
Remote Controlled Shutter Rolling Automation

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ABSTRACT:-

In today's world, security, wellbeing and accommodation has gotten exceptionally imperative than before. As the reliance on innovation increments, individuals require the capability to contemplate trivial errands and need to focus on other pertinent issues. This sort of interest must be met by a framework equipped for rapidly, exactly, and dependably translating the needs of the client and actualizing suitable movements independently. The Remote Controlled shutter Rolling Automation exploit the utilization of current innovations to give such a framework. The general idea driving is to actualize a framework where the client is no more fundamentally answerable for deciding the activity, yet rather an order module screens the movement, the shutter rolling needs to be performing and makes the fitting modification. In an age where no one has much time for things like coming out of the car and opening shutter rolling, a remote control shutter Rolling steps up for the solution of their problem. The research project for a shutter rolling that can be opened with a mere touch of a remote control button is studied, reviewed and its prototype has been developed. For the development purpose the problems faced by the users are identified, detailed specifications of the product parts are done and a working prototype has been fabricated.

Keywords: *Shutter Rolling Mechanism, IR remote Control, Electronic operated break AC motor.*

INTRODUCTION:

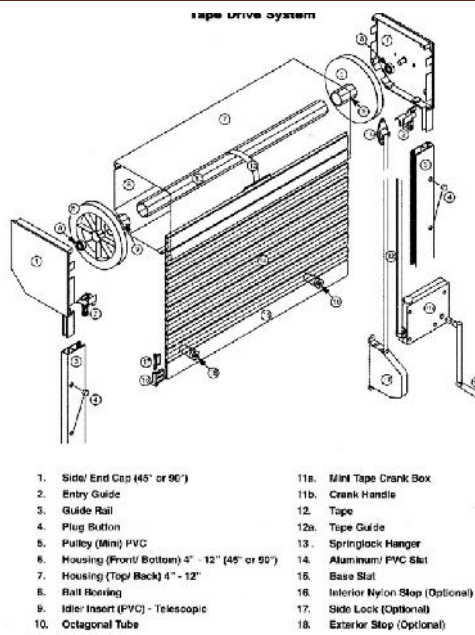
Now a day's shutter rolling is operating by hand driven gear mechanism for opening and closing the shutter, and also currently operated on geared AC motor by pressing up & down push buttons. Its uses increased extensively around 20th century when expensive motorised vehicles came into existence and its safety became a concern for its users. So considering this we suggesting that upward and downward shutter rolling automatically by IR remote control. After the huge progress made in the field of electronics that touched everything of our basic necessities, shutter rolling was not an exception. Several shutter rollers are available that can be opened with remote control and they come with various safety measures for the users.

1. Hand Driven Shutter Rolling Mechanism:

Requires an equivalent amount of applied force to manually open and close, & Does not rise or fall more than 100mm when stopped at any position between fully open and fully closed positions, and & Does not rub or make contact with any supporting or surrounding structures & Repairs to roller-shutters must only be carried out by technically qualified persons. Attempting to repair the system without suitable technical qualification may result in severe personal injury, death and/or property damage.

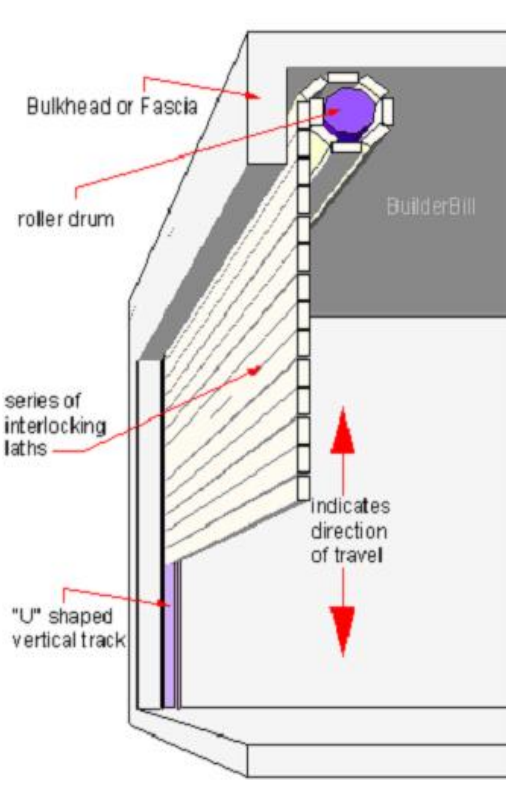
The helical coil springs must be properly lubricated between all of the coils with heavy automotive bearing grease. Failure to adequately lubricate the springs may result in one or more of the following symptoms;

1. The springs will become rusty over time resulting in extra operating friction between the coils which may cause the shutter rolling mechanism to malfunction & Seasonal temperature changes may cause the roller shutter springs to expand and/or contract. The resultant increase and/or decrease in operating friction may cause the system to malfunction.



2. Properly lubricating the springs will help to minimise the effects of seasonal temperature changes in operating friction of your roller-shutter & It is recommended that the manual operation chain is housed within the chain bag included with this kit and positioned in such a way that only authorised users have access to it, so as not to compromise the security of the installation.

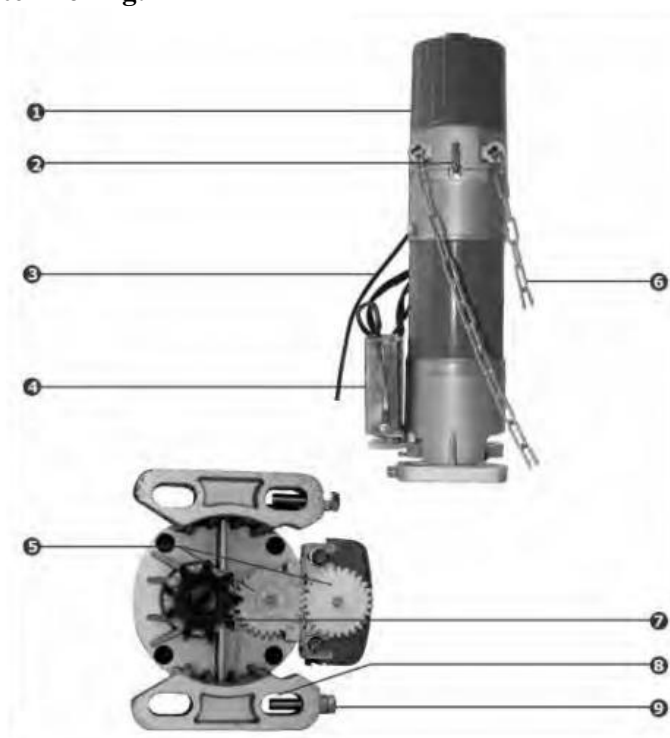
2. Remote control Shutter Rolling:



An electric drive is exceptionally valuable in client accommodation, they are controlled by remote controls. The electric drive follows up on a toothed sash which opens and shuts the door without any exertion from the client. The drive framework opens and shuts the door at a palatable rate. The electric engine is secured to the ceiling. One can drive in as well as out with the door without any issue. At the point when the button of remote control is pressed then it offers signal to the receiver which is inside the garage and the recipient on getting the sign reactions bringing about exchanging on the engine. The engine thus pivots and the lead screw begins turning which either pulls or opens the door or pushes or shuts the door.

The controller is capable of learning up to 500 CENTURION code-hopping remote controls / transmitters. Each transmitter can have up to four buttons. Each transmitter learned into the system is assigned a unique transmitter ID. & It is possible to artificially increase the number of buttons of a multibutton transmitter by using a two button combination & one of the buttons is used as a shift button to allow the other buttons to be used again in combination with this button. In other words the user will press and hold the shift button, before pressing one of the other buttons to create a new button & the shift button cannot be used as a button on its own, it must always be used in combination with the other buttons.

3. Electrical Motor for Shutter Rolling:



1. Relay/PCB housing
2. Manual override pin
3. Power cable
4. Limit switch housing
5. Limit switch drive
6. Manual operation chain
7. Drive sprocket
8. Mounting Slot
9. Tensioning bolt

The electric shutter rolling motor provides a total of four limit micro-switches. In addition to the open and closed switches, provision has also been made for a Safety Edge Off switch as well as a Backup Limit (for the open position) switch. The Safety Edge Off switch will be triggered first when the shutter is travelling towards its closing limit, and serves to disable the sensitive edge fitted to the leading edge of the shutter (if installed). This is done to ensure that the collision circuitry does not activate and cause the shutter to re-open once it has reached the fully closed position. The Backup Limit switch serves as a failsafe should the open limit switch malfunction, and will stop the shutter in the open position.

Product structure and function features

1. It can be driven by electricity to operate the function of moving up and down, precise limit by the limiter controlled automatically.
2. Operated by manually when out of power
3. The unwinding group of the motor is with overheat protect equipment. When the temperatures rise up to 110°C, it will cut off the power supply automatically to protect the motor. When the temperatures reduce to 70°C it can be used again.
4. Low noise, small shaking, low power exhaustion.

Main specification of and technical parameters for ECR motor:

Model= 412-1P

Input power (w) = 710

Set load output torque (N-m) = 412

Set load lifting force (kg.f) = 600

Set load output turn speed (r/min) = 4.8

Max lifting height (m) = 6

Slats thickness (mm) = 6

Max external diameter of door (m) = 0.38

Chain number = 10A

Weight of motor (kg) = 12.2

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