system and temperature sensor



状态	名称	数值	地址	读/写	描述	操作
<input type="checkbox"/>	主机转速		VD 1060	只读	主机转速	<a href="#">刷新</a>
<input type="checkbox"/>	当前米数		VD 330	只读	当前米数	<a href="#">刷新</a>
<input type="checkbox"/>	当前张力		VW 5000	只读	当前张力	<a href="#">刷新</a>
<input type="checkbox"/>	当前转速		VD 1190	只读	当前转速	<a href="#">刷新</a>
<input type="checkbox"/>	节操设定		VD 170	读写	节操设定	<a href="#">刷新</a>
<input type="checkbox"/>	设置米数		VD 1740	读写	设置米数	<a href="#">刷新</a>
<input type="checkbox"/>	设定张力		VW 360	读写	设定张力	<a href="#">刷新</a>
<input type="checkbox"/>	排程设定		VW 1420	读写	排程设定	<a href="#">刷新</a>
<input type="checkbox"/>	左轴1#温度		VD 3230	只读	左轴1#温度	<a href="#">刷新</a>
<input type="checkbox"/>	左轴2#温度		VD 3250	只读	左轴2#温度	<a href="#">刷新</a>
<input type="checkbox"/>	右轴3#温度		VD 3270	只读	右轴3#温度	<a href="#">刷新</a>

Trade terms: T/T,L/C

Package:

- 1) Simple water-prof package
- 2) Pallet package
- 3) Pallet with Vacuum package
- 4) Wooden box package





## **1+6 (630F) +12 (800B) Double Twist Bunching Machine Specification**

### **1 + 6 (630F) Technical specification**

#### **➤ Merits:**

1. Latest High-Tech products, completely replace the 200 tube bunching machine, especially for the production of 1 +6 +12 regular twisted products, 4.5 times capacity than tubal buncher , while energy-saving, smaller size and lower noise.
2. Brake: electromagnetic brake.
3. The internal tension of the thread is controlled by the belt tension.
4. Wire bunching system: with the latest structure, the conductor from the spool directly through the wire roller to the bow ,The bow material with SK5 , Using a unique semi-circular groove design , with semi-circular porcelain eyes to through the wire , to avoid twist scratches ,jumping phenomenon while high-speed running's wind resistance
5. Spindle lubrication: grease lubrication(Automatic lubrication).
6. Security protection: If the door contact is not in place, lift contact is not in place, internal and external wire broken error display in the touch screen on the automatic alarm or can not start to work
7. Spindle and cantilever arm: With high-speed dynamic balance processing; rotating part and the cover are separated, the noise is less than 75 dB.
8. Electrical control: user-friendly touch screen interface , control by the PLC programmer + inverter .
9. Bow use Imported carbon fiber.
10. Transmission system: drive with synchronous belts , laying accurate, no internal lubrication position, no waste products effect by refueling and machine cleaning
11. Change the lay length: Cooperate with the host , with continuously variable transmission, easy to achieve customers' requirement of lay length.
12. Meter mode: the use of encoder and host synchronization meter.
13. The machine should be used with our 650B stranding machine to complete the 1 +6 +12 twist effect.

#### **➤ Main performance parameters:**

- 1.Application: conductors 1 +6 +12 regular twisting
- 2.Conductor monofilament diameter range:  $\varphi 0.41 \sim \varphi 0.64\text{mm}$
- 3.1 + 6 Stranded outside diameter range:  $\varphi 0.1.23 \sim \varphi 1.92\text{mm}$
- 4.Spool size: PND630 Spool ( $\varphi 630\text{mm} \times \varphi 127\text{mm} \times 475\text{mm}$ )
- 5.Twist Maximum speed: 2000RPM
- 6.Tension: (By displacement sensor) to send the signal to the inverter to control the motor speed, and link to the host , to maintain the pay-off tension stable and uniform.
- 7.1 +6 strands lay length: Link to the host , with infinitely variable speed to change the twisted pitch
- 8.Main motor: 15KW AC motor inner pay-off motor: 1.1KW
- 9.Loading capacity: about 500Kg per spool
- 10.Twist direction : Change motor running direction to change the twist direction
- 11.Brake: the use of electromagnetic brakes, can automatic braking when internal and external disconnection, meet the set meters



12. Machine drive bearings: Main shaft with Sweden SKF bearings , the others with Japan NSK bearings
13. Synchronous belt: import from US GATES
14. Loading/unloading bobbin: Electric screw lift
15. Spindle lubrication: butter lubrication
16. Noise index: less than 80 dB
17. Machine size/MM (length×width×height): 3700 × 1750 × 1800
18. Weight: 2500 Kg
19. Coating: RAL 5015 Sky Blue (or customize)
20. Packing: waterproof simple packaging
21. Direction: left hand machine, i.e, facing to the front door, pay-off on the right (can be customization according to customer requirements)
22. Body and door seal: plastic seal
23. Spindle bearing Seal: Mechanical oil retaining ring
24. Sliding door

### ➤ **Mechanical Performance**

#### 1. Body structure:

(1) Material: low carbon steel welded together.

(2) Structure: the body by annealing and aging, to eliminate internal stress, and then boring by a precision boring machine to forming a molding.

#### 2. Bunching Entry part:

(1) Bunching Entry position: facing to the front door, at the right side of the machine (can be customization according to customer requirements to change to the left side).

(2) Bunching Entry Mode : from the pay-off device through the disconnection sensing area, first to the total sub-line board (sub-hole by 1 +6 distribution), through first pressure mold, then entering the right spindle within the wire guide wheel. From the Cantilever arm and bow's porcelain ring to the left spindle within the wire guide wheel, and then through the center corner's guide wheel to the Left spindle, then through the corner guide wheel to the second bunching machine, to achieve 1+6+12 twisting (see wire bunching entry pattern diagram)

#### 3. Spindle:

(1) Material: 40Cr steel forging after quenching and tempering treatment.

(2) Accuracy: The shaft core outer face diameter and the bearing end face are ground to ensure concentricity and verticality with the axis.

(3) Dynamic balance: Standard of G2.5

#### 4. Cantilever arm:

(1) Material: 45 # steel quenched and tempered

(2) Accuracy: All end faces are positioned relative to the locating holes

(3) Dynamic balance: Accuracy of G2.5

#### 5. Flyer Bow

(1) Material: SK5 material .

(2) Shape: special appearance, reduce the wind resistance. Light weight.

(3) Weight tolerance : less than 0.03 grams per pair

#### 6. Transmission part: with high quality timing belt drive, laying length accurate

#### 7. Wire entry wheel:



(1).Material: # 45 steel finished with heat treatment HRC30-40.

(2)Hard chrome plated on the surface, not easy to wear

8.Spindle housing:

(1)Material: Alloy cast iron.

(2)Processing: CNC machine tooling

(3)Accuracy: one processing hole end molding, to ensure concentricity.

9.Spindle bearing lubrication system:

(1)Lubrication method: Butter sealed lubrication.

(2)Butter Model: Mobil lux EP1 #

(3)Sealing method: mechanical oil retaining ring, to prevent butter exudation,keep the machine clean inside

10.Pay-off

Outer Dia (φD)	Hole (φd)	Outer Width (L1)	Inner Width (L2)	Fasten Hole	PCD
630	127	475	400	φ28	200

(The above specifications are factory standard )

11.Dynamic power : 5KW

12.Installed power : 11KW

➤ **Detail specification:**

Description	Model	Origin
1.Host Motor	15KW 380V 50Hz	SFC
2.Inverter	18.5KW	INOVANCE
3.Inner Pay-off Motor	1.1KW-6P	SFC
4.Inner Pay-off Invertor	1.5KW	INOVANCE
5.PLC Expander	VB-6A+VB-3A	INOVANCE
6.Electromagnetic Brake	24KG	TAIWAN
7.Spindle Bearings	1SET	SWEDEN SKF
8. Other Bearings	1SET	JAPAN NSK
9.Timing Belt	1SET	
10.Bow	1SET	carbon fiber
11. Body	1SET	Self-processing
12. Spindle	2pcs	Self-processing
13. Cantilever Arm	2pcs	Self-processing
14. Timing Pulley	1SET	Wu Xi
15. Bearing Housings	1SET	Self-processing
16. cradle	1pcs	Self-processing
17. Transmission Shaft	1pcs	Subcontracting
18. Wire guide wheel	3pcs	Self-processing with hard chrome plating

**12(800B) Double Twist Bunching Machine**

➤ **Merits:**

1.High speed, good stability (the motor through the rigid coupling directly connected with the



drive shaft)

2. Automatic tension control: When stranding, the reel take-up from the empty to the full , the tension must be increased (With the touch screen Free Set the data) The machine can automatically adjust the tension smoothly, keep the tension uniform variation ,Can achieve tension setting while working .

3. Over-line system: The latest structure, the wire from the spindle directly across the guide wheel to the bow belt, the bow (with) a unique semi-circular groove design, with the bow with a semicircle porcelain ring line to avoid high-speed operation due to wind resistance Caused by stranding scratch, jump shares phenomenon

4. Spindle lubrication: butter lubrication (Oil lubrication defects: the oil's temperature increases while high-speed operation , and the oil mist will concentrate into beads on the wall , falling to the reel and pollute the conductor, cause blister when conduct insulating )

5. Security protection: If the door contact is not in place, lift contact is not in place, internal and external wire broken error display in the touch screen on the automatic alarm or can not start to work

6. Spindle and aluminum plate finish: after high-speed dynamic balancer processing; noise less than 82 decibels

7. Electrical control: user-friendly touch screen interface operation, control by the PLC programmer + inverter

8. Bow use Japan imported SK5, finished with heat treatment, the surface of hard chrome

9. Transmission system: drive with synchronous belts , laying accurate, no internal lubrication position, no waste products effect by refueling and machine cleaning

10. Change the lay length: easy to operate, just change the leading wheel according to the lay length sheet

11. Meter counting way: the latest domestic design, with spindle meters; the same machine twisted with a conductor specifications, meter error in one ten thousandth

#### ➤ **Main performance parameters**

1. Application: bare wire, tinned wire, copper clad aluminum, enameled wire, alloy wire and etc. 1 + 6 can replace twisting with stranding

2. Mono-filament diameter range:  $\varnothing 0.41 \sim \varnothing 0.70\text{mm}$

3. Twisted wire diameter range:  $\varnothing 0.205 \sim \varnothing 3.2\text{mm}$

4. Stranded cross-sectional area:  $2.5 \sim 6\text{mm}^2$

5. Spool specifications: PND800

6. Max speed : 1500RPM; (and 1150 RPM on-line with 1 + 6 (250F) bunching ); normal work at 1500 RPM for stranding 7pcs conductors

7. Cable laying:  $\varnothing 40\text{mm}$  light rod bearing type ,rolling lay length and distance can be accurately adjusted

8. Strand lay length: 23~ 147mm

9. Main motor: 15KW AC motor + inverter

10. Assembly volume: about 900Kg

11. Twisted direction: left and right direction can be arbitrarily selected, pull the switch bar to change the direction,easy operation

12. Brake: With electromagnetic brakes, can achieve automatic braking when internal /external disconnection, and meet setting meters



13. Tension control: magnetic clutch control thread tension, by the PLC program controller automatically adjust the tension, keep the tension constant
14. Machine drive bearings: main shaft with Sweden SKF bearings , the others are Japan NSK bearings
15. Timing belt: high quality product
16. Spool loading/unloading : Electric pump hydraulic lifting
17. Spindle lubrication: butter lubrication
18. Noise index: almost 82dB
19. Machine size (mm): 4100L × 1850W × 1800H
20. Weight: 4500 Kg
21. Painting: RAL5015 light blue (can be customization according to customer requirements)
22. Packing: waterproof simple packaging
23. Direction: left hand machine, i.e, facing to the front door, pay-off on the right (can be customization according to customer requirements)
24. Body and door seal: plastic seal
25. Spindle bearing Seal: Mechanical oil retaining ring

➤ **Mechanical Performance**

1. Body structure:

1-1. Material: low carbon steel welded together.

1-2. Structure: the body by annealing and aging, to eliminate internal stress, and then boring by a precision boring machine to forming a molding.

2. Bunching Entry part:

2-1. Bunching Entry position: facing to the front door, at the right side of the machine (can be customization according to customer requirements to change to the left side).

2-2. Bunching Entry Mode : from the pay-off device through the disconnection sensing area, first to the total sub-line board (sub-hole by 1 +6 +12 + ... distribution), through first pressure mold, then the second Pressure mold, after entering the right spindle within the wire guide wheel. From the aluminum arch with porcelain ring and then into the left spindle within the wire guide wheel, and then through the center corner's guide wheel to the leading wheel, Final to the aligner's guide wheel to cable laying (see wire bunching entry pattern diagram)

3. Spindle:

3-1. Material: 40Cr steel forging after quenching and tempering treatment.

3-2. Accuracy: The shaft core outer face diameter and the bearing end face are ground to ensure concentricity and verticality with the axis.

3-3. Dynamic balance: Standard of G2.5

4. Aluminum plate:

4-1. Material: ZL104

4-2. Accuracy: All end faces are positioned relative to the locating holes

4-3. Dynamic balance: Accuracy of G2.5

5. Flyer Bow

5-1. Material: Japan imported SK5.

5-2. Shape: special appearance, reduce the wind resistance.

5-3. Weight tolerance : less than 0.03 grams per pair

6. Transmission part: with imported synchronous belt drive, laying length accurate

**7.Wire entry wheel:**

7-1.Material: # 45 steel finished with heat treatment HRC30-40.

7-2.Hard chrome plated on the surface, not easy to wear

**8.Spindle housing:**

8-1.Material: ductile iron QT42-10.

8-2.Processing: CNC machine tooling

8-3.Accuracy: one processing hole end molding, to ensure concentricity.

**9.Spindle bearing lubrication system:**

9-1.Lubrication method: butter lubrication

9-2.Butter Model: LGMT2

9-3.Sealing method: mechanical oil retaining ring, keep the machine clean inside

10.Take up tension control: through the magnetic clutch control thread tension, by the PLC program controller automatically adjust the tension, keep tension constant

11.Cable laying : Special two-way cable laying device,  $\phi 40$ mm light rod bearing type , lay length and distance can be accurately adjusted**12.Pool Size :**

Outer Dia ( $\phi D$ )	Fix Hole ( $\phi d$ )	Outer Length (L1)	Inner Length (L2)	Positioning Hole	PCD
800	80	600	500	$\phi 40$	320

13.Dynamic power : 6.75KW

14.Installed power : 15KW

**➤ Detail Specification :**

Description	Model	Origin
1.Host Motor	15KW-6P 380V 50Hz	SIEMENS (BEIDE)
2.Inverter	15KW	INOVANCE
3.PLC Programmer	32MR	INOVANCE
4.PLC Expander	1SET	INOVANCE
5.Touch Screen	7 inches RGB	WEINVIEW
6.Electromagnetic Brake	24KG	TAIWAN
7.Magnetic Clutch	10KG	TAIWAN
8.Spindle Bearings	1SET	SWEDEN SKF
Other Bearings	1SET	JAPAN NSK
9.Timing Belt	1SET	US GATES
10.Cable Laying Device	GP40(Special bi-direction)	SHANXI DIANTOU
11.Electric hydraulic pump	SB-5	TAIWAN SHUNXIN
12.Tension Controller	10V	TAIWAN
13.Bow	SK5	Japan
14. Body	1SET	Self-processing
15. Spindle	2pcs	Self-processing
16. Aluminum Plate	2pcs	Self-processing
17. Pulley	1SET	Wu Xi
18. Bearing Housings	1SET	Self-processing



19. Disc	2pcs	Self-processing
20. Transmission Shaft	1pcs	Subcontracting
21. Leading Wheel	1SET	Self-processing surface with hard chrome plating
22. Wire guide wheel	6pcs	Self-processing surface with hard chrome plating

➤ **Spare parts sheet**

No.	Description	Model	Qty	Remark
1	Spindle guide wheel	(with Bearings)	1SET	
2	Wire guide wheel	(with Bearings)	1SET	
3	Loops in Bow	Tungsten Steel Ring	3pcs	
4	Split plate porcelain ring	φ6.8	3pcs	
5	Stranded Die	According to customer's stranded specifications	1pcs	
6-9	Timing belt		1pcs	
10	Spool Top sleeve	According to customer's reel drawings	1SET	
11	Tool	With hex wrench, open wrench and etc	1SET	

序号 Serial No.	绞距轮底径 Bottom Dia of Pitch Wheel	A传动绞距 A Drive Pitch	B传动绞距 B Drive Pitch
1	φ65	23	61
2	φ75	26	70
3	φ85	30	78
4	φ96	33	88
5	φ105	36	96
6	φ118	40	107
7	φ125	43	113
8	φ138	47	125
9	φ151	51	136
10	φ163	55	147
11	φ178	60	160



➤ **630 double shaft-less multi-wire active pay-off** :

a constant tension control and no twisting double spool pay-off, can be used for single-wire or twisted wire pay-off, no interfere with each other, independent release, easy to operate, and saving space.

1. wire diameter range:  $\varphi 0.15$ - $\varphi 0.64$ mm;
2. Speed: MAX 200m/min;
3. Spool Size: OD $\varphi 630$  \* ID $\varphi 125$  \* Outer Width 475 \* Inner width 400mm;
4. Tension control: In the pendulum mounted on the cylinder, through the regulator to adjust the pressure of the cylinder to change the pay-off tension, can also use the hammer to adjust the tension;
5. Drive: reel by the brake with 1.5KW three-phase Special motor + timing belt + inverter control;
6. Brake: the disc spring brake inside the motor control the motor stop;
7. Speed control: by the sensor to send pendulum signal to the inverter, control the pay-off speed and the host (such as stranding machine) to maintain synchronization;
8. Spool handling: manual loading and unloading reel;
9. Painting: RAL5015 sky blue (according to the customer to provide color plate)

**10. Main configuration**

No.	Description	Model	Brand	Remark
1	Inverter	1.5KW	Yaskawa	
2	Motor	1.5KW-6P Frequency	SFC/DANMA	
3	Bearing		NSK	
4	Motion detector	LXB-05P2	FORTEK	
5	Precision regulating valve	IR2020-02	SNS	
6	Stainless steel cylinder	MA25*300	SNS	

Theoretical production capacity, for reference only (Not including the replace spool time, the capacity may be different according to the actual production lay length )

Specification	19/0.41		19/0.52		19/0.64	
Host speed RPM	1150	1500	1100	1350	1000	1200
1+12 pitch	45	48	58.8	62	76.1	70
1+6 pitch	70	25	80	35	100	40
Twist Direction	Z+S/ S+Z	Z+Z S+S	Z+S/ S+Z	Z+Z S+S	Z+S/ S+Z	Z+Z S+S
1 Hour Capacity kg/h	138	192	277	358	468	545
24 Hours Capacity kg/h	3310	4600	6650	8600	11250	13075



800B绞线机(左手机、适用800盘)  
完成1+6+12最终绞合成型

630F绞线机  
(适用PND630盘)  
完成1+6内层绞线

630双轴多头动力放线机-无轴式  
(适用PND630盘)  
完成12股铜丝放线

