DC Electronic Rolling Shutter Motor
Operation Manual

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Attention

Dear customers, for the security of your person and property and to ensure the normal service life of this product, please read the instructions carefully before installing and using the motor. Operate in strict accordance with the requirements. Debugging, repair, and maintenance must be carried out by qualified or certified professional personnel. Conduct regular checks every year. Otherwise, it will affect the normal service life of the shutter motor and the operational stability of the roller shutter. If you encounter any problems during installation and use, please contact our company.

★Our company achieved the ISO9001 International Quality Management System Certification

★Our company's products by Peoples Insurance Company of China, product liability insurance underwriting

★New chain adjust mechanism patent number: ZL2004 2 0087351.2.

★Chain-break protection device patent number:ZL02240227.6

Safety Notice:

★The roller shutter motor need install plane, shutter tuber need concentric, plane, shutter not binding phenomenon;

★The roller shutter motor must be firmly grounded, defy electric shock;

★Adjust the hand chain squareness between 3-6mm(adjust before the tuber install the shutter);

★Forbid user carry the motor to connect the wire;

★Control box must install on the dry wall above at least 1.5 meters, forbid the children to operate the push button and remote control;

★The input power wire to the roller shutter motor must more than 1.5 mm^2, and according the electrical construction standard to arrangement of wire;

★People or objects are prohibited from passing below the operating door;

★This motor forbid install in the area have the flammability, highly explosive thing;

★Pay attation proof damp and caugh rain, to avoid the motor electrical short circuit, broken the shutter motor;

★After instriall and debug, the drive chain need proper to add the lube, and later need to regularly add the lube.

★When install and use, the motor need to contact the 220V.50hz AC power (please confirm the control box indicator light is lit);

★When the motor use the battery power, if the lift speed is slower or the low voltage indicator light is lit, please

use again after charge battery.

★If long time no use, before cut off the power please charge enough power first, and take off the battery fuse (But the battery need to charge per 3 months, don't forget put inside the battery fuse before charge)

★The operate without this manual is not allow

★Please keep this manual, in case to reference when to main tenance the motor

★ The shutter motor must to be installed up to 2.5 meters above the ground or accessible passageway★ It need the professional worker to change the battery.

PREFACE

The ECRD DC rolling door motor is a new product series. It is designed and produced strictly in accordance with the construction industry standard of Q/ZJLJ11 - 2010, the electric rolling door motor enterprise standard. The DC motor should be installed with an electric control system. Normally, it can be powered by electricity, which is converted to DC for motor drive. If the power goes off, the control system automatically switches to its built - in battery supply for the DC motor, so you can also easily drive the door to open and close.

This motor can also be installed on the left side or the right side.

Work Environment and Conditions

1. Working temperature: -15℃~45℃.

2. Relative working humidity: ≤95% (40℃).

3. Short - term working:

Continual operation should not exceed 10 minutes.

Product Characteristics

- ✧ - Simple and appealing structural design, with sufficient power.
- ✧ - It uses high - quality electrical elements, ensuring safety and stability.
- ✧ - Low noise, slight oscillation, and less power loss.
- ✧ - Lightweight, small in volume, easy to install, with a long service life and reliable.
- ✧ - When there is a power failure, it is easy to operate manually.
- ✧ - We have obtained the national patent for the chain - broken protection device.
- ✧ - There is a protection device inside when the motor current is too high.
- ✧ - It comes with a remote control, allowing you to control the motor from a long distance.
- ✧ - It is equipped with a UPS (two 12V/4AH batteries). If the power supply is cut off, it can automatically

switch to the UPS supply, ensuring that the motor can operate up and down about 20 times.

- ✧ - It can be used in conjunction with a photocell safety device.
- ✧ - It uses DC24V drive, which is safer to use.

3. Main Specifications and Technical Parameters for Standard

Model	Input Power (w)	Set load	Set load		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			
ECRD-225-(400)	288	400	225	3.5	0.38	10A	14.9
ECRD-343-(500)	360	500	343	4.2	0.38	10A	18.7
ECRD-412-(600)	360	600	412	3.8	0.38	10A	17.9
ECRD-647-(800)	456	800	647	3.0	0.42	10A	22.7

4. Installation and Testing:

The ECR electronic rolling shutter motor is produced for right - side installation as standard (viewed from inside). If you wish to install it on the left side, you need to loosen the four bolts on the brake - shell. This will enable you to turn the shell 180º and then re - tighten the bolts.

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

The support board of the chain - wheel can be installed horizontally, depending on 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 hang vertically in a normal manner.

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

The phase order must not be violated for three - phase motors. When the motor rises in the wrong direction (down instead of up), the motor must be immediately stopped for readjustment of the phase order. If an interim power source is used for testing, attention should be paid to connect the normal power source in the correct sequence.

The correct operation method is as follows: when the rise-up button on the white line is pressed, the motor should turn counterclockwise, enabling the position limiting device to function. See Fig. 1 for details. Otherwise, the shutter door will be out of control and damaged.

Testing:

Screw cap position limiting slide piece model (Fig 2.1)

Loosen the locking bolt (No. 3) of the position limiter before testing. Then, pull the hand chain to lift the door 1 meter above the floor. Press the 'up', 'stop', and 'down' buttons and observe the functions of the rolling shutter operation to check if they are correct. After confirming that the door is working properly, open the door up or down to the desired position. Turn the position limiter slide piece (No. 6) until it touches the joggling switch (No. 2) and you hear a 'tick-tack' sound. Tighten the locking bolt (No. 3) and repeat the testing until the limiter is at the optimal position. Finally, tighten the locking bolt again.

Gear form screw nut position limiting board model (Fig 2.2)

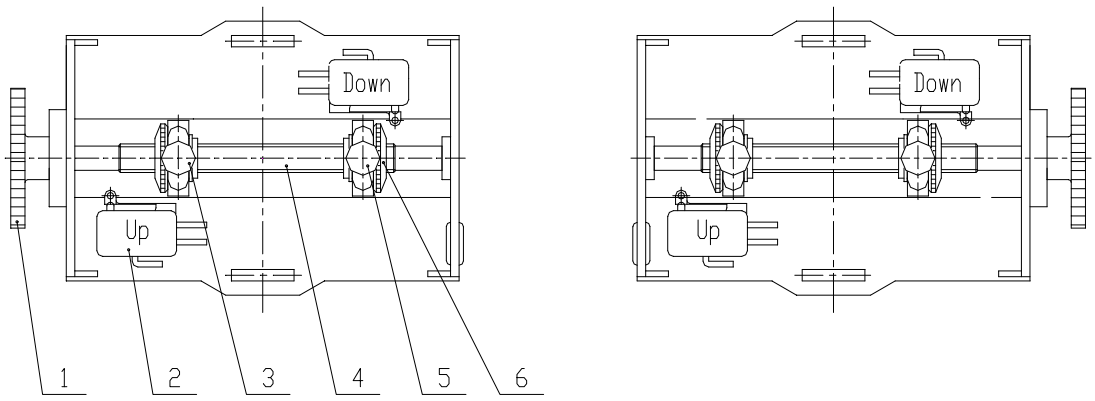
Before testing, loosen the two locking bolts (No. 3) of the position limiter. Hold the middle of the position limiter board (No. 6) with your fingers, push it 4mm to the left side (←), and pull the screw down (↓) 4mm. The position limiting board will now be separated from the gear form screw.

Turn the gear form screw nut (No. 5) to set the door position. The method is the same as above.

After setting the door position, hold the middle of the position limiting board (No. 6) and push it back up (↑) to make the position limiting board fit into the gear backlash. (If it cannot fit, turn the gear form screw nut to adjust it.) Then push the position limiting board to the right side (→) 4mm to reach the bottom of the gear backlash. Screw tight the locking bolt (No. 3), and repeat the testing until the limiter reaches the desired position.

Position Limiting Diagram

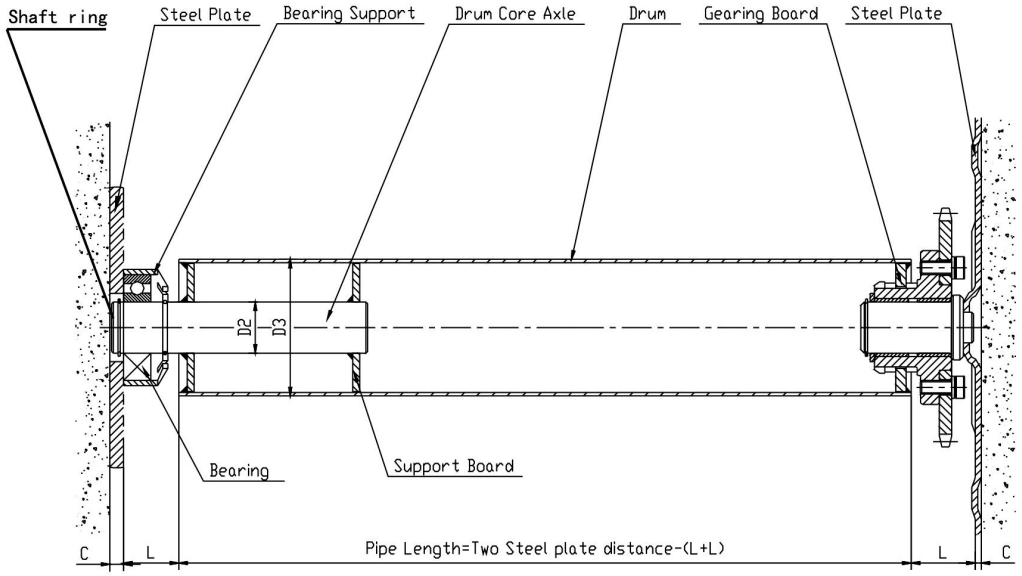
Fig.1 When the motor is to be fixed on the left when the motor is to be fixed on the right



Serial Number	1	2	3	4	5	6
Name	Position limiting gear	Joggling switch	Locking bolt	Gearing wire	Position limiting screw nut	Position limiting slide piece

Drum install Diagram

Fig.**2**



Note: Right-side installation for D1 Shutter Door Motor Model

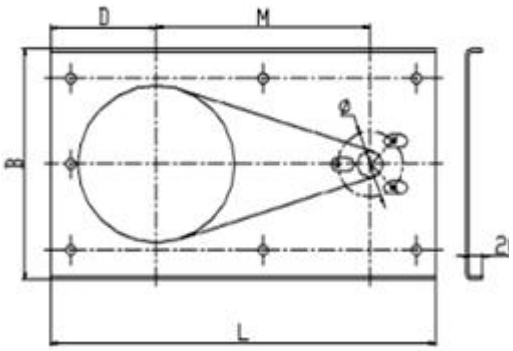
Code NO.	Model	D2	D3	L	C	Bearing

Values	**400kg**	**Φ30**	**4"**	**35**	**3**	**206**
	500kg	**Φ35**	**5″**	**35**	**4**	**207**
	600kg	**Φ35**	**5″**	**35**	**4**	**207**
	800kg	**Φ35**	**6"**	**35**	**5**	**207**

Support Plate Installation Diagram

A Model

Fig.**3**



Code No.	L (mm)	B (mm)	D (mm)	M (mm)	Φ (mm)
400kg	522	310	150	302	100
500kg	522	310	150	302	100
600kg	522	310	150	302	100
800kg	585	350	175	316	156

5. Usage

Press the “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 it to slide down at a uniformly controlled speed.

Relax the pull 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.

6. Trouble shooting

Problem	Analysis	Solution

No stopping at the upper and lower positions.	Phase connection error, and position detection failure	Cut off the power, check, adjust, and change
Up only, or down only	Circuit contact fails. Voltage is too low (<185V). Electromagnetic iron has weak attraction force.	Polish the contact or replace the relay, adjust the voltage button contact, and replace the magnet coil.
No reaction	Button contact fails. Position - limiting switch contact fails. Circuit is cut off.	Adjust the joggling switch and the relay.
Non-stop Operation	Relay contact is fused; joggling switch is out of control.	Repair or replace the joggling switch and relay.
Non - operation, only noise	Machine blocked, voltage too low	Remove the block and adjust the voltage.

7. 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 (per m^{2}) × length × width (see attachment for details)

material	aluminum alloy	net door	PVC steel	stainless steel	Fireproof door
KG×㎡	5 ~ 6	12	8 ~ 14	10 ~ 18	25 ~ 36

Type and drum selection drawing:

This diagram is drawn according to the national standard GB14102 - 2005 <Fireproofing Rolling Shutter>, with a deflection ≤ L/400, considering the rolling shutter motor output torque, the shutter gross weight, and the span length.

Selection method:

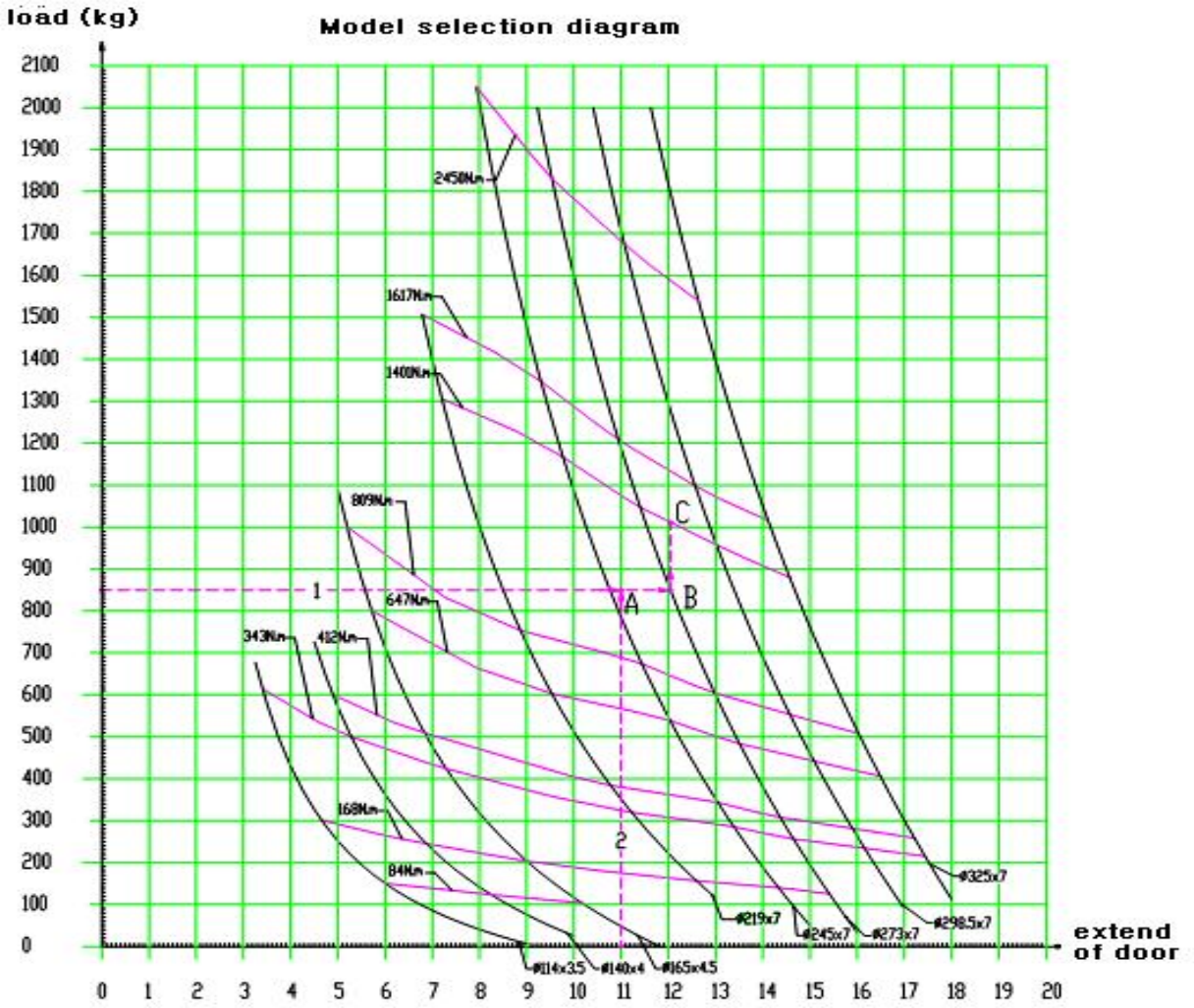
a) For single shutter type selection, the weight G is the actual weight × (1.1~1.2).

b) Then, according to the shutter model selection weight (kg), find the relevant point on the Y - coordinate.

c) 1. According to the maximum width (m) of the door, find the relevant point on the X - coordinate, and then move upwards to the vertical line 2 until it intersects with the Y - coordinate at point A. Then, move along the right - hand horizontal direction to reach the next point B on the pipe diameter diagonal line. This is the pipe diameter we need.

d) From point B, move upwards to the diagonal of the type selection line to reach point C. This is the type of

motor we need.



For example, if the maximum weight of the shutter is 850 kg and the door width is 11 m, what size of pipe diameter and what kind of model should we choose?

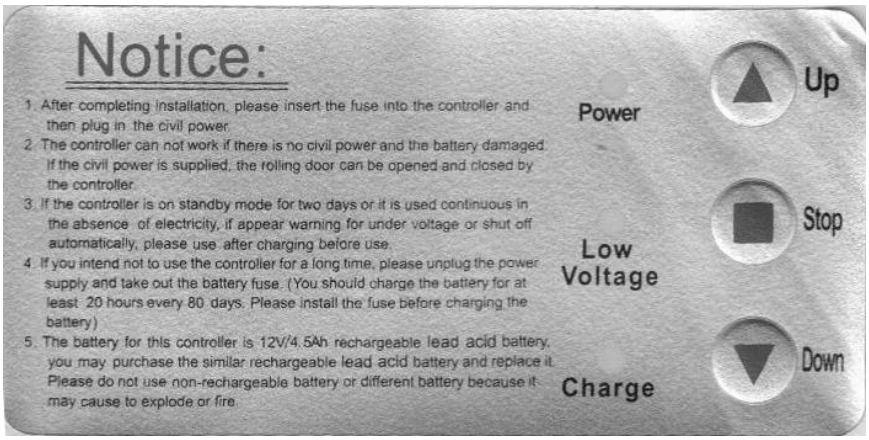
a) Select 850 kg from the Y - coordinate as line 1. Then select 11 m from the X - coordinate as line 2 to reach the intersection point A. Along the right direction to the next point B. The pipe diameter and thickness Φ273×7 in the pipe diameter line of point B is what we need.

b) From point B, move up to the closest model line at point C. The position of model 1401 N.m is what we want.

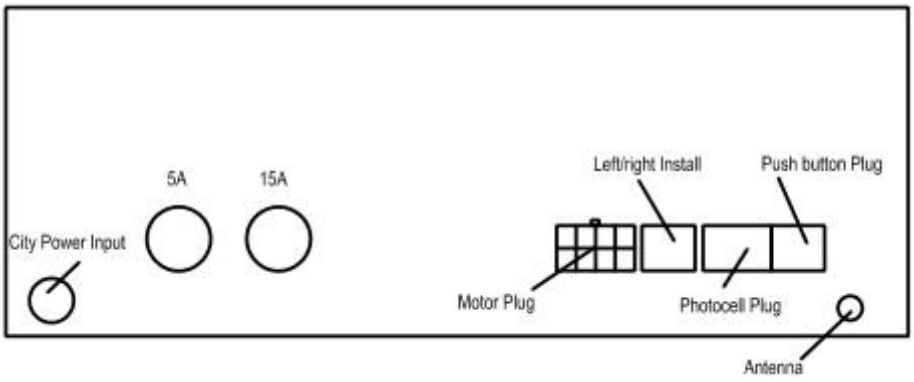
- The deflection should be controlled to less than 1/400. Or, when the door width is more than 5 m, with a thickness of more than 3 mm and a self - weight above 350 kg, 5 seamless pipes with a thickness of more than 3 mm and zinc - plated must be used to prevent the pipe axle from bending, which could lead to motor overload and a short motor life, and even directly damage the teeth of the motor's gear.
- Single - phase shutter door motors have obvious voltage fluctuations. Therefore, attention should be paid to the voltage during type selection.

8.Control box operating instructions

Control box panel frame



2.drawing of control box



9. Motor Accessories:

1. Bracket and side board

2. Big chain wheel (including axle connection)

3. Roller chain

4. Drum core axles

5. Axle and axle support

6. Gearing disc

7. Support discs × 2

8. Remote handsets × 2

9. Control box

10. Warranty Period

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

11. Note:

Due to the continuous improvement of products, the appearance, performance, and parameters in this manual may be modified without prior notice.