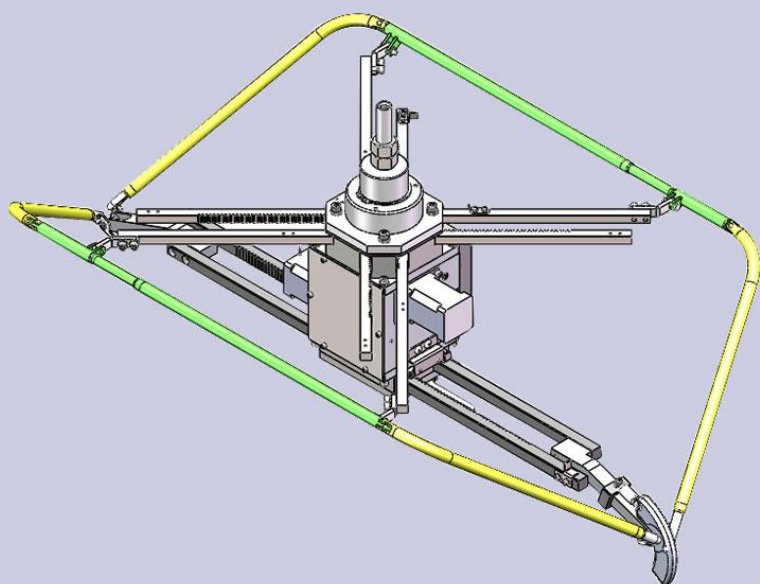


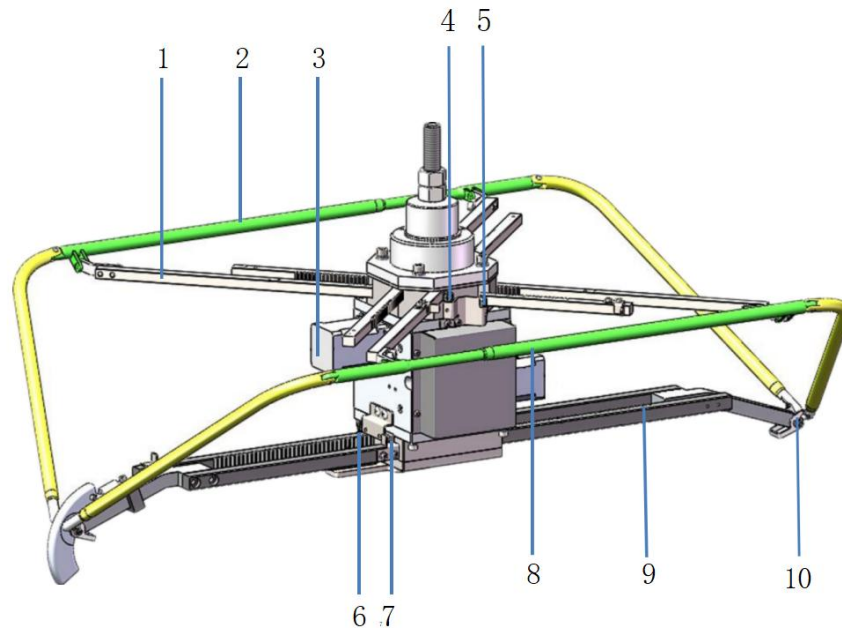


# 电子撑布架

ELECTRONIC FABRIC SPREADER



## 一 装置组件/ Equipment Components



1. 横向X轴伸缩齿条/ Horizontal X-Axis Extension Rack
2. 撑布架伸缩杆/Fabric Spreader Extension Rod
3. 横向X轴控制电机M1/Horizontal X-Axis Control Motor M1
4. 横向X轴收缩最小限位开关X1/Horizontal X-Axis Minimum Retraction Limit Switch X1
5. 横向X轴伸展最大限位开关X2/Horizontal X-Axis Maximum Extension Limit Switch X2
6. 纵向Y轴伸展最大限位开关X4/Vertical Y-Axis Maximum Extension Limit Switch X4
7. 纵向Y轴收缩最小限位开关X3/Vertical Y-Axis Minimum Retraction Limit Switch X3
8. 纵向Y轴控制电机M2/Vertical Y-Axis Control Motor M2
9. 纵向Y轴伸缩齿条/Vertical Y-Axis Telescopic Rack
10. 连接剖布刀位置/Position Connecting Fabric Cutter

### 1.1 功能简介/Functions

电子撑布架可以使用面板输入数值精准控制 撑布架伸缩程度，具体见 3.1 电子撑布架面板操作。

The operator can input numerical values on the panel to precisely control the extension or retraction of the electronic fabric spreader. For details, refer to section 3.1 - Electronic Fabric Spreader: Panel Operation.

面板可实时读取当前 X轴和Y轴坐标位置，面板可将输入的 X轴和Y轴的坐标位置发送给电子撑布架，电子撑布架自动运行到对应位置。

The operator can read the current X-axis and Y-axis coordinate positions on the panel in real-time. The inputted X-axis and Y-axis coordinate positions will be sent to the electronic fabric spreader, which will automatically move to the corresponding position.

面板提示撑布架故障/事件报警类型包括：上电读取参数异常、遥控位置更新、电机正在运转、电机驱动故障、电机短路故障报警、电机开路故障报警、过温故障报警、限位开关失效、横轴和纵轴移动超时告警。

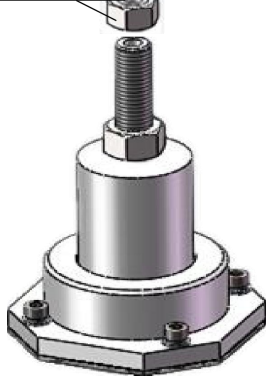
The panel indicates various types of faults/events of the fabric spreader, including: abnormal parameter reading upon power-on, remote control position update, motor operation in progress, motor drive failure, motor short circuit fault alarm, motor open circuit fault alarm, over-temperature fault alarm, limit switch failure, timeout alarm for horizontal and vertical axis movement.

电子撑布架也可以使用遥控器手动控制撑布架伸缩程度，具体见 3.2 电子撑布架遥控器操作。

The operator can also manually use a remote controller to adjust the extent of extension and retraction. Please refer to section 3.2- *Electronic Fabric Spreader Remote Control Operation* for specific instructions.

## 二 安装/Installation

M16 螺母/M16 Nut



### 2.1 电子撑布架与机架安装

#### Installation of the Electronic Fabric Spreader on the Frame

将电子撑布架使用两个M16的螺母一上一下锁到机台上。

Secure the electronic fabric spreader onto the machine frame using two M16 nuts, one above and one below.

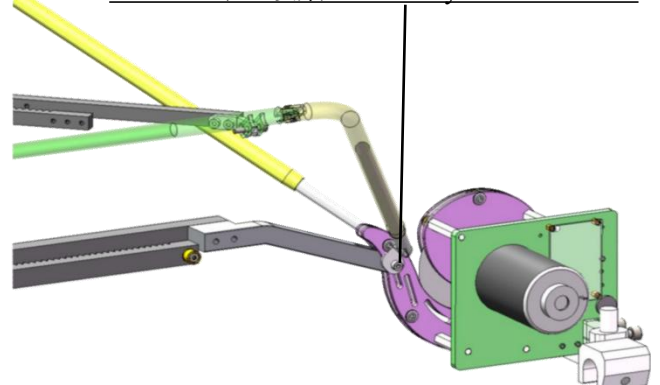
### 2.2 电子撑布架与剖布刀连接

Connection of the Electronic Fabric Spreader with the Fabric Cutter

将电子撑布架使用M4\*25的螺丝根据实际高度锁到剖布刀上。



Secure the electronic fabric spreader to the fabric cutter using M4\*25 screws, adjusting to the appropriate height as needed.



M4\*25 螺丝锁紧/Locked by M4\*25 screws

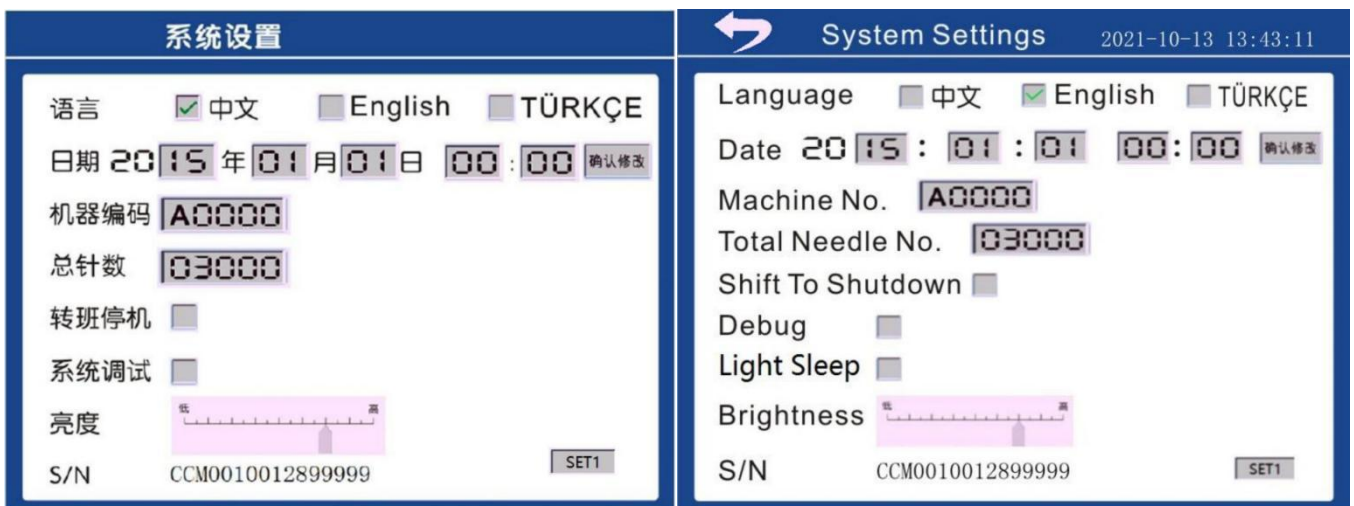






### 三 操作/Operations





#### 3.1 电子撑布架面板操作/Electronic Fabric Spreader: Panel Operation

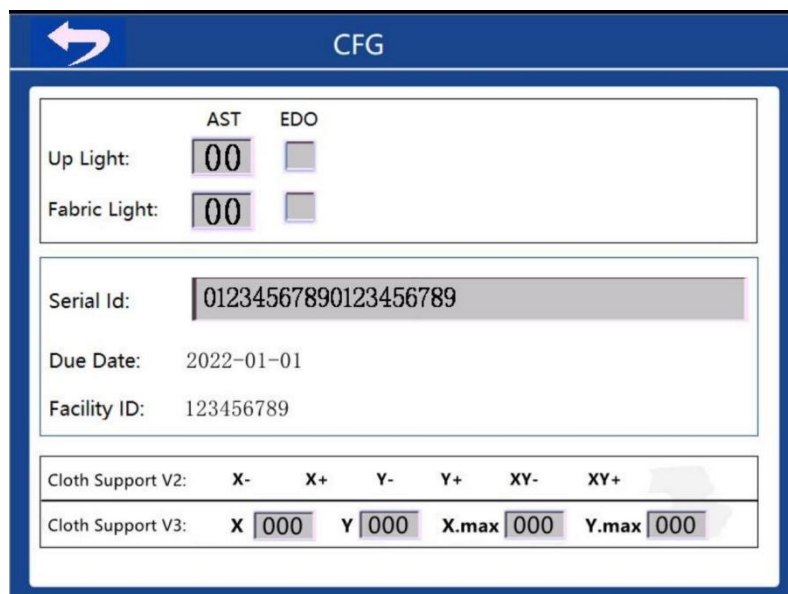
点击  进入设置界面旋转  旋钮选择系统设置并按压进入系统设置界面。

Press the  button to enter the settings menu. Rotate the  knob to select "System Settings" and press it to enter the system settings interface.



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

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



页面中的<Cloth Support V2>能对V2版本的电子撑布架进行控制。X-和X+表示横向收缩伸展操作，Y-和Y+表

示纵向收缩伸展操作。XY-和XY+表示横向和纵向同时收缩伸展操作。

The <Cloth Support V2> on the page is used to control the V2 version of the electronic fabric spreader.

X- and X+ control the horizontal retraction and extension operations, while Y- and Y+ control the vertical retraction and extension operations. XY- and XY+ control both horizontal and vertical retraction and extension operations simultaneously.

页面中的<Cloth Support V3>能对V3 版本的电子撑布架进行控制。X 表示输入横向伸缩位置坐标的

数值，Y 表示输入纵向伸缩位置坐标的数值，X.max 表示输入限制X 横向伸缩最大位置的数值，Y.max 表示输入限制Y.纵向伸缩最大位置的数值。如，X.max 输入 100，X 的最大有效值为 100。

The <Cloth Support V3> on the page is used to control the V3 version of the electronic fabric spreader. X represents the numerical value for inputting horizontal extension position coordinates, while Y represents the numerical value for inputting vertical extension position coordinates. X.max represents the numerical value for inputting the maximum limit of horizontal extension position (X), and Y.max represents the numerical value for inputting the maximum limit of vertical extension position (Y). For example, if X.max is set to 100, the maximum valid value for X would be 100.

设置X 轴最大位置为：187 个单位，每个单位为 1.28cm 。X 轴实际可调整范围为：0-187 单位。

Set the maximum position for the X-axis to 187 units, with each unit representing 1.28cm. The actual adjustable range for the X-axis is from 0 to 187 units.





设置Y轴最大位置为：174个单位，每个单位为 2.41cm 。Y轴实际可调整范围为：0-174 单位。

Set the maximum position for the Y-axis to 174 units, with each unit representing 2.41cm. The actual adjustable range for the Y-axis is from 0 to 174 units.


### 3.2 电子撑布架遥控器操作/Electronic Fabric Spreader: Remote Control

在使用遥控器控制撑布架时，先打开下照明灯进行照明和供电。

When using the remote control to operate the fabric spreader, first turn on the lower lighting for illumination and power supply.

1.  用来横向收缩撑布架/used to extend the fabric spreader horizontally.
2.  用来横向伸展撑布架/ used to retract the fabric spreader vertically.
3.  用来纵向收缩撑布架/ used to retract the fabric spreader vertically.
4.  用来纵向伸展撑布架/ used to extend the fabric spreader vertically.



5.  用来横向和纵向同时收缩撑布架 / used to simultaneously retract the fabric spreader both horizontally and vertically.

6.  用来横向和纵向同时伸展撑布架 / used to simultaneously extend the fabric spreader both horizontally and vertically.

### 注意/Points to Attention

1. 在运行过程中，当感应到行程最大和最小限位开关时，电机立即停止运转。
1. During operation, when the maximum and minimum limit switches are sensed, the motor stops immediately.
2. 控制撑布架要打开下照明灯。
2. Ensure that the lower lighting is turned on when controlling the fabric spreader.

### 3.3 电池安装/Battery Installation

取下遥控器后盖，按照电池正负极安装即可。

Remove the back cover of the remote control and install the battery according to the positive and negative poles.

电池规格为：“23A ”型12V电池。

The battery specification is "23A" type 12V battery.



## 四 技术数据/Technical Data

### 电子撑布架数据/Data of Electronic Fabric Spreader

供电	24V AC 交流 50/60Hz
Power Supply	24VAC, 50/60Hz
	供电需满足 EN 60204-1 指令 PELV
	Power supply must directive PELV comply with EN 60204-1
功率/Electric Power	待机功率/Standby Power: 3W
	一路运动/One-Way: 18W
	两路运动/Two-Way: 33W
电压范围/Voltage Range	17~48V AC 交流 50/60Hz
工作范围	纵向/Vertical: 840mm ~ 1260mm
Operating Range	横向/Horizontal: 475mm ~ 720mm
环境温度/Ambient Temperature	0°C ~ 60°C
重量/Weight	30kg

### 遥控器数据/Data of Remote Control

待机功耗/Standby Power Consumption	1 $\mu$ A
电池/Battery	23A 12V
电池使用寿命/Battery Life	每天按键2min使用400天
	Pressing the button for 2 minutes every day will last for 400 days.
	每天按键3min使用200天
	Pressing the button for 3 minutes every day will last for 200 days.
遥控距离/Remote Control Distance	2.5M

#### 4.1 遥控器可能出现的状况说明/Explanation of Possible Conditions for the Remote Control:

可能出现的状况 Possible Conditions That May Occur:	可能出现的原因 Possible Causes
按键按下遥控器灯未亮 Pressed button, remote control light not on:	电池没电或者遥控器损坏 Battery depleted or remote control damaged.

遥控器按下灯亮，松开灯依旧常亮 Pressed button, remote control light on, stays on after release:	遥控器损坏 Remote controller damaged.
遥控器按下灯亮，松开灯熄灭，但撑布架没有明显动作 Pressed button, remote control light on, light goes off after release, no significant movement in spreader bar:	遥控器损坏或者面板上未打开下照明灯（撑布架电源） Remote control damaged or the lower illumination light (fabric spreader power) on the panel not activated.

#### 4.2 故障报警代码/Fault Alarm Codes

电机驱动故障代码（丢步）	Motor Drive Fault Code (Stepping Loss)	0001
Flash 存储故障代码	Flash Storage Fault Code	0002
边界检测异常代码	Boundary Detection Abnormality Code	0005
开路故障报警代码	Open Circuit Fault Alarm Code	0006
短路故障报警代码	Short Circuit Fault Alarm Code	0007
过温故障报警代码	Overtemperature Fault Alarm Code	0008
X 轴超时告警代码	X-Axis Timeout Alarm Code	0020
Y 轴超时告警代码	Y-Axis Timeout Alarm Code	0021

故障显示优先级：过温故障 > 短路故障 > 驱动故障

Fault Display Priority: Overtemperature Fault > Short Circuit Fault > Drive Fault

（原理为：当读取到电机驱动故障时进行故障细分判定，若不是过温故障与短路故障，则报步进电机丢步故障）

The principle is as follows: When a drive fault is detected, it is further analyzed to determine whether it is an overtemperature fault or a short circuit fault. If it is neither of these, then it is reported as a stepping motor loss fault.

#### 4.3 LED 灯报警提示/ LED Alarm Indications

1、无故障状态：间隔 2 秒，闪烁 1 次（点亮时间 20ms）

1. No Fault State: Blink once every 2 seconds (lighting time: 20ms).

2、电机正在运转：间隔 0.5 秒，闪烁 1 次。

2. Motor in Operation: Blink once every 0.5 seconds.

3、报警细分：单灯双数字提示：间隔 2 秒，闪烁 M 次（闪烁间隔 0.4 秒），间隔 1 秒，闪烁 N 次（闪烁间隔 0.4 秒）。

熄灭 3s 后，重复以上操作。

3. Subdivided Alarms: Single Light with Dual Digital Indications: Blink M times every 2 seconds (blink interval: 0.4 seconds), then blink N times every 1 second (blink interval: 0.4 seconds). Repeat the above operations after a 3-second pause.

电机驱动故障代码（丢步） Motor Drive Fault Code (Step Loss)	间隔2秒，闪烁1次,间隔1秒，闪烁1次。熄灭3s后，重复以上操作（M=1,N=1） Interval of 2 seconds, blink 1 time, interval of 1 second, blink 1 time. Extinct for 3 seconds, then repeat the above operation (M= 1, N= 1).
Flash 存储故障代码 Flash Storage Fault Code	间隔2秒，闪烁1次,间隔1秒，闪烁2次。熄灭3s后，重复以上操作（M=1,N=2） Interval of 2 seconds, blink 1 time, interval of 1 second, blink 2 times. Extinct for 3 seconds, then repeat the above operation (M= 1, N=2).
边界检测异常代码 Boundary Detection Abnormality Code	间隔2秒，闪烁1次,间隔1秒，闪烁3次。熄灭3s后，重复以上操作（M=1,N=3） Interval of 2 seconds, blink 1 time, interval of 1 second, blink 3 times. Extinct for 3 seconds, then repeat the above operation (M= 1, N=3).
开路故障报警代码 Open Circuit Fault Alarm Code	间隔2秒，闪烁1次,间隔1秒，闪烁4次。熄灭3s后，重复以上操作（M=1,N=4） Interval of 2 seconds, blink 1 time, interval of 1 second, blink 4 times. Extinct for 3 seconds, then repeat the above operation (M= 1, N=4).
短路故障报警代码 Short Circuit Fault Alarm Code	间隔2秒，闪烁1次,间隔1秒，闪烁5次。熄灭3s后，重复以上操作（M=1,N=5） Interval of 2 seconds, blink 1 time, interval of 1 second, blink 5 times. Extinct for 3 seconds, then repeat the above operation (M= 1, N=5).
过温故障报警代码 Overtemperature Fault Alarm Code	间隔2秒，闪烁1次,间隔1秒，闪烁6次。熄灭3s后，重复以上操作（M=1,N=6） Interval of 2 seconds, blink 1 time, interval of 1 second, blink 6 times. Extinct for 3 seconds, then repeat the above operation (M= 1, N=6).
X轴超时告警代码 X-axis Timeout Alarm Code	间隔2秒，闪烁1次,间隔1秒，闪烁7次。熄灭3s后，重复以上操作（M=1,N=7） Interval of 2 seconds, blink 1 time, interval of 1 second, blink 7 times. Extinct for 3 seconds, then repeat the above operation (M= 1, N=7).
Y轴超时告警代码 Y-axis Timeout Alarm Code	间隔2秒，闪烁1次,间隔1秒，闪烁8次。熄灭3s后，重复以上操作（M=1,N=8） Interval of 2 seconds, blink 1 time, interval of 1 second, blink 8 times. Extinct for 3 seconds, then repeat the above operation (M= 1, N=8).