"ADVANCE LIFT FAIL SAFE"

(Using Electromagnetic Break)

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Abstract :

The main purpose of this work is to perform an analysis on elevator safety. This report introduces the development of elevators through its history, definitions and commonly used concepts in the elevator industry. Elevators are already an important part of day-to-day life for thousands of people and have significant role to play in the future of urbanization due to increasing population density and decreasing real estate. Elevators not only make vertical transportation convenient, but also play an important role in providing accessibility for people with disabilities; so, its safe and reliable operation is very crucial. Elevator maintenance and safety practices around the country are evaluated in this article and a study on various elevator related accidents was performed to recommend safety practices. Modern elevators are very safe in general, but poorly maintained systems, passenger safety vulnerabilities, incomprehensive work instructions, negligence and lack of proper safety protocols still cause several accidents every year.

INTRODUCTION

Modern elevator systems have reliable braking systems with fail-safe mechanisms due to which elevators are considered very safe in general. According to Consumer Watch, thereare approximately 900,000 elevator that serve an average of 20,000 people per year, resulting in about 18 billion passenger trips annually . According to India of Labor Statistics and Consumer Product Safety, elevators related accidents kill about 27 people and seriously injure about 10,200 people every year Considering the frequency of elevator use, it can be seen so that theElectromagnetic Break are using for Lift Fail Safe.it is reliable and quick in action block of its paper.

This approach works the best in guidance of fellow researchers. In this the authors continuously receives or asks inputs from their fellows. It enriches the information pool of your paper with expert comments or up gradations. And the researcher feels confident about their work and takes a jump to start the paper writing.

CONSTRUCTION

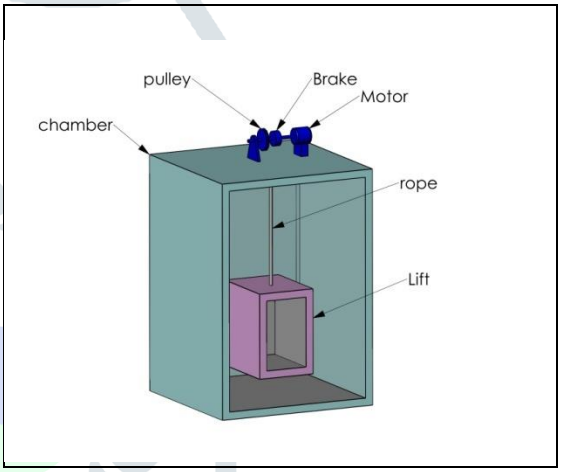

fig.1

Technical Parameter

Electromagnetic Spring-operated brakes are brakes with two friction surfaces. When no current is applied, the brake force is generated by means of several coiled

pressure springs. When current is applied, the brakes are released electromagnetically. While braking, the rotor which is axially movable on the hub is pressed against

the adaptor by means of the springs acting on the armature plate In case of braking, an air gap 'S' occurs between the armature plate and the stator assembly.

To release the brake, the coil in the body is excited by application of DC current. The resulting magnetic field via the magnetic flux path causes the armature plate to be pulled towards the stator assembly against the spring force; thereby releasing the rotor.

Electromagnetic called electromagnetic or EM brakes slow or stop motion using Electromagnetic force to apply mechanical resistance (friction). They were originally called "electro-mechanical brakes," but over the years the name changed to "electromagnetic brakes", referring to their actuation method. Since becoming popular in the mid-20th century, especially in trains and trams, the variety of applications and brake designs has increased dramatically, but the basic operation remains the same.

Both electromagnetic brakes and eddy current brakes use electromagnetic force, but electromagnetic brakes ultimately depend on friction whereas eddy current brakes use magnetic force directly.

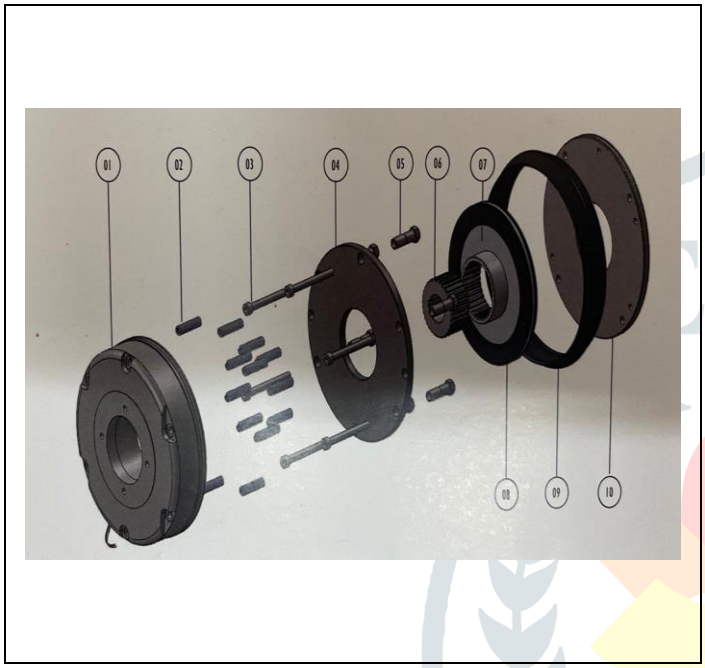

fig.2

CONCLUSION

The most common causes of elevator related accidents have been identified as: fall into the shafts, malfunction of elevator doors, stopped or stuck elevators and misalignment of elevator car with the floor (resulting in passengers getting trapped, tripping or falling).

There could be several factors involved in each particular accident, but they can be broadly identified as: poorly maintained systems, passenger safety vulnerabilities, lack of comprehensive written instructions for technicians, negligence while working on or near elevators and lack of proper communication channels.

In order to avoid such accidents as well as maintain safety in modern elevator systems more efficiently, the following safety practices are recommended.

ADVANTAGE :

1. During fall the break wast enggaged within second
2. Break enggaging time is to fast and accurtate

DISADVANTAGE :

1. Break heating due to coil
2. Maintaning Air gap

APPLICATION :

1.Cranes & Material Handling equipmen
2.Forklift trucks and AGVS
3. Automobil Industry

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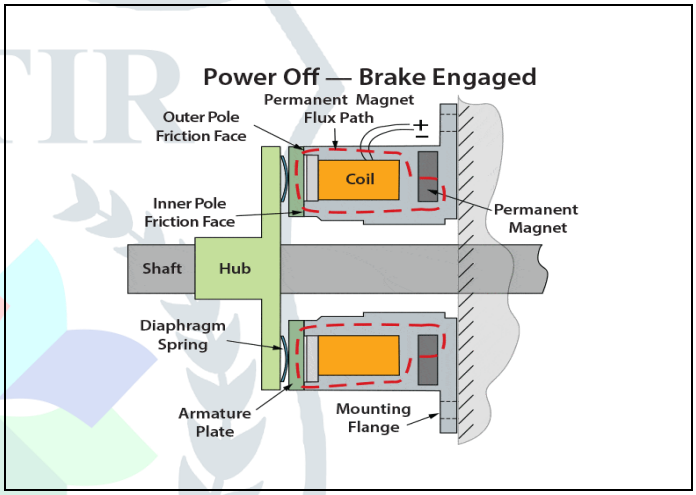

fig.3

Permanent magnet brakes stop or hold a load when electrical power is either accidentally lost or intentionally disconnected. They are sometimes called "fail safe" brakes and use a permanent magnet to attract a single face armature. As the brake is engaged, the magnets create magnetic lines of flux, which can turn to attract the armature to the brake housing. To disengage the brake, power is applied to the coil, which sets up an alternate magnetic field that cancels out the magnetic flux of the permanent magnets. Permanent brakes are engaged when no power is applied to them and can hold or stop when power is lost or unavailable.