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## Braking Resistors

### Overview

Hoists are required to have both a primary and secondary brake system. Almost every primary hoist brake is an electrical friction disc-type brake. For the secondary brake, a hoist can have either a mechanical load brake or use regenerative/dynamic braking. Most traverse motions only use regenerative/dynamic braking; however some special applications require mechanical brakes for horizontal motion.

### **Mechanical Load Brake**

Mechanical Load Brakes are also called Weston Type brakes and holding brakes. If the primary brake fails, the mechanical load brake will hold the load. Since the motor does not move when the hoist is off, there is little or no regeneration.

### **Regenerative Braking**

Regenerative braking is dynamic braking that is fed back into a power system to be reused. Dynamic braking occurs when the load (hoist or traverse) is decelerating. The motor is forced into reverse torque which temporarily makes it a generator. If the primary brake fails, dynamic/regenerative braking will allow the load to fall at a controlled speed.

### Resistors

When a VFD is applied to a motor, it is important to know the application and how much regeneration energy there will be. A VFD can be damaged or destroyed by regenerative energy going backwards through the drive. To prevent damage to the VFD, braking resistors are required to change the regenerative energy into heat.

### **“No Load Brake” Hoists**

This is the most demanding type of regenerative motion. Therefore, it needs the largest resistors to convert the regenerative energy into heat.

### **Mechanical Load Brake Hoists**

Some VFDs require any braking resistors for load brake hoists. There will be some regeneration from mechanical load brake hoists due to brake slip.

### **Traverse/ Horizontal Motions (Trolley, Monorail, Runway)**

Deceleration in these motions will cause some regeneration.

**Check each VFD's product details to select the correct braking resistors.**

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**If you have any questions, please contact us:**

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