

# ECR Electronic Rolling Shutter Motor

## Operating Manual

### Warning

Install the actuating member of a manual release at a height less than 1.8m;

The actuating member of a biased off switch is to be located within direct sight of the driven part but away from moving parts. It is to be installed at a minimum height of 1.5m.

**WARNING:** Important safety instructions. It is important for the safety of persons to follow these instructions. Save these instructions.

Read this manual carefully before the installation. Installation, testing and maintenance must be carried out by specially qualified personnel.

Periodical maintenance should take place in order to ensure smooth operation. If you have any questions feel free to contact our company.

- Our company has got certification by ISO9001 internal quality control system.
- THE PEOPLE'S INSURANCE COMPANY (GROUP) OF CHINA has accepted our products liability insurance.
- New model chain system patent number: ZL 2004 2 0087351.2
- Break-proof chain insurance equipment patent number: ZL99209951.X、ZL02240227.6

### Safety notice:

- The roller shutter door motors should be installed horizontally with precision.
- The roller axle of the shutter door should be homocentric and horizontal.
- The motor must be satisfactorily earthed to prevent potential injury from shocks .The earthing connection bolts should be fixed to the chain wheel support board or electric appliance control box.
- The roller shutter should be free of any obstructions.
- The vertical hanging length of the chain must be adjusted within 3-6mm,adjustment should be made before hanging the shutter onto the roller axis.
- It is strictly forbidden to pull on the motor down lead.
- External power cord should be minimum 1mm diameter.
- Special attention should be given to protecting the motor from humidity and rain, to prevent short-circuiting.
- The switch box has to be installed on the dry wall and placed at a height of over 1.5 meters high, The button connecting wire fixed in trunking,and with cable clamp fixed, the switches fixed in a locked box, this is to ensure that children cannot operate the wall switch and remote controller,as picture shown.

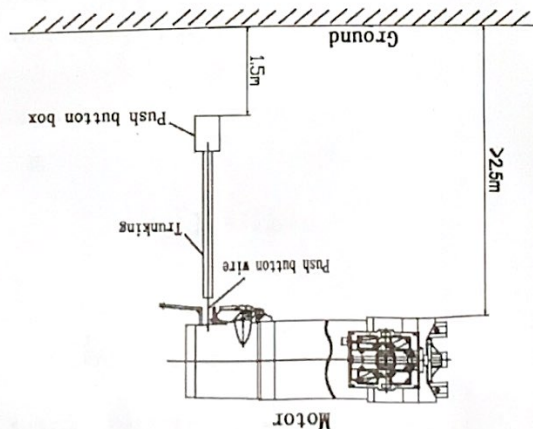
*The motors can be installed to both Left and Right sides.*

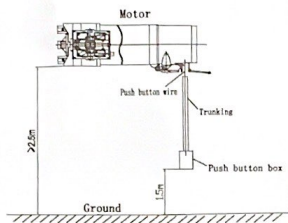
ECR electronic rolling shutter motor is the product which our company has been producing for many years. It utilizes most advanced production techniques combined with the latest technologies available to provide reliability with diverse functionality. The product has credible quality, it is simple to install and has proven to suit a wide variety of applications.

## Prologue

lead to severe injury.

- **WARNING:** Important safety instructions. Follow all instructions, since incorrect installation can similarly qualified persons in order to avoid a hazard.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or the floor, adjust if necessary and recheck since an incorrect adjustments may present an hazard.
- Each month check that the drive reverses when the door contacts a 40mm high object placed on due to weak or broken springs or being out of balance.
- Care should be taken when operating the manual release since an open shutter may fall rapidly
- Watch the moving shutter and keep people away until the shutter is completely closed.
- incorrectly balanced door may cause injury.
- Do not use if repair or adjustment is needed since a fault in the installation or an springs.
- Frequently examine the installation for imbalance and signs of wear or damage to cables and
- Do not allow children to play with fixed controls. Keep remote controls away from children.
- required.
- Add appropriate lubricating oil into the chain rollers after motor testing; continue to do so when
- It is strictly forbidden to install the motor in combustible or explosive areas.
- It is strictly forbidden to allow anyone or anything pass under the operating door.





- It is strictly forbidden to allow anyone or anything pass under the operating door.
- It is strictly forbidden to install the motor in combustible or explosive areas.
- Add appropriate lubricating oil into the chain rollers after motor testing; continue to do so when required.
- Do not allow children to play with fixed controls. Keep remote controls away from children.
- Frequently examine the installation for imbalance and signs of wear or damage to cables and springs. Do not use if repair or adjustment is needed since a fault in the installation or an incorrectly balanced door may cause injury.
- Watch the moving shutter and keep people away until the shutter is completely closed.
- Care should be taken when operating the manual release since an open shutter may fall rapidly due to weak or broken springs or being out of balance.
- Each month check that the drive reverses when the door contacts a 40mm high object placed on the floor, adjust if necessary and recheck since an incorrect adjustments may present a hazard.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- **WARNING: Important safety instructions. Follow all instructions, since incorrect installation can lead to severe injury.**

### Prologue

ECR electronic rolling shutter motor is the product which our company has been producing for many years. It utilizes most advanced production techniques combined with the latest technologies available to provide reliability with diverse functionality. The product has credible quality, it is simple to install and has proven to suit a wide variety of applications.

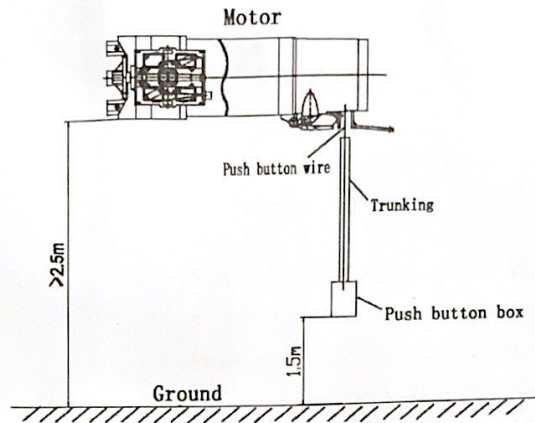
*The motors can be installed to both Left and Right sides.*

### I. Work Environment and Conditions

1. Working temperature : Indoor temperature (-20°C to 60°C)
2. Relative working humidity : 90% at 25°C
3. Short-term working :
  - a. Continual Single-Phase operation should not exceed 6 minutes
  - b. Continual Three-phase operation should not exceed 10 minutes

### II. main specification and technical parameters for ECR motor:

Model	Input Power (w)	Set load Lifting force (kg.f)	Set load Output torque N.m	Set load Output Speed r/min	Maxlifting height (m)		Max external diameter of Door (m)	Chain No.	Weight of host motor (kg)
					Laths thickness	20			
					15	20			
220V 60Hz									
ECR-168-1P-(300)	731	300	168	5.0	5	6	0.38	10A	11.6
ECR-225-1P-(400)	392	400	225	4.2	5	6	0.41	08B	7.9
ECR-343-1P-(500)	836	500	343	4.8	6	6	0.38	10A	12.2
ECR-412-1P-(600)	836	600	412	4.8	6	6	0.38	10A	12.2
ECR-647-1P-(800)	1225	800	647	4.0	7	8	0.42	10A	14.2
ECR-809-1P-(1000)	1225	1000	809	3.5	6	7	0.47	10A	14.2
ECR-1617-1P-(1500)	1768	1500	1617	3.3	8	9	0.48	12A	28
ECR-206-1P-(300F)	836	300	206	8.0	6	6	0.38	10A	12.2
ECR-223-1P-(350F)	1225	350	223	8.7	6	6	0.42	10A	14.2
ECR-331-1P-(410F)	1225	410	331	7.1	6	7	0.47	10A	14.2
380V 60Hz									
ECR-168-3P-(300)	640	300	168	5.0	5	6	0.38	10A	11.6
ECR-225-3P-(400)	384	225	400	4.2	5	6	0.41	08B	7.9
ECR-343-3P-(500)	771	500	343	4.8	6	6	0.38	10A	12.2
ECR-412-3P-(600)	771	600	412	4.8	6	6	0.38	10A	12.2
ECR-647-3P-(800)	1436	800	647	4.0	7	8	0.42	10A	14.2
ECR-809-3P-(1000)	1436	1000	809	3.5	6	7	0.47	10A	14.2
ECR-1401-3P-(1300)	1776	1300	1401	4.4	7	8	0.45	12A	23.5
ECR-1617-3P-(1500)	2220	1500	1617	5.2	8	9	0.48	16A	23.5
ECR-2450-3P-(2000)	2220	2000	2450	3.6	12	12	0.65	16A	27.5
ECR-206-3P-(300F)	771	300	206	8.0	6	6	0.38	10A	12.2
ECR-223-3P-(350F)	1436	350	223	8.7	6	6	0.42	10A	14.2
ECR-331-3P-(410F)	1436	410	331	7.1	6	7	0.47	10A	14.2
ECR-647-3P-(600F)	1776	600	647	8.1	6	7	0.45	12A	23.5
ECR-776-3P-(720F)	2220	720	776	9.0	6	7	0.48	12A	23.5



- It is strictly forbidden to allow anyone or anything pass under the operating door.
- It is strictly forbidden to install the motor in combustible or explosive areas.
- Add appropriate lubricating oil into the chain rollers after motor testing; continue to do so when required.
- Do not allow children to play with fixed controls. Keep remote controls away from children.
- Frequently examine the installation for imbalance and signs of wear or damage to cables and springs. Do not use if repair or adjustment is needed since a fault in the installation or an incorrectly balanced door may cause injury.
- Watch the moving shutter and keep people away until the shutter is completely closed.
- Care should be taken when operating the manual release since an open shutter may fall rapidly due to weak or broken springs or being out of balance.
- Each month check that the drive reverses when the door contacts a 40mm high object placed on the floor, adjust if necessary and recheck since an incorrect adjustments may present an hazard.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
- **WARNING:** Important safety instructions. Follow all instructions, since incorrect installation can lead to severe injury.

## Prologue

ECR electronic rolling shutter motor is the product which our company has been producing for many years. It utilizes most advanced production techniques combined with the latest technologies available to provide reliability with diverse functionality. The product has credible quality, it is simple to install and has proven to suit a wide variety of applications.

*The motors can be installed to both Left and Right sides.*

### I. Work Environment and Conditions

- 1、 Working temperature : Indoor temperature (-20°C to 60°C)
- 2、 Relative working humidity : 90% at 25°C
- 3、 Short-term working :
  - a、 Continual Single-Phase operation should not exceed 6 minutes
  - b、 Continual Three-phase operation should not exceed 10 minutes

### II. main specification and technical parameters for ECR motor:

Model	Input Power (w)	Set load	Set load		Maxlifting height (m)		Max external diameter of Door (m)	Chain No.	Weight of host motor (kg)
		Lifting force (kg.f)	Output torque N.m	Output turn Speed r/min	Laths thickness				
					15	20			
220V 60Hz									
ECR-168-1P-(300)	731	300	168	5.0	5	6	0.38	10A	11.6
ECR-225-1P-(400)	392	400	225	4.2	5	6	0.41	08B	7.9
ECR-343-1P-(500)	836	500	343	4.8	6	6	0.38	10A	12.2
ECR-412-1P-(600)	836	600	412	4.8	6	6	0.38	10A	12.2
ECR-647-1P-(800)	1225	800	647	4.0	7	8	0.42	10A	14.2
ECR-809-1P-(1000)	1225	1000	809	3.5	6	7	0.47	10A	14.2
ECR-1617-1P-(1500)	1768	1500	1617	3.3	8	9	0.48	12A	28
ECR-206-1P-(300F)	836	300	206	8.0	6	6	0.38	10A	12.2
ECR-223-1P-(350F)	1225	350	223	8.7	6	6	0.42	10A	14.2
ECR-331-1P-(410F)	1225	410	331	7.1	6	7	0.47	10A	14.2
380V 60Hz									
ECR-168-3P-(300)	640	300	168	5.0	5	6	0.38	10A	11.6
ECR-225-3P-(400)	384	225	400	4.2	5	6	0.41	08B	7.9
ECR-343-3P-(500)	771	500	343	4.8	6	6	0.38	10A	12.2
ECR-412-3P-(600)	771	600	412	4.8	6	6	0.38	10A	12.2
ECR-647-3P-(800)	1436	800	647	4.0	7	8	0.42	10A	14.2
ECR-809-3P-(1000)	1436	1000	809	3.5	6	7	0.47	10A	14.2
ECR-1401-3P-(1300)	1776	1300	1401	4.4	7	8	0.45	12A	23.5
ECR-1617-3P-(1500)	2220	1500	1617	5.2	8	9	0.48	16A	23.5
ECR-2450-3P-(2000)	2220	2000	2450	3.6	12	12	0.65	16A	27.5
ECR-206-3P-(300F)	771	300	206	8.0	6	6	0.38	10A	12.2
ECR-223-3P-(350F)	1436	350	223	8.7	6	6	0.42	10A	14.2
ECR-331-3P-(410F)	1436	410	331	7.1	6	7	0.47	10A	14.2
ECR-647-3P-(600F)	1776	600	647	8.1	6	7	0.45	12A	23.5
ECR-776-3P-(720F)	2220	720	776	9.0	6	7	0.48	12A	23.5

### Product Characteristics

- Simple pleasing design of structure
- Good drive/size ratio
- Selected elements ensure safe working and reliability
- Low noise
- Small oscillation
- Lightweight
- Safety Device in of chain-break
- DEADMAN Switch: Up/Down

### III. Installation & Testing

- 1、 The motors are produced for standard mounting to the right of the opening (viewed from inside). If you wish to install to the left side, it is necessary to loosen the bolts on the brake-shell. This will allow you to turn the shell 180° and then re-tighten the bolts

Note: The white and green lines of the switches should change positions.

- 2、 The support board of the chain-wheel can be installed horizontally, according to the specific situation-as shown in Fig.3-or it can be fixed within a range of 0-45 degrees. When the support board is not installed horizontally the brake-shell must be turned so that the loop-type hand-pull chain can lie vertically in a normal manner.

Note: Special attention must be given to the joint of the shell-body and the top cover of the motor. When you are certain that there is no gap then tighten the bolts (diagonally). If a gap exists, and is allowed, the braking efficiency could be affected.

- The roller shutter door motors should be installed exactly horizontally.
- The roller axle of the shutter should door should be homocentric and horizontal
- The roller shutter should be free of any obstructions.
- The vertical hanging length of the chain must be adjusted within 3-6mm-adjustment should be made before hanging the shutter onto the roller axis.
- It is strictly forbidden to pull on the motor down lead.
- External power cord should be minimum 1mm diameter.
- Special attention should be given to protecting the motor from humidity and rain, to prevent short-circuiting.

The phase order must not be violated for three-phase motors. When the rise-up becomes downside the motors must be immediately stopped for readjustment of the phase order .If an interim power source is used for testing, attention should be given to connect in correct sequence when normal power source is introduced.

The correct operation approach is that when the rise-up button on the White line is pressed, the motor should turn anti-clockwise, allowing the position limiting device to function-see Fig .1 for details. Otherwise the shutter door would be out of control and will be damaged.

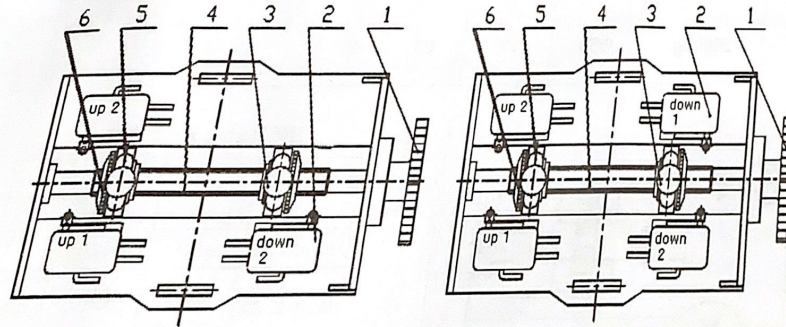
The motor must be satisfactorily earthed to prevent potential injury from shocks .The earthing connection bolts should be fixed to the chain wheel support board OR electric appliance control box.

### Position Limiting Diagram

Fig.1

Single phase

Three phase



1. gear 2. jogging switch 3. locking bolt  
 4. gearing wire 5. position limiting screw nut  
 6. position limiting slide piece

1. gear 2. jogging switch 3. locking bolt  
 4. gearing wire 5. gear form screw nut  
 6. position limiting board

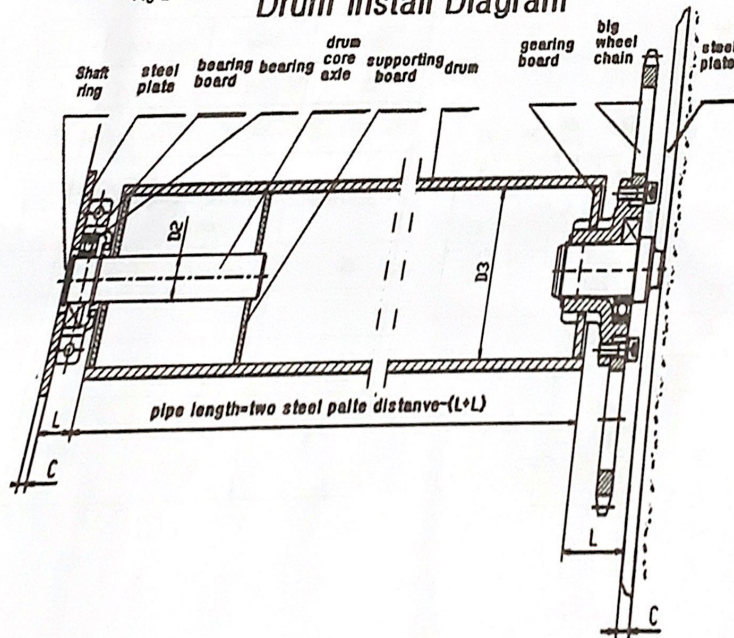
orm inside). If  
 ell. This will

specific  
 oard is  
 in lie

or.  
 s

Fig 2

### Drum install Diagram



The correct operation approach is that when the rise-up button on the White line is pressed, the motor should turn anti-clockwise, allowing the position limiting device to function-see Fig .1 for details. Otherwise the shutter door would be out of control and will be damaged.

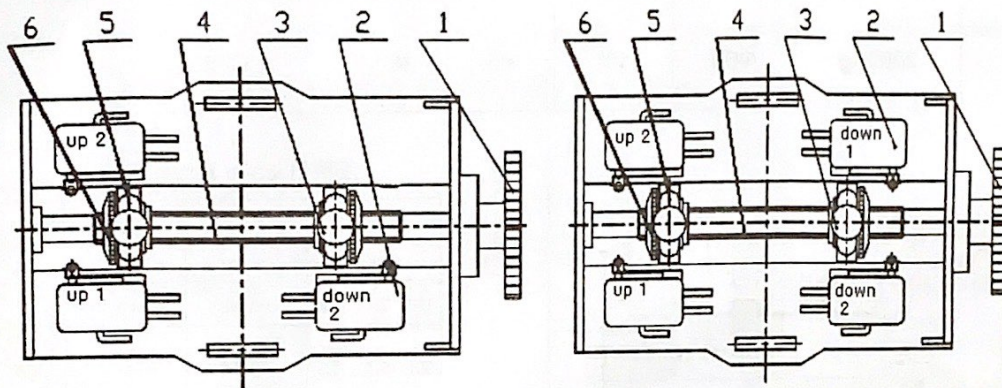
The motor must be satisfactorily earthed to prevent potential injury from shocks .The earthing connection bolts should be fixed to the chain wheel support board OR electric appliance control box.

### Position Limiting Diagram

Fig.1

Single phase

Three phase

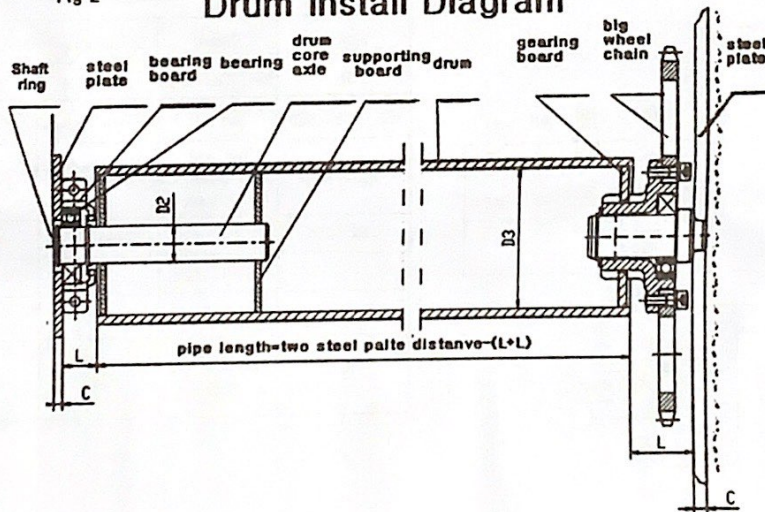


- 1. gear    2. jogging switch    3. locking bolt
- 4. gearing wire    5. position limiting screw nut
- 6. position limiting slide piece

- 1. gear    2. jogging switch    3. locking bolt
- 4. gearing wire    5. gear form screw nut
- 6. position limiting board

Fig 2

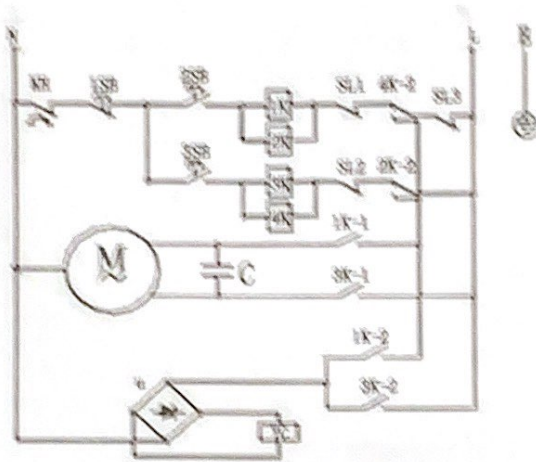
### Drum install Diagram





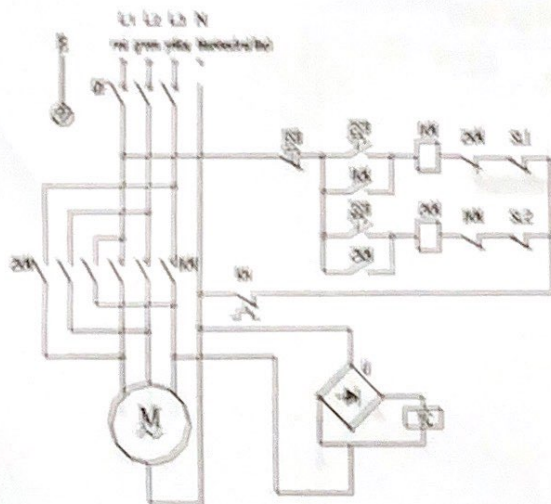
### Drums install diagram data

Model	D2	D3	L	C	Axle	remark
300Kg	φ30	4"	35	4	206	
500Kg	φ35	4 1/5"	35	4	207	
600Kg	φ35	5"	35	4	207	
800Kg	φ35	6"	45	5	207and1207	
1000Kg	φ40	6"	45	5	208and1208	
1300Kg	φ40	8"	45	12	UCF208	
1500Kg	φ40	8"	55	12	UCF208	
2000Kg	φ60	10"	85	16	UCF212	Side mount



220V Electric Wiring Diagram

Symbol	Name	Size & Model	Quantity
KR	Heat Protector	JOK-SP-1	1
S1, S2, S3	Switch	2 open 1 close	1
SL1, SL2, SL3	Top and bottom Buttons	JW-1-11	2-4
KR-KR	Small relay	JOK-1SP	4
C	Capacitor	12-35μF 50VAC	1
U	Rectifier		1
YC	Magnet coil		1
M	Single-phase Motor	~220V	1



380V Electric Wiring Diagram

Symbol	Name	Size & Model	Quantity
KR	Heat Protector	JOK-SP-1	1
S1, S2, S3	Switch	2 open 1 close	1
SL1, SL2	Top and bottom Buttons	JW-1-11	2-4
CJX2, CJX2	AC contactor	CJX2-6.3/0.1	2
U	Rectifier		1
YC	Magnet coil		1
M	Three-phase Motor	~380V	1

#### IV. Usage

Press "UP" or "down" buttons. If there is no reaction—press the "stop" button to avoid potential damage to the motor.

Check to see if there is any blockage under the shutter door before closing it. Passage under the shutter is forbidden during the process of starting or closing the door.

When closing the shutter, with the power off, lightly pull on the shutter door loop for slide—down at even controlled speed.

Relax the pull on the on the pulling loop when the door is almost closed and then pull again to close it completely.

Motors for fire shutter doors are equipped with separate control boxes—specially qualified personnel should undertake regular and preventative maintenance and inspection.

#### V. Trouble shooting

Problem	Analysis	Solution
No stop at upper and bottom positions	Incorrect connection of phases, and the position fails	Cut off power, check, adjust and change
Up only, or down only	Circuit contact fails, over low voltage < 185v, Electromagnetic iron weak in attraction force	Polish contact or change relay, adjust voltage button contact, change magnet coil
No reaction	Button contact fails, position limiting switch contract fails, circuit cut off	Adjust and change joggling switch and relay
Non-stop Operation	Relay contact fused, joggling switch out of control	Repair or change joggling switch and relay
Non-operation, only noise	Machine blocked, voltage too low	Remove block, adjust voltage

#### VI. Type Selection Formula

Output torque T

Total weight of shutter door G ..... = Motor type –total lifted weight Kg

Radius of rolling axle R × 9.8

G = door material/m<sup>2</sup> × length × width (see attachment for details)

Material	Kg × m <sup>2</sup>
Aluminum alloy	5-6
Mesh door	12
Powder coated steel	8-14
Stainless steel	10-18
Fire prevention door	25-36

Single-phase shutter door motor has obvious fluctuations of voltage, and therefore attention should be paid to voltage in type in type selection.

## **VII. Shutter Door Axle**

When the door is more than 5m in width, with more than 3 mm thickness and self-weight is above 350kg, 5 seamless pipe with more than 3mm thickness and zinc plated must be used to prevent pipe axle from bending which would lead to overload and a short life of motor, and even directly damage teeth of motor's gear.

## **VII. Motor Accessories:**

- 1.Chain wheel support ,
- 2.big chain wheel (including axle connect );
- 3.roller chain ;
- 4.drum core axles;
- 5.axle and axle support ;
- 6.gearing board ;7.support board ×2;
- 8.side board;
9. 3 meters of button/switch line;
- 10.stainless steel switch box (equipped with night lock).

## **IX. Warranty Period**

One year from the day of shipment; parts are offered at preferential prices.

## **X. Options**

- 1.Wireless remote controller
- 2.UPS electricity storage device AT (220)
- 3.Fire prevention electric control system (A.C models); LTFV –temperature sensing metal blow controller;
- 4.Stainless steel switch.