# What is an Electric Traction Elevator?

**Outline**
- Identify and define terminology associated with traction elevator operation
- Identify basic operation of a traction elevator
- Identify different types of electric traction elevators
- Identify major components of electric traction elevators
Outline

- Identify and highlight specific safety features of traction elevators
- Identify braking system of traction elevator
- Identify operational controls of traction elevator
- Identify methods of roping

Key Terms

- Braking Systems
- Controller
- Counterweight
- Elevator driving machine
- Geared electric traction elevators
- Gearless electric traction elevators
- Governor
- Machine room
- Machine Room-less (MRL) elevators
- Roping System
- Roped hydraulic
- Safeties
- Sheaves
- Traction

Electric Traction and MRL

Thinking back to course 200, what are some things you remember about electric traction elevators?
Electric Traction & MRL Elevators

Objectives
- Identify basic operation of a traction elevator
- Identify different types of electric traction elevators

Electric traction elevator = electric elevator = traction elevator

Basic Operation
A traction elevator:
- Relies on a pulley system drive sheave controlled by an electric motor to move the car using hoist ropes and counterweight
- Electric motor is alternating current (AC) or direct current (DC) to produce traction by turning a traction sheave
- Brakes hold the car in place once stopped electronically
**Electric Traction and MRL Elevators**

**Types**

- Geared Electric Traction
- Gearless Electric Traction
- MRL

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**Electric Traction Elevators**

- Types
  - Geared Electric Traction
  - Gearless Electric Traction
  - MRL

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**Geared Electric Traction**

- Reducer attached to the motor driving the sheave that pulls the ropes
- Capable of traveling 500 feet per minute
- Used for mid-rise buildings up to 10 floors
- Generally less expensive than gearless or MRL elevators to install

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**Gearless Electric Traction**

- Drive sheave attached directly to the motor shaft and brake
- Capable of speeds up to 2,000 feet per minute
- Ideal for high-rise structures above fifteen floors

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