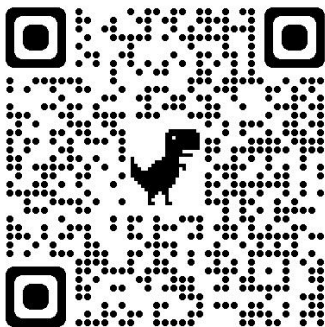
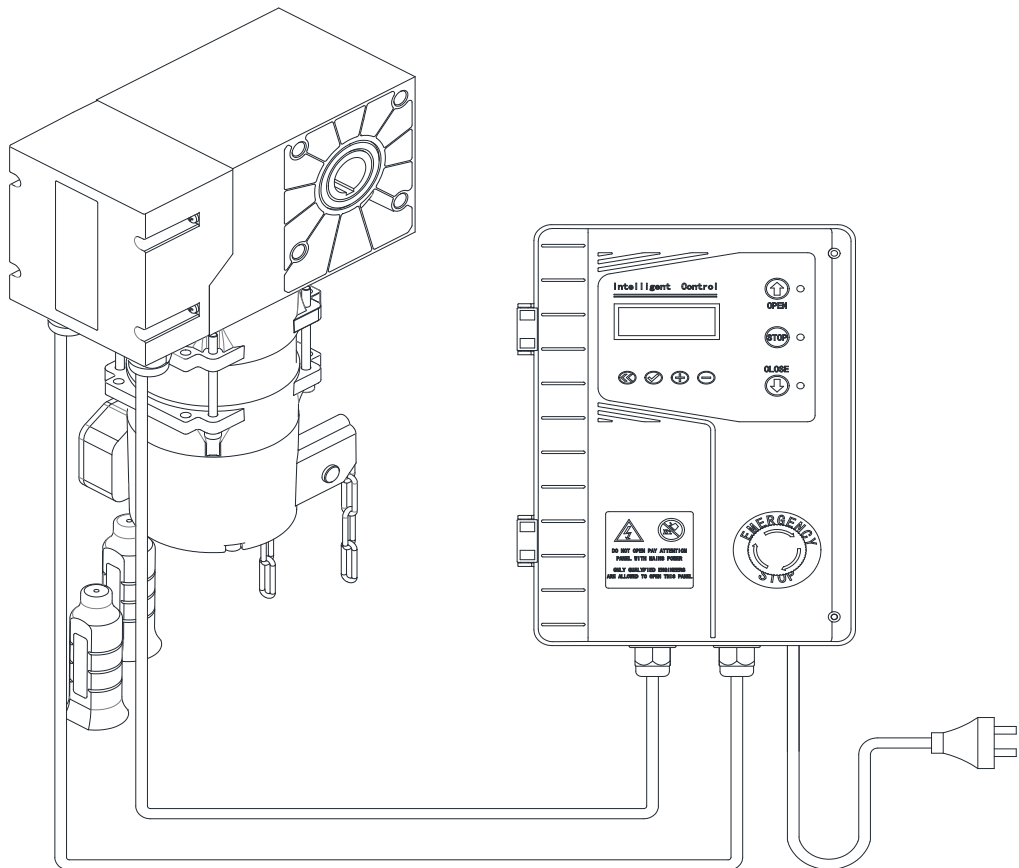


INDUSTRIAL DOOR OPERATOR WITH ELECTRONIC LIMIT SWITCH USER MANUAL

GK-E SERIES



Website: www.gatexpert.com

E-mail: sales@gatexpert.com

WARRANTY

1. To repair against this warranty card and invoice during the warranty period.
2. Warranty period: 1 year after the date of invoice.
3. Without unauthorized dismantling, any product broken or damage due to quality problem, we' ll offer the repair service for free or replace for free.
4. The malfunction and damages caused by incorrect use or man fault is not covered by this warranty.

CONTACT US

E-mail: sales@gatexpert.com

- Please fill in the order information in the form below.
- All personal information you provided will be only used for warranty service and kept strictly confidential.
- Refer to this list when contacting GATEXPERT for technical service or assistance with your automatic gate opener.

Order Number	Product Model	Purchase Date	Country / Region
Email Address			
Issue Details			



Safety Instruction

1. The industrial door operator should be installed and put into operation by qualified personnel. Otherwise, serious personal injury or property damage may occur.
2. Installation and wiring must be in accordance with the construction standards and electrical standards, diameter $\cong 1.5\text{mm}^2$; power must have a reliable grounding, ground wire must be reliably connected to the place labeled ground tab, ground lead on the power line is prohibited to be removed; front end of incoming power line should be installed with electrical leakage protector which is in line with national standards.
3. This industrial door operator is only allowed to be installed on well-balanced door which has balance spring, otherwise machine may be damaged due to overload.
4. Door should be flexible and run without stagnation; The end of door lead rail must be installed with mechanical stop block and buffering booster to prevent the door from rolling out.
5. Control unit should be installed on the wall or a post of 1.4 meters away from the ground where the operation of door can be observed to prevent children from inadvertently touching. Keep the remote control well, do not allow children to touch or play in case of any danger. Do not use the remote control when you didn't see the operation of door.
6. Before repairing and moving the industrial door operator and its control unit, please cut off the power supply, and make sure that the door has been locked and there is no any risk of falling due to self-weight is null.
7. Pedestrian and vehicle are prohibited to go through or stay when the door is running.
8. Hand-pulled chain is prohibited to be pulled during the operation of the industrial door operator to prevent the motor from damaged.
9. To ensure the safety of pedestrian and vehicle, it's recommended to install the infrared protection and airbag protection devices.
10. Please check the safety protection devices and the door running condition from time to time to ensure the safety and stability of door operation.

Thank you for choosing this product!

Appreciate for your trust and support!

Please read this manual carefully before installation!

Please keep this manual properly even after installation!

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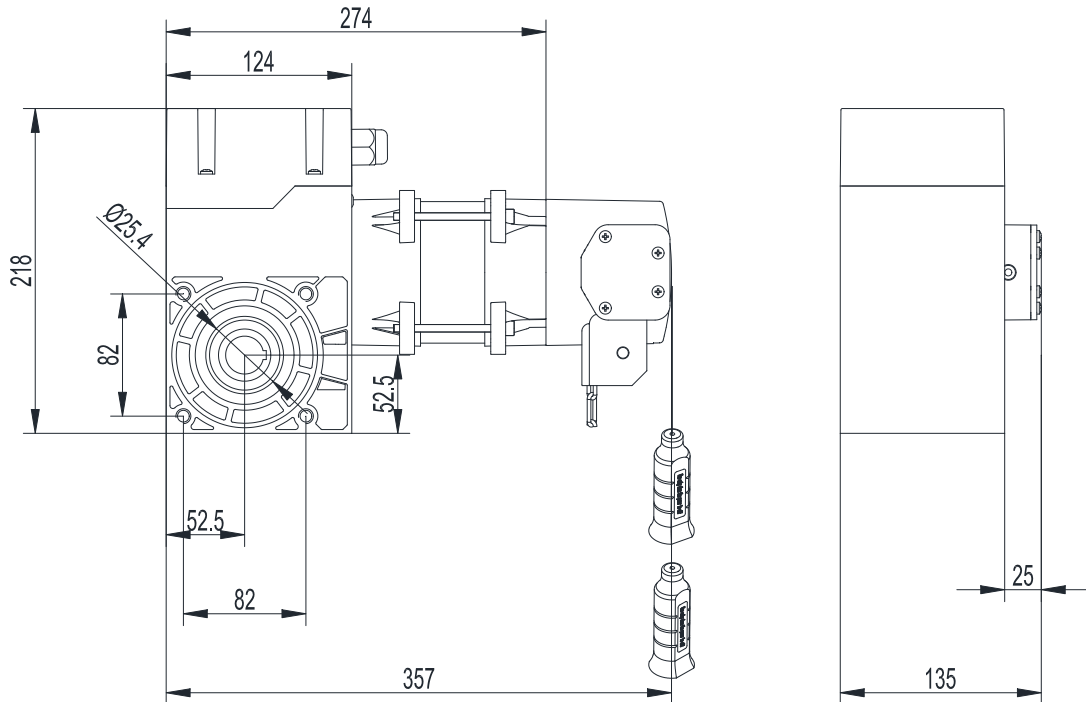
Technical Parameter Table of Door Operator

Model (Single Phase AC220V \pm 10%)	GK30E	GK40E	GK100E
Rated Power	230W	300W	550W
Torque	30N.m	40N.m	100N.m
No-load Continuous Running Time	15 min.		8 min.
Max. gate area	15m ²	20m ²	35m ²
Model (Three Phase AC380V \pm 10%)	GK60SE	GK100SE	
Rated Power	400W	550W	
Torque	60N.m	100N.m	
Max. gate area	30m ²	40m ²	
No-load Continuous Running Time	15 min.		
Other Parameters:			
Thermal Protection Temperature	120°C		
Reduction Ratio	1:58		
No-load Rotation Speed	24r/min		
Lubricating System	Oil-immersed		
Noise	\leq 55dB		
Hand Release Device	Manual release switch		
Maximum Travel Limit	Output shaft rotates 20 rounds		
Output Shaft Diameter	Φ 25.4mm		
Environment Temperature	-20°C ~ +50°C		
Working Duty	S2-15min		
Protection Class	IP54		
Operator Dimension(mm)	357x135x218		
Operator Weight(kg)	12.5		

Technical Parameter Table of Control Unit

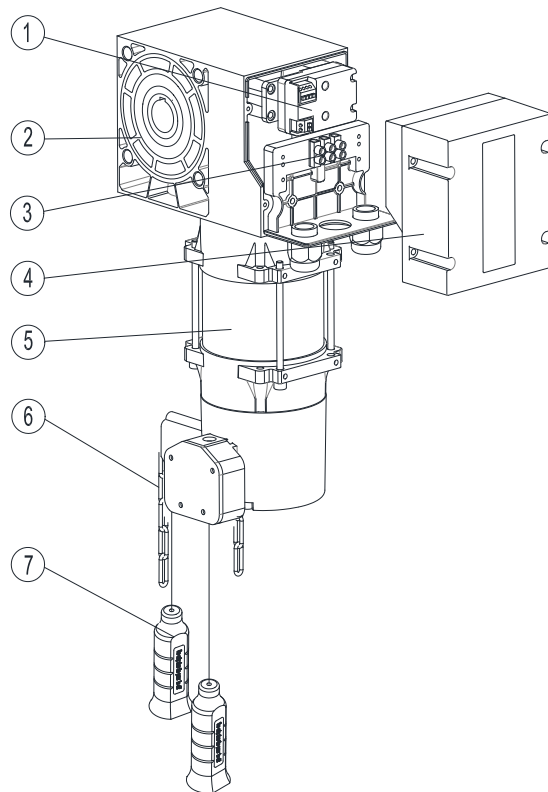
Model	GKB220E	GKB380E
Power Supply	AC220V/50Hz	AC380V/50Hz
Remote Control	Available	Available
Applicable Model	GK30E/40E/100E	GK60SE/100SE
External Three Button Switch Terminal	Available (Optional)	Available (Optional)
External Single Button Switch Terminal	Available (Optional)	Available (Optional)
Partial Opening Button Switch Terminal	Available (Optional)	Available (Optional)
Interlock Terminal	Available (Optional)	Available (Optional)
Infrared Photocell Terminal	Available (Optional)	Available (Optional)
Airbag Terminal	Available (Optional)	Available (Optional)
Loop Detector Terminal	Available (Optional)	Available (Optional)
Small-door Terminal	Available (Optional)	Available (Optional)
Multi-function Output Terminal	Available (Optional)	Available (Optional)
DC24V Power Terminal	Available (Optional)	Available (Optional)
Protection Class	IP54	IP54

Dimension and Component of Industrial Door Operator

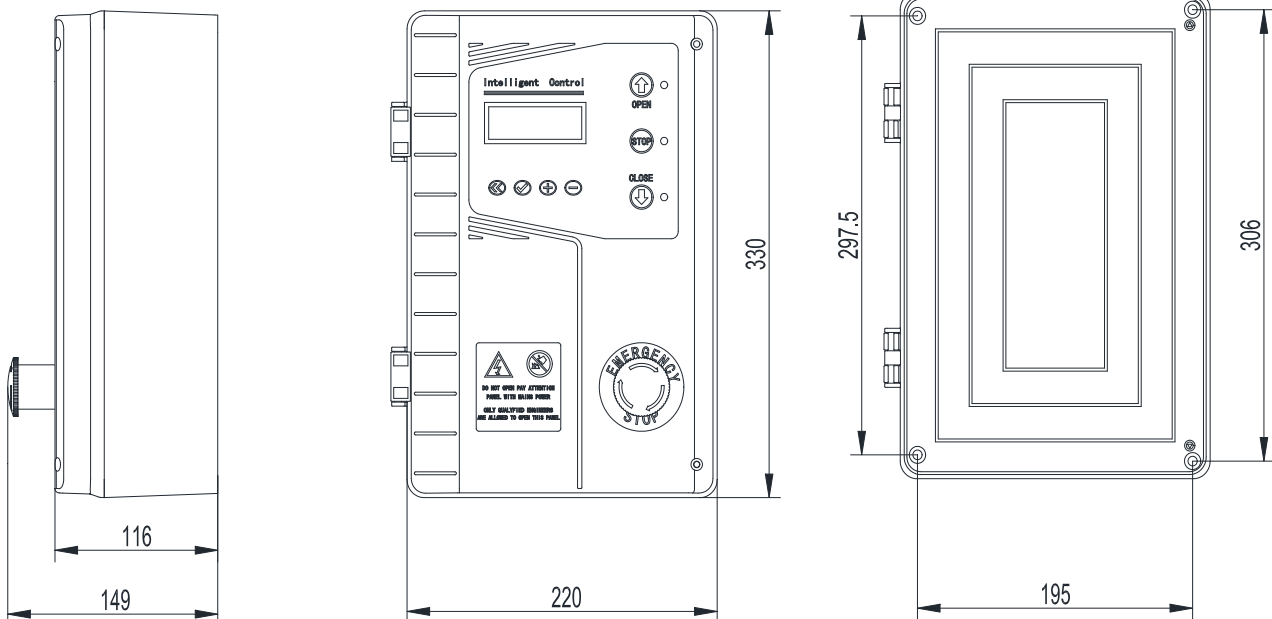


Dimension

- ① Electronic limit switch part
- ② Gearbox
- ③ Wiring terminals
- ④ Plastic cover
- ⑤ Door operator
- ⑥ Hand-pulled chain
- ⑦ Release handle



Component

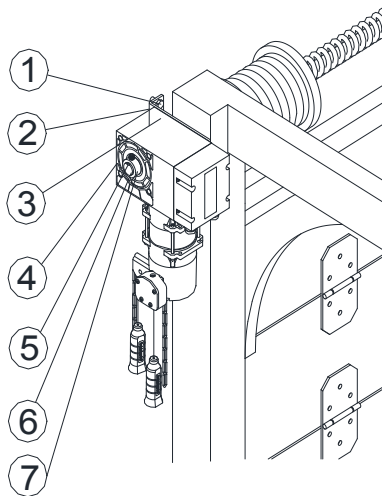


Control Unit Dimension

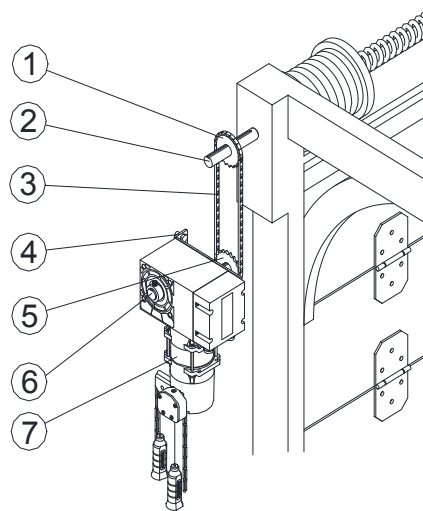
Installation Guide of Industrial Door Operator

This product is commonly used for the industrial sectional door which was equipped with balance spring and lifting industrial door. There are two installation ways for this product: shaft drive installation and chain drive installation. The factory standard configuration is for shaft drive installation. If users require chain drive type, they can choose the appropriate sprocket chain accessories for installation needs.

Shaft Drive Installation



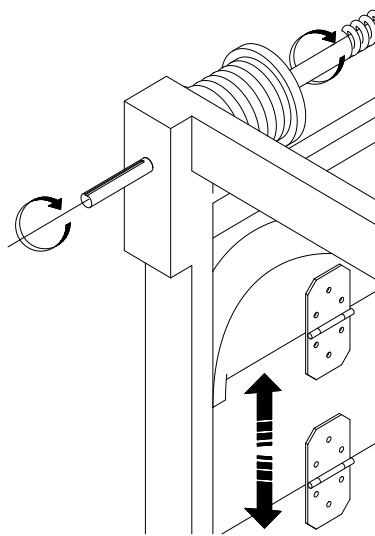
Chain Drive Installation



Shaft Drive Installation	Chain Drive Installation
① Expansion Screw	① Driven Wheel
② Mounting Bracket	② Door Shaft
③ Mounting Screw	③ Chain
④ Door Operator	④ Mounting Bracket
⑤ Special Flat Key	⑤ Driving Sprocket
⑥ Door Shaft	⑥ Driving Sprocket Shaft
⑦ Fixing Sleeve	⑦ Door Operator

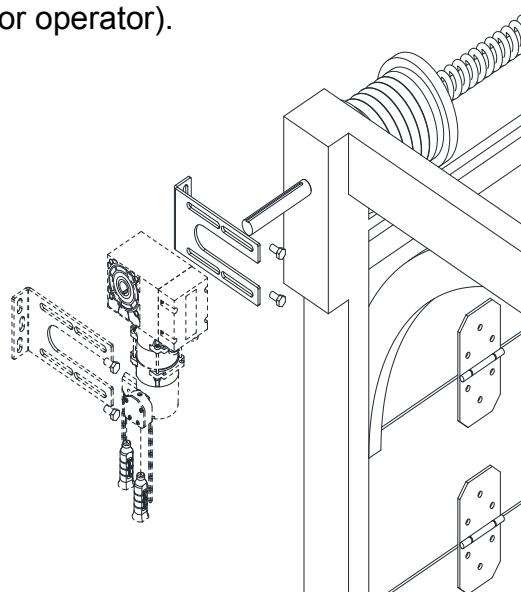
Step 1. Check the door

After the door is installed, adjust the torsion spring, ensure manually opening or closing the door is flexible without stagnation, observe the rotation direction of the rope sheave which should be consistent with the opening and closing direction of the industrial door operator.



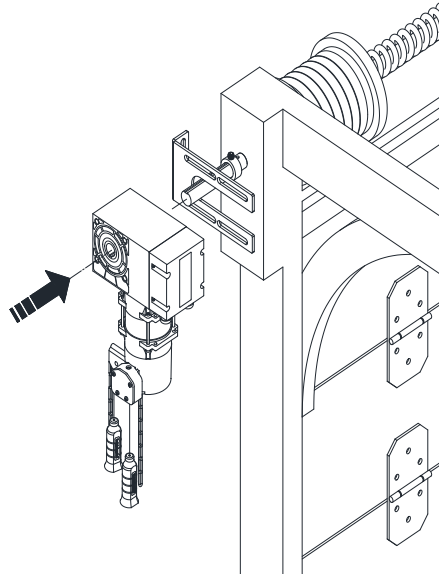
Step 2. Determine the installation position

Consider the boundary dimension and installation direction of the door operator, determine the position of the mounting bracket, mark the insert cavity position, drill the screw hole and fix the mounting bracket. (The mounting bracket can be fixed inside or outside the door operator, recommended to be installed inside for the convenience of disassembly of the door operator).



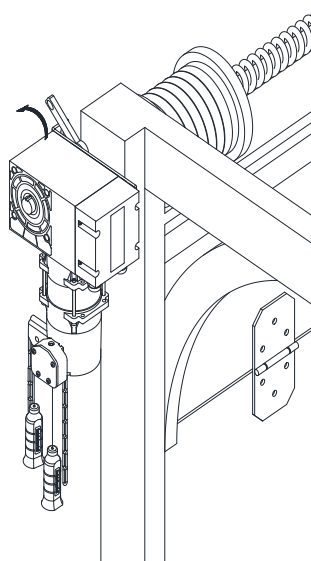
Step 3. Trial installing the door operator

Install a fixing sleeve on door shaft first, and insert the industrial door operator into the door shaft.



Step 4. Pre-fix the industrial door operator

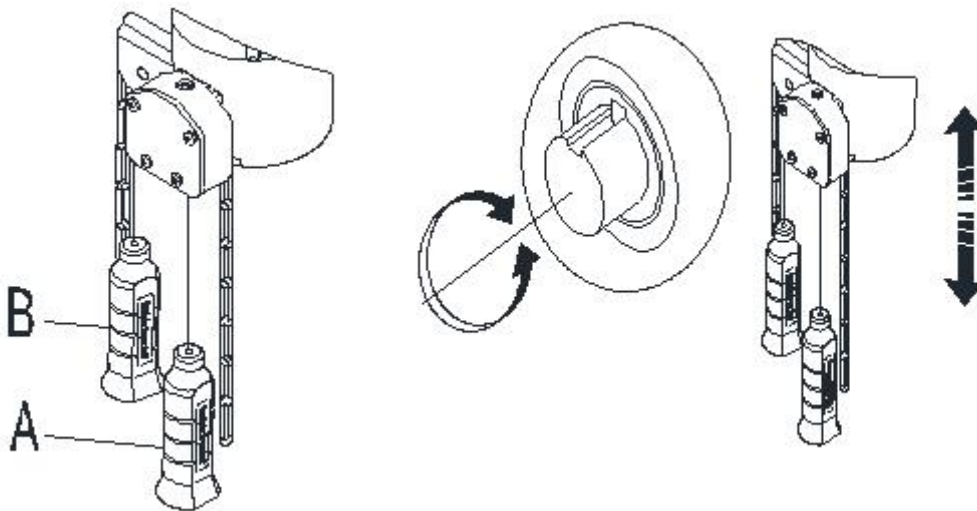
Fix the industrial door operator on mounting bracket with 4pcs hexagon head flange bolts M10×20, do not tighten at this step.



Step 5. Find the direction of key slot

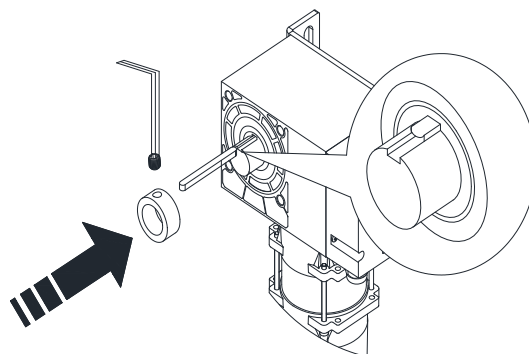
First pull the red handle A to the bottom to make the hand-pulled chain mechanism engage with the main engine (**Manual control mode**).

Rotate the output shaft of industrial door operator by pulling the hand-pulled chain up and down until the key slot of the output shaft is fully aligned with the key slot of the door shaft.



Step 6. Mount the flat key and fixing sleeve

Mount the flat key, keep two fixing sleeves close to the two ends of the output shaft, fasten the two M6 head screws in the key slot of door shaft in order to prevent the flat key from loosening and falling off.

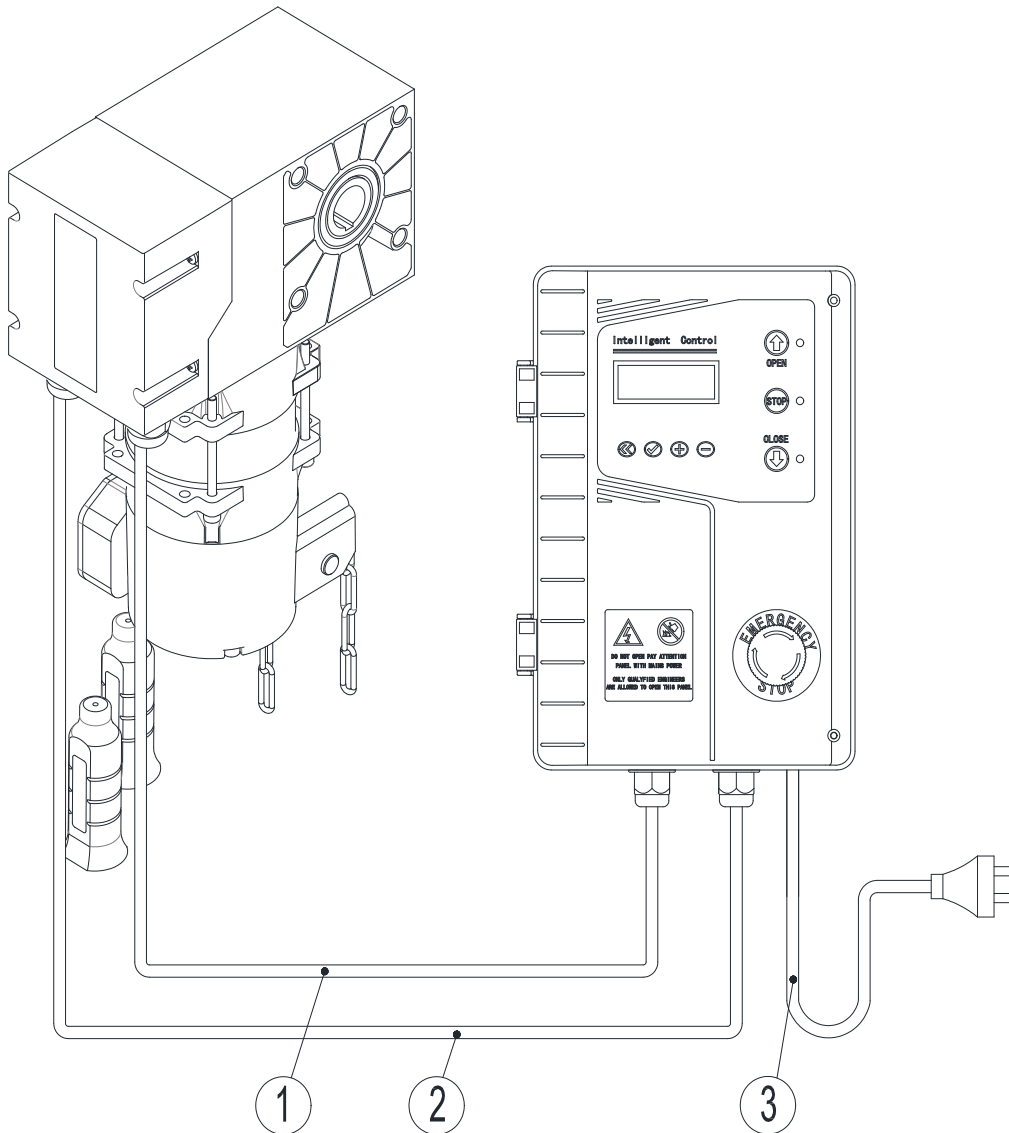


Step 7. Tighten the screws, prepare wiring and debugging Tighten all screws.

Finally pull green handle B to the bottom to make the hand-pulled chain mechanism detach from the main machine (**Electric control mode**).

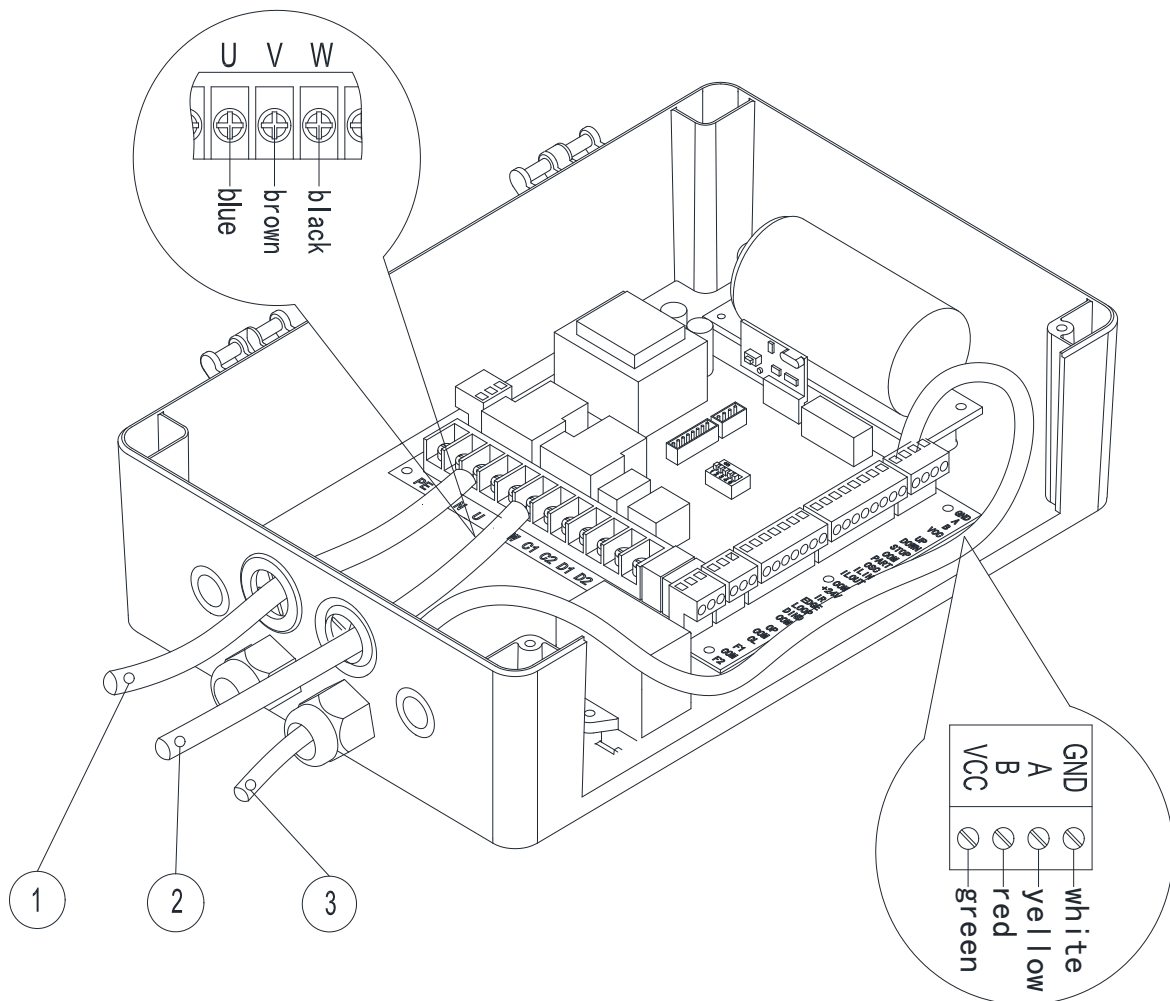
Industrial Door Operator Wiring

Wiring Between Door Operator and Control Unit



1. Motor Wire 2. Encoder Wire 3. Power Supply Wire

Wiring of Single Phase Operator

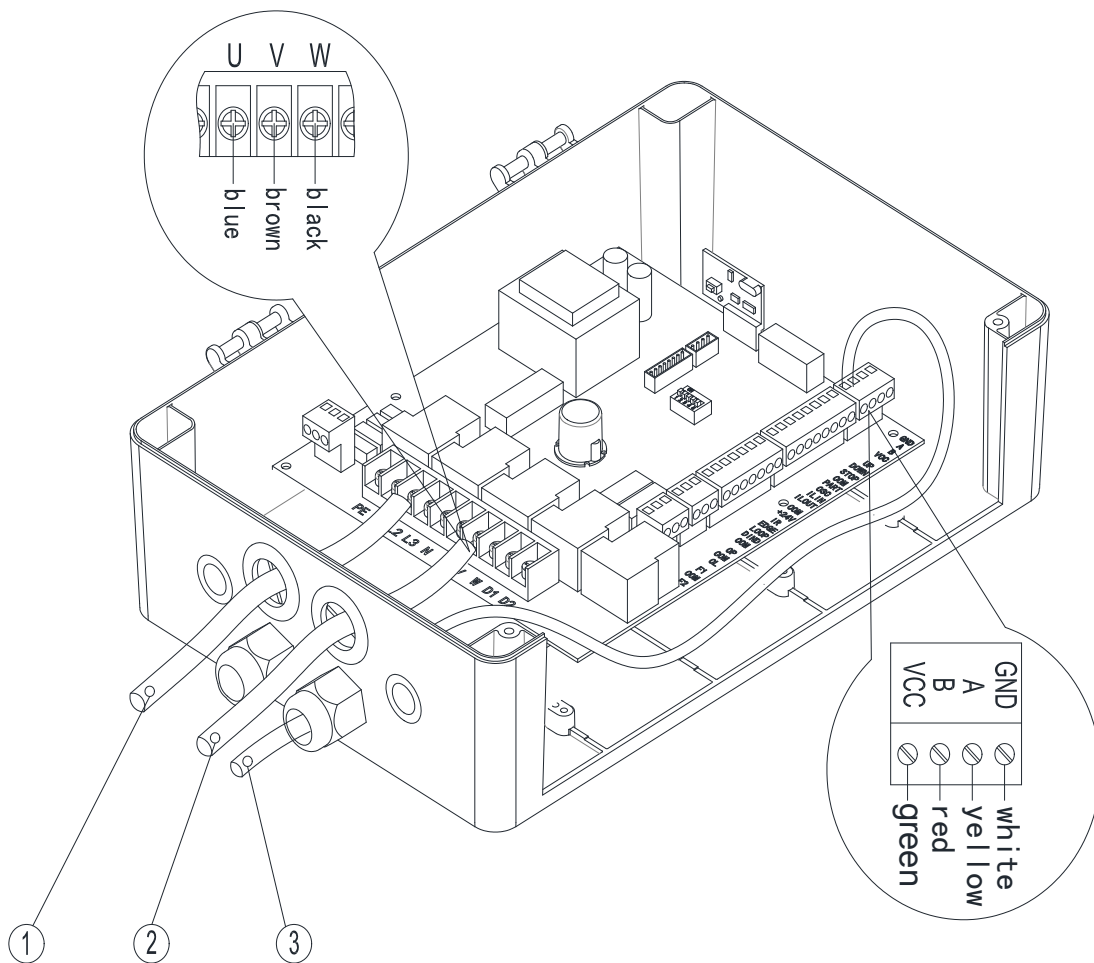


- ① — Motor Wire: U(blue) V(brown) W(black)
- ② — Encoder Wire: GND(white) A(yellow) B(red) VCC(green)
- ③ — AC220V(single phase) Power Supply Wire

Note: Please make sure the wirings are tight and in good connection. After wiring, remember to tighten up the IP plug to ensure all wirings completely fixed.

Warning: Please ensure the power supply wire is not plugged before you finish all wirings.

Wiring of Three Phases Operator



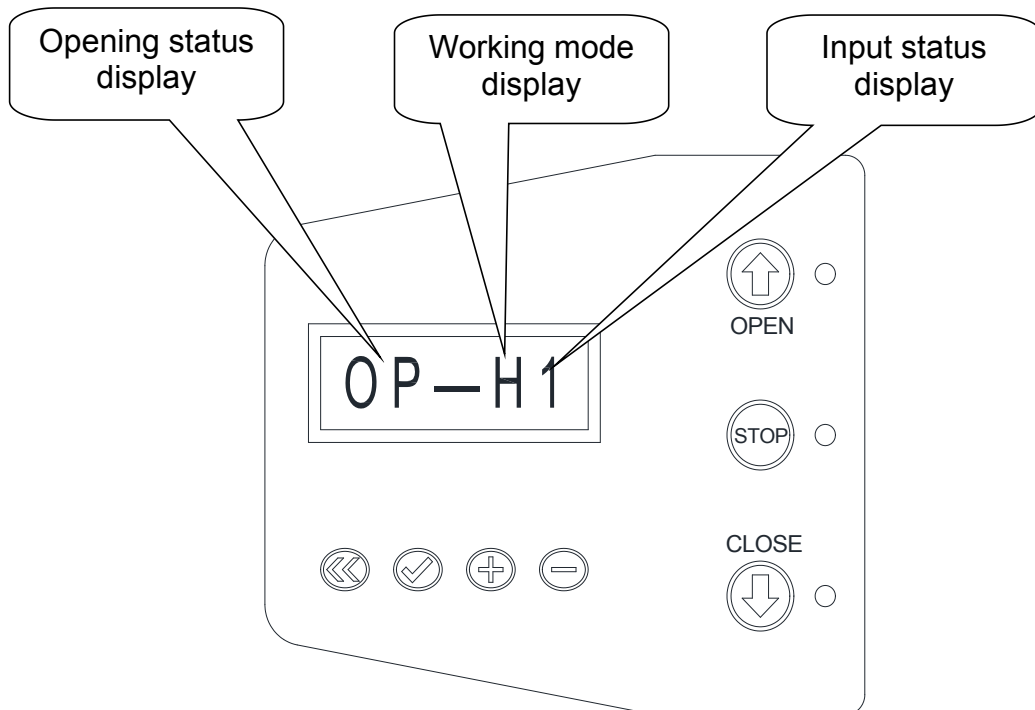
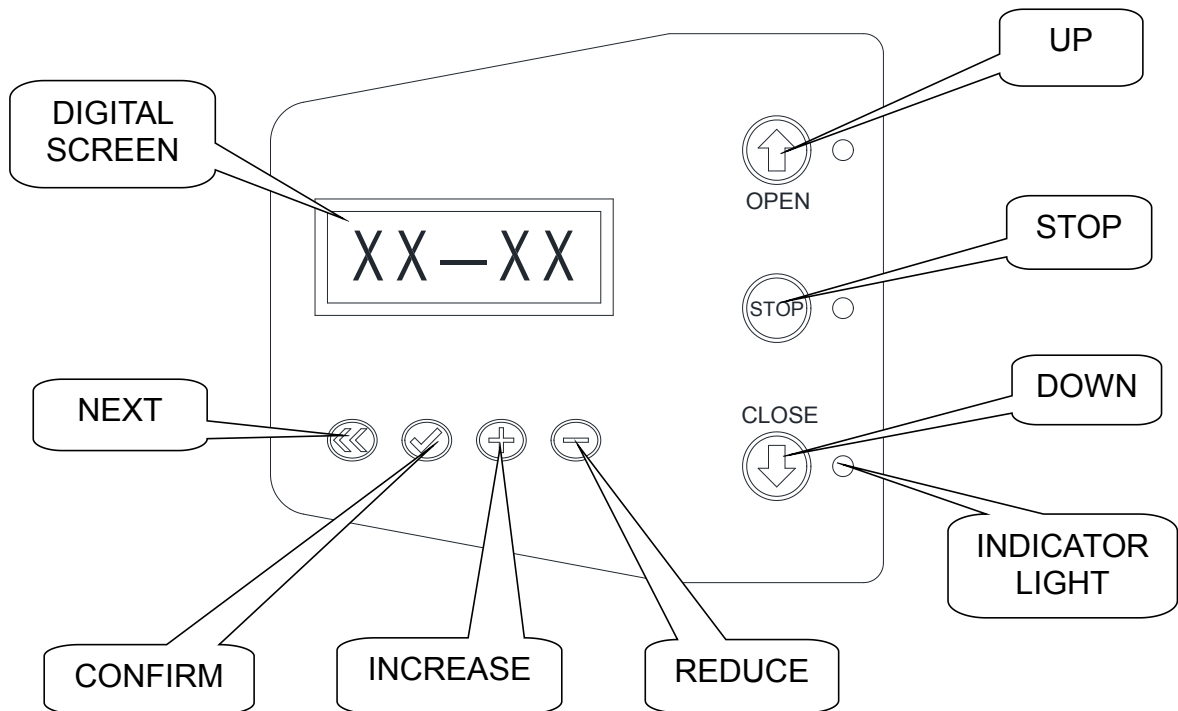
- ① ——Motor Wire: U(blue) V(brown) W(black)
- ② ——Encoder Wire: GND(white) A(yellow) B(red) VCC(green)
- ③ ——AC380V(three phases) Power Supply Wire

Note:

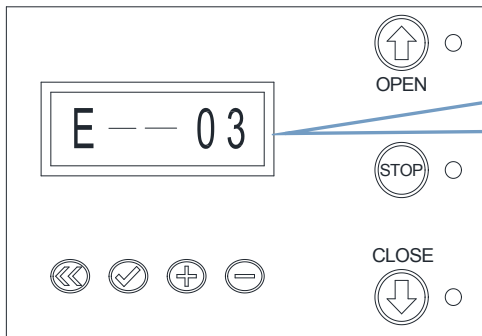
1. Please make sure the wirings are tight and in good connection. After wiring, remember to tighten up the IP plug to ensure all wirings completely fixed.
2. Please notice the phase sequence change when reconnecting wires. If the phase sequence changed, the motor will run in opposite. The digital screen won't display abnormal if the phase sequence is correct.

Warning: Please ensure the power supply wire is not plugged before you finish all wirings.

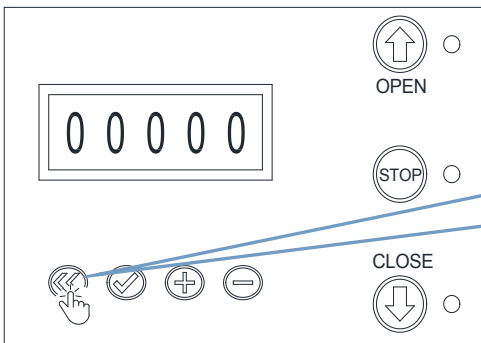
Operation Interface Illustration



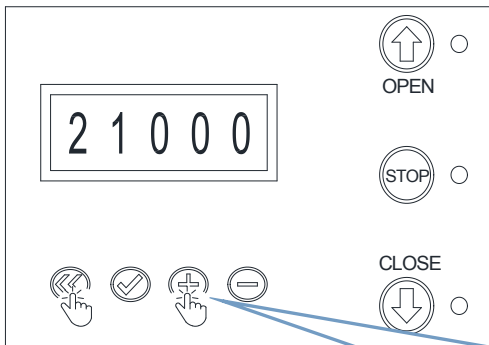
Open and Closed Limit Switch Setting



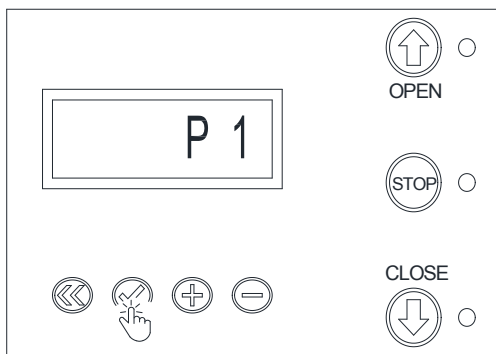
After powering on, the digital will display E-03 (hasn't set the limit switch)

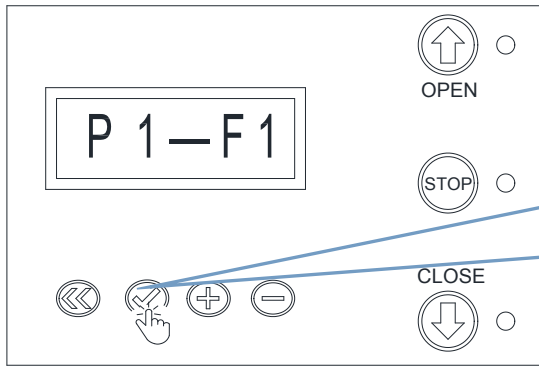


Press and hold "NEXT" for 3 seconds, the digital will display 00000

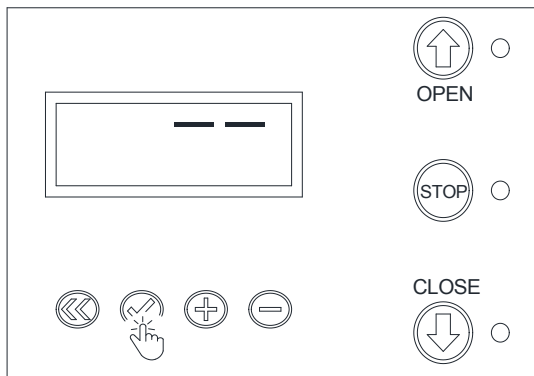


Enter password 21000: press "+" twice; press "NEXT" once; press "+" once; press "CONFIRM" once; The digital will display P1

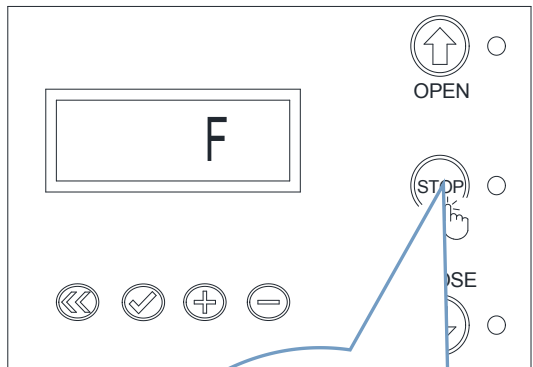
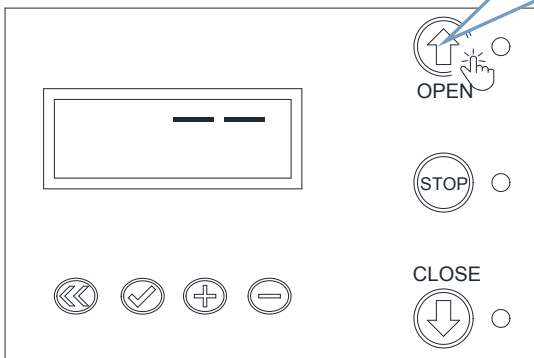




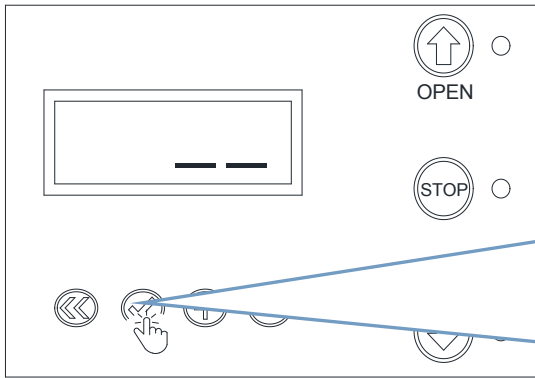
Press "confirm" once; The digital will display P1-F1; press "confirm" once again; The digital will display — —



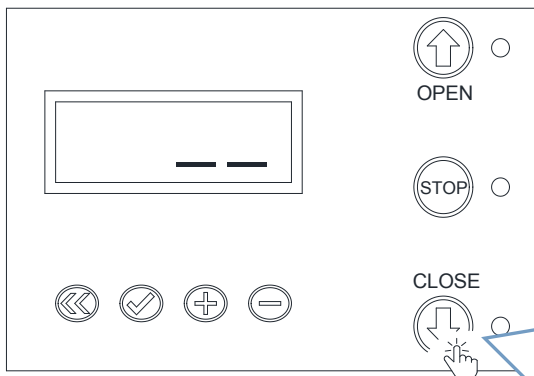
Shortly press "OPEN" to check opening direction, if it's correct, then press and hold "OPEN" to set the open limit switch position, digital will flash — —



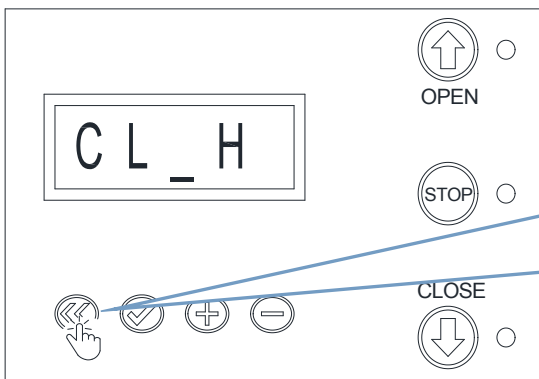
If the opening direction is wrong, press and hold "STOP" until the digital displays "F" or "r" to change the running direction. After direction changed, press and hold "OPEN" to set the open limit switch position.



Release the "OPEN" when motor arrives at the open limit switch position, press "CONFIRM", the digital will display the encoder value for 1 second and then show — —, then you can set the closed limit switch position.

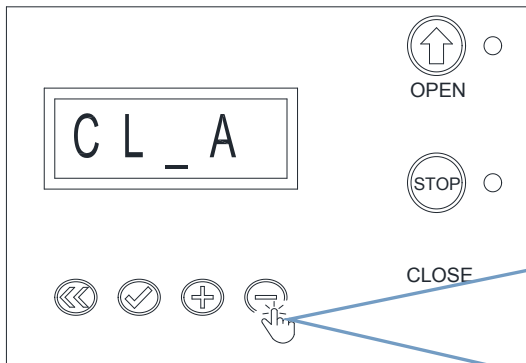


Press and hold "CLOSE" to set the closed limit switch position until the gate runs to proper closed limit position, then release the button, press "CONFIRM", the digital will display the encoder value for 1 second, then show P1-F2, limit switch was set.



Press "NEXT" twice to return to primary menu, you can operate the operator now.

Working Mode Setting



Press and hold “-” for 4 seconds, you can select manual control or automatic control mode.

1. Automatic(A): Press “OPEN”, the door will run to the open limit switch position, after waiting for the programmed auto-close time, it'll automatically close to the closed limit switch position.

2. Manual(H): Press “OPEN”, the door will run to the open limit switch position, press “CLOSE” the door will run to the closed limit switch position.

After these 2 steps, please check if the door running condition is to your standard, if it's good, you don't have to do any other settings, the door will work properly. If it's not good, you should adjust the relative parameters.

Note:

- 1) Please adjust the door operator with the buttons on the control unit.
- 2) After adjustment, please make some trial running first, make sure everything is correct, fit the control unit on a post that can be observed by you and should be 1.4 high from the ground to keep it away from Children.

DIP Switch Setting:

ON(Up Position); OFF(Down Position)

No.1: ON-Mechanical Limit Switch; OFF-Electronic Limit switch

No.2: No function

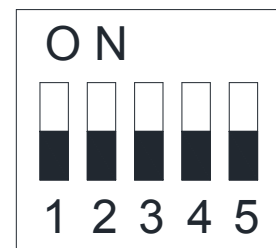
No.3: No function

No.4: ON-Remote Control in Single Button Mode;

OFF-Remote Control in Three Buttons Mode;

No.5: ON-Enable Phase Sequence Detection;

OFF-Disable Phase Sequence Detection



Input Status:

Input Status	
No.	Instruction
1	Stop
2	Open
3	Close
4	Photo Sensor
5	Air Bag
6	Loop Detector
7	Partial Opening
8	Single Cycle
9	Interlock

Parameters Setting

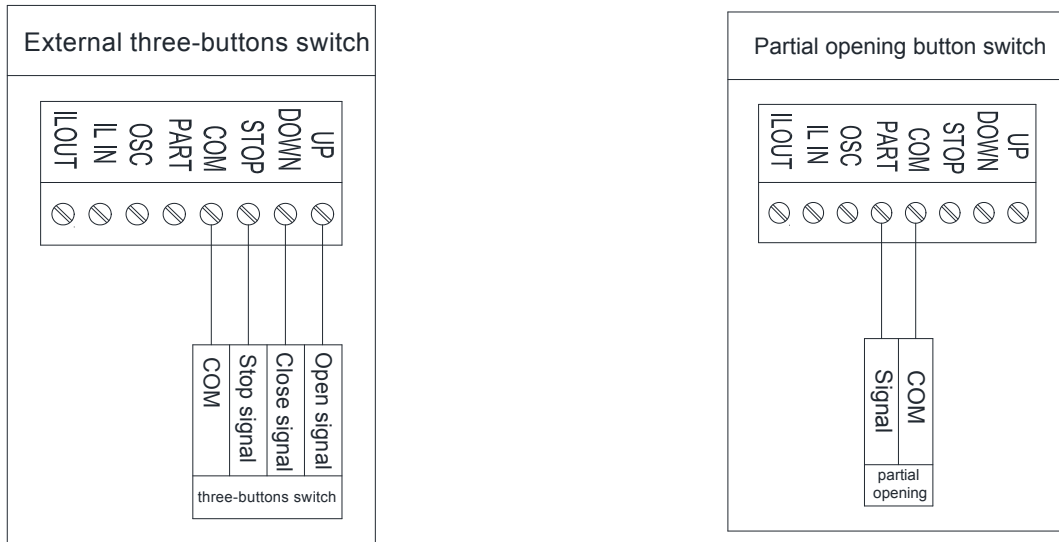
No.	Parameters	Value Range	Default
P1			
P1-F1	Electronic limit switch setting		
P1-F2	Pre-stop before arriving at the open limit switch position	0-200	50
P1-F3	Pre-stop before arriving at the closed limit switch position	0-200	60
P1-F4	Delay time for Auto-close	0-120 sec.	10
P1-F5	Height of partial opening	0-100%	50
P1-F6	Inch move for opening	0=Continuously move; 1=Inch move	0
P1-F7	Inch move for closing	0=Continuously move; 1=Inch move	0
P1-F8	Restore to factory setting of P1	0=No; 1=Yes	0
P2			
P2-F1	Stop of external three buttons switch	0=NO; 1=NC	0
P2-F2	Partial opening	0=NO; 1=NC	0
P2-F3	Single cycle	0=NO; 1=NC	0
P2-F4	Photo sensor	0=NO; 1=NC	0
P2-F5	Loop detector	0=NO; 1=NC	0
P2-F6	Airbag	0=NO; 1=NC; 2=pulse	0
P2-F7	Mechanical limit switch	0=NO; 1=NC	1

Instructions for GK-E SERIES

P2-F8	Restore to factory setting of P2	0=No; 1=Yes	0
P3			
P3-F1	Multi-function of F1	0=NO; 1=NC	0
P3-F2	Multi-function of F2	0=NO; 1=NC	0
P3-F3	F1	Close	0
		Fault output	1
		Door completely open in place output	2
		Door partially open in place output	3
		Not open limit switch output	4
		Closed in place output	5
		Not closed limit switch output	6
		Door in running output	7
		Air curtain signal output	8
	Force on	9	0
P3-F4	F2	Same as P3-F3	
P3-F5	Inter-lock function	0=Disable; 1=Enable	0
P3-F6	Limit height of infrared photocell valid	1-1500	100
P3-F7	Limit height of airbag valid	1-1500	50
P3-F8	Locked rotor time	1-7	4
P3-F9	Restore to factory setting of P3	0=No; 1=Yes	0
P4			
P4-F1	Alarm of running over the open limit switch	10-200	80
P4-F2	Alarm of running over the closed limit switch	10-200	100
P4-F3	Open limit switch position check	Read only	
P4-F4	Closed limit switch position check	Read only	
P4-F5	Current position check	Read only	
P4-F6	Restore to factory setting of P4	0=No; 1=Yes	0
P4-A3	Display backlight selection	0=60sec. automatically energy saving; 1=always on	0
P5 (Initial password: 00000)			
P5-F1	Total running times setting	0-99999	99999
P5-F2	Total running days setting	0-99999	99999
P5-F3	Total running days checking	Read only	
P5-F4	Total running times checking	Read only	
P5-F5	Change your password	00000-99999	00000
P5-F6	Restore to factory setting of P1- P4	0=No; 1=Yes	0

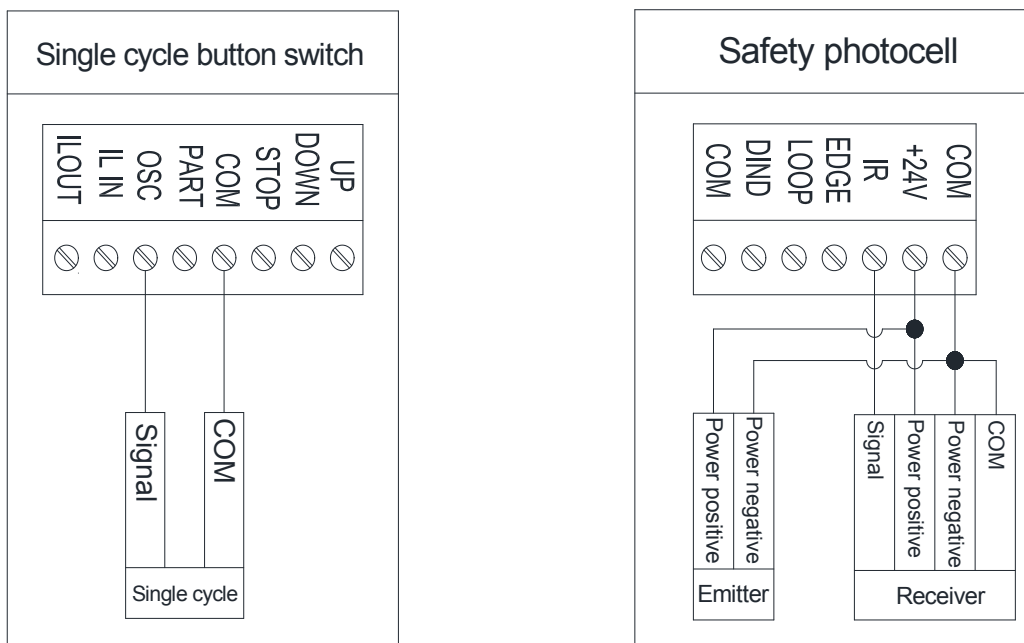
External Accessories Wiring

1. External three-buttons switch terminal: “STOP” terminal type is NO by default, if you need NC type, please modify the setting of “P2-F1” to be “1”.

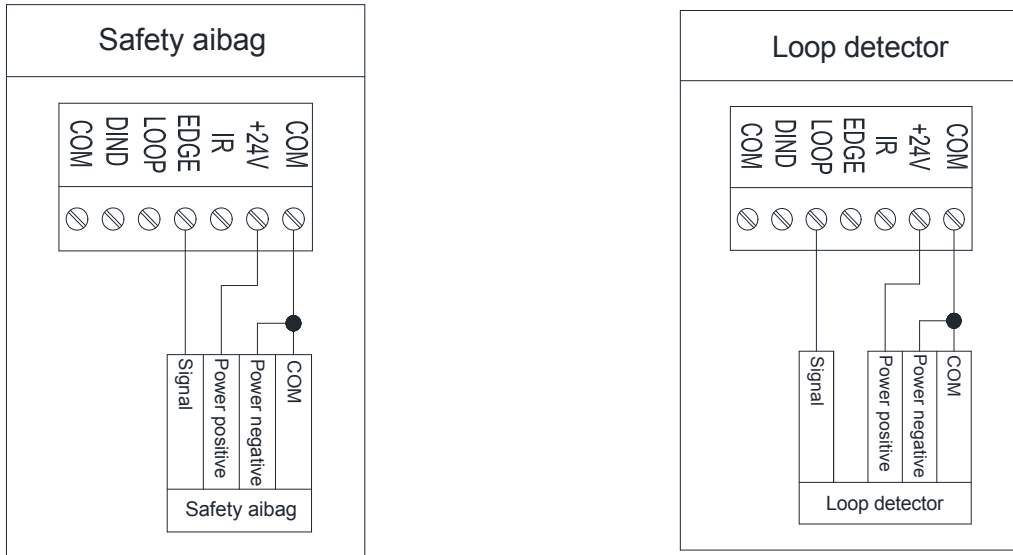


2. External partial opening button switch terminal: terminal type is NO, if you need NC type, please modify the setting of “P2-F2” to be “1”. The height of partial opening can be adjusted under setting “P1-F5”.

3. External single cycle button switch terminal: terminal type is NO, if you need NC type, please modify the setting “P2-F3” to be “1”.



4. Safety photocell terminal: terminal type is NO, if you need NC type, please modify the setting of “P2-F4” to be “1”. The valid height of photocell can be adjusted under “P3-F6”.



5. Safety airbag terminal: There are 2 signal types of safety airbag: level signal and pulse signal, factory default is level single in NO type, if require NC type or pulse signal, you can change it under setting of “P2-F6”. The valid height of airbag can be adjusted under “P3-F7”

6. Loop detector terminal: default is NO, if require NC, please modify the setting of “P2-F5” to be “1”. Loop detector signal is only valid under automatic control mode, invalid under manual control mode.

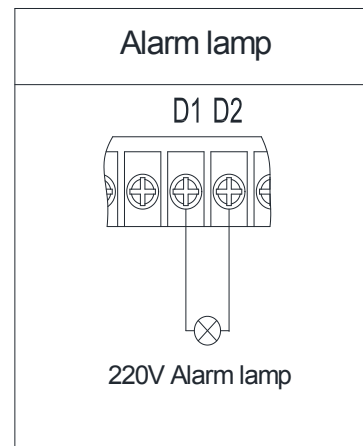
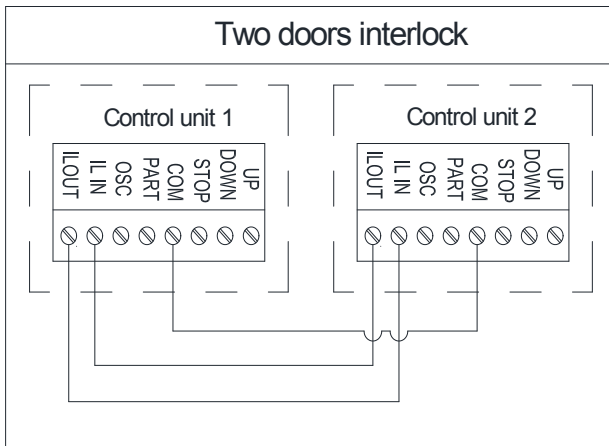


7. Small door interlock terminal: default is NC, if require to connect with small door,

please remove the jumper wire between “DIND” and “COM”

8. Relay terminal output: default is NO, if require NC type, please modify the setting of “P3-F1” or “P3-F2” to be “1”. Output logic function can be selected under “P3-F3” and “P3-F4”.

9. Two doors interlock: connect terminal “ILIN” of control unit 1 to terminal “ILOUT” of control unit 2. Connect terminal “ILOUT” of control unit 1 to terminal “ILIN” of control unit 2. Connect terminal “COM” of control unit 1 to terminal “COM” of control unit 2. Please remember to change the parameter of “P3-F5” to be 1 if you enable this two doors interlock function.



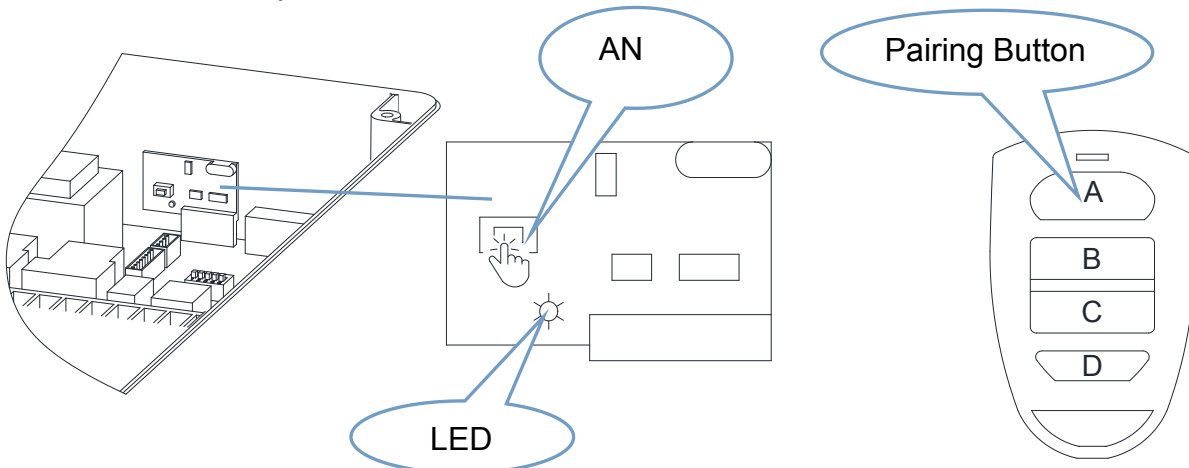
10. 220V alarm lamp terminal: Alarm lamp should be 220V, wire to D1 and D2 terminals.

Remote Control Password Setting

a. Remote control pairing:

Press AN button on the receiver, LED light will flash once, press any one of the buttons on the remote (normally button A), LED light will flash for 4 seconds then off, remote control pairing is complete.


If require to pair another remote control please repeat the above pairing steps, each PC board can be paired with 25 remote controls in max.



Note: Only need to pair “button A”, the pairing of the remote control is finished meanwhile.

b、 Remote control delete:

Press and hold AN button on the receiver, LED light will be on, release the button until the LED light is off, all paired remote controls are deleted.

 **Note: Recommended to operate the remote control deletion first and re-pair the remote before you use the operator for security consideration.**

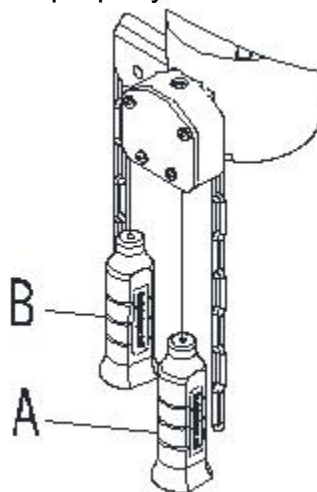
Use of hand-pulled chain

When you need to manually open or close the industrial door, then hand-pulled chain would be required.

Before pulling the chain, please fully pull the red handle A in the hand-pulled chain mechanism to make it engage with the main machine. The protection switch inside the hand-pulled chain mechanism will automatically cut off the power supply. At this time, the chain can be pulled.

The chain should be pulled continuously and evenly to avoid damage to the hand-pulled chain mechanism.

When you need to electrically open or close the industrial door, please fully pull the green handle B in the hand-pulled mechanism first to make it disengage from the main machine, and the protection switch in the hand-pulled mechanism will be reset to make the industrial door operator return to its normal electric operation. Please fix the hand-pulled chain on the wall properly when it's not in use.



Note: 1. After the chain is used, if digital displays E--06, the door cannot be opened or closed electrically, because protection switch in the hand-pulled chain mechanism has not been automatically reset. To fully pull the green handle in the hand-pulled chain mechanism to separate it from the main

machine, the control unit can work properly until the E--06 is off.

2. In the process of electrically opening or closing of door, chain is strictly prohibited to be pulled, to avoid any accidents.

3. Hand-pulled chain is used for special circumstances such as power outage only, and cannot be used as a long-term normalized operating.

Note: Please make monthly check on the opening and closing travel of the door operator, if the up and down limit switch is still accuracy, if the door is balance, if not, please adjust it timely. If necessary, please ask for professionals' help to repair and adjust.

Common Faults and Countermeasures

No.	Trouble	Possible Cause	Countermeasures
1	The digital screen is off.	The power supply is not connected or the wires is loose.	Tighten the screw of the wiring and re-power on.
		The emergency stop terminal is loose or emergency stop button is not reset.	Reinsert the emergency stop terminal or reset the emergency stop button.
		Power has input, while transformer without voltage output. Transformer has damaged in transit.	Replace the circuit board.
		The fuse is burnt.	Replace the fuse.
2	E-01 Power supply phase-loss	Phase sequence of three phases power supply is not correct. Phase sequence detection function is working.	Cut off the power supply, exchange two of the L1, L2 or L3, after changed correctly, the E-01 will disappear.
		Phase-loss of three phases power supply.	Check with a multimeter which phase is lost, and re-wire.
3	E-02 Encoder disconnect	Encoder was not connected or wrongly connected.	Re-connect the encoder.
4	E-03 Limit switch abnormal	Up and down limit switch was not set or was set over the travel.	Re-set the limit switch.
5	E-04 Maintenance notice	Exceed the scheduled running cycles or time	Please contact supplier for solution.
6	E-05 Motor stalling	The door balance spring is not working or the door is meeting obstacles, motor can't drive the door caused motor stalling.	Adjust the balance spring.
			Rail is deformed, find the obstacle and remove it

Instructions for GK-E SERIES

7	E-06 Thermal protection	Thermal protection or hand chain protection	Waiting for the motor to cool down.
			pull green handle B to the bottom to close the disengagement wrench.
8	E-07 Door in door mode abnormal	The smaller door is open or damaged.	Close the smaller door to enable it's normal running.
			Make sure the wiring between DIND and COM are good.
9	Remote control doesn't work	The remote control indicator light is off	Change the battery.
		The transmitter does not match the receiver.	Re-set the remote control password.

PACKING LIST

Door Operator Packing List GK30E、GK40E、GK100E、 GK60SE、GK100SE			
No.	Name	Qty.	Note
1	Door operator	1	
2	Mounting bracket	1	
3	Fixing sleeve	2	Contain M6×10 fastening screw
4	Special flat key	1	6×70
5	Hexagon bolts	4	M10x20
7	User manual	1	
8	Motor four-core wire	1	5 meter
9	Limit switch four-core wire	1	5 meter

Control Unit Packing List GKB220E、GKB380E			
No.	Name	Qty.	Note
1	Control unit	1	
2	Remote control	2	