

Electric Traction and MRL Elevators


Electric Traction Elevators and MRL Elevators



Transit Elevator/Escalator Consortium

Electric Traction and MRL Elevators

What is an Electric Traction Elevator?



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Electric Traction and MRL Elevators

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

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Course 213: Elevator Principles of Operation
Module 3: Electric Traction Elevators and MRL Elevators

Electric Traction and MRL 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

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Electric Traction and MRL Elevators

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

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Electric Traction and MRL Elevators

Electric Traction and MRL

Thinking back to course 200, what are some things you remember about electric traction elevators?



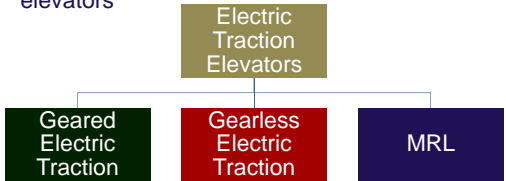
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Electric Traction and MRL Elevators

Electric Traction & MRL Elevators

Objectives

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

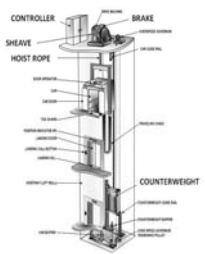


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Electric Traction & MRL Elevators

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Electric Traction and MRL Elevators

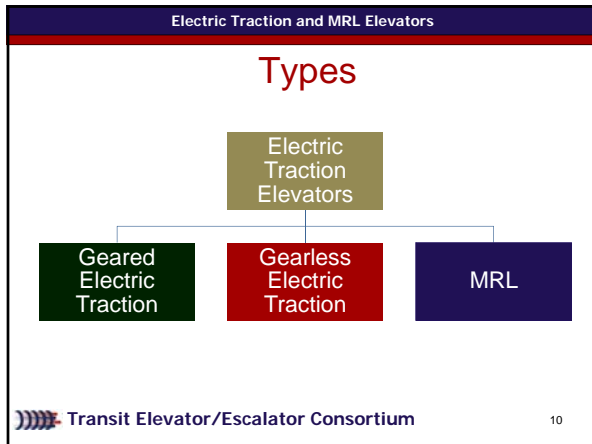
Basic Operation

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

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Electric Traction and MRL Elevators

Types

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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Electric Traction and MRL Elevators

Types

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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