



## **Professional Grade 1+6(185F)+12(500C) Double Twist Bunching Machine with 2 Year Warranty!**

The quality of our **1+6(185F)+12(500C) Double Twist Bunching Machine** is second to none. Can do conductor stranding from 0.38mm<sup>2</sup> to 1.5mm<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(185F)+12(500C) 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(185F)+12(500C) 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: 19/0.16 ~ 0.32) 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(185F)+12(500C) 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(185F)+12(500C) Double Twist Bunching Machine** 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.



This **1+6(185F)+12(500C) Double Twist Bunching Machine** is CE approved



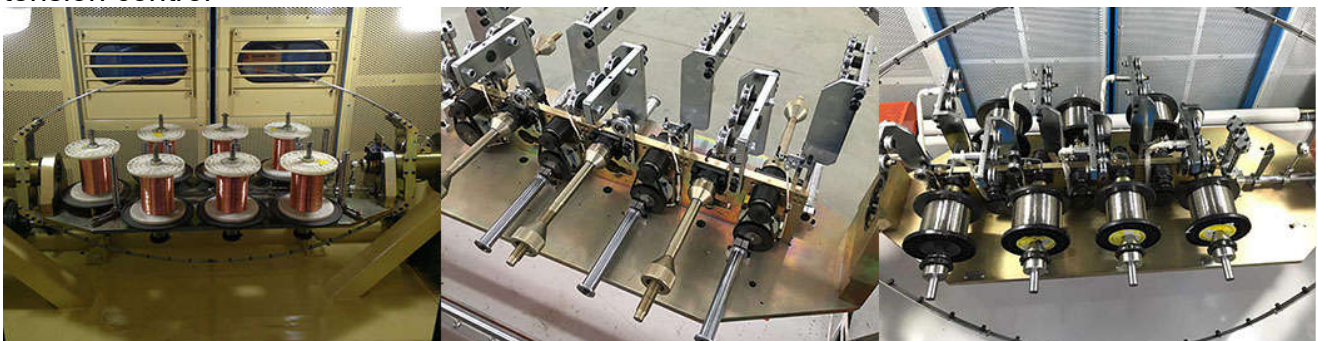
4. Can fit 380V to 440V, 50HZ to 60HZ, color can be customize  
3 phase 4 wires, R, S, T, PEN  
3 phase 5 wires, R, S, T, PE, N

5. **Type:**

**1+6(185F)+12(500C) Double Twist Bunching Machine** for 19 wire 0.16-0.32mm stranding, cross section 0.38-1.5mm<sup>2</sup>, pitch range 6.3-52.3mm 2600RPM (please refer to page 5-14)

6. **Some Option:**

**1+6 control type:** vertical friction / horizontal powder clutch / horizontal Closed-loop tension control





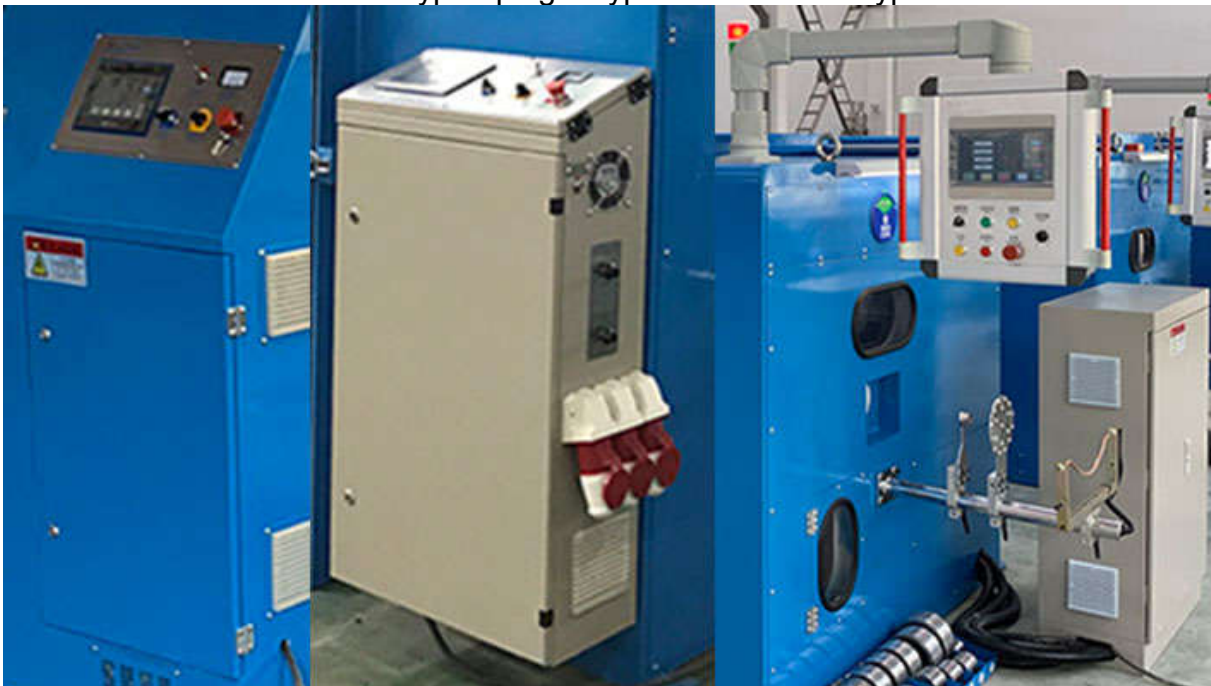
**Set-up:**

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

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

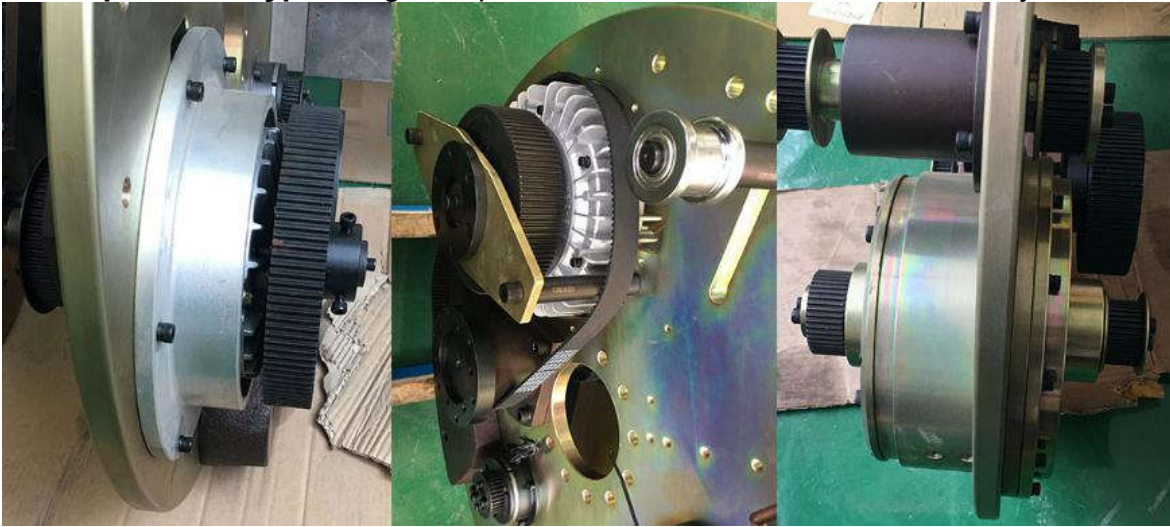


**Power Cabinet:** Embedded type / plug in type / Stand alone type





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	寄存器	描述	操作
<input type="checkbox"/>	主机转矩		VD 1060	32	主机转矩	<a href="#">↕</a> <a href="#">↔</a> <a href="#">🗑️</a>
<input type="checkbox"/>	当前米数		VD 330	32	当前米数	<a href="#">↕</a> <a href="#">↔</a> <a href="#">🗑️</a>
<input type="checkbox"/>	当前张力		VW 5000	32	当前张力	<a href="#">↕</a> <a href="#">↔</a> <a href="#">🗑️</a>
<input type="checkbox"/>	当前线速		VD 1190	32	当前线速	<a href="#">↕</a> <a href="#">↔</a> <a href="#">🗑️</a>
<input type="checkbox"/>	节距设定		VD 170	32	节距设定	<a href="#">↕</a> <a href="#">↔</a> <a href="#">🗑️</a>
<input type="checkbox"/>	设置米数		VD 740	32	设置米数	<a href="#">↕</a> <a href="#">↔</a> <a href="#">🗑️</a>
<input type="checkbox"/>	设定张力		VW 360	32	设定张力	<a href="#">↕</a> <a href="#">↔</a> <a href="#">🗑️</a>
<input type="checkbox"/>	排距设定		VW 1420	32	排距设定	<a href="#">↕</a> <a href="#">↔</a> <a href="#">🗑️</a>
<input type="checkbox"/>	左轴1#温度		VD 3230	32	左轴1#温度	<a href="#">↕</a> <a href="#">↔</a> <a href="#">🗑️</a>
<input type="checkbox"/>	左轴2#温度		VD 3250	32	左轴2#温度	<a href="#">↕</a> <a href="#">↔</a> <a href="#">🗑️</a>
<input type="checkbox"/>	右轴3#温度		VD 3270	32	右轴3#温度	<a href="#">↕</a> <a href="#">↔</a> <a href="#">🗑️</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 (185F) +12 (500C) Double Twist Bunching Machine Specification**

### **1 + 6 (185F) Technical specification (Magnetic powder tension pay-off)**

#### **➤ 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 bunching machine, while energy-saving, smaller size and lower noise.
2. Brake: electromagnetic brake.
3. The internal tension : Horizontal powder Clutch control.
4. Wire bunching system: with the latest structure, the conductor from the spool directly through the wire roller to the bow, bow material with Imported Japan SK5, with double porcelain eyes to through the wire, to avoid twist scratches, jumping phenomenon while high-speed running's wind resistance
5. Spindle lubrication: butter 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. Wire bunching system: with the latest structure, the conductor from the spool directly through the wire roller to the bow, bow material with Imported Japan SK5, with double porcelain eyes to through the wire, to avoid twist scratches, jumping phenomenon while high-speed running's wind resistance
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 the 500C stranding machine to complete the 1 +6 +12 twist effect.

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

1. Application: conductors 1 +6 +12 regular twisting
2. Single conductor diameter range:  $\varnothing 0.16 \sim \varnothing 0.32\text{mm}$
3. 1 + 6 Stranded outside diameter range:  $\varnothing 0.48 \sim \varnothing 0.96\text{mm}$
4. Spool size:  $\varnothing 185\text{mm} \times \varnothing 30\text{mm} \times 180\text{mm}$  (or customize)
5. Twist Maximum speed: 2000RPM
6. Tension: Pay-off horizontal structure, magnetic powder brake controls tension.
7. 1 +6 strands lay length: Link to the host, with infinitely variable speed to change the twisted pitch
8. Main motor: 5.5KW AC motor
9. Loading capacity: about 15KG 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
- 14.Spool Loading: without lift,manual loading and unloading
- 15.Spindle lubrication: automatic lubrication( PLC programmer control the lubricator)
- 16.Noise index: less than 82 dB
- 17.Machine size/MM (length×width×height): 2709 × 1155 × 1290
- 18.Weight: 1600 Kg
- 19.Packing: waterproof simple packaging
- 20.Direction: left hand machine, i.e, facing to the front door,pay-off on the right (can be customization according to customer requirements)
- 21.Body and door seal: plastic seal
- 22.Spindle bearing Seal: Mechanical oil retaining ring
- 23.Front and rear double 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 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: Japan imported SK5.
- (2)Shape: special appearance, reduce the wind resistance.
- (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:**

- (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 auto lubrication(automatic lubrication)
- (2)Butter Model: Mobil Lux EP1#
- (3)Sealing method: mechanical oil retaining ring, keep the machine clean inside

**10. Pay-off**

Outer Dia (φD)	Hole(φd)	Outer Width (L1)	Inner Width (L2)
185	30	185	160

(The above specifications are factory standard , can be customized according to client's spool drawings)

11. Dynamic power : 2.5KW

12. Installed power : 5.5KW

**➤ Detail Specification:**

Description	Model	Origin
1. Host Motor	5.5KW	SFC
2. Inverter	5.5KW	INOVANCE
3. Electromagnetic Brake	24KG	TAIWAN
4. Spindle Bearings	1SET	SWEDEN SKF
Other Bearings	1SET	JAPAN NSK
5. Timing Belt	1SET	
6. Bow	1SET	Japan
7. Body	1SET	Self-processing
8. Spindle	2pcs	Self-processing
9. Cantilever Arm	2pcs	Self-processing
10. Timing Pulley	1SET	Wu Xi
11. Bearing Housings	1SET	Self-processing
12. cradle	1pcs	Self-processing
13. Transmission Shaft	1pcs	Subcontracting
14. Wire guide wheel	3pcs	Self-processing surface with hard chrome plating
15. Powder Clutch	0.5KG	TAIWAN

**12 (500C) Double Twist Bunching Machine****➤ Merits:**

- 1. High speed and 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: Auto 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 Rotation Arm finish: after high-speed dynamic balance processing; noise less than 80 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. Compressor device: The machine is equipped with second compression devices to ensure the roundness of the conductor after stranding, guarantee the product characteristics of thin-walled insulated wires, and effectively reduce the loss of insulating materials

➤ **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:  $\varnothing 0.16 \sim \varnothing 0.32\text{mm}$
3. Twisted wire diameter range:  $\varnothing 0.48 \sim \varnothing 1.56\text{mm}$
4. Stranded cross-sectional area:  $0.38 - 1.5\text{mm}^2$
5. Spool specifications:  $\varnothing 500 \text{ mm} \times (300 - 375) \text{ mm} \times \varnothing 56\text{mm}$  (or customize)
6. Normal working speed: up to 3000RPM(different specifications ,different speed )
7. Cable laying:  $\varnothing 20\text{mm}$  light rod bearing type ,rolling lay length and distance can be accurately adjusted
8. Strand lay length:  $6.3 \sim 52.3\text{mm}$
9. Main motor: 5.5KW AC motor + inverter
10. Assembly volume: about 200Kg
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: with Sweden Japan NSK bearings
15. Synchronous belt: import from US
16. Spool loading/unloading : Electric pump hydraulic lifting
17. Spindle lubrication: Sealed grease lubrication method (automatic lubrication)
18. Noise index: less than 79dB
19. Machine size (mm): 2680L × 1250W × 1500H
20. Weight: 2500 Kg
21. Coating: RAL5015 Sky blue (or customized)
22. Packing: waterproof simple packaging
23. Direction: from right to left , i.e, facing to the front door, pay-off on the right (or customized)
24. Body and door seal: plastic seal
25. Spindle bearing Seal: Mechanical oil retaining ring

### ➤ **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 +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:

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. Rotation Arm:

1) Material: 45# iron Steel

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

3) Dynamic balance: Accuracy of G2.5

5. Bow

1) Material: Japan imported SK5.

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

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:

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 lubrication (automatic lubrication)
  - 2)Butter Model: LGMT2
  - 3)Sealing method: mechanical oil retaining ring, keep the machine clean inside
- 10.Take up:Tensile 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,  $\phi$ 20mm light rod bearing type , lay length and distance can be accurately adjusted

**12.Spool Size:**

Out Dia ( $\phi$ D)	Fix Hole( $\phi$ d)	Outer Length (L1)	Inner Length (L2)	Positioning Hole	PCD
500	56	300-375	300	$\phi$ 25	142

13.Dynamic power : 2.5KW

14.Static power : 5.5KW

**➤ Detail Specifications:**

Description	Model	Origin
1.Host Motor	5.5KW	SIEMENS
2.Inverter	5.5KW	INOVANCE
3.PLC Programmer	1SET	INOVANCE
4.PLC Expander	1SET	INOVANCE
5.Touch Screen	7 inches RGB	WEINVIEW
6.Electromagnetic Brake	24KG	TAIWAN
7.Magnetic Clutch	1.2KG	TAIWAN
8.Spindle Bearings	1SET	SWEDEN SKF
Other Bearings	1SET	JAPAN NSK
9.Timing Belt	1SET	
10.Cable Laying Device	GP20(Special bi-direction)	SHANXI Tian Xiang
11.Tension Controller	10V	TAIWAN
12.Bow	1SET	Japan
13. Body	1SET	Self-processing
14. Spindle	2pcs	Self-processing
15. Aluminum Plate	2pcs	Self-processing
16. Timing Pulley	1SET	SHANGHAI
17. Bearing Housings	1SET	Self-processing
18. Disc	2pcs	Self-processing
19. Transmission Shaft	1pcs	Subcontracting
20. Leading Wheel	1SET	Self-processing with hard chrome plating



21. Wire guide wheel	6pcs	Self-processing with hard chrome plating
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➤ **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	Bilateral porcelain ring	3pcs	
4	Split plate porcelain ring	Φ5.0	3pcs	
5	Stranded Die	Client provide		
6-9	Timing belt		1pcs	
10	Spool Top sleeve	According to reel drawings	1SET	
11	Tool	With hex wrench, open wrench and etc	1SET	
12	Operating instructions		1SET	
13	Electrical Schematic		1SET	
14	Inverter manual		1pcs	

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	∅32.9	6.3	18.5
2	∅38.4	7.4	21.5
3	∅42.5	8.2	23.8
4	∅49.4	9.5	27.7
5	∅56.2	10.8	31.5
6	∅61.5	11.8	34.5
7	∅65.8	12.6	36.8
8	∅71.3	13.7	39.9
9	∅76.8	14.8	43.0
10	∅82.3	15.8	46.0
11	∅87.8	16.9	49.1
12	∅93.3	17.9	52.3

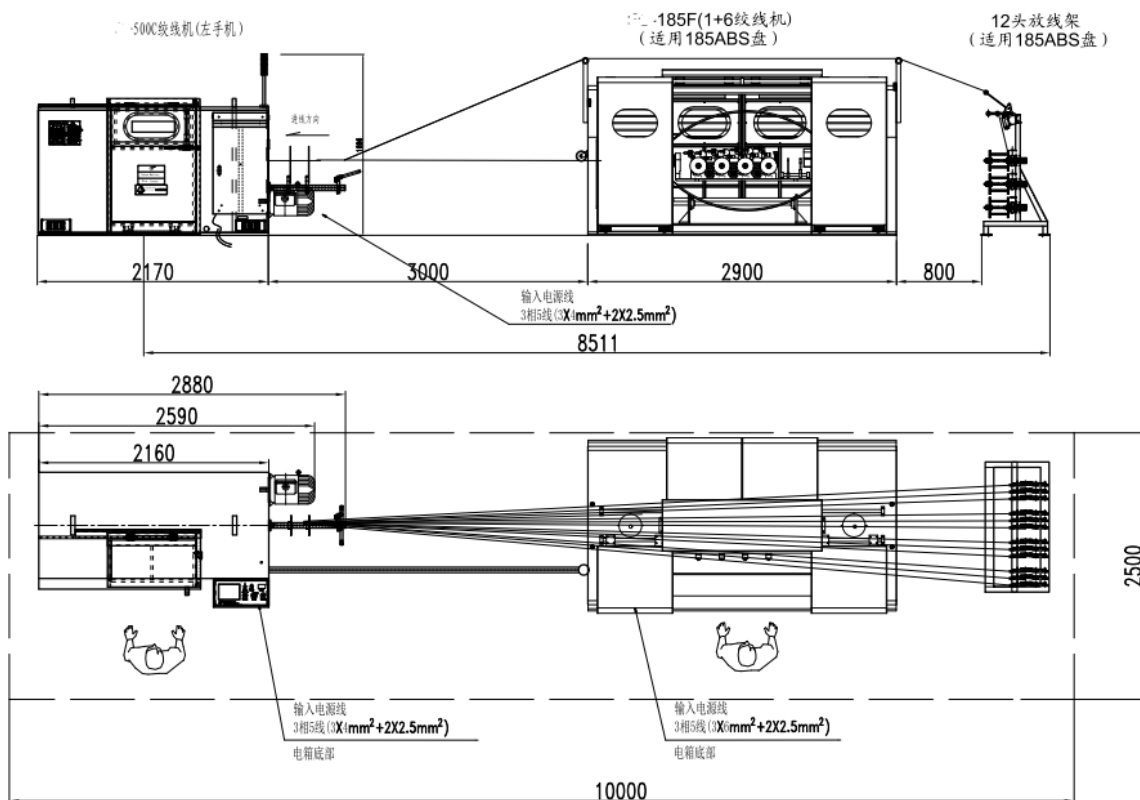


➤ **180 tension pay-off :**

1. Spool Size: PND160-185 ABS spool
2. Inlet diameter:  $\Phi 0.16 \sim \Phi 0.32\text{mm}$
3. Number of head: 12 head / station \* 1 set
4. Brake: while wire broken ,the belt automatic brake
5. Tension control: spring-type tension gun control, keep constant tension, with broken line detection of automatic braking, linked to the machine can achieve automatic shutdown
6. Loading Limits: max load 15Kg
7. Oblique fast nuts

➤ 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	19/0.16		19/0.19		19/0.23		19/0.26		19/0.32	
Host speed: RPM	1250	3000	1200	3000	1150	2800	1150	3000	1100	3000
1+12 pitch	14.8	14.8	17.9	17.9	21.5	21.5	23.8	23.8	31.5	31.5
1+6 pitch	25	9.5	28	10.8	30	12.6	32	14.8	45	17.9
Twist Direction	S+Z/ Z+S	S+S/ Z+Z	S+Z/ Z+S	S+S/ Z+Z	S+Z/ Z+S	S+S/ Z+Z	S+Z/ Z+S	S+S/ Z+Z	S+Z/ Z+S	S+S/ Z+Z
1 Hour Capacity/KG	7.5	18	12	30	21	51.5	29.5	77.5	57	156
24 Hours Capacity/KG	180	432	288	720	504	1236	708	1860	1368	3744





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