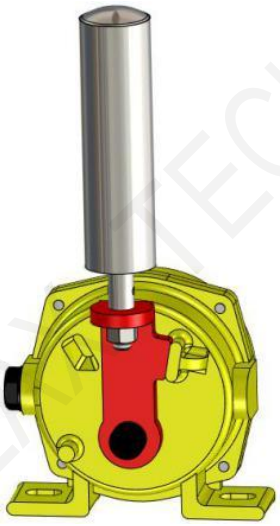
Instructions for Electric belt alignment device

ZAXDJ-AS-1000-133-YYHB V1.0



Zax Technology Co., Ltd

1. Overviews

Electric belt alignment device can automatically detect whether the conveyor belt in operation is out of alignment, and timely adjust the conveyor belt so that it can run on the ideal path.

The electric belt alignment device developed by our company is sensitive, reliable, adaptable to work in harsh environment, and easy to install and maintain. It is an ideal electric alignment device for belt conveyor and can be widely used in various belt conveyor systems.

2. Characteristic

2.1. The control box is made of stainless steel with strong corrosion resistance.

2.2. Modular components, easy to install.

2.3. The shell has high protection level, good sealing, and can be used in harsh environment.

2.4. Large thrust electric push rod, flexible and stable movement.

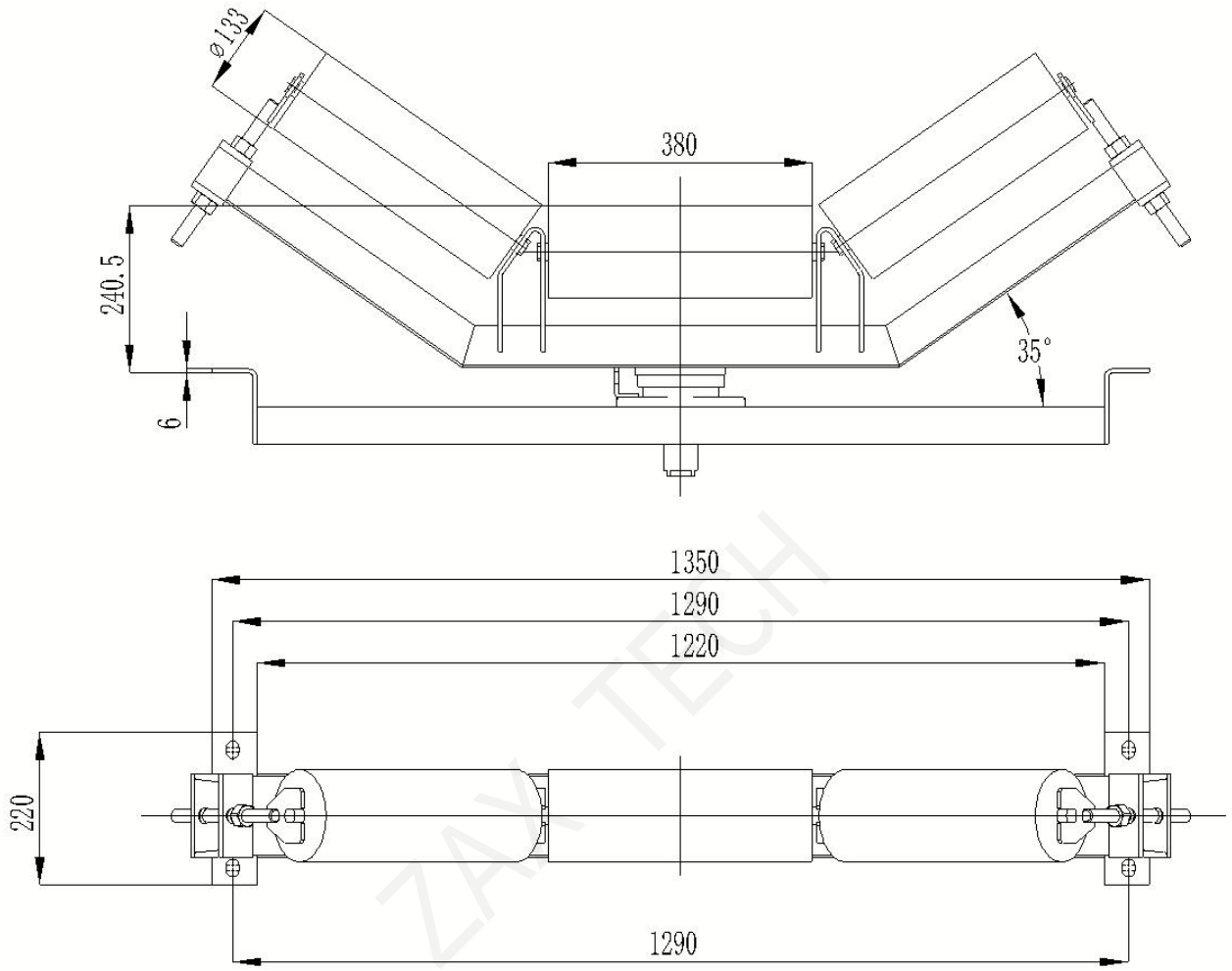
2.5. Using single chip computer as control unit, it has fast response speed, high precision and small error.

2.6. Intelligent design suitable for reversible belt conveyor.

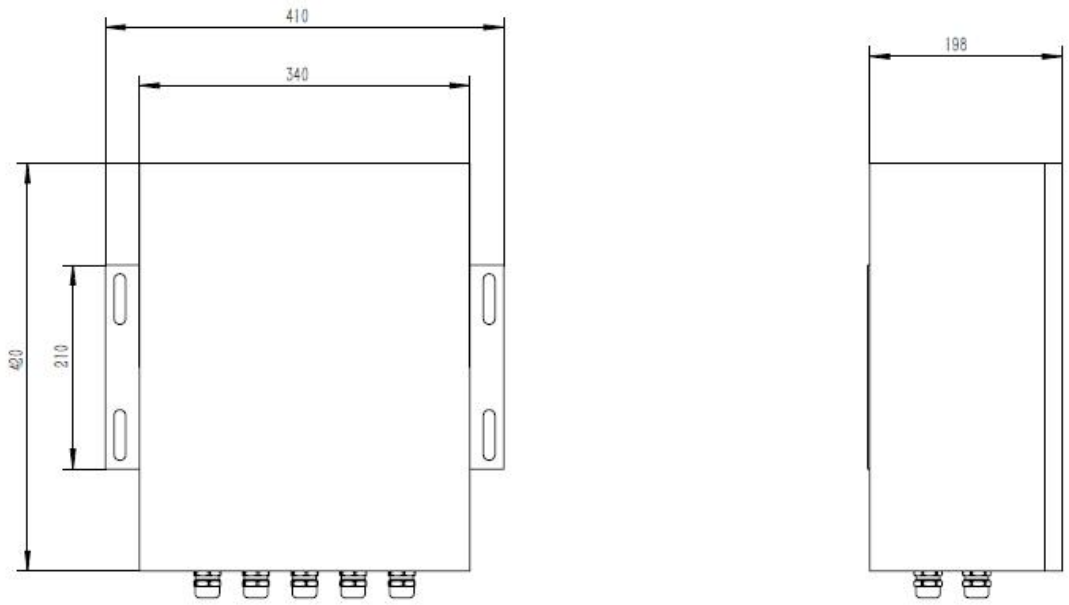
3. Parameter table

Ambient temperature	-20℃~50℃
Relative humidity	0~95%
Atmospheric pressure	80 kPa ~110kPa
Output mode and quantity	1×SPDT
Contact rating	AC380V 5A DC24V 5A
Power consumption of the whole machine	200W
Protection level	IP65

4. Structure features and main dimensions

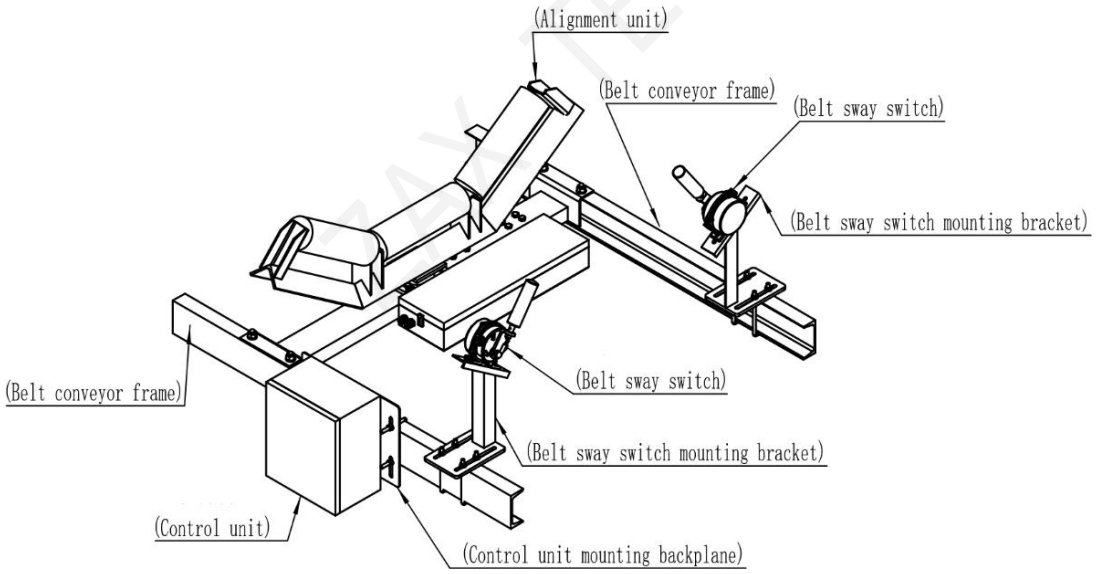


Correction unit



Appearance size chart (Units: mm）

5. Installation indication



Installation indication diagram

6. Installation instructions

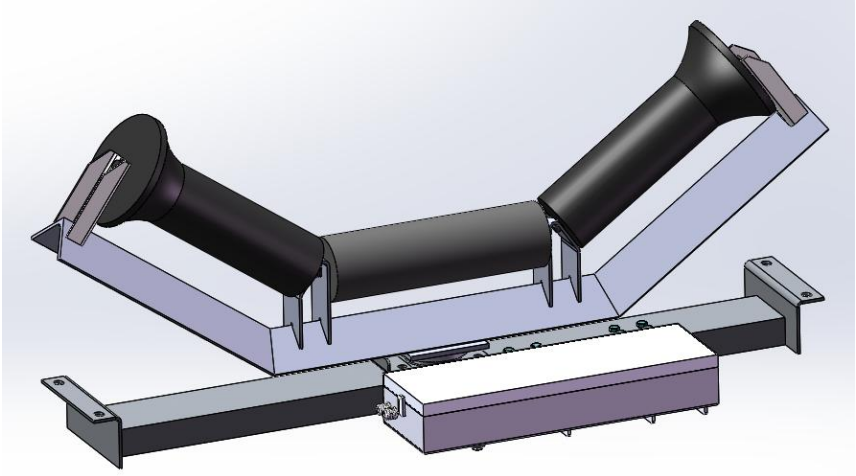
6.1. WARNING：

6.1.1. Do not live operation.

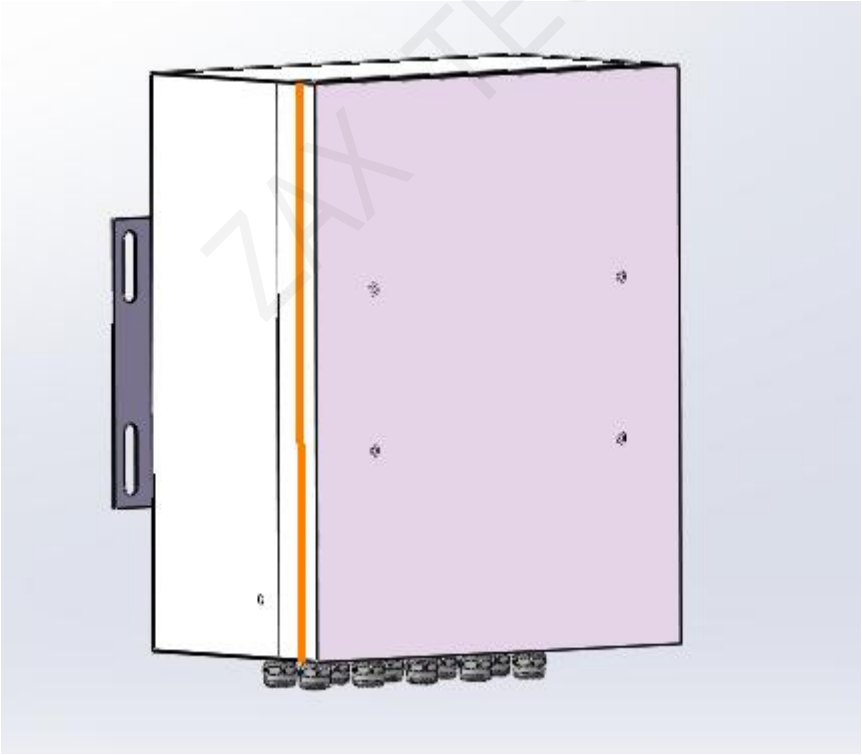
6.1.2. This product is non explosion proof products, please do not use in inflammable and explosive environment.

6.2. Prepare materials :

6.2.1. Belt alignment unit



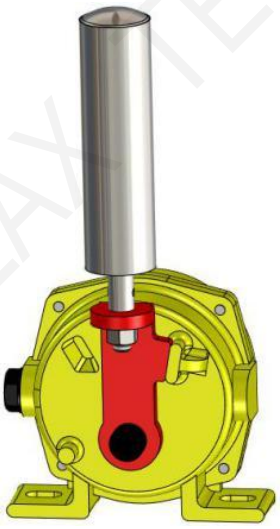
6.2.2. Control unit



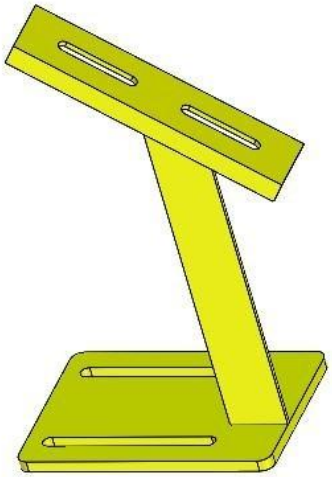
6.2.3. U-bolt 1

6.2.4. U-bolt 2

6.2.5. Belt sway switch

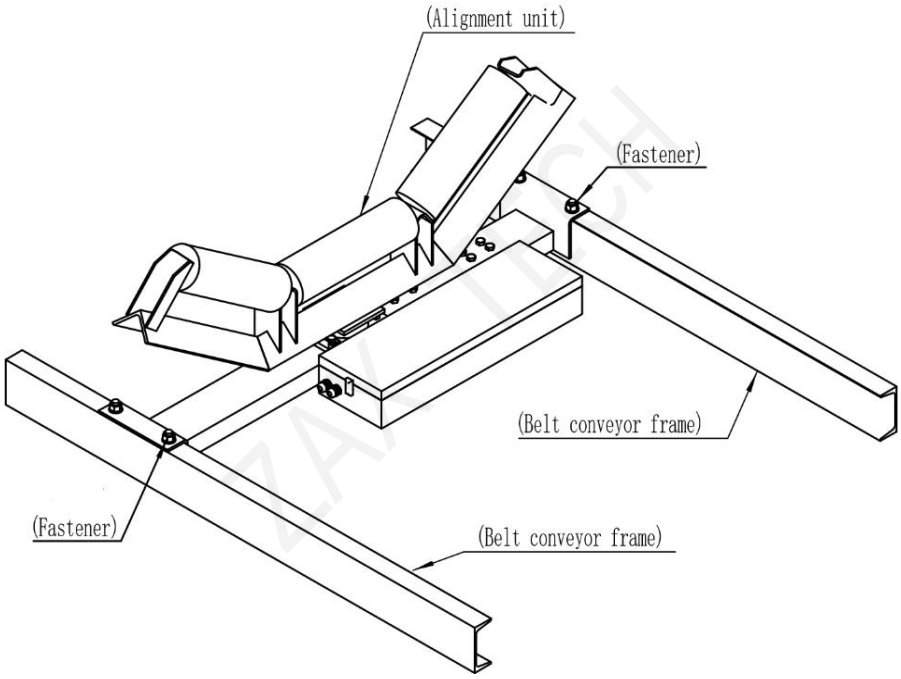


6.2.6. Belt sway switch mounting bracket



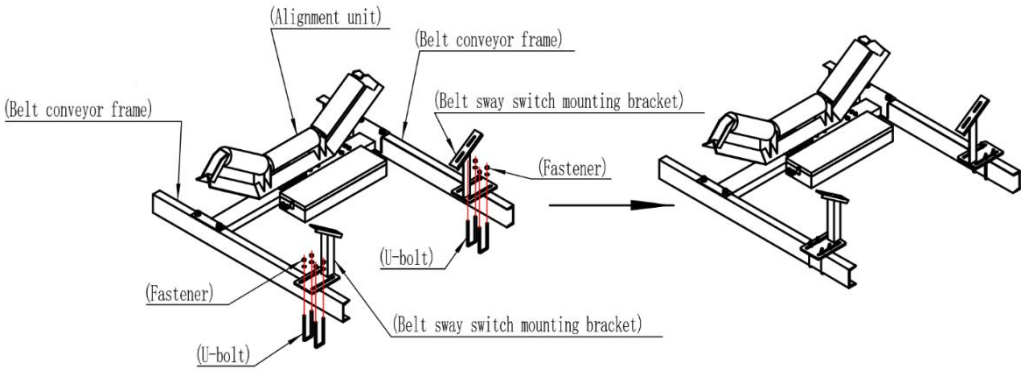
6.3. Installation steps：

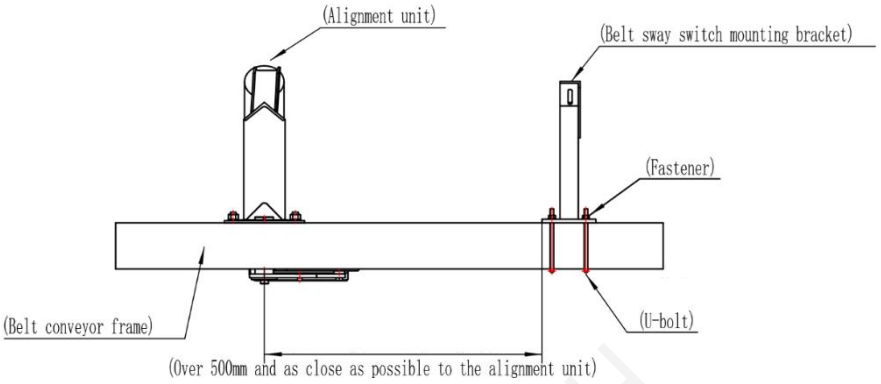
6.3.1. Install the belt alignment unit assembly

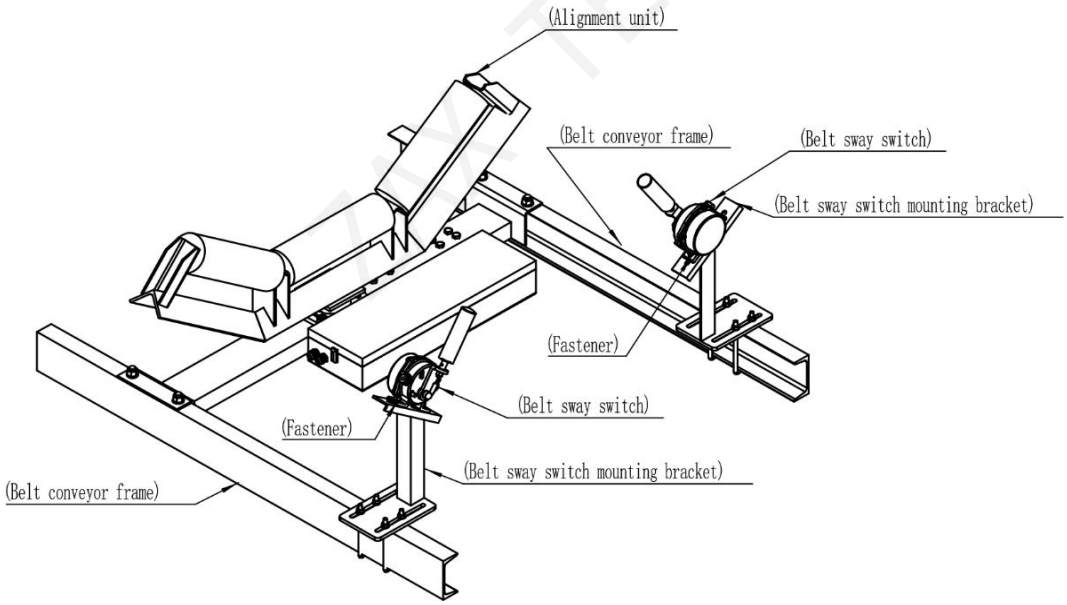


As shown in the figure above, install the belt alignment unit assembly to the conveyor frame at the appropriate position(if the original conveyor have alignment roller group remove it and replaced by the belt alignment unit)

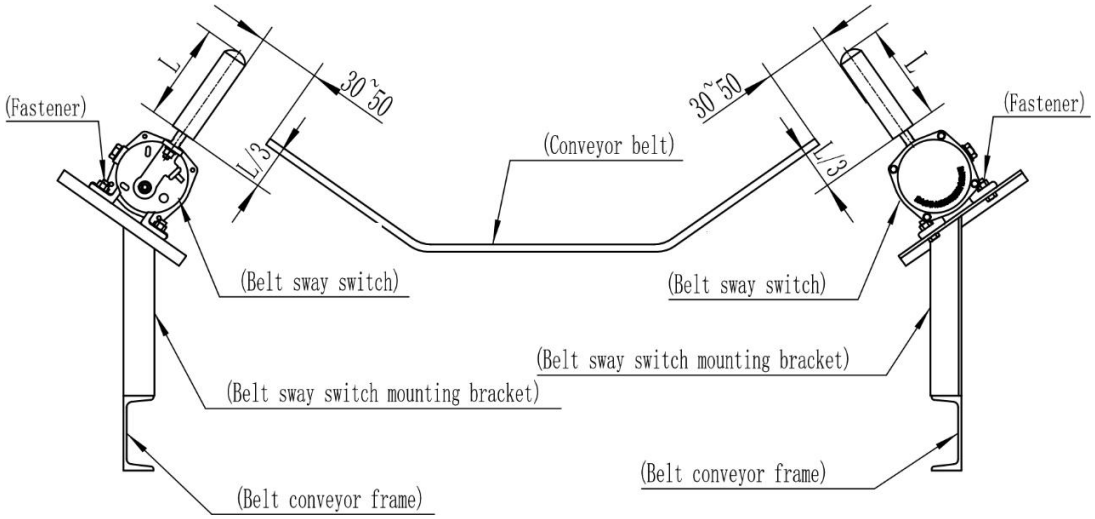
6.3.2. Install the belt sway switch



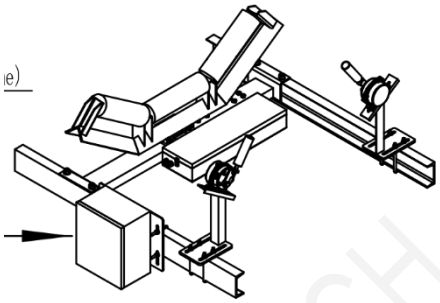




As shown in the figure above, select the appropriate position at the belt conveyor frame (as close as possible to the position of the belt alignment unit but should greater than 500mm) and install the belt sway switch mounting bracket and fix it with U-bolt. Install the belt sway switch on the mounting bracket with fasteners. The installation position of belt sway switch is shown in the figure below.

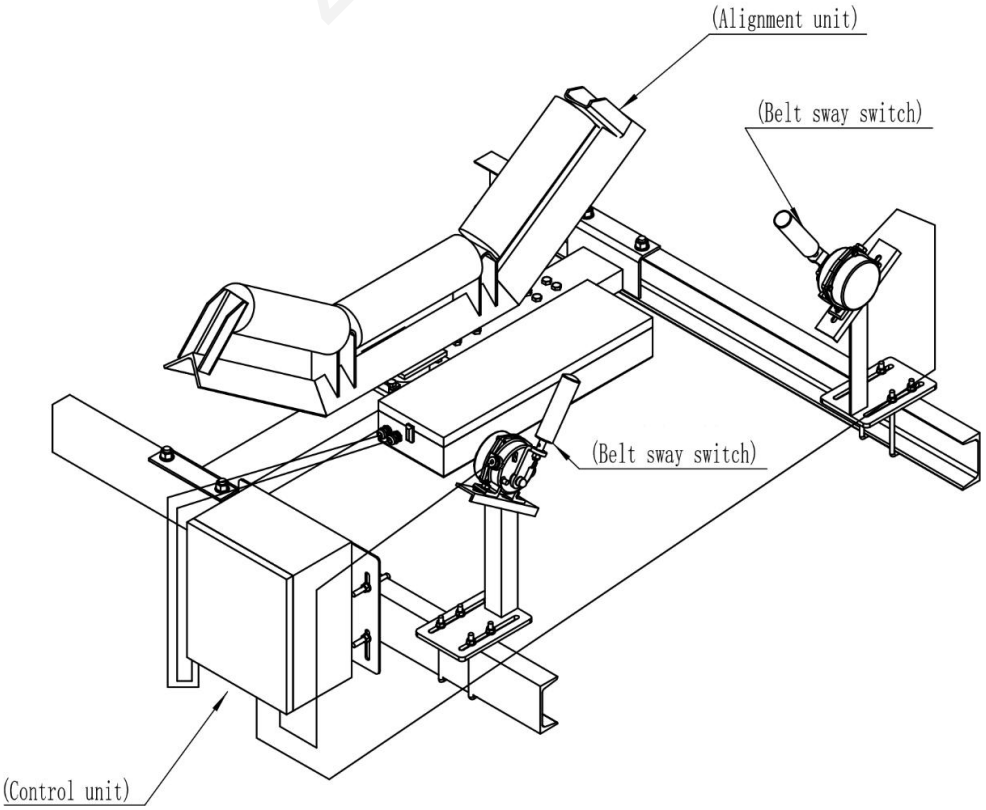


6.3.3. Install the control unit



6.3.4. Cable connection

As shown in the figure below, connect 2 cables of the belt sway switch and 2 cables of the belt alignment unit to the control unit respectively.



6.3.5. The control unit cable connection diagram is shown below

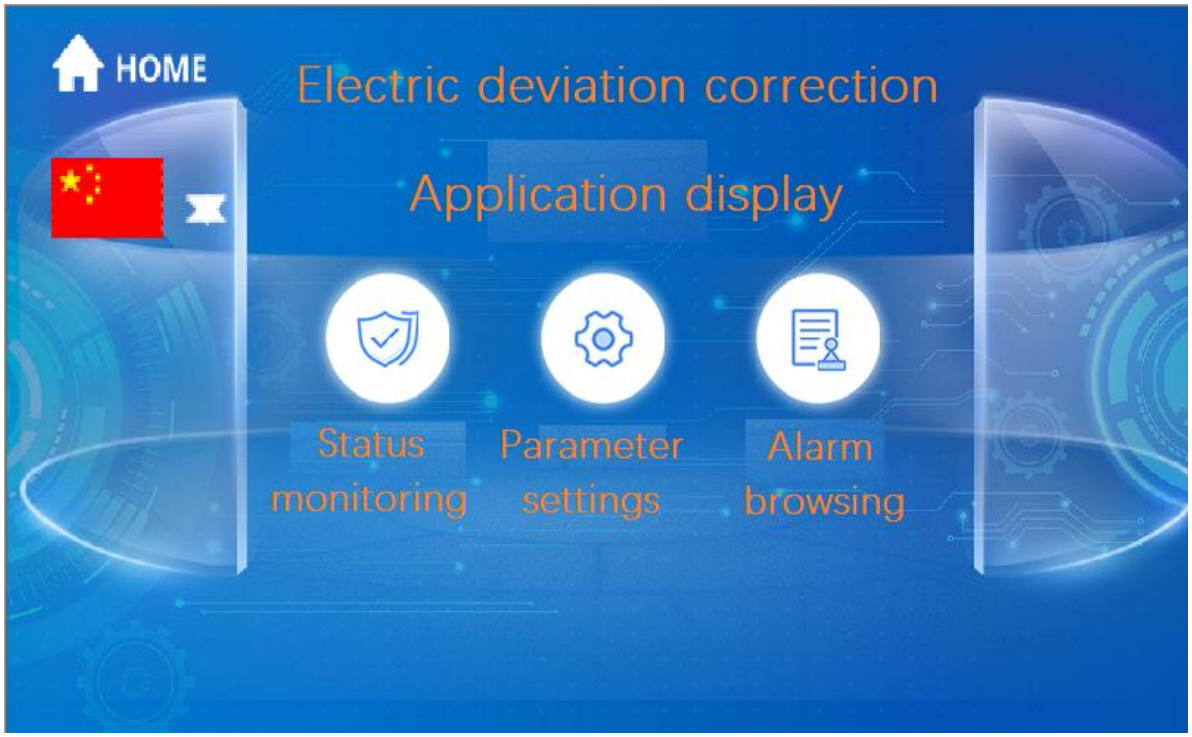
Terminal definition	D1 Terminal number	Line color	
Electric actuator DC24	1	BN	4-core signal cable for push rod
Electric actuator DCO	2	BL	
Electric actuator signal	3	YE .WH	
Reverse operation	4		
Reverse operation	5		
	6		
	7		
Left light deviation signal	8	BLK	3-core cable for deviation detection
Left deviation from the common end	9	YE	
Left weight deviation signal	10	RED	
	11		
	12		
Right light deviation signal	13	BLK	3-core cable for deviation detection
Right deviation from the public end	14	YE	
Right weight deviation signal	15	RED	
	16		
	17		
	18		
Belt operation	19		
Belt operation	20		
Alarm output contact	37		
Alarm output contact	38		
Backup output contact	39		
Backup output contact	40		

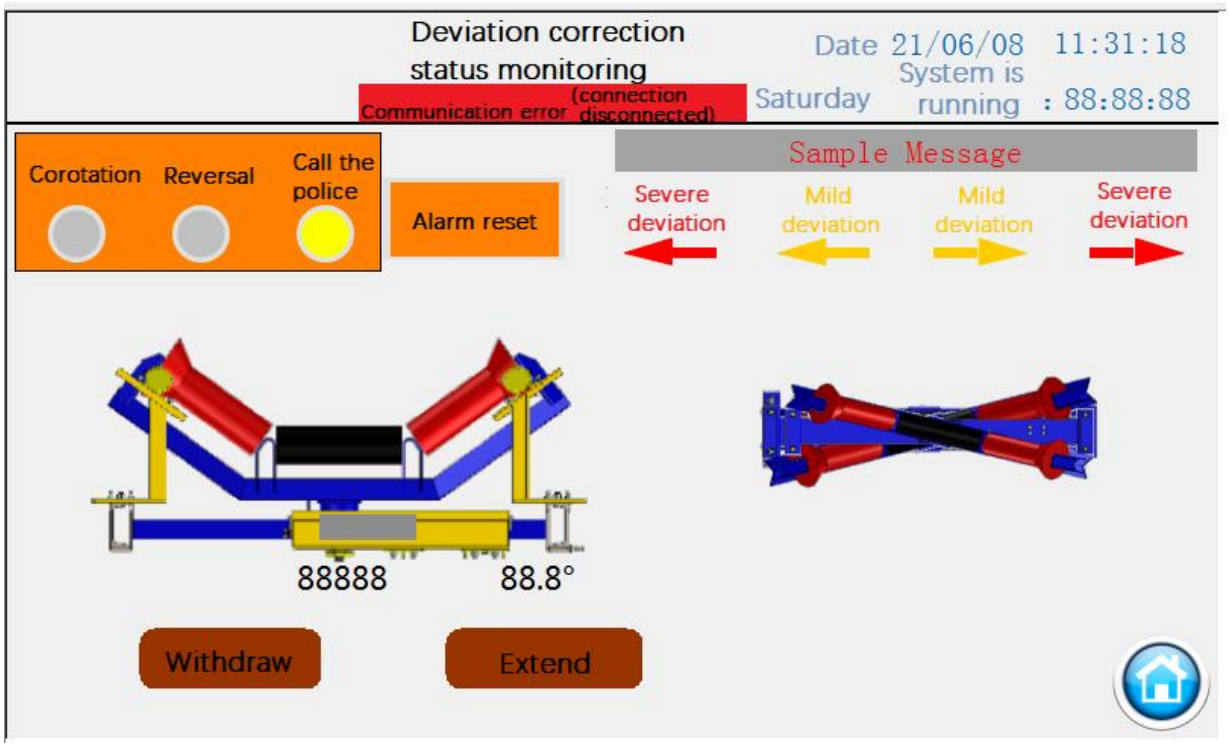
X1			
Terminal definition	Terminal number	Line color	
AC220Power supply L	1		3-core power supply cable
AC220Power supply N	2		
Grounding	3		
Electric linear actuator power supply	4	RED	Connecting rod 2-core cable
Electric linear actuator power supply	5	BLK	
	6		
	7		

6.4. Debugging

6.4.1.

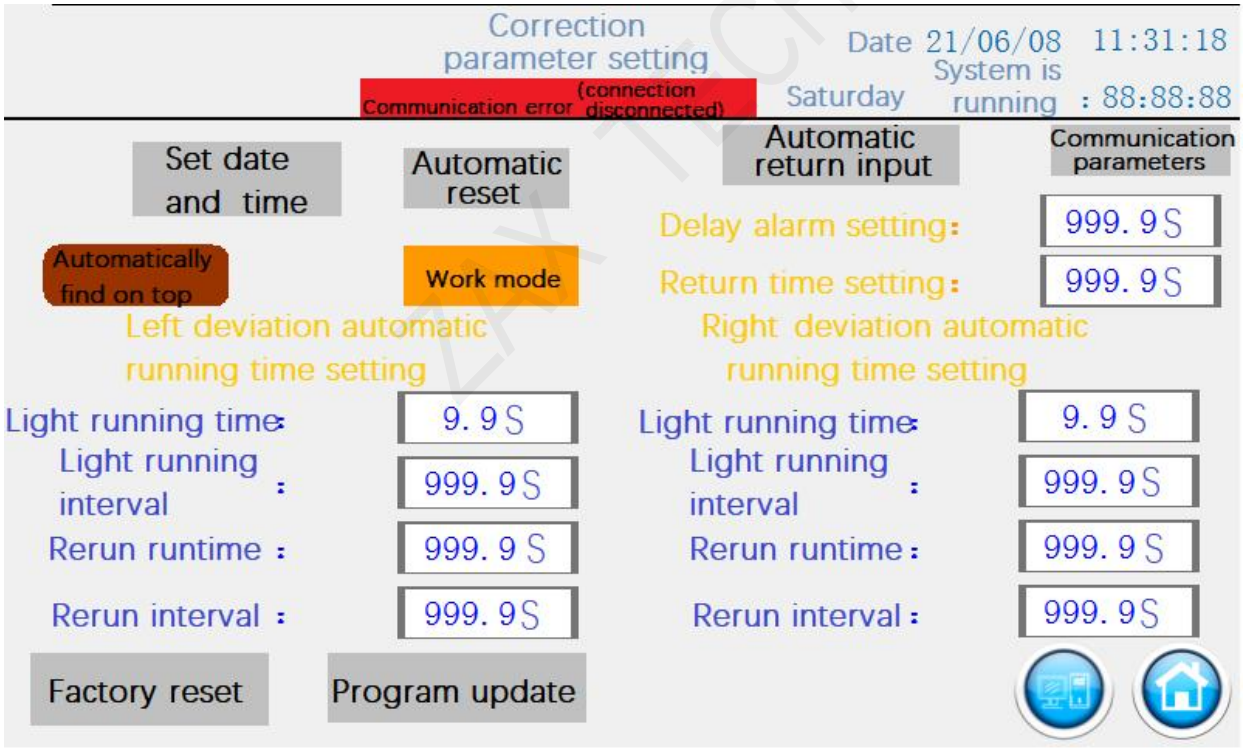
HMI operation instructions home page





Interface	State monitoring	Instructions
Indication operation interface	Forward / reverse rotation	Operation status of push rod motor
	call the police	When the push rod is pushed to the limit position beyond the set time, the alarm will be output
	Pull Limit	Manual release of alarm
	Rectification of left wing deviation	Manual operation left deviation correction

	Right deviation correction	Manual operation right deviation correction
	Automatic return	The rectifying unit returns to the middle position
	Severe deviation(left)	(Light deviation indicator in left direction)
	Mild deviation (left)	(Left direction rerouting indicator)
	Severe deviation (right)	(Light deviation indicator in right direction)
	Mild deviation (Wright)	(Right direction rerouting indicator)
	Alarm scroll bar	(Alarm information scrolling display)



Interface	Parameter setting	Instructions
Parameter setting interface	Mild running time	Maximum allowable running time of light deviation
	Trotting run intervals	Running time of electric push rod after slight deviation
	Rerun run time	Maximum allowable running time of heavy deviation
	Rerun run intervals	Running time of electric push rod after heavy running deviation
	Delay alarm	When the deviation occurs, it reaches the set time alarm output
	Return time setting	When the rectifying device has no rectifying action, the rectifying device will automatically return to the initial position after reaching the set time
	Automatic return	The rectifying unit returns to the middle position

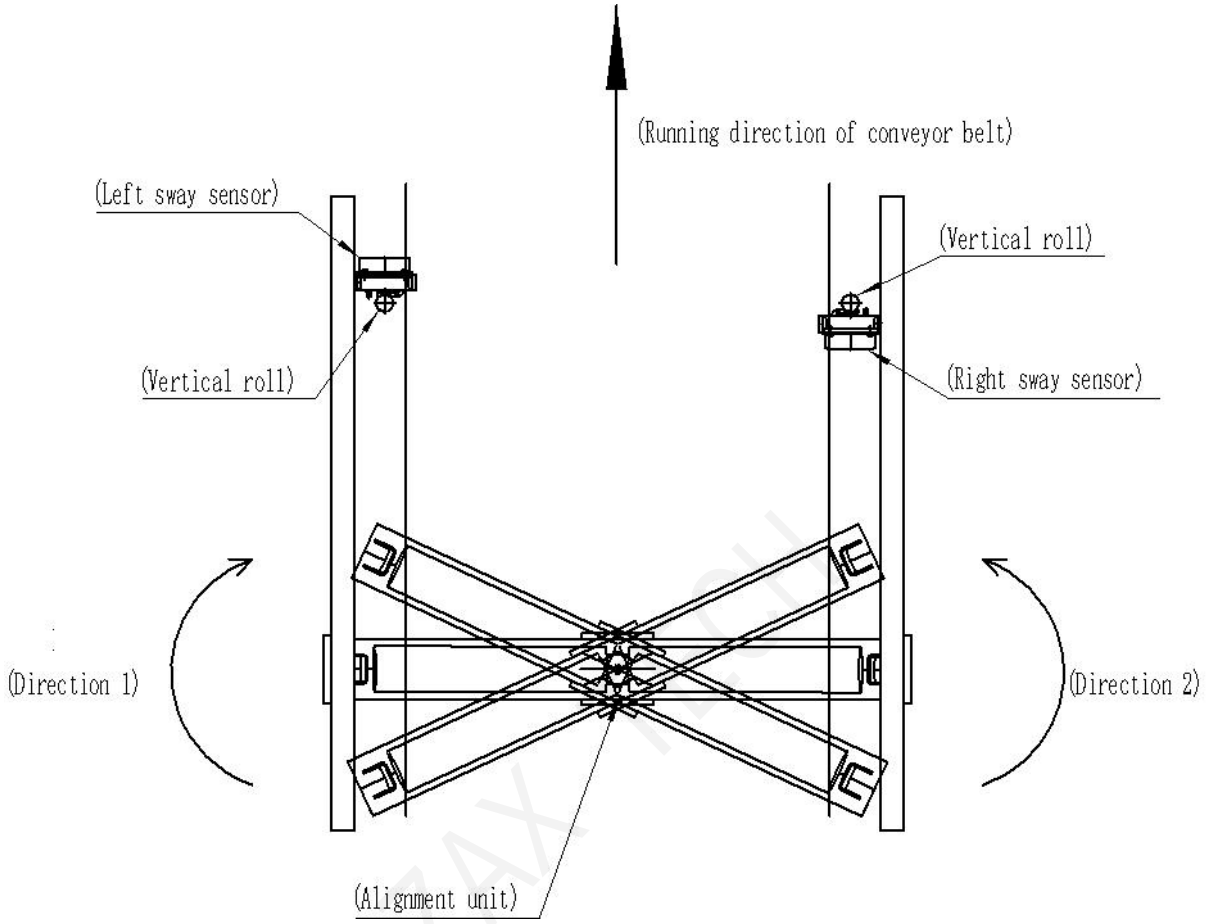
6.4.2. Manual mode test：

Select the mode to the manual state via the mode button, hold the "push" button for more than 5 seconds, At this time, the indicator lamp of the panel "push" will bright, and the belt alignment unit should perform corresponding actions; Similarly, hold the "pull" button for more than 5 seconds and observe the corresponding indicator lamp and action of the belt alignment unit.

6.4.3. Automatic mode test：

First, select the working mode to "Automatic" mode. Turn the left sway Vertical roll manual mode the left sway signal trigger, and then the "belt alignment device" should adjust the angle clockwise according to "direction 1". When the left sway signal is cancelled, the "belt alignment device" stops and keep the current angle position; Similarly, when the right sway signal is triggered, the "belt alignment device" will adjust the angle counterclockwise according to "direction 2". When the right sway signal is cancelled, the "belt alignment device" will stop running and keep the current angle position.

If the "belt alignment device" is contrary to the above operation direction, the "direction signal" on the wiring terminal inside the control box can be adjusted to change the direction, or the "sway1" and "sway2" signals connected to the alignment control box can be exchanged. When the "belt alignment device" runs to the "limit angle" and the sway signal is still not cancelled, the controller of the electric belt alignment device will send an alarm signal, and at the same time, the "failure light" of the control box panel will be on. The staff can use this signal to interlocking conveyor belt stop protection.



7. Working principle

The belt alignment device should be installed in pairs, and its symmetry center is the same as the conveyor center. When the center of the running conveyor belt deviates from the center of the conveyor, the belt alignment device on both sides start to work, so the deviated electric signals are output to the belt alignment control box, and an electric signal related to the position deviation and deviation direction of the conveyor belt is output to the electric push rod after the operation of the micro-processor in the control box, thus push or pull the adjusting roller to return the center of the deviation belt to the center of the conveyor until the deviation disappears. The belt alignment control box stops output, the electric push rod stops and the alignment ends.

When the aligning roller is adjusted to the limit position and the conveyor belt continues to run sway for a period of time without recovery, the control box outputs the alarm signal and the alarm indicator lamp on. When the conveyor belt returns to normal, the alarm signal need manually relieve.

8. Maintain

8.1. Regular dust removal, regular check whether the switch is working properly;

8.2. Regular inspection and tightening of bolts and nuts in all parts.