Instructor/Participant Guide



212: Escalator-Inspection & Basic Maintenance

Module 5: Preventative Maintenance of Escalator Drive Systems

>>>>> Transit Elevator/Escalator Consortium



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Icons Used in This Guide

Throughout the Instructor's Guide, the following icons indicate the type of content being presented.



Refer To



PowerPoint



Multimedia



Web based **Training**



Write



Ask



Individual Activity



Small Group Activity



Classroom **Activity**



Duration

Agenda

Topic No.	Topic Title	Duration
1	Introduction	5 minutes
2	Overview Types of Drive Systems Preventative Maintenance Guide	15 minutes
3	Preventative Maintenance of Modular Drive Systems Gaining Access Cleaning Up Care Westinghouse Escalator Modular Drive System - Motors Motors - Replacement Reducer Brakes Sprocket and Chains	40 minutes
4	Preventative Maintenance of Chain Drive Systems • Main Drive Chain	15 minutes
5	Preventative Maintenance of Gear Drive Systems	15 minutes
6	Summary	5 minutes
	Total Time:	1.6 hours



Overview

Purpose

The purpose of this module is to:

Introduce participants to preventative maintenance of escalator drive systems

Objectives

At the end of this chapter, the learner will be able to:

- Perform inspection of a transit escalator drive unit
- Identify inspection areas
- Perform check of all lubricants
- Perform check of all seatings and mountings
- List all problems located during an inspection
- Recommend necessary repairs
- Describe the methods used to change out a drive motor

Materials

Make sure you have the following:

- Laptop (one for leader)
- Participant Guides
- PowerPoint slide deck
- LCD projector
- A17.1 Safety Code for Elevators and **Escalators**
- A17.2 Guide for Inspection of Elevators, **Escalators and Moving Sidewalks**
- A17.3 Safety Code for Existing Elevators and Escalators

- Heavy Duty Transportation System Escalator Design Guidelines (APTA RT-RP-FS 007-02)
- Field Employees' Safety Handbook
- Transit Agency Handbook

PREPARE flip charts with the following titles:

Class Expectations

Preparation



Instructor's Notes List the differences between the three main types of drive systems. Three Types of Drive Systems **Modular Drive System** • There are three different types of drive systems found - Modular - Chain - Gear · In this course, we will outline specific features in these three types of systems that require preventative >>>> Transit Elevator/Escalator Consortium Slide 3 **Chain Drive System REVIEW** the main types of drive systems. ASK the participants to list the differences between the three main types of drive systems. **Gear Drive System**



Instructor's Notes

Modular Drive Systems

- Are found in the Washington Metropolitan Area transit
- · Require noise-damping canopies to reduce the noise of the drive while running.
- · Contain locking bars that will have to be removed







Slide 5



REVIEW slide 5 and discuss the brief details of a Modular Drive System.

APPLICATION FEEDBACK: now that we have discussed a little about the modular drive system, have the participants answer the following questions.

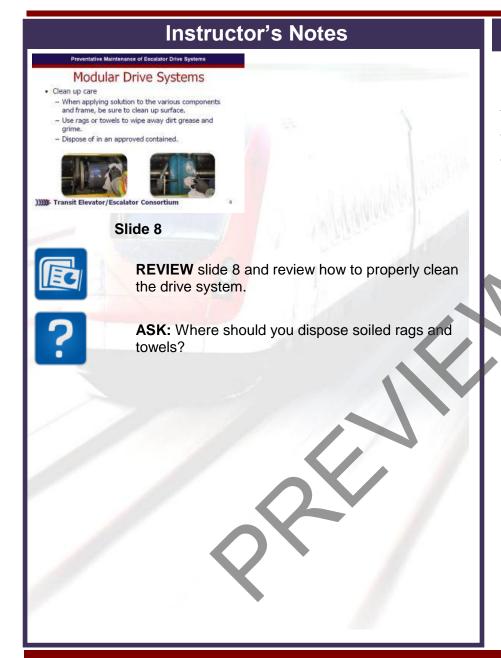


ASK participants to describe the purpose of the locking bars.

Modular Drive System

What is the purpose of the locking bars?





Clean Up Care

When cleaning is complete, where should you dispose soiled rags and towels?



Instructor's Notes

Modular Drive Systems-Motors

- · The means by which the escalator moves.
- Check mounting bolts to ensure they are tight and prevent slippage.
- Keep motor square to the sled and truss.
- Check my measuring to the step, axle tracks, and cross c-channel members.







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· Bearings should be lubricated at

· Threaded hole poses a need for

recommended intervals.

No fittings = sealed bearing

• No threads = seal bearing already lubricated. · New motors are shipped with a plug where grease fitting should

Modular Drive Systems-Motors

Slide 11

Slide 10



REVIEW slides 10 and 11 and review the proper preventative maintenance procedures for a modular drive motor.



ASK If a motor does not have fittings in the area of the bearings, what does this mean?

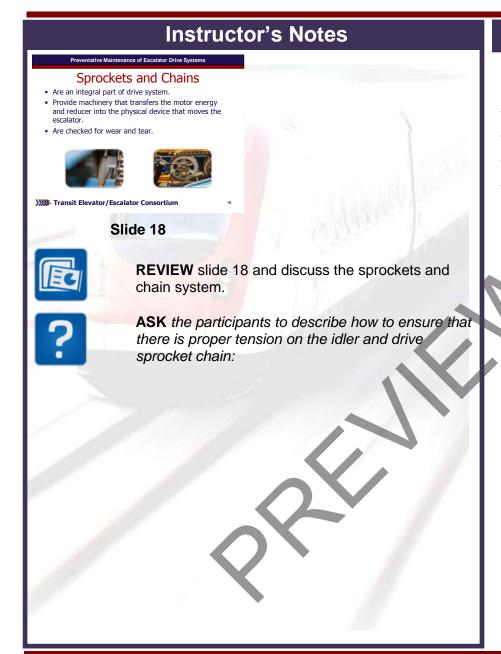
does this mean?



Instructor's Notes Reducer Reducer • Ensure the broken belt switch is operational and · To detect problems on Westinghouse escalators: - Open the reducer filler hole • Ensure the output shaft collars are secure and inspect for gear wear • Check the hub clamping for loose belts and tighten if using an adjustable - Check for gear oil on the • Ensure no oil has dripped onto the steps. teeth of the gears in view. · Check that mounting bolts are secure to the sled, and - Fill drivers with oil once drip pan and hose are in place. received and do not • Ensure reducer drain valve is turned off and hose is remove the inspection plug removed when reducer is drained. unless drive is stopped.))))) Transit Elevator/Escalator Consortium Slide 14 Slide 16 **REVIEW slides 14** through 16 and review how to detect problems on the Westinghouse escalator ASK Why should the breather never be removed while the drive is in operation?

Red	ucer
Why should the breather never be	removed while the drive is in
peration?	

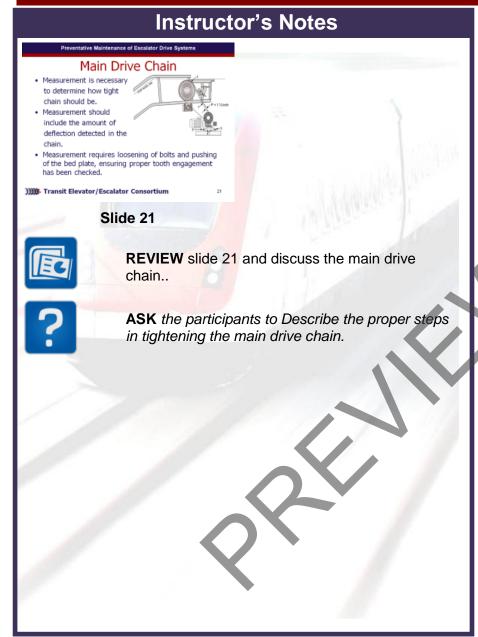




Sprockets and Chains

Describe how to ensure that there is proper tension on the idler and drive sprocket chain:





Main Drive Chain
Describe the proper steps in tightening the main drive chair



