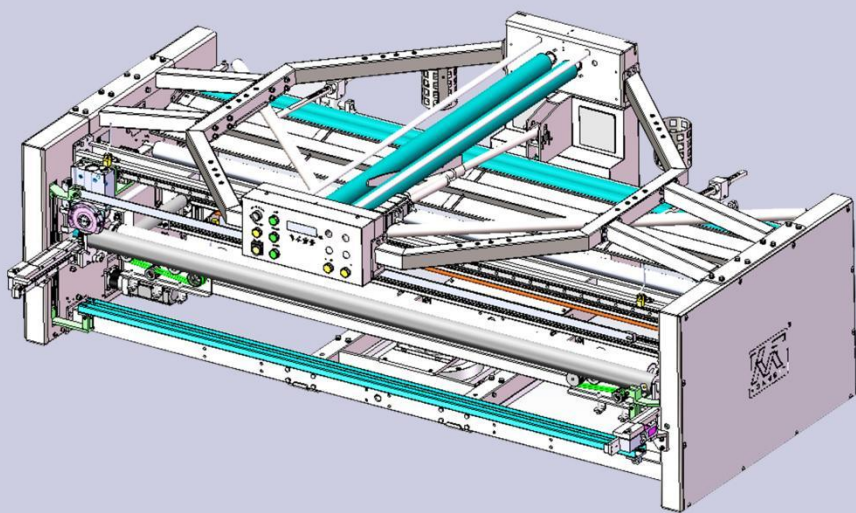




A系列全自动电子卷布机

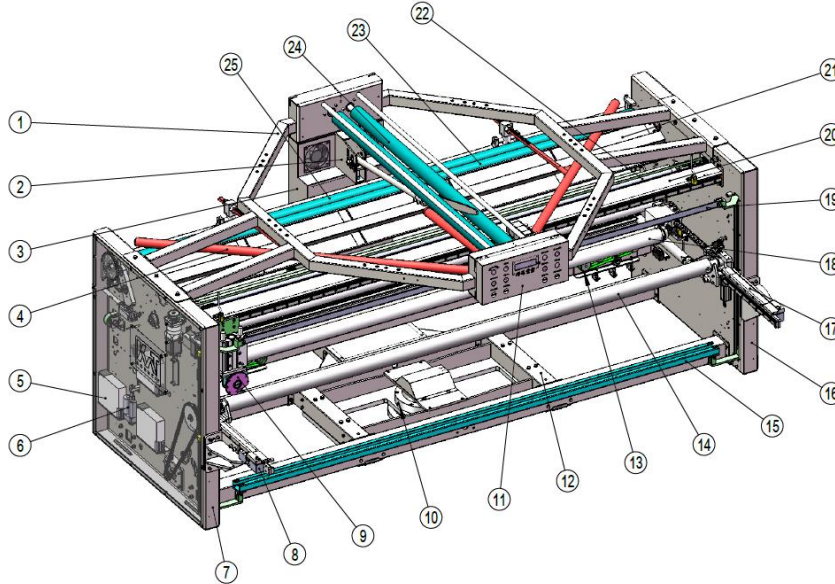
A-SERIES AUTOMATIC ELECTRONIC TAKE-DOWN



一 整机结构示意图及电子配件/Overall Appearance and Electronic Components

备注：以正视操作按钮方向区分左右

Note: Identify the right and the left sides from a front view.

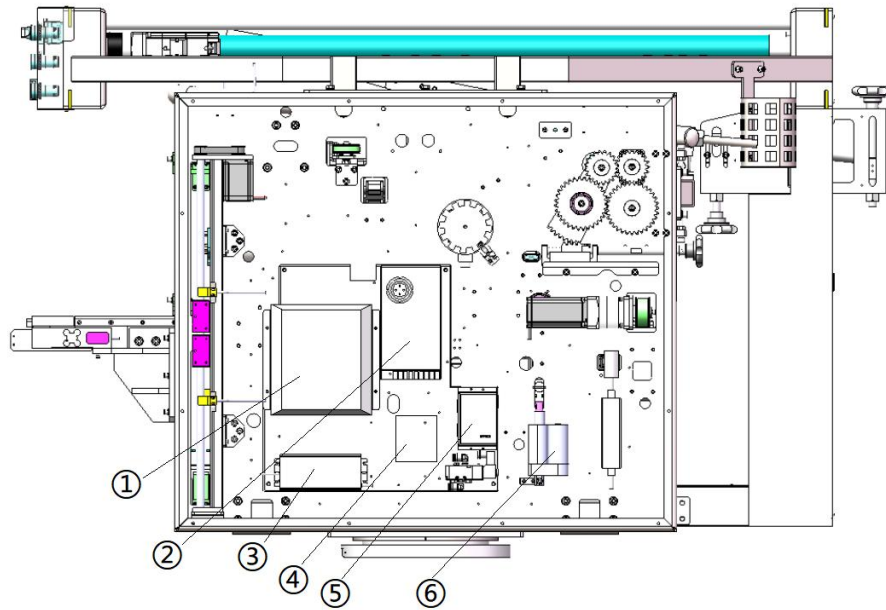


结构配件/Component:

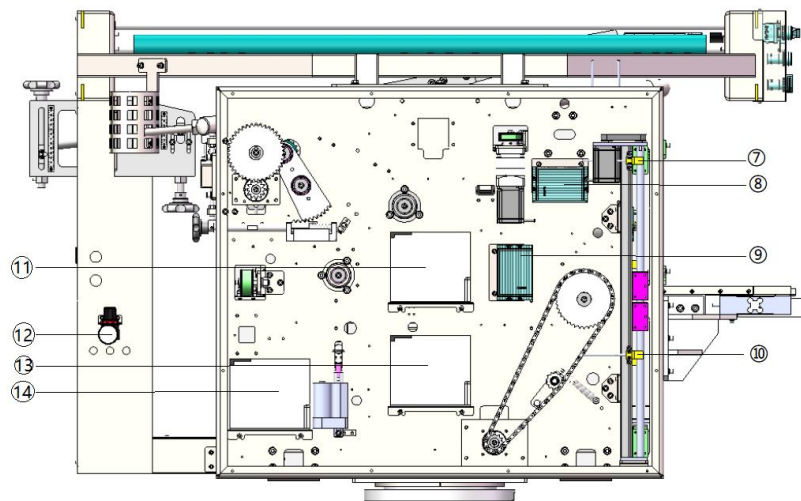
1. 上支架/ Upper Support	14. 卷布辊/气胀轴/Fabric Roller/Inflation Shaft
2. V型架调节模块/V-Shaped Frame Adjust Module	15. 下压杆/Down Pressing Rod ^[1]
3. 电控箱/Electronic Control Box	16. 右侧板/Right Side Plate
4. V型架/ V-Shaped Frame	17. 自动落布支架/Take-Down Track
5. 伺服驱动器/Servo Drive Motor	18. 剥边压布辊/Selvedge Uncurling Roller
6. 电动推杆/Electronic Push Rod	19. 上压杆/Up Pressing Rod ^[2]
7. 左侧板/Left Side Plate	20. 裁切机构/Cutting Module ^[3]
8. 称重传感器/Weighing Sensor	21. 遮光板/Light Shield
9. 裁布刀/Cutting Knife	22. 铝合金张力辊/Aluminum Alloy Tension Roller
10. 旋转底座/Swiveling Base	23. 夹布包胶辊组/Fabric-Clamping Encapsulated Roller ^[4]
11. 按钮板/Button Board	24. 开幅包胶辊组/Open-Width Encapsulated Roller Set
12. 底座支架/Pedestal Base	25. 主传动包胶辊组/Main Drive Encapsulated Roller ^[5]
13. 剥边器/Selvedge Uncurler	

电子配件/Electronic Components:

电子配件名称具体如下图示/ The specific names of the electronic components are as follows:

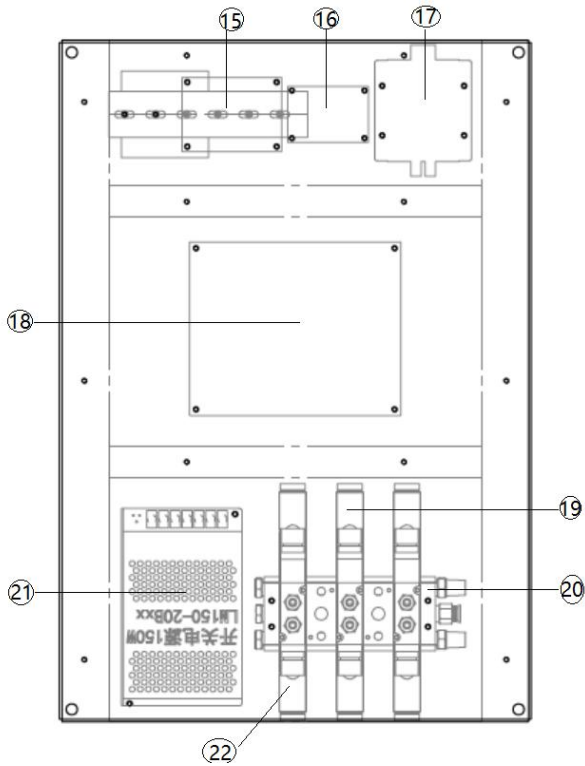


1.工控机/IP	4.驱动板/Driven Plate
2.开关电源/Power Supply Switch	5.镜头移动驱动器/Lens Movement Drive
3.UPS电源/UPS Power Supply	6.电动推杆/Electronic Rod



7.松开限位/Release Limit Position ^[7]	11.上段驱动器/Driving Motor of Upper Roller
8.切布夹紧驱动器/Drive Motor in Clamping and Cutting Modules	12.气压表/Gas-Pressure Meter
9.切布驱动器/Drive Motor in the Cutting Module	13.下段驱动器/Drive Motor of Lower Roller
10.夹紧限位/Clamping Limit Position ^[6]	14.中段驱动器/Drive Motor of Middle Roller

Please see VI.Glossary for reference



15.称重板/Weighing Plate
16.张力板/Tension Plate
17.张力变换器/Tension Signal Amplifier
18. 电子卷布控制板 /Control Circuit Board of the Electronic Take-Down System
19.插销气缸电磁阀/Locked Air Cylinder Solenoid Valve
20.切气气缸电磁阀/Air Cylinder Solenoid Valve of the Cutting Module
21.开关电源/Switch Mode Power Supply
22.推布气缸电磁阀/Air Cylinder Solenoid Valve of the Fabric Pushing Module

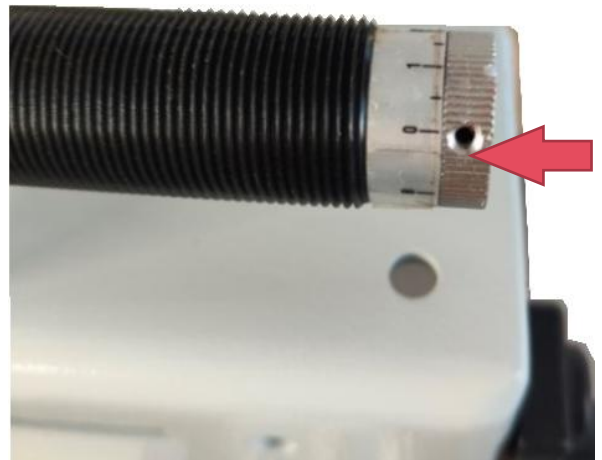
1.1 缓冲器介绍/Introduction to Buffer

安装前要把指示点旋转至0刻度点，使缓冲器松解，安装后使指示点旋转至6刻度点，但是具体调节刻度按照现场实际情况调节。

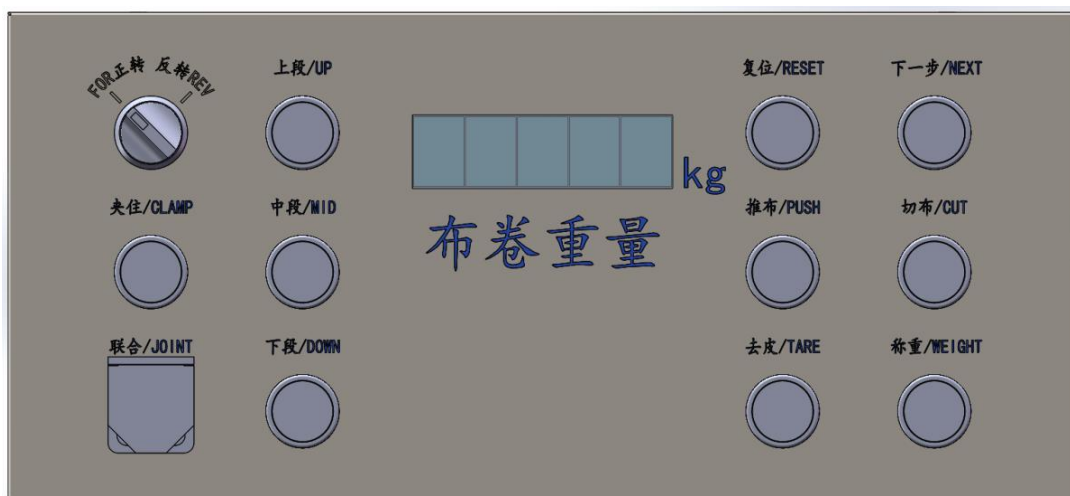
Before installation, rotate the indicating point to 0 in terms of the scale point, so as to loose the buffer, and rotate to 6 after installation. Adjust the scale point according to the actual situation on site.

箭头指示处为缓冲器指示点。

The position pointed by the arrow is the indicating point of the buffer.



1.2 操作面板/Operation Panel



FOR正转/反转REV: 在手动模式下, 若有上/中/下/联合任一按键按下时候,电机正转或者反转。

Forward Rotation(FOR)/ Reverse Rotation(REV): Under the manual mode, if the knob is turned to <FOR>, press any buttons of UP/MID/DOWN/JOINT, the corresponding roller will rotate clockwise, and vice versa.

上段: 控制上段卷布辊转动 (可选正传/反转)。

UP: Control the rotation of the upper roller (FOR/REV).

中段: 控制中段卷布辊转动 (可选正传/反转)。

MID: Control the rotation of the middle roller (FOR/REV).

下段: 控制下段卷布辊转动 (可选正传/反转)。

DOWN: Control the rotation of the lower roller (FOR/REV).

联动: 控制所有辊一起同步转动。

JOINT: Simultaneously control the rotation of all the rollers (FOR/REV).

夹住: 按下电动推杆夹住, 再次按下时, 电动推杆松开;

CLAMP: Press <CLAMP> button to clamp the fabric with the electronic push rod, and press again to loose the rod.

复位: 按下后, 切刀收回, 夹紧机构松开, 控制卷布棍收回;

RESET: Press <RESET> button to restore the cutting knife and the fabric roller, and loose the fabric clamping module.

推布: 按下按键, 执行切刀收回, 电动推杆夹住, 夹紧机构松开, 推出卷布棍

PUSH: Press the button to withdraw the cutting knife and loose the clamping module in order to push the fabric roller with the electronic rod.

切布: 按下按键, 执行夹紧机构夹紧坯布, 切刀探出, 从左往右切布, 结束后切刀收回并移动到原点位置

CUT: Press the button to execute the fabric clamping module with the cutting knife releasing to cut the fabric from left to right, and the cutting knife will be withdrawn and the cutting module will restore to the original position

upon the cutting process ends.

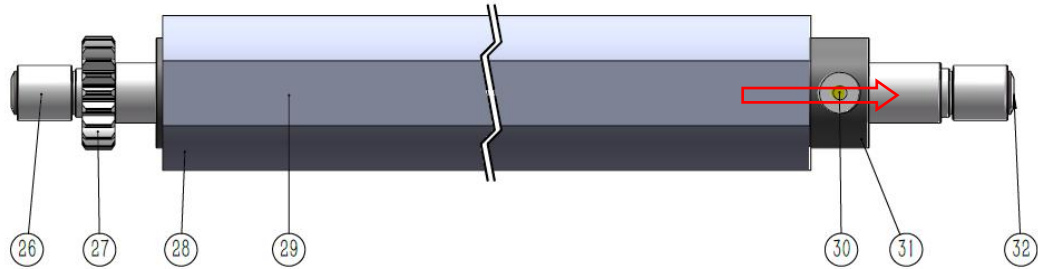
称重：点动按下，显示称重值

WEIGHT: Press <JOG> button on the intelligent control panel to display weight.

去皮：长按下约3秒后，称重去皮

TARE: Press and hold for 3 seconds to reset weight value.

1.3 卷布辊介绍/Introduction to Fabric Roller



26. 滚针轴承：两端各有一个，气胀轴在滚针轴承中间旋转，同时该结构还起到支撑气胀轴的作用。

Needle Bearing: One on either end with the inflation shaft rotating in between, it also works to bear the inflation shaft.

27. 传动齿轮：旋转气胀轴啮合、旋转卷布

Rotating Gear: Rotate the inflation shaft with mechanical work from its meshing with the main driving gear so as to roll the fabric.

28. 卷布辊：下段卷布（6号电机）

Fabric Roller: When the No.6 motor is in operation, it rotates with the driven force generated by the rotation of gears combined with chain wheel and chain.

29. 卷布套管：向右侧滑动可从卷布辊上取出

Fabric Roller Outer Tube: Usually a PVC tube, steel tube or a paper tube, it fixes the inflation shaft when it is inflated, and release the inflation shaft when it is deflated. Users can take out the fabric roller(inflation shaft) from the right.

30. 粘布位置：可将布固定在此处

Sticking Position: Users can stick and fix the fabric head onto the magic sticker on the sticking position.

31. 气胀轴充气口

Air inlet and outlet position on the inflation shaft.

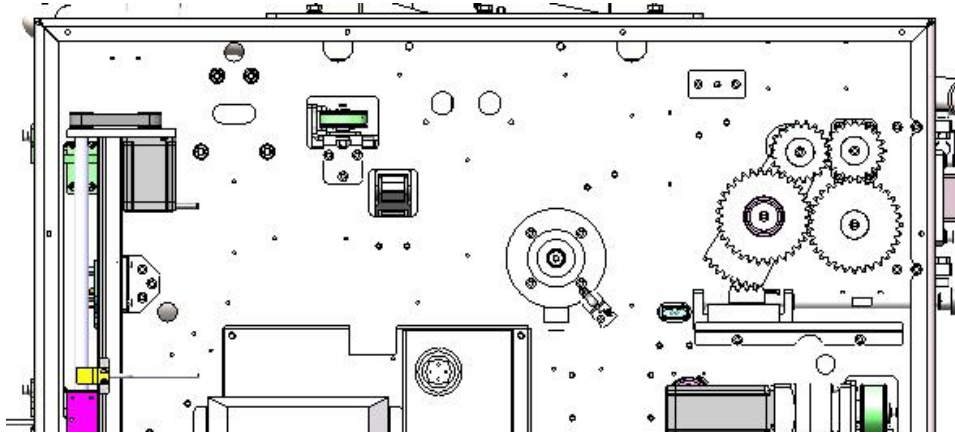
32. 轴端挡板：左右各1个，滚针轴承轴向限位

Barriers on the shaft ends: One on either end to fix the needle bearing.

1.4 张力检测装置/Tension Detector

张力检测传感器安装在张力辊的一端，张力辊受到布匹的拉力后传感器就会产生信号输送给控制系统。

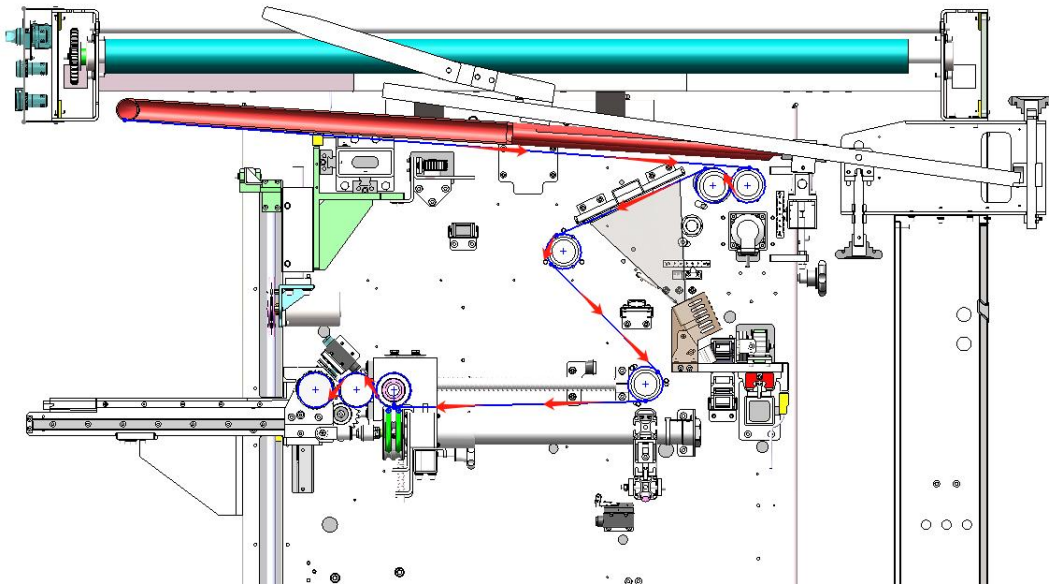
The tension detector is installed on one end of the tension roller, the sensor will generate signals that will be transmitted to the control system upon receiving the pulling force by the fabric.



1.5 绕布路径/ Fabric Rolling Track

请按照示意图轨迹进行绕布卷布操作

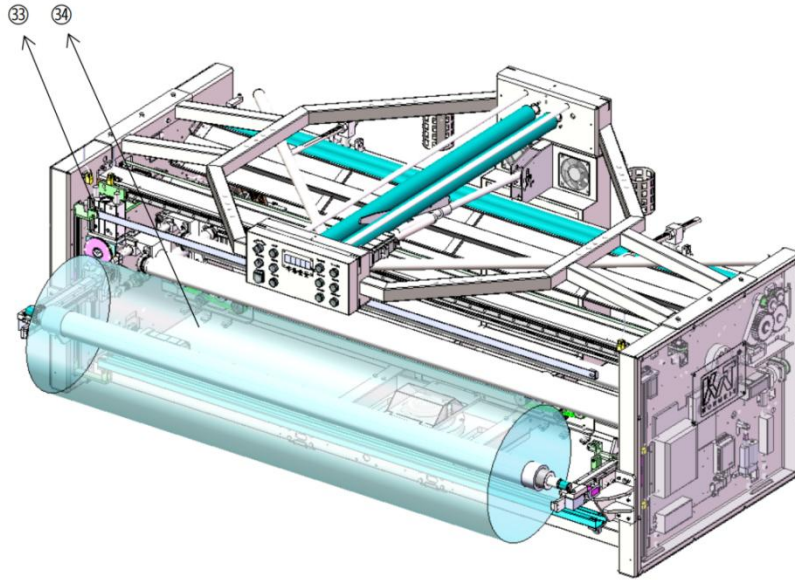
Please make sure that the fabric is rolled according to the track in the picture below.



1.6 自动推布&自动切布/ Automatic Push& Cutting

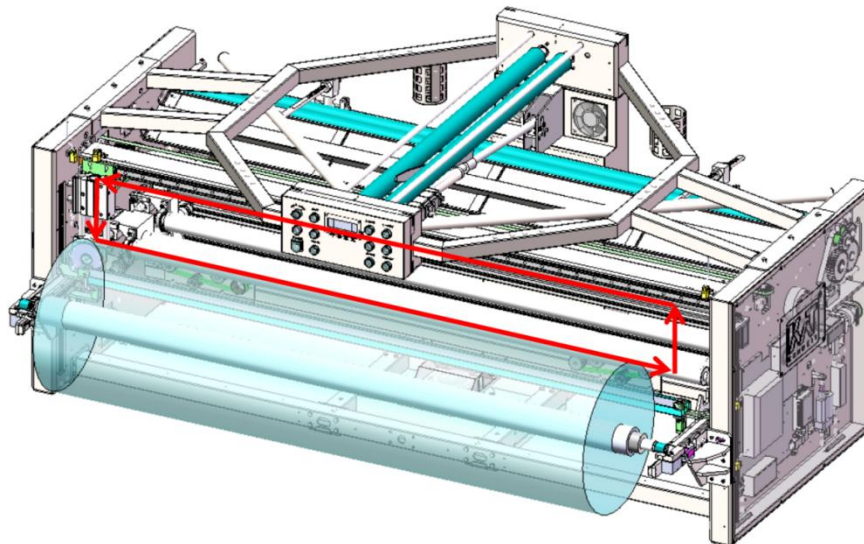
在停机状态并且没有报错情况下，按下推布按键，切刀自动收回，夹布机构松开，下段卷布棍反转，气缸将布推出如下图：

When the machine is stopped without fault condition, press <PUSH> button to withdraw the cutting knife, loose the fabric-clamping module and reversely rotate the lower fabric roller in order to push out the finished fabric with the air cylinder.



布推出后，按下切布，夹紧机构运行自动夹紧坯布，切刀探出，并且从左向右切，如下图：

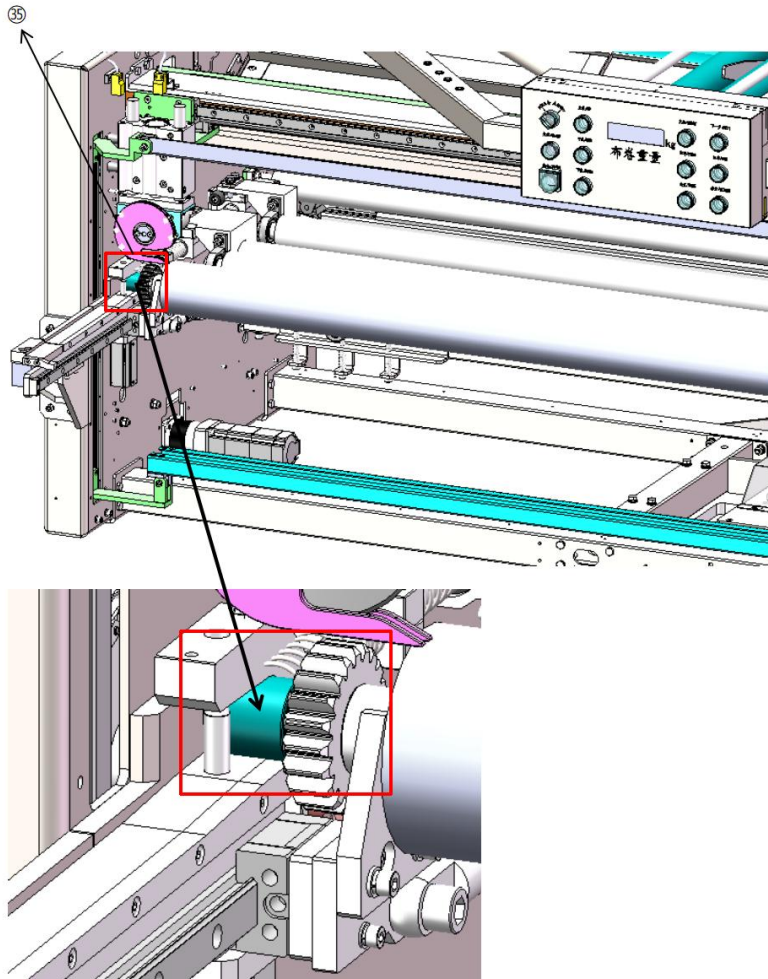
When the fabric is pushed out, press <CUT> button to drive the fabric clamping module in order to automatically clamp the fabric with cutting knife releasing to cut the finished fabric from left to right, as shown in the picture below:



1.7 收棍复位/ Roller Reset

按下复位后，切刀收回夹紧机构打开，推布气缸收回到原位，插销气缸顶起，锁定气胀轴。

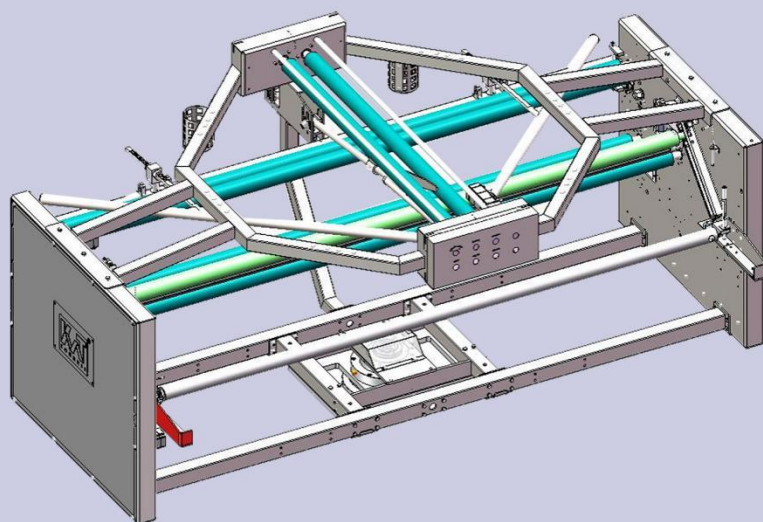
Press <RESET> button to withdraw the cutting knife, loose the fabric-clamping module, and restore the air cylinder to the original position, as well as lift the locked air cylinder and lock the inflation shaft.



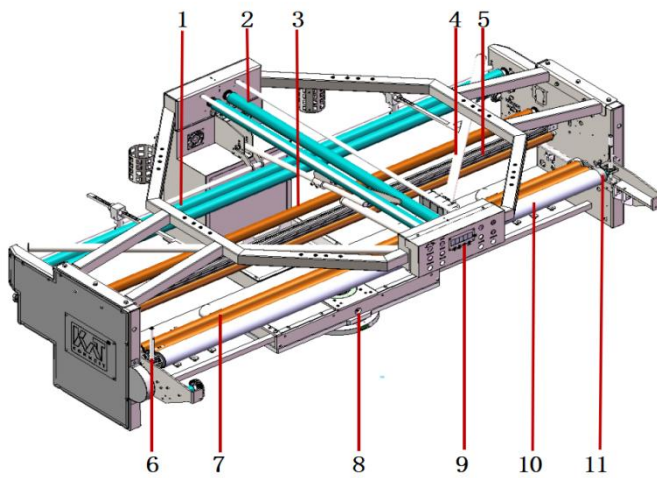


K系列电子卷布机

K-SERIES ELECTRONIC TAKE-DOWN

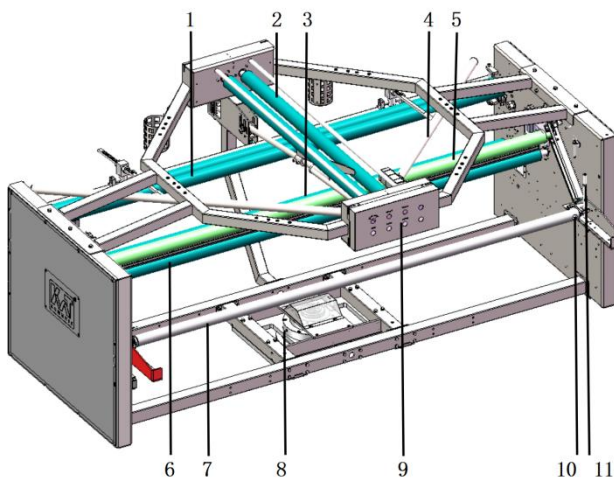


一 开幅悬空式卷布机结构/Structure of Open-Width Take-Down



K50系列/K50-Series

1. 7号包胶辊/No.7 Encapsulated Roller
2. 8号包胶辊/No.8 Encapsulated Roller
3. 张力辊/Tension Roller
4. V型撑布架/V-Shaped Cloth Spreader
5. 压布机构/Fabric Pressing Module
6. 落布插销/Cloth Doffing Latch
7. 过渡辊/ Transition Roller
8. 注油嘴/Oil Inlet Position
9. 操作按钮/ Operation Button Board
10. 6号卷布辊/No.6 Fabric Roller
11. 充气口/Air Inlet Position



K3系列/K3-Series

1. 7号包胶辊/No.7 Encapsulated Roller
2. 8号包胶辊/No.8 Encapsulated Roller
3. 张力辊/Tension Roller
4. V型撑布架/V-Shaped Fabric Support
5. 压布机构/Fabric Pressing Module
6. 夹布过渡包胶辊/Fabric Clamping Transition
7. 6号卷布辊/No.6 Fabric Roller
8. 注油嘴/Oil Inlet Position
9. 操作按钮/Operation Button
10. 充气口/Air Inlet Position
11. 落布插销/Cloth Doffing Latch

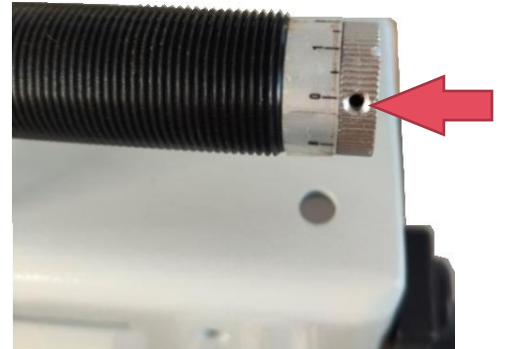
1.1 缓冲器介绍/Introduction to Buffer

安装前要把指示点旋转至0刻度点，使缓冲器松解，安装后使指示点旋转至6刻度点，但是具体调节刻度按照现场实际情况调节。

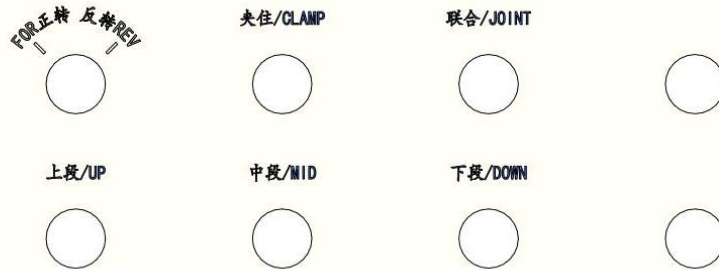
Before installation, rotate the indicating point to 0 in terms of the scale point, so as to loose the buffer, and rotate to 6 after installation. Adjust the scale point according to the actual situation on site.

箭头指示处为缓冲器指示点。

The position pointed by the arrow is the indicating point of the buffer.



1.2 操作面板/ Operation Panel



按钮的功能介绍（按钮布局根据不同机型可能有差异，请仔细对照实物标签）：

Buttons (The button layout may differ from the actual product, please carefully read the actual labels on the board before operating the machine):

FOR正转/反转REV: 在手动模式下，若有上/中/下/联合任一按键按下时候,电机正转或者反转。

Forward Rotation(FOR)/ Reverse Rotation(REV): Under the manual mode, if the knob is turned to <FOR>, press any buttons of UP/MID/DOWN/JOINT, the corresponding roller will rotate clockwise, and vice versa.

上段：控制上段卷布辊转动（可选正传/反转）。

UP: Singly control the rotation of the No.8 roller (FOR/REV).

中段：控制中段卷布辊转动（可选正传/反转）。

MID: Singly control the rotation of the No.7 roller (FOR/REV).

下段：控制下段卷布辊转动（可选正传/反转）。

DOWN: Singly control the rotation of the No.6 fabric roller (inflation shaft) (FOR/REV).

联动：控制所有辊一起同步转动。

JOINT: Simultaneously control the rotation of all the rollers (FOR/REV).

夹住：按下电动推杆夹住，再次按下时，电动推杆松开；

CLAMP: Press <CLAMP> button to clamp the fabric with the electronic push rod, and press again to loose the rod.

复位：按下后，切刀收回，夹紧机构松开，控制卷布棍收回；

RESET: Press <RESET> button to restore the cutting knife and the fabric roller, and loose the fabric clamping module.

推布：按下按键，执行切刀收回，电动推杆夹住，夹紧机构松开，推出卷布棍

PUSH: Press the button to withdraw the cutting knife and loose the clamping module to push out the fabric roller with the electronic rod.

切布：按下按键，执行夹紧机构夹紧坯布，切刀探出，从左往右切布，结束后切刀收回并移动到原点位置

CUT: Press the button to execute the fabric clamping module with the cutting knife releasing to cut the fabric from left to right, and the cutting knife will be withdrawn and the cutting module will restore to the original position upon the cutting process ends.

称重：点动按下，显示称重值

WEIGHT: Press <JOG> button on the intelligent control panel to display weight.

去皮：长按下约3秒后，称重去皮

TARE: Press and hold for 3 seconds to reset weight value.

1.3 卷布机充气口介绍/ Introduction to Air Inlet Position

安装好布筒后向充气口里充气使卷布辊膨胀固定布筒，当布卷完后滑动取布开关取出卷布辊，然后按压充气口放出气体把布筒卸下。

After the installation of the outer cloth tube, inflate the fabric roller to fix the outer cloth tube by pumping air into the air inlet position. When the process of fabric rolling finishes, users can turn the slide switch on to take out the fabric roller and press the air inlet position to release air inside the inflation shaft so as to remove the outer tube.

充气工具尾部连接直径8mm的气管。

Install an 8mm wide tracheal joint onto the end of the inflator.



(1) 充气工具/Inflator



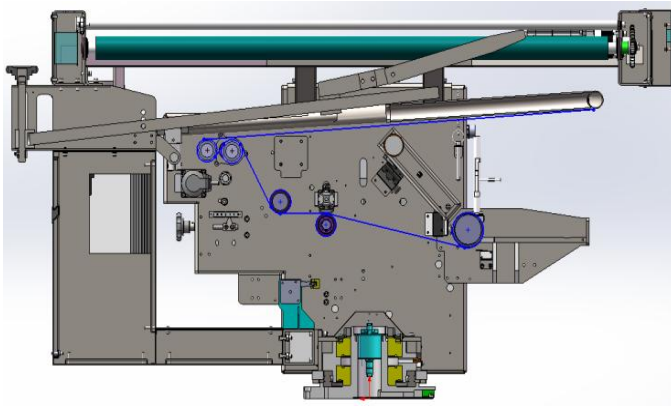
(2) 充气口/Air inlet position

1.4 K50系列布面运行轨迹/Fabric Rolling Track of K50-Series Take-Down:

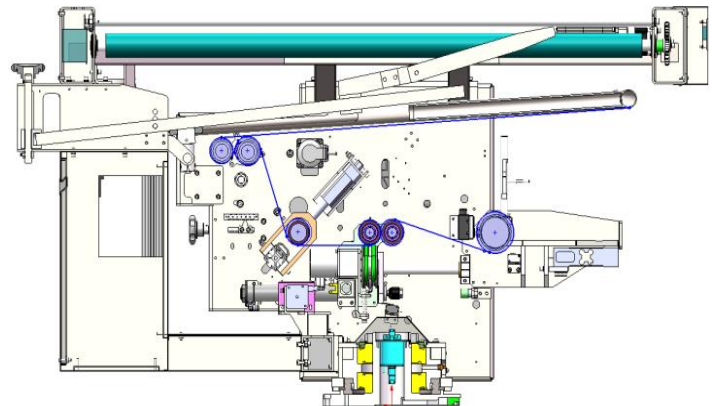
双面机的绕布轨迹/Fabric Rolling Track of the Double Jersey Machine:

圆筒布先经过剖布刀切开，由上段卷布辊(8号包胶辊)内卷带到V型支布架上，V型支布架把布展开送到中段卷布辊(7号包胶辊)最外侧，逆时针旋转带到内侧顺时针旋转的辊上，然后布向下绕卷到张力辊上，检测张力的同时转换方向，最后穿过夹布方管，逆时针绕卷到下段卷布辊(6号卷布辊)并粘到魔术贴上。

The finished fabric is firstly cut by the cutting module, and then rolled by the upper fabric roller(No.8 encapsulated roller) before being sent to the V-shaped fabric support, which will spread the fabric. Afterwards, the fabric will be rolled on the middle fabric roller(No.7 encapsulated roller) and be sent to a forward rotating roller through reverse rotation. The fabric will be pulled downwards to roll on the tension roller to detect its tension. At last, the fabric will go through the outer fabric tube and move counterclockwise to the lower fabric roller(No.6 roller), and finally stick onto the magic stick on the roller.



K50X双面机/K50X Series Double Jersey Take-Down



K50X 单面机/K50X Series Single Jersey Take-Down

单面机的绕布轨迹/Fabric Rolling Track of the Single Jersey Machine :

圆筒布先经过剖布刀切开，由上段卷布辊(8号包胶辊)内卷带到V型支布架上，V型支布架把布展开送到中段卷布辊(7号包胶辊)最外侧，逆时针旋转带到内侧顺时针旋转的辊上，然后布向下绕卷到张力辊上，检测张力的同时转换方向，穿过夹布方管，再向下穿过剥边皮带和第一根圆辊，再向上顺时针绕向第二根圆辊，包绕圆辊后从圆辊和卷布辊中间向上，逆时针绕卷到下段卷布辊(6号卷布辊)并粘到魔术贴上。

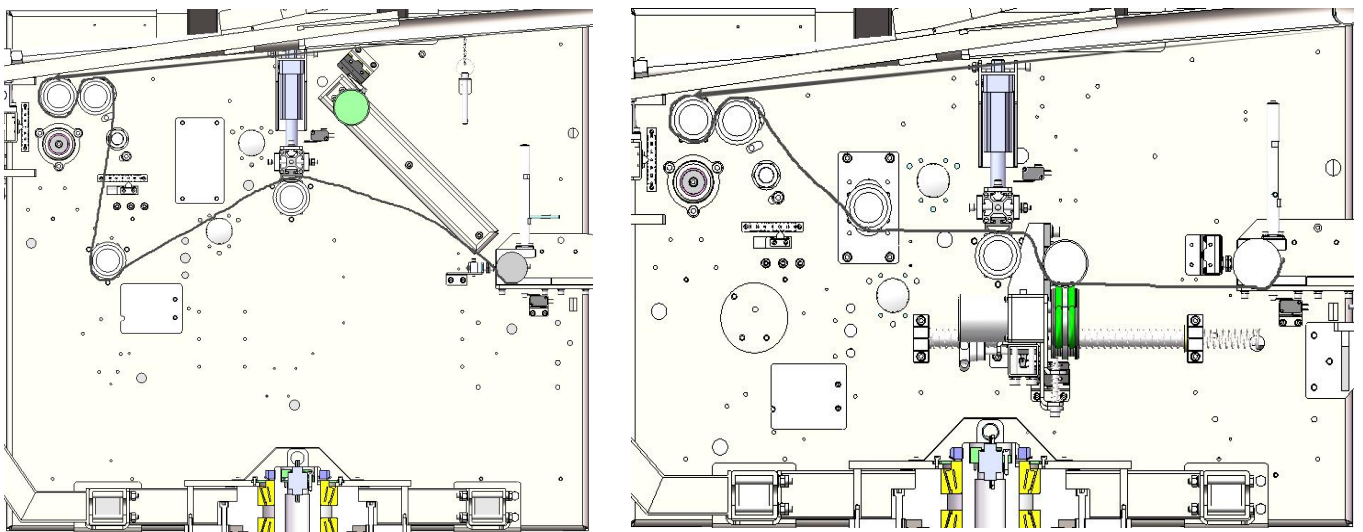
The finished fabric is firstly cut by the cutting module, and then rolled by the upper fabric roller(No.8 encapsulated roller) before being sent to the V-shaped fabric support, which will spread the fabric. Afterwards, the fabric will be rolled on the middle fabric roller(No.7 encapsulated roller) and be sent to a forward rotating roller through reverse rotation. The fabric will be pulled downwards and rolled on the tension roller to detect its tension before moving through the outer fabric tube, then through the uncurler belt and the first roller. After moving upwards onto the second roller that is rotating clockwise, the fabric move upwards through the roller and the fabric roller and to the lower fabric roller(No.6 roller) through reverse rotation, and finally stick onto the magic stick on the roller.

1.5 K3系列布面运行轨迹/Fabric Rolling Track of K3-Series Take-Down:

双面机的绕布轨迹/Fabric Rolling Track of the Double Jersey Machine:

圆筒布先经过剖布刀切开，由上段卷布辊(8号包胶辊)内卷带到V型支布架上，V型支布架把布展开送到中段卷布辊(7号包胶辊)最外侧，逆时针旋转带到内侧顺时针旋转的辊上，然后布向下绕卷到张力辊上，再向右上绕过过渡辊，检测张力的同时转换方向，最后穿过夹布方管，逆时针绕卷到下段卷布辊(6号卷布辊)并粘到魔术贴上。

The finished fabric is firstly cut by the cutting module, and then rolled by the upper fabric roller(No.8 encapsulated roller) before being sent to the V-shape fabric support, which will spread the fabric. Afterwards, the fabric will be rolled on the middle fabric roller(No.7 encapsulated roller) and be sent to a forward rotating roller through reverse rotation. The fabric will be pulled downwards to roll on the tension roller and move to the top right through two rollers for transition. At last, the fabric will go through the external fabric tube and a unidirectional rotating roller, move counterclockwise to the lower fabric roller(No.6 roller), and finally stick onto the magic stick on the roller.



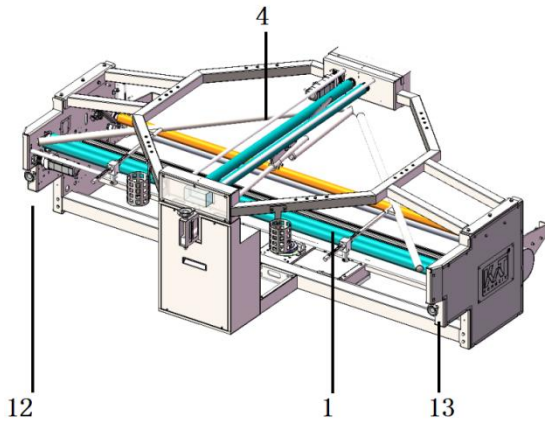
K3X系列双面机/K3X-Series Double Jersey Take-Down **K3X系列单面机/K3X-Series Single Jersey Take-Down**

单面机的绕布轨迹/Fabric Rolling Track of the Single Jersey Machine :

圆筒布先经过剖布刀切开，由上段卷布辊(8号包胶辊)内卷带到V型支布架上，V型支布架把布展开送到中段卷布辊(7号包胶辊)最外侧，逆时针旋转带到内侧顺时针旋转的辊上，然后布向下绕卷到张力辊上，再向右上绕过一根过渡辊，检测张力的同时转换方向，穿过夹布方管和单向旋转过渡辊，再向下穿过剥边皮带和圆辊，包绕圆辊后从圆辊和卷布辊中间向上，顺时针绕卷到下段卷布辊(6号卷布辊)并粘到魔术贴上。

The finished fabric is firstly cut by the cutting module, and then rolled by the upper fabric roller(No.8 encapsulated roller) before being sent to the V-shape fabric support, which will spread the fabric. Afterwards, the fabric will be rolled on the middle fabric roller(No.7 encapsulated roller) and be sent to a forward rotating roller through reverse rotation. The fabric will be pulled downwards and rolled on the tension roller, then move to the top right through a roller for transition before moving through the external fabric tube and a unidirectional rotating roller, and then through the uncurler belt and a roller. After moving upwards through the roller and the fabric roller, the fabric move counterclockwise to the lower fabric roller(No.6 roller), and finally stick onto the magic stick on the roller.

1.6 中段卷布辊(7号包胶辊)/ Middle Roller (No.7 Encapsulated Roller)

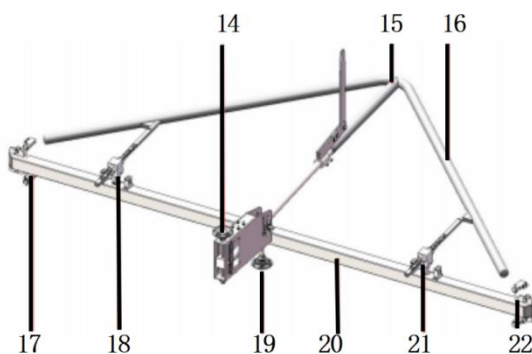


- 4.V型支布架/V-Shaped Fabric Support
- 12.左夹紧分开旋钮/Left Clamp-Release Knob
- 1.7号包胶辊/No.7 Encapsulated Roller
- 13.右夹紧分开旋钮/Right Clamp-Release Knob

旋转夹紧分开旋钮，根据不同布料手动调节两根7号包胶辊对布的夹紧与分开的距离。

Rotate the clamp-release knob, to manually adjust the distance between the two No.7 encapsulated rollers according to different fabric categories.

1.7 V型支布架与调节组件/V-Shaped Fabric Support and Adjusting Component



- 14. 尾部角度调节/Tail Angle Adjustment
- 15. 头部/Head
- 16. V型支布架/V-Shaped Fabric Support
- 17. 支撑杆上下调节/Support Rod Up-Down Control
- 18. V型支布架前后调节/V-Shaped Fabric Support Fore-and-Aft Control
- 19. V型支布架上下调节/V-Shaped Fabric Support Up-Down Control
- 20. 支撑杆/Support Rod
- 21. V型支布架前后调节/Fabric Support Fore-and-Aft Control
- 22. 支撑杆上下调节/Support Rod Up-Down Control

支撑杆上下调节：改变整体上下高低位置

Support Rod Up-Down Control: Adjust the height of the whole set;

V型支布架前后调节：改变V型支布架前后缩进位置

V-Shaped Fabric Support Fore-and-Aft Control: Adjust V-shaped fabric support to go forth or back;

V型支布架上下调节：改变V型支布架上下高低位置

V-Shaped Fabric Support Up-Down Control: Adjust the height of the V-shape fabric support;

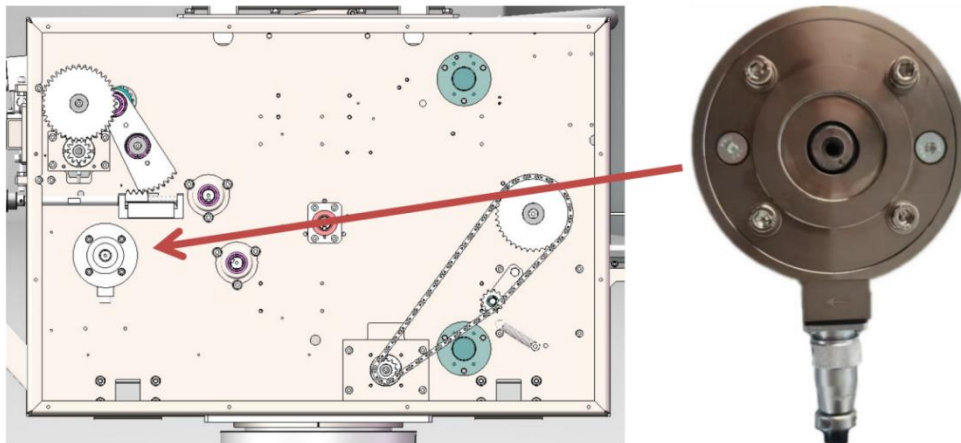
尾部角度调节：改变尾部翘起与下落的角度

Tail Angle Adjustment: Adjust rising and falling angle of the tail part;

1.8 张力检测装置/Tension Detector

张力检测装置（即张力传感器）连接到张力辊的一端（单端检测），张力辊受到布匹的拉力后，张力传感器产生并发送电信号（详细电路见第三章卷布控制板电路）。张力传感器上箭号方向与布面合力方向夹角必须小于90度，否则无法检测到张力数据。

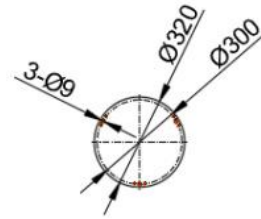
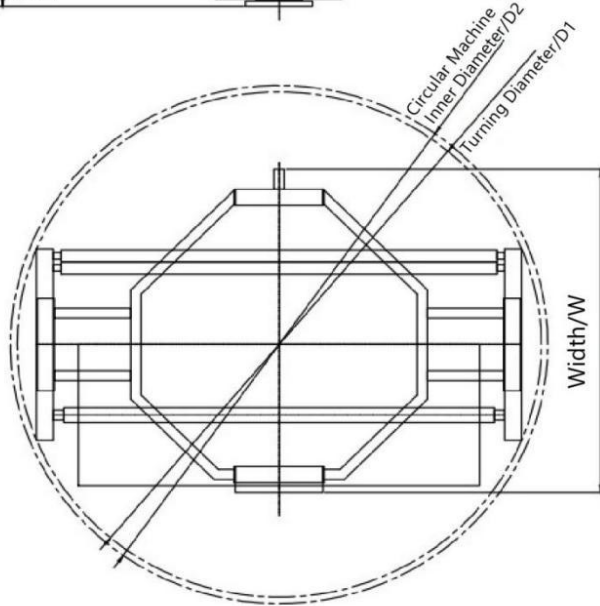
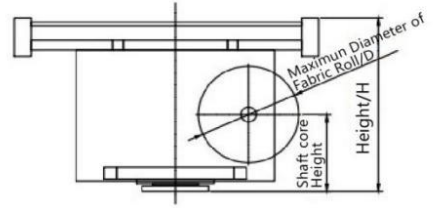
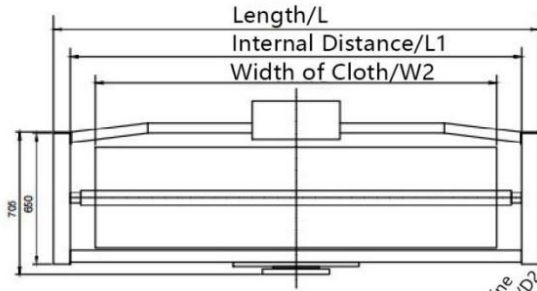
The tension detector, or tension sensor, is installed on one end of the tension roller (single end detection). The sensor will generate signals that will be transmitted to the control system (please see III. Control Circuit Board of Take-Down for detailed electrical circuit) upon receiving the pulling force by the fabric. The angle between the arrow direction of the tension sensor and the resultant force direction must keep within 90 degree, otherwise, the tension sensor cannot detect tension.



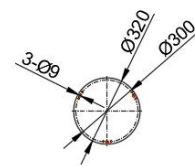
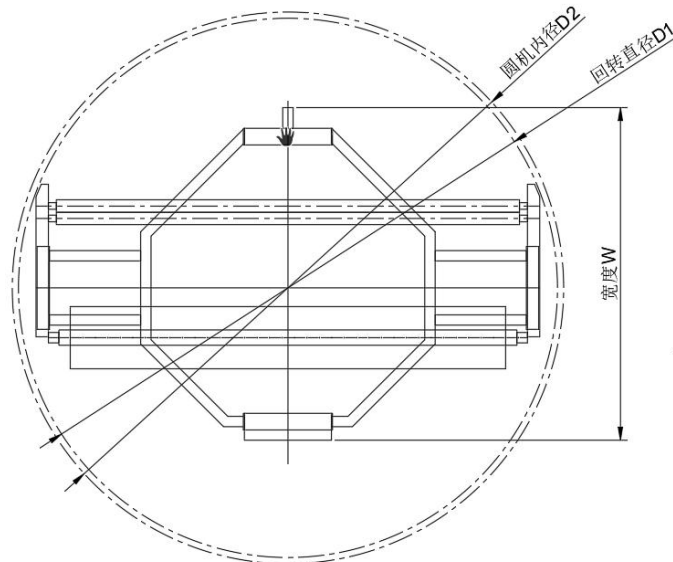
1.9 卷布机尺寸/Take-Down Size

卷布机相关尺寸/Relevant size information of the take-down machine:

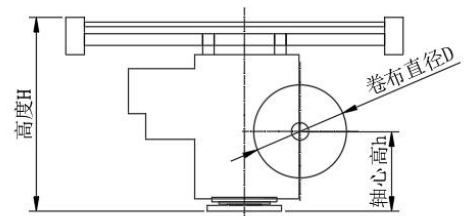
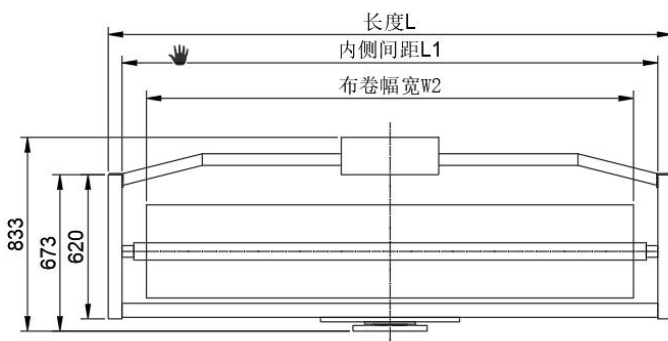
型号 Model Number	长/L Length/L	宽 /W Width/W	高 /H Height/H	回转直径 /D1 Turning Diameter /D ₁	圆机内径 /D2 Circular Machine Inner Diameter/D ₂	卷布幅宽 /W2 Width of Cloth/W ₂	卷布直径 /D Maximum Diameter of Fabric Roll /D
KMT-MT-K32	2420	1605	860	2600	2660	2020	480/400
KMT-MT-K33	2320	1605	860	2507	2570	1920	480/400
KMT-MT-K34	2520	1605	860	2693	2760	2120	480/400
KMT-MT-K35	2420	1605	1000	2600	2660	2020	540/620
KMT-MT-K36	2520	1605	1060	2693	2760	2120	600/680
KMT-MT-K37	2420	1605	1060	2600	2660	2020	680/680
KMT-MT-K502	2430	1605	833	2600	2660	2100	400
KMT-MT-K503	2630	1605	833	2790	2850	2300	400
KMT-MT-K504	2530	1605	833	2700	2760	2200	400
KMT-MT-K505	2530	1705	1013	2700	2760	2200	580
KMT-MT-K506	2350	1605	833	2520	2580	2020	400
KMT-MT-K507	2530	1705	1063	2700	2760	2200	630
KMT-MT-K508	2730	1705	833	2880	2940	2400	400
KMT-MT-K509	2430	1605	1043	2600	2600	2100	610



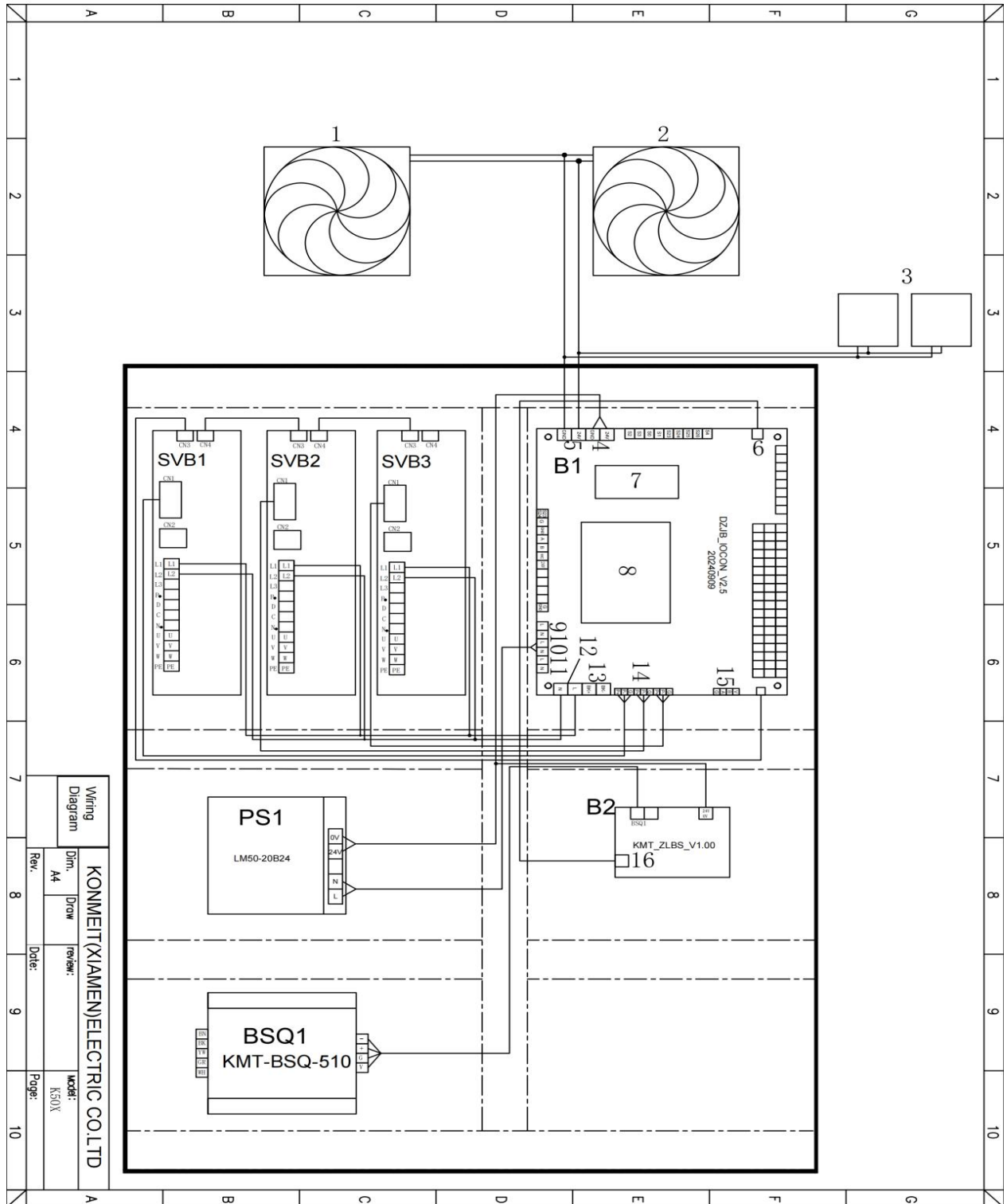
Pedestal Size



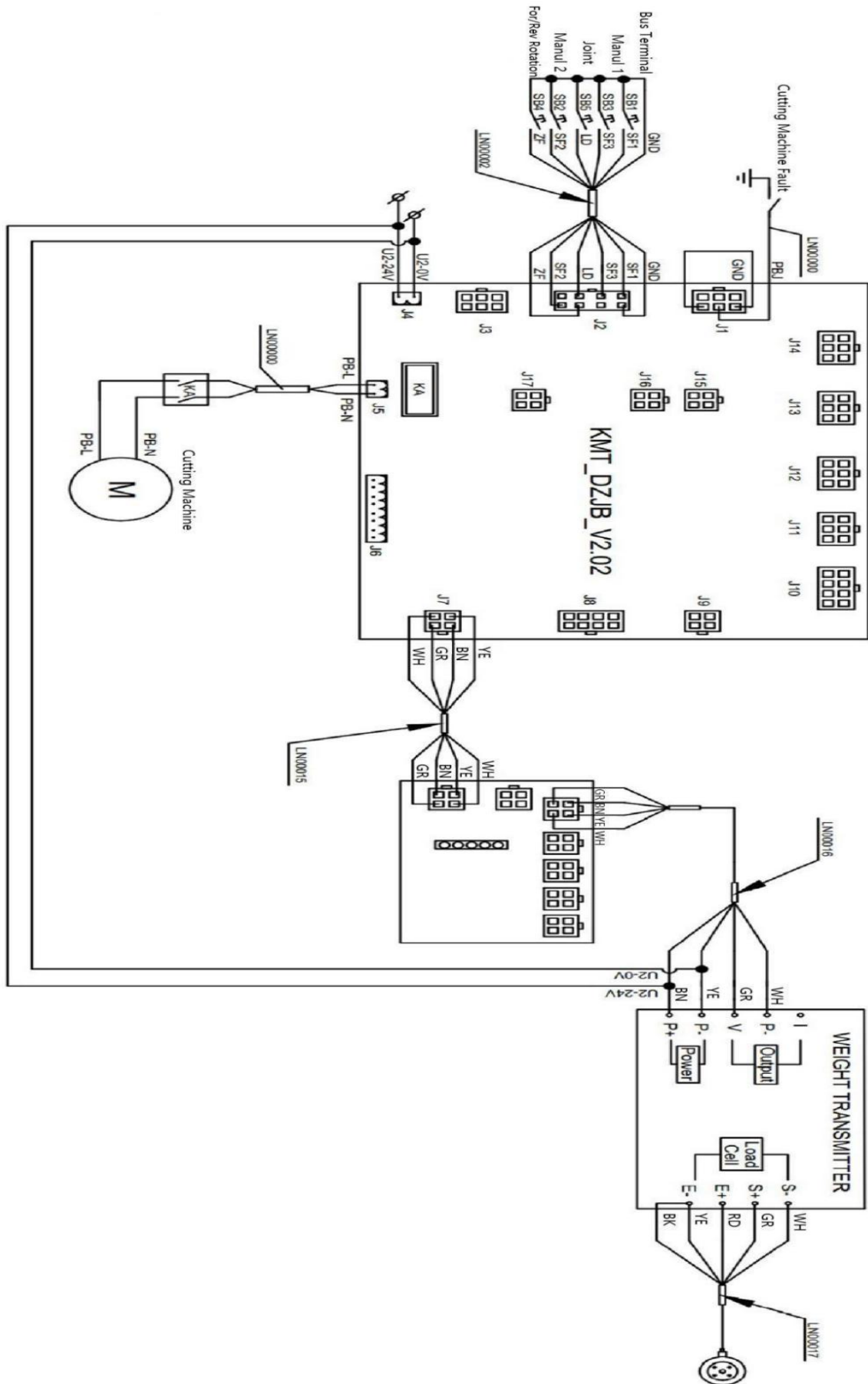
底座尺寸



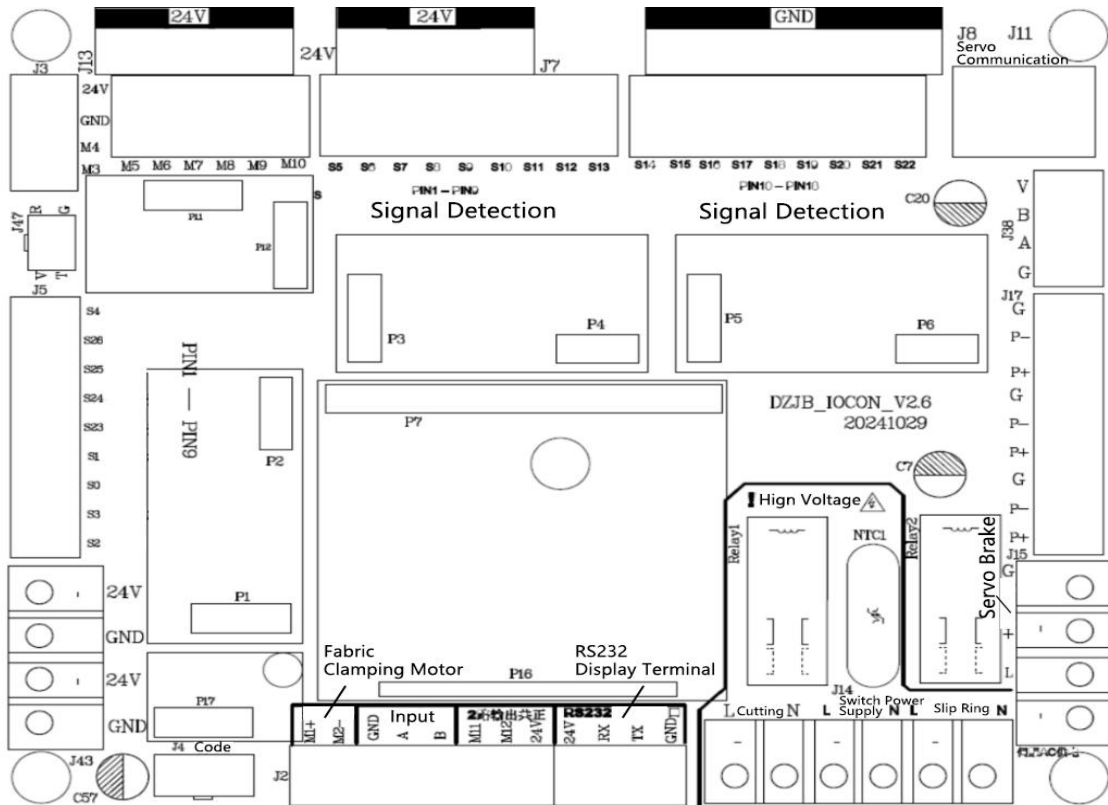
A Set



1.Fan 1	2.Fan 2	3.Digital Air Pressure Display
4.Input	5.Output	6.Continuous Tension Plate
7.Optocoupler Board	8.Core Board	9.Cutting
10.Switch Power Supply	11.Slip Ring	12.Servo Power Supply
13.Motor Connection Line	14.Servo	15.Button Panel
16.Continuous Fabric Rolling Board		



2.4 K50系列卷布控制板/K50-Series Take-Down Electrical Circuit:

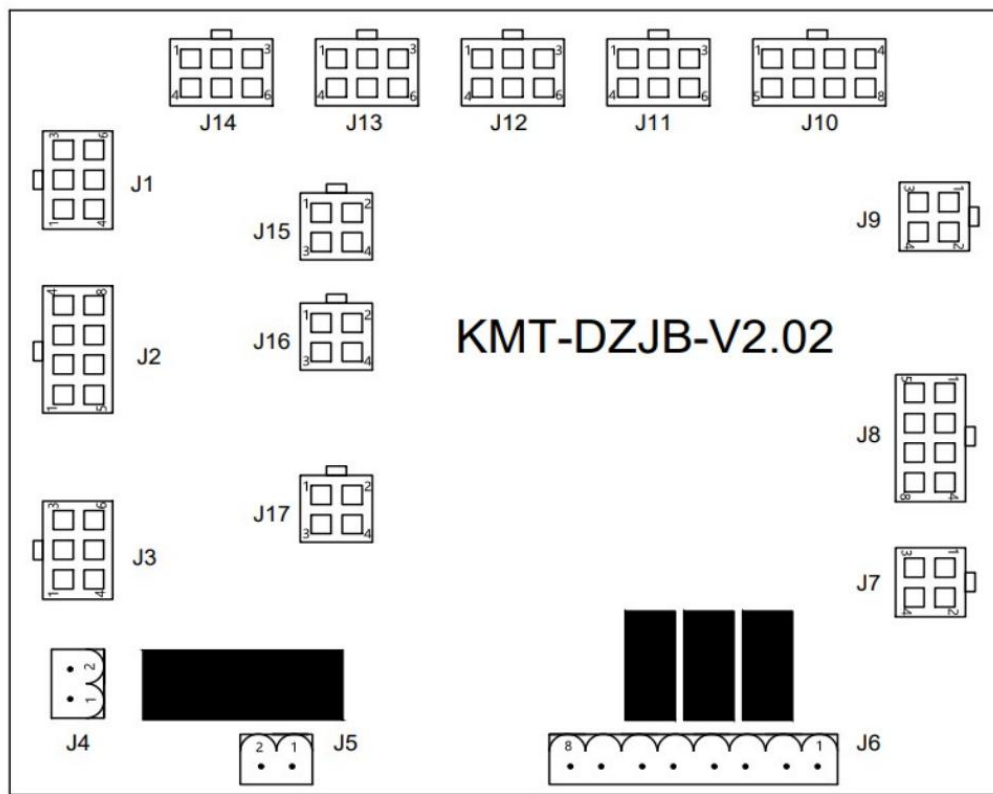


功能/Functions

NO.	部件名称	Name	说明/Description
J8	伺服通信接口	Servo Communication Interface	
J38	按键接口	Button Interface	
J17	G:伺服9脉冲GND端 P-: 伺服9 脉冲负极 P+: 伺服9 脉冲正 G:伺服8脉冲GND端 P-: 伺服8 脉冲负极 P+: 伺服8 脉冲正 G:伺服7脉冲GND端 P-: 伺服7 脉冲负极 P+: 伺服7 脉冲正 G:伺服6脉冲GND端 P-: 伺服6 脉冲负极 P+: 伺服6 脉冲正	G:Servo 9 pulse GND terminal P-: Servo 9 pulse negative pole P+: Servo 9 pulse positive pole G:Servo 8 pulse GND terminal P-: Servo 8 pulse negative pole P+: Servo 8 pulse positive pole G:Servo 7 pulse GND terminal P-: Servo 7 pulse negative pole P+: Servo 7 pulse positive pole G:Servo 6 pulse GND terminal P-: Servo 6 pulse negative pole P+: Servo 6 pulse positive pole	伺服驱动器9号信号输出 Servo drive 9 signal output 伺服驱动器8号信号输出 Servo drive 8 signal output 伺服驱动器7号信号输出 Servo drive 7 signal output 伺服驱动器6号信号输出 Servo drive 6 signal output
J15	G:伺服刹车负极 V+: 伺服刹车正极	G: Servo brake negative pole V+: Servo brake positive pole	伺服刹车电源 Servo brake power supply
	伺服AC供电电源	Servo AC power supply source	伺服AC供电电源 Servo AC power supply source

J14	滑环AC输入: AC_L, AC_N 开关电源供电:AC_L,AC_N 剖布机供电: V+,G	Slip ring input: AC_L, AC_N Switch power supply source:AC_L,AC_N Cutting machine power supply: V+,G	滑环电源输入 Slip ring power supply input 电源端子 Power terminal
J2	M1: 夹紧电机正极 M2: 夹紧电机负极 G:GND A: 滑环输入 RS485 A B: 滑环输入 RS485 B M11 :-- M12 :-- 24V:-- RX: -- TX: -- GND: --	M1: Positive pole of the motor in the fabric clamping module M2: Negative pole of the motor in the fabric clamping module G:GND A: Slip ring input RS485 A B: Slip ring input RS485 B M11 :-- M12 :-- 24V:-- RX: -- TX: -- GND: --	夹紧电机 Motor of the fabric clamping module 夹紧检测 Clamping detection
J43	接开关电源24V	Approaching switch power supply 24V	接开关电源24V Approaching switch power supply 24V
J5	S4:剖布机 S26:-- S25:-- S24:-- S23:夹紧松开检测 S1: -- S0: -- S3: 屏蔽卷布棍检测 S2:卷布棍检测信号	S4: Cutting S26:-- S25:-- S24:-- S23:Detection of fabric clamping and loosening S1: -- S0: -- S3: Shield fabric roller detection S2: Fabric roller detection signal	信号检测输入 Signal detection input
J47	张力接口	Tension port	核心板/Core board J47张力接口/J47 Tension port

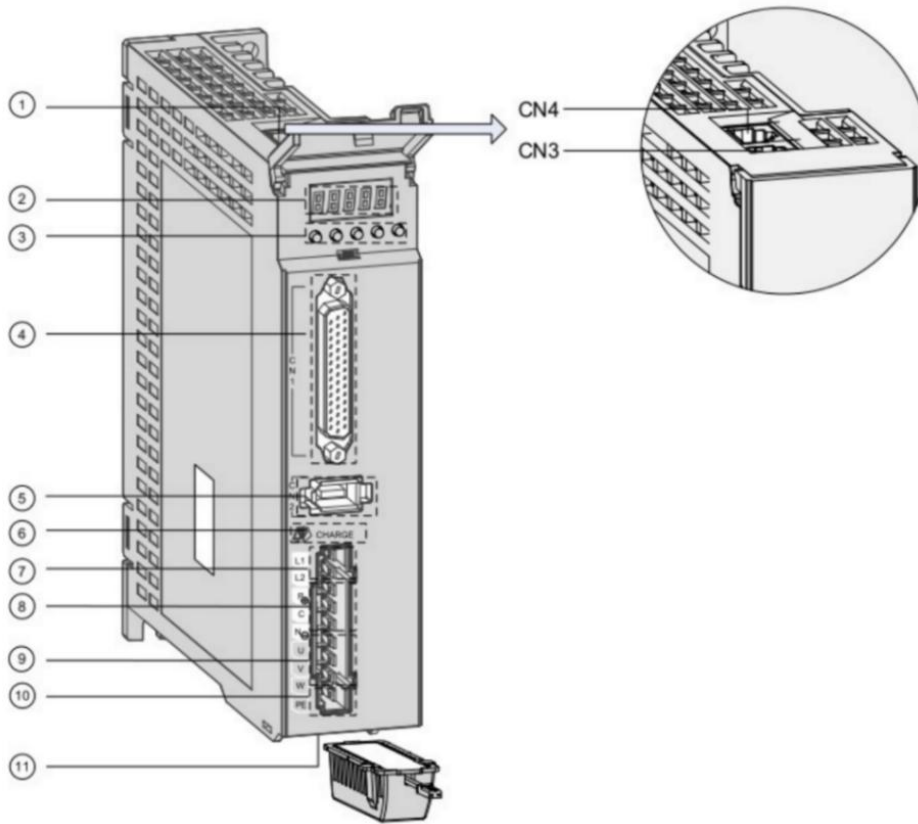
2.5 K3系列卷布控制板/K3-Series Take-Down Electrical Circuit:



功能/Functions

NO.	Name	说明/Description
1	J1	①NC ②NC ③NC ④电容板故障/Capacitive Plate Fault, 常闭/N/C ⑤剖布机故障/Cutting Fault, 常闭/N/C ⑥GND
2	J2	①NC ②联动/Joint ③SF3 ④SF1 ⑤SF2 ⑥正反转/For/Rev Rotation ⑦NC ⑧GND
3	J3	①24VDC ②GND ③A ④B ⑤NC ⑥NC
4	J4	①220V ②N
5	J5	①PB-N ②PB-L
6	J6	①+24V ②24VDC-2 输入/Input ③刹车器/Brake+24V ④NC ⑤NC ⑥24VDC-2 输入/Input ⑦步进驱动器电源/Stepping Motor Power Supply+24V ⑧GND
7	J7	①VCC 5V ②RXD ③TXD ④GND
8	J9	①NC ②A ③B ④GND

2.6 伺服驱动器介绍/Introduction to Servo Drive



编号	部件名称	说明
1	CN3、CN4(通信端子)	内部并联，与RS-232、RS-485 通信指令装置连接。
2	数码管显示器	5 位7段LED数码管用于显示伺服的运行状态及参数设定。
3	按键操作器	MODE: 依次切换功能码 △: 增加当前闪烁位设置值 ▽: 减少当前闪烁位设置值 ◀◀: 当前闪烁位左移 (长按: 显示多于5位时翻页) SET: 保存修改并进入下一级菜单
4	CN1(控制端子)	指令输入信号及其他输入输出信号用端口。
5	CN2(编码器连接用端子)	与电机编码器端子连接。
6	CHARGE(母线电压指示灯)	用于指示母线电容处于有电荷状态。指示灯亮时，即使主回路电源OFF，伺服单元内部电容器可能仍存有电荷。因此，灯亮时请勿触摸电源端子，以免触电。
7	L1、L2(电源输入端子)	参考铭牌额定电压等级输入电源。
	P ⁺ ，N ⁻ (伺服母线端子)	直流母线端子，用于多台伺服共直流母线。

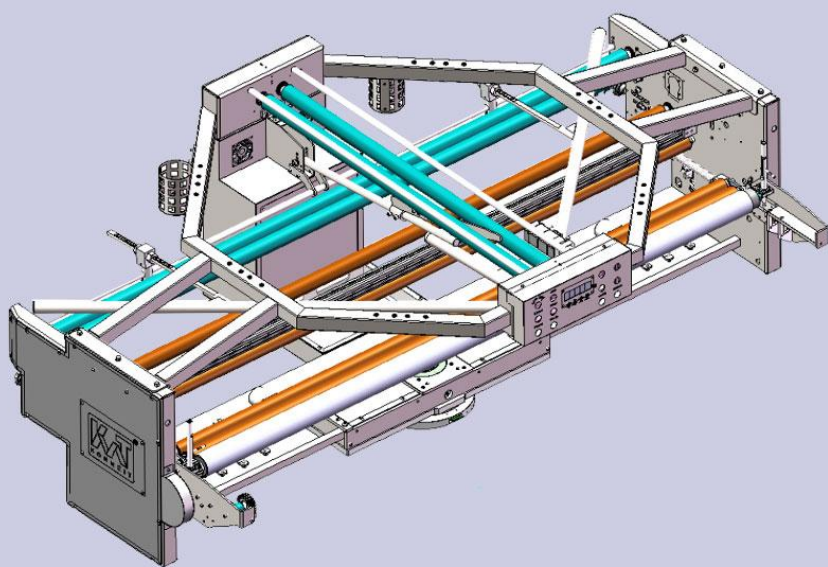
8	P \oplus , C(外接制动电阻连接端子)	需要外接泄放电阻时, 将其接于P \oplus , C之间。
9	U、V、W(伺服电机连接端子)	连接伺服电机 U、V、W 相。
10	电机接地端子	与电机接地端子连接, 进行接地处理。
11	电池盒安装位	使用绝对值编码器时, 将电池盒安装至该位置。

No.	Name	Description
1	CN3, CN4(Communication Terminals)	Internal parallel connection, connecting with RS-232, RS-485 communication command control device.
2	LED Display Screen	5-digit and 7-segment LED screen, displaying the servo operation status and parameter settings.
3	Button Controller	MODE: Switch function codes in turns \triangle : Increase the setting value of the flicker bit. ∇ : Reduce the setting value of the flicker bit. $\triangleleft \triangleleft$: Shift the current flicker bit to the left. (Long press: turn pages when more than 5 digits are displayed) SET: Save edits and enter the sub-menu
4	CN1(Control Terminal)	Command input signal and other signal input and output terminals.
5	CN2(Encoder Connection Terminal)	Connecting with motor encoder terminal.
6	CHARGE(Indicator Light of Bus Voltage)	Used to indicate if the bus is electrified. When the indicator light is on, even when the main electrical circuit is turned OFF, the internal capacitors of the servo unit can still be electrified. Therefore, please do not touch the power supply terminal when the light is on.
7	L1, L2(Power Input Terminals)	Please see the rated voltage range of the input power supply on the nameplate.
	P \oplus , N \ominus (Servo Bus Terminal)	Direct-current bus terminal for multiple servos.
8	P \oplus , C \ominus (outer Braking Resistor Terminal)	When connecting outer bleeder resistors, please put it between P \oplus and C \ominus .
9	U,V,W(Servo Connection Terminal)	U,V,W motor phase connection
10	Motor Grounding Terminal	Connecting with the motor grounding terminal so as to ground.
11	Battery Box Mounting Position	Please install the battery box on the position while using absolute encoder.



卷布机控制设置

TAKE-DOWN CONTROL SETTING



一 进入卷布机界面/ Enter <Electronic Gear> Page



点击 进入设置界面旋转 旋钮并按压进入电子齿轮界面。

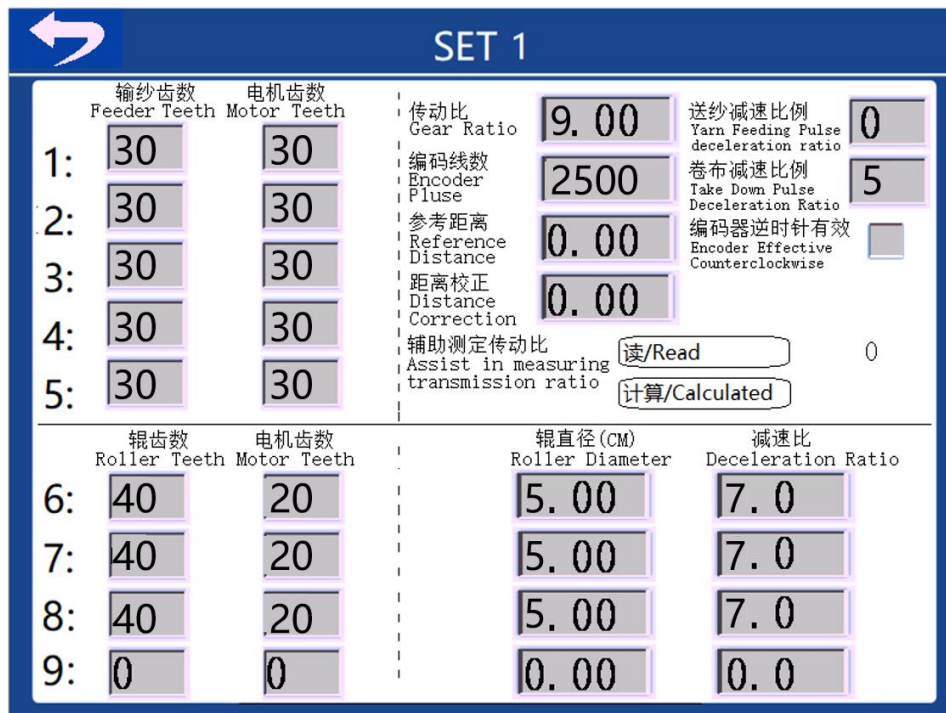
Press to enter <Settings> page, rotate knob and press to enter <Electronic Gear> page.



旋转旋钮 到 **SET1**，先按下 按钮然后再按下 旋钮，即可进入SET1界面。

Rotate the button to **SET1**, press the button and then press the button to enter the SET1 interface.

二 进入SET1界面/Enter <SET1> Page



输纱齿数 Feeder Teeth		电机齿数 Motor Teeth		传动比 Gear Ratio		送纱减速比例 Yarn Feeding Pulse deceleration ratio	
1:	30	30	30	9.00	0		
2:	30	30	30	2500	5		
3:	30	30	30	0.00			
4:	30	30	30	0.00			
5:	30	30	30				
				编码器线数 Encoder Pulse		卷布减速比例 Take Down Pulse Deceleration Ratio	
				参考距离 Reference Distance		编码器逆时针有效 Encoder Effective Counterclockwise	
				距离校正 Distance Correction			
				辅助测定传动比 Assist in measuring transmission ratio	读/Read	0	
					计算/Calculated		
辊齿数 Roller Teeth		电机齿数 Motor Teeth		辊直径(CM) Roller Diameter		减速比 Deceleration Ratio	
6:	40	20	20	5.00	7.0		
7:	40	20	20	5.00	7.0		
8:	40	20	20	5.00	7.0		
9:	0	0	0	0.00	0.0		

界面参数描述/The description of the interface parameters:

输纱齿数/Feeder Teeth:

1~5是电子送纱皮带所带输纱器齿轮齿数，市面常见27齿和30齿。

1~5 refers to the tooth number of the yarn feeder gears, commonly 27 teeth and 30 teeth.

6~9是相应卷布辊上安装的齿轮齿数。

6~9 refers to the tooth number of the gears on the corresponding fabric rollers.

卷布机具体型号所对照齿轮齿数如下表/The tooth number of the gears on different take-down systems:

型号/Model Number	6	7	8	9
A02/A05	40	40	30	-
K3-Series	40	40	30	
K50-Series	40	40	26	

表1/Table 1

电机齿数/Motor teeth:

1~5为电子送纱电机所配的齿轮齿数，一般为27齿或30齿，根据实际齿数填入。

1~5 refers to the tooth number of the yarn feeder motor gears, commonly 27 teeth and 30 teeth, input the number according to actual tooth number.

6~9为卷布辊电机+减速器出轴所配齿轮齿数，不同型号齿数如下表：

6~9 refers to the tooth number of the gear on the decelerator output shaft connecting motor of the fabric roller, reference of different gear tooth number:

型号/Model Number	6	7	8	9
A02/A05	12	12	30	—
K3-Series	12	12	30	
K50-Series	12	12	26	

表2/Table 2

传动比: 编码器传动比，用于指示机器旋转一圈，编码器旋转了多少圈，参考2.2.1。

Transmission Ratio: Encoder transmission ratio refers to encoder pulse per indicator machine revolution of the indicator machine, see 2.2.1 for reference.

送纱减速比：送纱脉冲分频比，脉冲频率=编码线数*2*传动比*RPM(Max)/60/(卷布减速比例+1)。

Yarn Feeding Pulse Deceleration Ratio: Refers to yarn feeding pulse frequency dividing ratio, pulse frequency=Encoder Pulse*2*Transmission Ratio*RPM(Max)/60/(Take Down Deceleration Ratio+1).

脉冲频率不得高于30000Hz，若高于30000Hz，则加大送纱减速比例数值。送纱减速比例数值以脉冲频率刚好不超出30000Hz即可。送纱减速比例设置过大会导致送纱电机抖动，影响送纱稳定性。默认0。

Pulse Frequency must keep below 30,000Hz, otherwise, users must increase the value on <Yarn Feeding Pulse Deceleration Ratio>. Make sure that the value on <Yarn Feeding Pulse Deceleration Ratio> is just below 30,000Hz by pulse frequency, because too high value will lead to motor jitters of the yarn feeder and influence its performance. Default value:0.

编码线数: 所使用的编码器的每圈编码数（线数），默认2500。

Encoder Pulse: The encoder pulse frequency per revolution on the encoder. Default value:2500.

卷布减速比: 卷布脉冲分频比。注：卷布系统使用。

Take Down Pulse Deceleration Ratio: Take-down pulse frequency dividing ratio. NOTE: Only for machines equipped with KMT take-down system.

卷布脉冲频率=编码线数*2*传动比*RPM(Max)/60/(卷布减速比例+1)，该数值不得高于10000Hz，若高于10000Hz，则加大卷布减速比例数值。卷布减速比例数值以脉冲频率刚好不超出10000Hz即可。BD设置过大会导致卷布电机噪音较大，设置过小则会在运转期间报警A600（卷布脉冲滞留）。

Take Down pulse frequency=Encoder Pulse*2*Transmission Ratio*RPM(Max)/60/(Take Down Deceleration Ratio+1), the value must keep below 10,000Hz, otherwise, users must increase the value on <Take Down Deceleration Ratio>. Make sure that the value on <Take Down Deceleration Ratio> is just below 10,000Hz, because too high value on <Take Down Deceleration Ratio> will lead to huge noise of the take-down motor, while

too low value will report A600 alarm (take-down pulse blocking) when the machine is in operation.

参考距离: 脉冲错误报警数值百分比, 设置3.00。根据实际情况做调整

Reference Distance: Pulse frequency error alarm, accurate to one decimal place. Set the value to 3.00 and adjust the value according to actual situation.

距离校正: A系列卷布机在推布时候, 下段卷布棍倒转时间, 单位:秒

Distance Correction: Refers to the reverse rotation time of the lower fabric roller while the machine is pushing the fabric. Unit:Seconds.

编码器逆时针有效: 编码器旋转方向设定。

Encoder Effective Counterclockwise: Set rotation direction for the encoder.

2.2.1 (传动比)数值辅助测定/2.2.1 (Gear Ratio) Assist in measuring transmission ratio :

- ① 返回控制面板首页，设定机台转数（设定值）为2。

Return to <HOME> page on the control panel, set <Completed> in the <Home> on the intelligent control panel to 2.

- ② 设置快车频率10Hz，并启动机台运转，直到机台<到转>自然停机。

Set <FAST> to 10Hz, and start the machine until the value on <Completed> reaches the preset value on <DOFF>.

- ③ 进入<电子齿轮><SET1>页面，点击计算(Calculated)行后面的Read按钮，获取当前编码器位置值。

Enter the <SET1> page in <Electronic Gear>, choose <Read> bar to acquire current position value of the encoder.

- ④ 返回控制面板首页，复位当前转数（按下转数复位键），随后设定机台转数为10。

Return to <HOME> page on the control panel, press <Reset> button to clear values on <Revs>.

- ⑤ 保持快车频率10Hz不变，启动机台运转，直到机台<到转>自然停机。

Keep the value on <FAST> is 10Hz, start the machine until the value on <Completed> reaches the preset value on <DOFF>.

- ⑥ 倘若上述步骤过程出现其它异常停机，则需要从步骤1开始执行。

If there is any abnormal machine halt in the operation of the steps above, users need to execute the process from the first step.

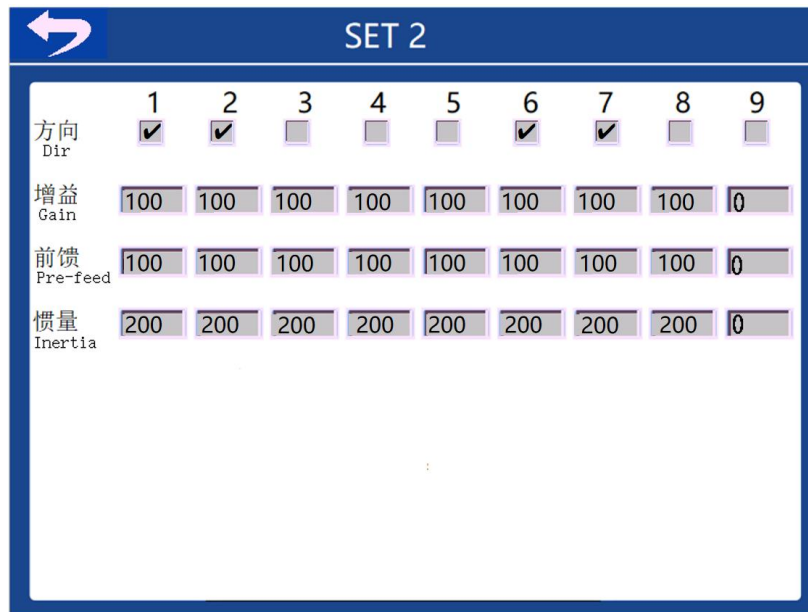
⑦ 再次进入<电子齿轮><SET1>页面，点击计算(Calculated)行后面的Read按钮，刷新获取当前编码器位置值，随后点击后面的计算(Calculated)按钮，执行传动比值计算。计算所得值会自动写入传动比位置并刷新显示出来。

Enter the <SET1> page in <Electronic Gear> again, choose <Read> bar to acquire current position value of the encoder, then press <Calculated> button to calculate the transmission ratio, which will be displayed on <Gear Ratio>

⑧ 使用该方式自动计算传动比值后，若调试电子送纱，请务必使用慢速点动方式进行试运行，避免参数异常导致断纱。

After using the method, if users want to adjust the electronic yarn feeding system, please press < JOG> button to adjust in order to avoid yarn breakage due to abnormal parameters.

2.3 进入SET2界面/Enter <SET2> Page



	1	2	3	4	5	6	7	8	9
方向 Dir	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
增益 Gain	100	100	100	100	100	100	100	100	0
前馈 Pre-feed	100	100	100	100	100	100	100	100	0
惯量 Inertia	200	200	200	200	200	200	200	200	0

本界面设置说明如下/The description of the page is as follows:

方向： 1~5用于设置电子送纱电机旋转方向，**勾选**表示送纱皮带**逆时针（顶视）**传动。

Direction: 1~5 refers to settings of rotation directions of the yarn feeder motor, **ticking** the checkbox indicates that the corresponding yarn feeding belt is moving **counterclockwise from a top view**.

6~9用于设置电子卷布机中的动力卷布辊旋转方向。**勾选**表示电机**逆时针（顶视）**传动。

6~9 refers to settings of rotation direction of the fabric roller in the electronic take-down. **Ticking** the checkbox indicates that the corresponding motor is moving **counterclockwise from a top view**.

型号/Model Number	6-P1	7-P1	8-P1	9-P1
A02	勾选（逆时针） Tick (Counterclockwise)	不勾选（顺时针） Untick (Clockwise)	不勾选（顺时针） Untick (Clockwise)	-

表5/Table 5

增益：伺服电机增益值，出厂默认100。

Gain: Set the servo operation gain. Default value:100.



前馈：伺服电机前馈值，出厂默认100。



Pre-feed: Set the servo operation feedforward. Default value:100.

惯量：伺服电机前馈值惯量值，若机台运转期间电机会抖动，可以调节该参数进行优化。

Inertia: Set the servo operation inertia. If the motor jitters when the machine is in operation, users can adjust the parameter to improve its performance.

2.4 系统配置包括WIFI、自动门、张力卷布机等配置开关配置/System Configurations(WiFi, Automatic Door, Take-Down and Others)

在控制面板的<系统设置>页面中，长按面贴上  <断纱强迫>键和  <停止>键并持续2秒以上，直到屏幕显示跳转到以下页面，根据配置，开启对应的功能，修改该页面配置开关选项后，系统需要断电重启才能生效（电子送纱功能需要等待送纱系统完全断电）。

Select<System Setting> page on the control panel, press and hold  <Force Jogging> button and  <STOP> button for 2 seconds, until the display screen redirect to the following page, then select specific functions according to the configuration. Note: The machine must be restarted before all the configurations take effect (users must wait until the yarn feeding system is fully power-off when using electronic yarn feeding function).

CONFIG								
功能码/Function Code:				代号码/Code Selection:				
用户码/User Code :				代号值/Code Value :				
伺服类型/Servo Type :								
P1	P1.0 送纱 Feeder	P1.1 卷布 Takedown	P1.2 无线后台 WIFI	P1.3 保留 REV	P1.4 保留 REV	P1.5 点动不切 Jog Stop	P1.6 缺气后检 Air Det. Delay	P1.7 特殊清车 Customized Cleaning
	P1.8 累计圈数 Acc.Revs	P1.9 刷卡器 Card Reader	P1.10 保留 REV	P1.11 断纱选存 Yarn Record	P1.12 单张力 Single Tension	P1.13 保留 REV	P1.14 过载屏蔽 Shield Overload	P1.15 保留 REV
P2	P2.0 手动机门 Manual Door	P2.1 双张力 Double Tension	P2.2 撑布架 Cloth Support	P2.3 验布机 Visual System	P2.4 自动门 Automatic Door	P2.5 保留 REV	P2.6 保留 REV	P2.7 保留 REV
	P2.8 保留 REV	P2.9 保留 REV	P2.10 保留 REV	P2.11 保留 REV	P2.12 保留 REV	P2.13 保留 REV	P2.14 保留 REV	P2.15 保留 REV
P3								

2.5 卷布张力设定/ Tension Setting of Take-Down

1) 进入<电子齿轮>页面，6号位置首列设置值用来设置布匹卷取张力。不同机型该数值对照的实际布面张力值有差异，具体对照下表：

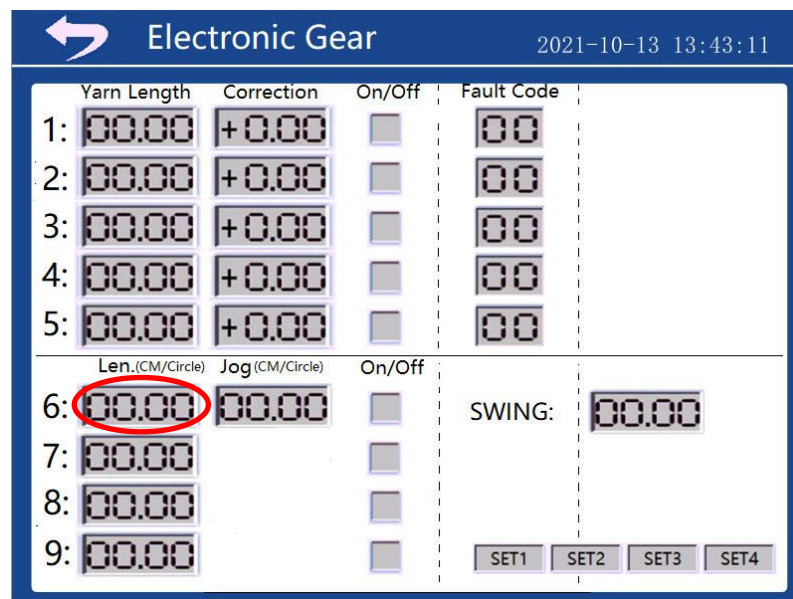
Enter <Electronic Gear> page, input the value in the first column in the No.6 position to set fabric rolling tension. The tension value on different take-down system:

型号 Model Number	5.00 对照实际张力值 (N) 5.00 (N) Actual Tension Value(N)	低张力报警值 (N) Low Tension Alarm Value (N)	高张力报警值 (N) High Tension Alarm Value (N)
A02	500	100	3500

型号/Model Number	10.00实际张力值(N)/10.00 Actual Tension Value(N)
KMT-MT-K3X Series	500
KMT-MT-K50 Series	500


2) 张力卷布机，必须同时开启6、7、8号卷布辊才能正常工作，调试期间也不能关闭这三个通道的卷布辊。

Tension take-down machine, users must simultaneously open No.6,7,8 rollers to make sure that the machine works in normal operation and mustn't switch off the three rollers even during machine adjustment.



3) 使用张力检测功能时，运行机器需要系统能够检测到有0.1公斤布匹张力才允许机器运行。

While using tension detecting function, the machine can only start operating upon the system acquires 0.1kg fabric tension value.

 如果新织布匹还没有缠绕到卷布辊上时，可以用一个旧布头系在新布上，然后再缠绕到卷布辊上，使系统能够检测到布匹张力让机器正常运行。

If the new fabric has not been rolled on the fabric roller, users can tie an old fabric to the new one and roll it on the fabric roller

so that the system is able to detect the fabric tension, ensuring normal operation of the machine.



如果还没有运行出新布可以系到卷布辊上，可以在卷布辊上系一根绳子拉拽产生拉力使机器运行。

If there is no new fabric to be rolled on the fabric roller, users can tie a rope to the fabric roller and pull to make sure that the machine can run.

2) 使用点动按键增加布匹拉力时，达到预设拉力值后点动按键正转失效，但可以正常使用反转减少拉力。

While pressing <JOG> button to increase fabric tension, the button stop forward rotation upon tension value reaches the preset tension value.



使用机器时，建议先点动按键达到预设张力值机器自动停止，然后启动机器。

When the machine is in operation, please press <JOG> button until the tension value reaches the preset tension value so that the machine can stop automatically before restart the machine.

2.6 布匹张力检测报警/ Fabric Tension Detection Alarm

➤ 低张力报警

➤ **Low Tension Alarm**

机器运转期间，张力传感器检测到低于表6中的<低张力报警值>会立即报警停机，报警图标为<伺服驱动>，代码 A110。

When the machine is in operation, if the tension value detected by the tension sensor is below <Low Tension Alarm> in the Table 6, the machine will stop and alarm. Alarm icon <Servo Drive>, code: A110.

➤ 高张力报警

➤ **High Tension Alarm**

机器运转期间，张力传感器检测到高于表6中的<高张力报警值>会立即报警停机，报警图标为<伺服驱动>，代码 A112。

When the machine is in operation, if the tension value detected by the tension sensor is higher than <High Tension Alarm> in the Table 6, the machine will stop and alarm. Alarm icon <Servo Drive>, code: A112.

➤ 均值报警

➤ **Mean Value Alarm**

机器运转期间，张力传感器2—3分钟内检测到的张力值超出6号设定值的40%，则报警图标为<伺服驱动>，代码 A111。

When the machine is in operation, if the tension value detected by the tension sensor is 40% higher than No.6 setting value for 2-3 minutes, the machine will alarm. Alarm icon <Servo Drive>, code: A111.