



Professional Grade **650C-1 Double Twist Bunching Machine** with 2 Year Warranty!

The quality of our **650C-1 Double Twist Bunching Machine** is second to none. Can do conductor stranding from 0.3mm² to 4.0mm². products are widely used in IT

communications, aerospace, military, medical, locomotives, automobiles, robots, ships, 5G cloud databases and other fields

650C-1 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. **650C-1 Double Twist Bunching Machine** is High speed, constant tension from empty reel to full reel, excellent quality of stranded wire, which can be used for stranding instead of stranding to meet customer's requirements for stranding of small cross-sectional area. The whole machine is driven by a synchronous belt, and only the take-up wheel needs to be replaced when changing the lay length, easy to use

2. IoT (optional): **650C-1 Double Twist Bunching Machine** information of multiple devices can be integrated on multiple mobile phones or computers, and the operation of the machine can be checked at any time, such as speed, stranding specifications, line speed, output, equipment maintenance, etc., and can be online at the same time Diagnosis and remote maintenance, etc., to achieve refined management and reduce production and maintenance costs.

3. **650C-1 Double Twist Bunching Machine** is a new product developed by our company, with high speed, constant tension from empty to full reel, and excellent stranding quality. This machine can be equipped with a pressure sensor to monitor the tension of the take-up online, and feedback and correct the tension value at the same time;

4. Internal precision wiring of the stranding machine (optional): **650C-1 Double Twist Bunching Machine** can use stepper motor + precision ball screw wiring, 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 precision, and the wiring width and row spacing are set on the touch screen, no need to stop the adjustment, reduce downtime and improve production efficiency.

5. Intelligent constant tension control system (optional): through the high-precision tension closed-loop control system, **650C-1 Double Twist Bunching Machine** tension of the internal take-up is constant from the empty reel to the full reel; solve the problem of the winding The diameter increases, the half-reel start is difficult, and the tension tracking is not timely, causing quality problems such as copper wire stretching; at the same time, the take-up tension is automatically adjusted according to the set tension value.

6. Automatic oil supply system: **650C-1 Double Twist Bunching Machine** program is set to automatically refuel at a fixed time, which is not affected by the environment, and can be used for regular and quantitative oil, to prevent bearing damage caused by no timing refueling; to prevent lubricant deterioration, from the oil pump to the refueling point, the lubricant will not Contact with outside air to prevent deterioration of lubricant and mixing of debris.



This **650C-1 Double Twist Bunching Machine** is CE approved



7. 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

8. Type:

650C-1 Double Twist Bunching Machine for single wire 0.12-0.45mm stranding, cross section 0.3-2.5mm², pitch range 11.6-100mm 2600RPM (please refer to page 6-9)

650C-1 Double Twist Bunching Machine for single wire 0.15-0.52mm stranding, cross section 0.3-2.5mm², pitch range 11.6-100mm 2500RPM (please refer to page 10-16)

650C-1 Double Twist Bunching Machine for single wire 0.12-0.45mm stranding, cross section 0.3-2.5mm², pitch range 11.6-67mm 2400RPM (please refer to page 17-21)

650C-1 Double Twist Bunching Machine for single wire 0.15-0.64mm stranding, cross section 0.5-4.0mm², pitch range 11.6-100mm 2300RPM (please refer to page 22-28)





9. Some Option:

Set-up:

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

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





Spindle lubrication: manual lubrication / PLC lubricator



Power Cabinet: Embedded type / plug in type / Stand alone type / Synoptic panel type



Spool Lift: manual hydraulic pump / electrical hydraulic pump / Electrical screw Lift



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





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IOT remote system and temperature sensor



Pay terms: T/T, L/C.

Package:

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





650C-1 Double Twist Bunching Machine Specification

➤ **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 tension of taking-up should be increased from empty to the full (touch screen operate) The machine 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 (PLC auto Oil lubrication : Avoid artificial factors without regular refueling caused spindle bearings lack of oil, bearing damage)
- 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.Rotation Arm finish: After improvement, the rotating diameter is reduced, the appearance is more beautiful, the rotating wind resistance is reduced, and the noise is reduced
- 7.Spindle pulley and wire guide pulley are enlarged, the conductor bending radius is increased, and the twisted conductor is more rounded.
- 8.Electrical control: user-friendly touch screen interface operation, control by the PLC programmer + inverter
- 9.Bow with carbon fiber, strong hardness , not easy to deform, small vibration, light weight, small centrifugal force, wire slot, reduce wire and air friction, so that the quality is more stable
- 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: easy to operate, just change the leading wheel according to the lay length sheet

➤ **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: $\varphi 0.12 \sim \varphi 0.45\text{mm}$
3. Twisted wire diameter range: $\varphi 0.7 \sim \varphi 2.05\text{mm}$
4. Stranded cross-sectional area: $0.3 \sim 2.5\text{mm}^2$
5. Spool specifications: PND630
6. Normal working speed: up to 2600RPM(5200TPM),According to different stranded wire specifications, the speed is different
7. Traverse: $\varphi 30\text{mm}$ polish rod bearing type ,traverse width and row space can be accurately adjusted
8. Strand lay length: $11.6 \sim 100\text{mm}$
9. Main motor: 11KW AC motor + inverter
10. Assembly volume: about 400Kg
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:spindle with Sweden SKF bearings ,others with Japan NSK bearings
15. Timing belt: import from US
16. Spool loading/unloading : Electric hydraulic lift
17. Spindle lubrication: butter lubrication(PLC programmer automatic lubrication)
18. Noise index: Approx 82dB
19. Machine size (mm): 3300L × 1450W × 1650H
20. Weight: 4200 Kg
21. Painting: RAL5015 sky blue (or customize)
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: Imported carbon fiber.



- 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: ductile iron QT42-10.
 - 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
 - 2)Butter Model: Mobil Flux EP1#
 - 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, ϕ 30mm light rod bearing type , lay length and distance can be accurately adjusted
- 12.Spool Size:

Out Dia (ϕ D)	Fix Hole (ϕ d)	Outer Length (L1)	Inner Length (L2)	Position Hole	PCD
630	125	475	400	ϕ 28	260

13.Dynamic power : 5KW

14.Installed power : 11KW

➤ **Detail Specifications:**

Description	Model	Origin
1.Host Motor	11KW-4P 380V 50Hz	SIEMENS
2.Inverter	11KW	INOVANCE
3.PLC Programmer	32MR	INOVANCE
4.PLC Expander	1 set	INOVANCE
5.Touch Screen	7 inches RGB	WEINVIEW
6.Electromagnetic Brake	24KG	TAIWAN
7.Magnetic Clutch	2.5KG	TAIWAN
8.Spindle Bearings	1SET	SWEDEN SKF
Other Bearings	1SET	JAPAN NSK
9.Timing Belt	1SET	US GATES
10.Cable Laying Device	GP30(Special bi-direction)	SHANXI DIAN TOU
11.Electrical hydraulic pump	S-5B	TAIWAN SHUNXIN
12.Tension Controller	10V	TAIWAN
13.Carbon Fiber Bow	1SET	Import
14.round porcelain ring	1SET	Import
15. Body	1SET	Self-processing



16. Spindle	2pcs	Self-processing
17. Aluminum Plate	2pcs	Self-processing
18. Timing Pulley	1SET	WU XI
19. Bearing Housings	1SET	Self-processing
20. Disc	2pcs	Self-processing
21. Transmission Shaft	1pcs	Subcontracting
22. Leading Wheel	1SET	Self-processing with hard chrome plating
23. Wire guide wheel	6pcs	Self-processing 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		3pcs	
4	Split plate porcelain ring	Φ6.8	3pcs	
5	Stranded Die	Client provide		
6-9	Timing belt		1pcs	
10	Spool Top sleeve	According to reel drawings	1SET	
11	SKF Butter	LGMT2/1	1Bottle	1KG
12	Grease gun		1pcs	
13	Tool	With hex wrench, open wrench and etc	1SET	
14	Operating instructions		1SET	
15	Electrical Schematic		1SET	
16	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	∅54.8	11.6	34.6
2	∅60.3	12.8	38.1
3	∅65.8	13.9	41.5
4	∅71.3	15.1	45.0
5	∅76.8	16.3	48.5
6	∅82.3	17.4	51.9
7	∅85.6	18.1	54.0
8	∅87.8	18.6	55.4
9	∅93.3	19.8	58.8
10	∅98.8	20.9	62.3
11	∅104.2	22.1	65.8
12	∅109.7	23.2	69.2
13	∅115.2	24.4	72.7
14	∅120.7	25.6	76.1
15	∅126.2	26.7	79.6
16	∅141.8	30.0	89.5
17	∅157.0	33.2	100





650C-1 Double Twist Bunching Machine Specification

With pressure sensor 2.5KG magnetic powder

➤ **Merits:**

1. Internet of Things control: information of multiple devices can be integrated on multiple mobile phones or computers, and the operation of the machine can be checked at any time, such as speed, stranding specifications, wire speed, output, equipment maintenance, etc., and online diagnosis and remote Maintenance, etc., to achieve refined management and reduce production and maintenance costs.

2. Intelligent constant tension control system: Based on the traditional tension control of the stranding machine, through the high-precision tension closed-loop control system, the internal tension of the internal wire take-up is constant from the empty reel to the full reel; it solves the problem that the previous stranding machine becomes larger due to the warp It is difficult to start half-disc and the tension tracking is not timely, causing quality problems such as copper wire stretching; at the same time, the output torque of the take-up clutch is automatically adjusted according to the set tension value to take up the wire.

3. Automatic lubrication system: The program is set to automatically refuel at a fixed time, which is not affected by the environment. It can be quantitatively delivered according to the plan, so as to achieve no leakage and save time and effort; prevent lubricant deterioration, from the oil pump to the refueling point , The lubricant will not contact the outside air, thus preventing the lubricant from deteriorating and mixing with impurities.

1. Spindle temperature measurement device: When the spindle is abnormally heated or the equipment is not well ventilated, the spindle bearing temperature exceeds the set temperature, and the equipment will automatically alarm and stop.

2. Split cabinet: the main cabinet is separated from the outer cover, the equipment has lower noise, less vibration, and is more environmentally friendly.

6. High speed and good stability (the motor through the rigid coupling directly connected with the drive shaft)

7. Automatic tension control: When stranding, the tension of taking-up should be increased from empty to the full (touch screen operate) The machine automatically adjust the tension smoothly, keep the tension uniform variation ,Can achieve tension setting while working .

8. 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

9. Spindle lubrication: butter lubrication (PLC auto Oil lubrication : Avoid artificial factors without regular refueling caused spindle bearings lack of oil, bearing damage)

10. 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

11. Rotation Arm: After improvement, the rotating diameter is reduced, the appearance is more beautiful, the rotating wind resistance is reduced, and the noise is reduced

12. Spindle pulley and wire guide pulley are enlarged, the conductor bending radius is increased, and the twisted conductor is more rounded.



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

14.Bow with SK5 material, strong hardness , not easy to deform, small vibration, light weight, small centrifugal force, wire slot, reduce wire and air friction, so that the quality is more stable

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

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

➤ **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: $\varphi 0.15 \sim \varphi 0.52\text{mm}$

3.Twisted wire diameter range: $\varphi 0.7 \sim \varphi 2.05\text{mm}$

4.Stranded cross-sectional area: $0.3 \sim 2.5\text{mm}^2$

5.Spool specifications: PND630

6.Normal working speed: up to 2500RPM(5000TPM),According to different stranded wire specifications, the speed is different

7.Traverse: $\varphi 30\text{mm}$ polish rod bearing type ,traverse width and row space can be accurately adjusted

8.Strand lay length: $11.6 \sim 100\text{mm}$

9.Main motor: 11KW AC motor + inverter

10.Assembly volume: about 400Kg

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:spindle with Sweden SKF bearings ,others with Japan NSK bearings

15.Timing belt: import from US

16.Spool loading/unloading : Electric screw lift

17.Spindle lubrication: butter lubrication(PLC programmer automatic lubrication)

18.Noise index: Approx 78dB

19.Machine size (mm): $3500\text{L} \times 1450\text{W} \times 1650\text{H}$

20.Weight: 4200 Kg

21.Painting: RAL5015 sky blue (or customize)

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: SK5 Flyer Bow.
 - 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: ductile iron QT42-10.
 - 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: Mobil Flux EP1#
 - 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, φ30mm light rod bearing type , lay length and distance can be accurately adjusted
- 12.Pool Size:

Out Dia (φD)	Fix Hole (φd)	Outer Length (L1)	Inner Length (L2)	Position Hole	PCD



630	125	475	400	Φ28	260
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13.Dynamic power : 5KW

14.Installed power : 11KW

➤ Detail Specifications:

Description	Model	Origin
1.Host Motor	11KW-4P 380V 50Hz	SIEMENS
2.Inverter	11KW	INOVANCE
3.PLC Programmer	32MR	INOVANCE
4.PLC Expander	1 set	INOVANCE
5.Touch Screen	7 inches RGB	WEINVIEW
6.Electromagnetic Brake	24KG	TAIWAN
7.Magnetic Clutch	2.5KG	TAIWAN
8.Spindle Bearings	1SET	SWEDEN SKF
Other Bearings	1SET	JAPAN NSK
9.Timing Belt	1SET	US GATES
10.Cable Laying Device	GP30(Special bi-direction)	SHANXI TIANXIANG
11.Electric screw lift	0.75KW motor + worm gear reducer	--
12.Intelligent constant tension controller	608F	TAIWAN
13.Tension sensor	15KG	TAIWAN
14.Wireless communicator	CH02-485-2K	TAIWAN
15.SK5 Flyer Bow	1SET	SK5
16.round porcelain ring in bow	1SET	Import
17. Body	1SET	Self-processing
18. Spindle	2pcs	Self-processing
19. Rotation Arm	2pcs	Self-processing
20. Timing Pulley	1SET	WU XI
21. Bearing Housings	1SET	Self-processing
22. Disc	2pcs	Self-processing
23. Transmission Shaft	1pcs	Subcontracting
24. Leading Wheel	1SET	Self-processing with hard chrome plating
25. Wire guide wheel	6pcs	Self-processing 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		3pcs	
4	Split plate porcelain ring		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	

❖ **Dual 630 Double shaft multi-wires active pay-off**

It is constant tension control, Non-twist wires pay-off unit, apply for single conduct and multiple drawing wires pay-off, each reel separated control by inverter, no interface, easy operate and save space.

1. Single Wire range: 0.15-0.64mm

2. Speed: Max 200m/min

3. Reel Size: 630*125*475

4. Tension control:

① with pneumatic cylinder on the rocker, can change pressure value;

② Use Counterweight Regulate to change the wire tension

5. Driver: 1.5KW Special 3phases motor with brake through belt to control the spool action; drive by inverter

6. Brake: Use disc spring inner brake to stop the motor rocker, can adjust the pressure value to change the wire tension

7. Speed control: sensor feedback the signal to the inverter to control the speed of pay-off and the host

8. Reel load: Use Manual Hydraulic lift (Client provide)

9. Coating: RAL 5015 Sky Blue

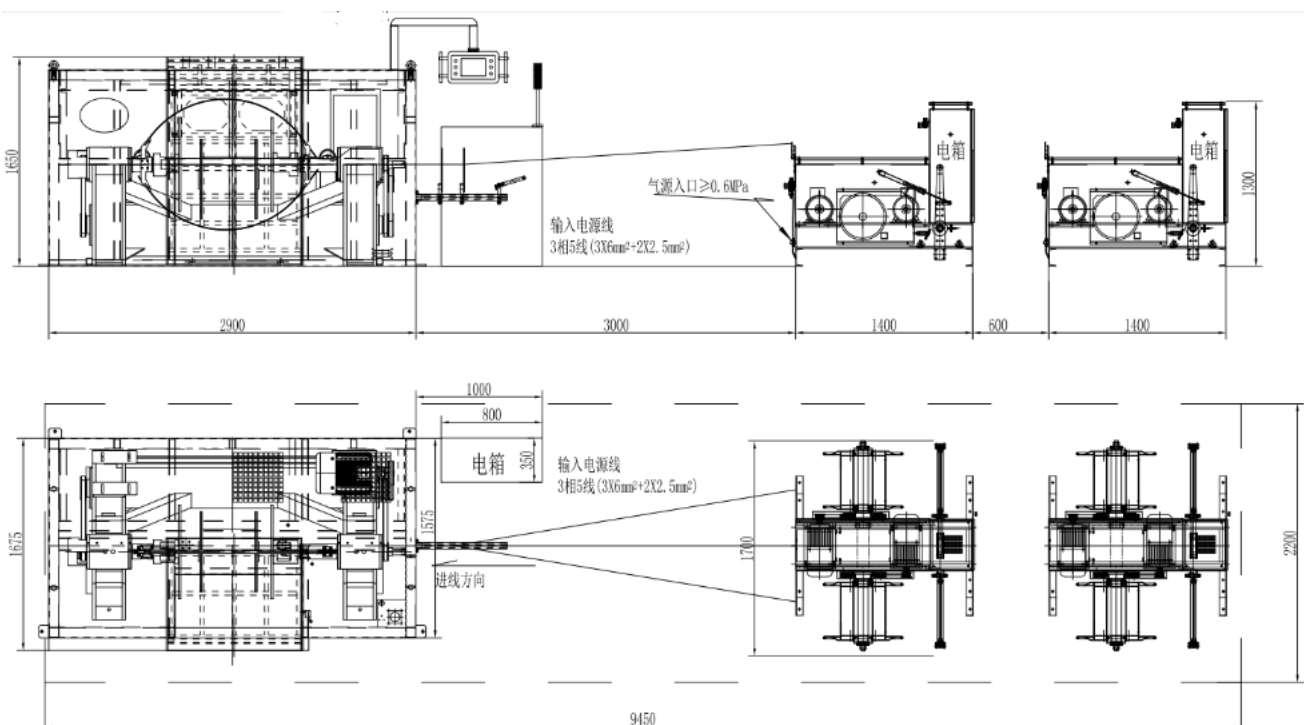
10. Weight: 600KG

11. Parameter:

Description	Model	Brand	Remark
1. Inverter	1.5KW	YASKAWA	
2. Motor	1.5KW-6P Special inverter motor	SFC/DANMA	
3. Bearings	1SET	NSK	
4. Sensor	SYL18	FOTEK	
5. Precision pressure regulating valve	IR2020-02	SNS	
6. stainless steel cylinder	MA25*300	SNS	



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	ø54.8	11.6	34.6
2	ø60.3	12.8	38.1
3	ø65.8	13.9	41.5
4	ø71.3	15.1	45.0
5	ø76.8	16.3	48.5
6	ø82.3	17.4	51.9
7	ø85.6	18.1	54.0
8	ø87.8	18.6	55.4
9	ø93.3	19.8	58.8
10	ø98.8	20.9	62.3
11	ø104.2	22.1	65.8
12	ø109.7	23.2	69.2
13	ø115.2	24.4	72.7
14	ø120.7	25.6	76.1
15	ø126.2	26.7	79.6
16	ø141.8	30.0	89.5
17	ø157.0	33.2	100





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650C-1 Double Twist Bunching Machine Specification

➤ **Merits:**

1. Intelligent constant tension control system: Based on the traditional tension control of the stranding machine, through the high-precision tension closed-loop control system, the internal tension of the internal wire take-up is constant from the empty reel to the full reel; it solves the problem that the winding warp of the previous stranding machine becomes larger. It is difficult to start half-disc and the tension tracking is not timely, causing quality problems such as copper wire stretching; at the same time, the output torque of the take-up clutch is automatically adjusted according to the set tension value to take up the wire.
2. German ZF hysteresis clutch: The unique feature is that it can continuously switch from synchronous mode to slip mode. The torque and linearity are constant, which has advantages that other methods can't compare. Non-contact torque transmission, through the air gap of the clutch of the mechanical components, continuously changes, and then becomes a constant to avoid any wear.
3. Automatic lubrication system: The program is set to automatically refuel at a fixed time, which is not affected by the environment. It can be quantitatively delivered according to the plan, so as to achieve no leakage and save time and effort; prevent lubricant deterioration, from the oil pump to the refueling point , The lubricant will not contact the outside air, thus preventing the lubricant from deteriorating and mixing with impurities.
4. High speed and good stability (the motor through the rigid coupling directly connected with the drive shaft)
5. 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
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; The upper and lower spool adopts electric lifting device; ensure that the twisted bow can be raised and lowered in the horizontal position to avoid human error operation to deform the twisted bow top.
7. Rotation Arm: After improvement, the rotating diameter is reduced, the appearance is more beautiful, the rotating wind resistance is reduced, and the noise is reduced
8. Spindle pulley and wire guide pulley are enlarged, the conductor bending radius is increased, and the twisted conductor is more rounded.
9. Electrical control: user-friendly touch screen interface operation, control by the PLC programmer + inverter
10. Bow with import fiber glass material, strong hardness , not easy to deform, small vibration, light weight, small centrifugal force, wire slot, reduce wire and air friction, so that the quality is more stable
11. Transmission system: drive with synchronous belts , laying accurate, no internal lubrication position, no waste products effect by refueling and machine cleaning
12. Change the lay length: easy to operate, just change the leading wheel according to the lay length sheet



➤ **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: $\varnothing 0.15 \sim \varnothing 0.52\text{mm}$
- 3.Twisted wire diameter range: $\varnothing 0.7 \sim \varnothing 2.05\text{mm}$
- 4.Stranded cross-sectional area: $0.3 \sim 2.5\text{mm}^2$
- 5.Spool specifications: PND630
- 6.Normal working speed: up to 2400RPM(4800TPM),According to different stranded wire specifications, the speed is different
- 7.Traverse: $\varnothing 30\text{mm}$ polish rod bearing type ,traverse width and row space can be accurately adjusted
- 8.Strand lay length: $11.6 \sim 67\text{mm}$
- 9.Main motor: 11KW AC motor + inverter
- 10.Assembly volume: about 400Kg
- 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: Hysteresis clutch control thread tension, by the PLC program controller automatically adjust the tension, keep the tension constant
- 14.Machine drive bearings:spindle with Sweden SKF bearings ,others with Japan NSK bearings
- 15.Timing belt: import from US
- 16.Spool loading/unloading : Electric lift
- 17.Spindle lubrication: butter lubrication(PLC programmer automatic lubrication)
- 18.Noise index: Approx 82dB
- 19.Machine size (mm): $3650\text{L} \times 2000\text{W} \times 2200\text{H}$
- 20.Weight: 5500 Kg
- 21.Painting: RAL5015 sky blue (or customize)
- 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: SK5 Flyer Bow.
- 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: ductile iron QT42-10.
- 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: Mobil Flux EP1#
- 3)Sealing method: mechanical oil retaining ring, keep the machine clean inside

10.Take up:Tensile tension control: through the Hysteresis 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, φ30mm light rod bearing type , lay length and distance can be accurately adjusted

12.Pool Size:

Out Dia(φD)	Fix Hole (φd)	Outer Length (L1)	Inner Length (L2)	Positioning Hole	PCD
630	125	475	400	φ28	260

13.Dynamic power : 5KW

14.Installed power : 11KW

➤ Detail Specifications:

Description	Model	Origin
1.Host Motor	11KW-4P 380V 50Hz	SIEMENS
2.Inverter	11KW	INOVANCE
3.PLC Programmer	32MR	INOVANCE



4.PLC Expander	1 set	INOVANCE
5.Touch Screen	7 inches RGB	WEINVIEW
6.Electromagnetic Brake	24KG	TAIWAN
7.Hysteresis clutch	EKU-10	TAIWAN
8.Spindle Bearings	1SET	SWEDEN SKF
Other Bearings	1SET	JAPAN NSK
9.Timing Belt	1SET	US GATES
10.Cable Laying Device	GP30(Special bi-direction)	SHANXI TIANXIANG
11.Electric lift	SB-5T	TAIWAN
12.Intelligent constant tension controller	608F	TAIWAN
13.Tension sensor	10KG	TAIWAN
14.Wireless communicator	CH02-485-2K	TAIWAN
15.SK5 Flyer Bow	1SET	SK5
16.round porcelain ring	1SET	Import
17. Body	1SET	Self-processing
18. Spindle	2pcs	Self-processing
19. Rotation Arm	2pcs	Self-processing
20. Timing Pulley	1SET	WU XI
21. Bearing Housings	1SET	Self-processing
22. Disc	2pcs	Self-processing
23. Transmission Shaft	1pcs	Subcontracting
24. Leading Wheel	1SET	Self-processing with hard chrome plating
25. Wire guide wheel	6pcs	Self-processing 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		3pcs	
4	Split plate porcelain ring		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	∅54.8	11.6	23.5
2	∅60.3	12.8	25.8
3	∅65.8	13.9	28.0
4	∅71.3	15.1	30.5
5	∅76.8	16.3	32.5
6	∅82.3	17.4	35.0
7	∅85.6	18.1	36.6
8	∅87.8	18.6	37.6
9	∅93.3	19.8	40.0
10	∅98.8	20.9	42.0
11	∅102.2	21.6	43.5
12	∅109.7	23.2	46.8
13	∅115.2	24.4	49.5
14	∅120.7	25.6	51.5
15	∅126.2	26.7	54.0
16	∅141.8	30.0	60.5
17	∅157.0	33.2	67.0





650C-1 Double Twist Bunching Machine Specification

With pressure sensor 2.5KG magnetic powder

➤ Merits:

1. Internet of Things control: information of multiple devices can be integrated on multiple mobile phones or computers, and the operation of the machine can be checked at any time, such as speed, stranding specifications, wire speed, output, equipment maintenance, etc., and online diagnosis and remote Maintenance, etc., to achieve refined management and reduce production and maintenance costs.
2. Intelligent constant tension control system: Based on the traditional tension control of the stranding machine, through the high-precision tension closed-loop control system, the internal tension of the internal wire take-up is constant from the empty reel to the full reel; it solves the problem that the previous stranding machine becomes larger due to the warp It is difficult to start half-disc and the tension tracking is not timely, causing quality problems such as copper wire stretching; at the same time, the output torque of the take-up clutch is automatically adjusted according to the set tension value to take up the wire.
3. Automatic lubrication system: The program is set to automatically refuel at a fixed time, which is not affected by the environment. It can be quantitatively delivered according to the plan, so as to achieve no leakage and save time and effort; prevent lubricant deterioration, from the oil pump to the refueling point , The lubricant will not contact the outside air, thus preventing the lubricant from deteriorating and mixing with impurities.
4. Spindle temperature measurement device: When the spindle is abnormally heated or the equipment is not well ventilated, the spindle bearing temperature exceeds the set temperature, and the equipment will automatically alarm and stop.
5. Split cabinet: the main cabinet is separated from the outer cover, the equipment has lower noise, less vibration, and is more environmentally friendly.
6. High speed and good stability (the motor through the rigid coupling directly connected with the drive shaft)
7. Automatic tension control: When stranding, the tension of taking-up should be increased from empty to the full (touch screen operate) The machine automatically adjust the tension smoothly, keep the tension uniform variation ,Can achieve tension setting while working .
8. 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
9. Spindle lubrication: butter lubrication (PLC auto Oil lubrication : Avoid artificial factors without regular refueling caused spindle bearings lack of oil, bearing damage)
10. 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
11. Rotation Arm: After improvement, the rotating diameter is reduced, the appearance is more beautiful, the rotating wind resistance is reduced, and the noise is reduced
12. Spindle pulley and wire guide pulley are enlarged, the conductor bending radius is increased, and the twisted conductor is more rounded.



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

14. Bow with SK5 material, strong hardness, not easy to deform, small vibration, light weight, small centrifugal force, wire slot, reduce wire and air friction, so that the quality is more stable

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

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

➤ **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: $\varnothing 0.15 \sim \varnothing 0.52\text{mm}$

3. Twisted wire diameter range: $\varnothing 0.7 \sim \varnothing 2.6\text{mm}$

4. Stranded cross-sectional area: $0.3 \sim 4.0\text{mm}^2$

5. Spool specifications: PND630

6. Normal working speed: up to 2300RPM(4600TPM), According to different stranded wire specifications, the speed is different

7. Traverse: $\varnothing 30\text{mm}$ polish rod bearing type, traverse width and row space can be accurately adjusted

8. Strand lay length: $11.6 \sim 100\text{mm}$

9. Main motor: 11KW AC motor + inverter

10. Assembly volume: about 400Kg

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: spindle with Sweden SKF bearings, others with Japan NSK bearings

15. Timing belt: import from US

16. Spool loading/unloading : Electric screw lift

17. Spindle lubrication: butter lubrication(PLC programmer automatic lubrication)

18. Noise index: Approx 78dB

19. Machine size (mm): $3500\text{L} \times 1450\text{W} \times 1650\text{H}$

20. Weight: 4200 Kg

21. Painting: RAL5015 sky blue (or customize)

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 (0.03g of weight difference)
- 4.Rotation Arm:
 - 1)Material: 45# iron steel
 - 2)Accuracy: All end faces are positioned relative to the locating holes(less than 0.03 grams)
 - 3)Dynamic balance: Accuracy of G2.5 (0.03 grams of weight difference)
- 5.Bow
 - 1)Material: SK5 Flyer Bow.
 - 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: ductile iron QT42-10.
 - 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: Mobil Flux EP1#
 - 3)Sealing method: mechanical oil retaining ring, keep the machine clean inside
- 10Take 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, ϕ 30mm light rod bearing type , lay length and distance can be accurately adjusted
- 12.Pool Size:

Out Dia (ϕ D)	Fix Hole (ϕ d)	Outer Length (L1)	Inner Length (L2)	Position Hole	PCD
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630	125	475	400	Φ28	260
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13. Dynamic power : 5KW

14. Installed power : 11KW

➤ **Detail Specifications:**

Description	Model	Origin
1. Host Motor	11KW-4P 380V 50Hz	SIEMENS
2. Inverter	11KW	INOVANCE
3. PLC Programmer	32MR	INOVANCE
4. PLC Expander	1 set	INOVANCE
5. Touch Screen	7 inches RGB	WEINVIEW
6. Electromagnetic Brake	24KG	TAIWAN
7. Magnetic Clutch	5KG	TAIWAN
8. Spindle Bearings	1SET	SWEDEN SKF
Other Bearings	1SET	JAPAN NSK
9. Timing Belt	1SET	US GATES
10. Cable Laying Device	GP30(Special bi-direction)	SHANXI TIANXIANG
11. Electric screw lift	0.75KW motor + worm gear reducer	--
12. Intelligent constant tension controller	608F	TAIWAN
13. Tension sensor	15KG	TAIWAN
14. Wireless communicator	CH02-485-2K	TAIWAN
15. SK5 Flyer Bow	1SET	SK5
16. round porcelain ring in bow	1SET	Import
17. Body	1SET	Self-processing
18. Spindle	2pcs	Self-processing
19. Rotation Arm	2pcs	Self-processing
20. Timing Pulley	1SET	WU XI
21. Bearing Housings	1SET	Self-processing
22. Disc	2pcs	Self-processing
23. Transmission Shaft	1pcs	Subcontracting
24. Leading Wheel	1SET	Self-processing with hard chrome plating
25. Wire guide wheel	6pcs	Self-processing 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		3pcs	



4	Split plate porcelain ring		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	

❖ Dual 630 Double shaft multi-wires active pay-off

It is constant tension control, Non-twist wires pay-off unit, apply for single conduct and multiple drawing wires pay-off, each reel separated control by inverter, no interface, easy operate and save space.

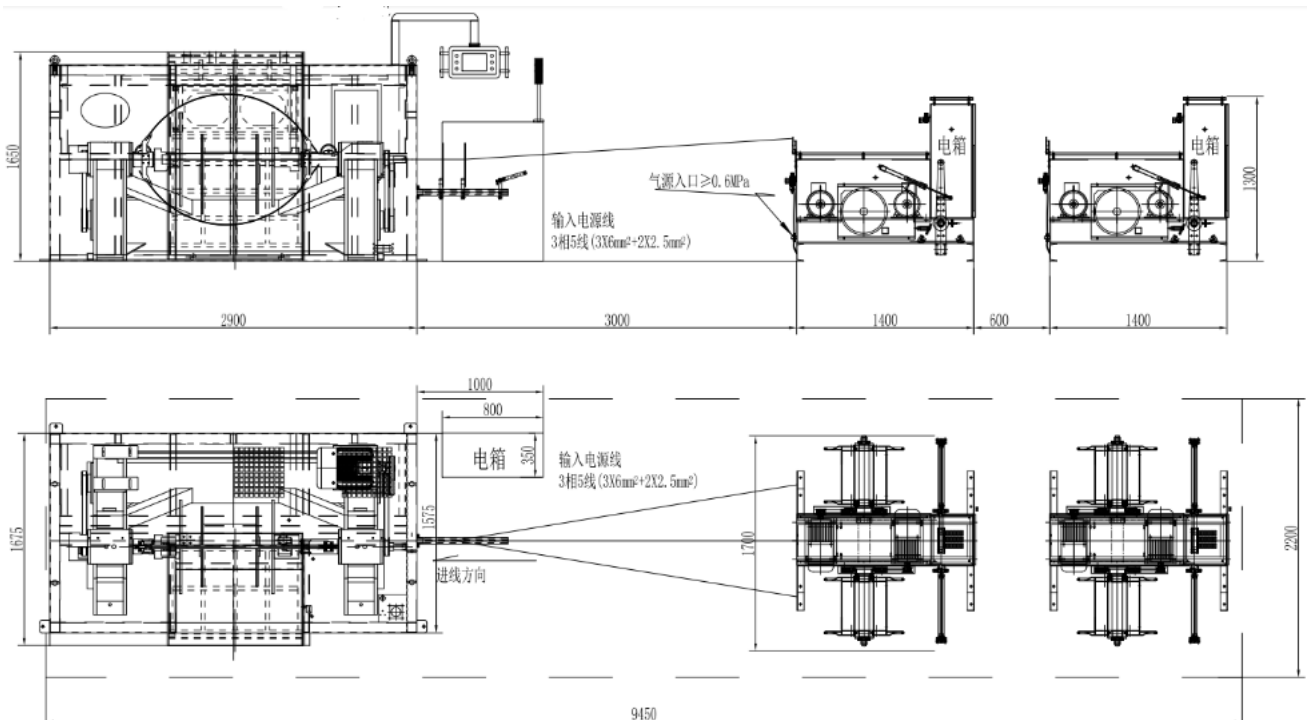
- 1) Single Wire range: 0.15-0.64mm
- 2) Speed: Max 200m/min
- 3) Reel Size: 630*125*475
- 4) Tension control:
 - ① with pneumatic cylinder on the rocker, can change pressure value;
 - ② Use Counterweight Regulate to change the wire tension
- 5) Driver: 1.5KW Special 3phases motor with brake through belt to control the spool action; drive by inverter
- 6) Brake: Use disc spring inner brake to stop the motor rocker, can adjust the pressure value to change the wire tension
- 7) Speed control: sensor feedback the signal to the inverter to control the speed of pay-off and the host
- 8) Reel load: Use Manual Hydraulic lift (Client provide)
- 9) Coating: RAL 5015 Sky Blue
- 10) Weight: 600KG

Parameter:

Description	Model	Brand	Remark
1. Inverter	1.5KW	YASKAWA	
2. Motor	1.5KW-6P Special inverter motor	SFC/DANMA	
3. Bearings	1SET	NSK	
4. Sensor	SYL18	FOTEK	
5. Precision pressure regulating valve	IR2020-02	SNS	
6. stainless steel cylinder	MA25*300	SNS	



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	∅54.8	11.6	34.6
2	∅60.3	12.8	38.1
3	∅65.8	13.9	41.5
4	∅71.3	15.1	45.0
5	∅76.8	16.3	48.5
6	∅82.3	17.4	51.9
7	∅85.6	18.1	54.0
8	∅87.8	18.6	55.4
9	∅93.3	19.8	58.8
10	∅98.8	20.9	62.3
11	∅104.2	22.1	65.8
12	∅109.7	23.2	69.2
13	∅115.2	24.4	72.7
14	∅120.7	25.6	76.1
15	∅126.2	26.7	79.6
16	∅141.8	30.0	89.5
17	∅157.0	33.2	100





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