



APTA STANDARDS DEVELOPMENT PROGRAM

STANDARD

American Public Transportation Association
1300 I Street, NW, Suite 1200 East, Washington, DC 20005

APTA PR-IM-S-010-98, Rev. 2

First Published: October 27, 1999

First Revision: February 13, 2004

Second Revision: August 9, 2017

PRESS Inspection & Maintenance
Working Group

Passenger Car Brake Disc Periodic Inspection and Maintenance

Abstract: This document establishes a standard for brake disc inspection and maintenance of passenger cars.

Keywords: brake disc maintenance, brake disc periodic inspection and maintenance, brake discs, brake system, brake system maintenance

Summary: This standard covers the basic procedures for the periodic inspection and maintenance of the brake discs of passenger cars, with emphasis on maintenance of safety appliances and other safety-critical systems. These systems (if applicable) are essential in the safe operation of passenger cars.

Scope and purpose: This standard is intended for use by rail properties to apply basic procedures for periodic inspection and maintenance of passenger car brake discs. It applies to all passenger cars. Periodic inspection and maintenance of passenger locomotive brake systems remains governed by 49 CFR, Part 229, and 49 CFR, Part 238, Railroad Locomotive Safety Standards. However, railroads may wish to use some of the procedures in this standard to supplement the federal requirements.

This document represents a common viewpoint of those parties concerned with its provisions, namely operating/planning agencies, manufacturers, consultants, engineers and general interest groups. The application of any standards, recommended practices or guidelines contained herein is voluntary. In some cases, federal and/or state regulations govern portions of a transit system's operations. In those cases, the government regulations take precedence over this standard. The North American Transit Service Association and its parent organization APTA recognize that for certain applications, the standards or practices, as implemented by individual agencies, may be either more or less restrictive than those given in this document.

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Participants

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Introduction

This introduction is not part of APTA PR-IM-S-010-98, Rev. 2, "Passenger Car Brake Disc Periodic Inspection and Maintenance."

This introduction provides some background on the rationale used to develop this document and is meant to aid in its understanding and application. This standard describes the requirements for passenger car brake disc periodic inspection and maintenance. It is intended for the following:

- individuals or organizations who do passenger car brake discs periodic inspection and maintenance
- individuals or organizations who contract with others for passenger car brake disc periodic inspection and maintenance
- individuals or organizations who influence how passenger car brake disc periodic inspection and maintenance is performed

Passenger Car Brake Disc Periodic Inspection and Maintenance

1. Frequency of conduct

The frequency of conduct of this task shall be as specified in and in compliance with the requirements of APTA PR-IM-S-013-99, Rev. 1, “Passenger Car Periodic Inspection and Maintenance” or the superseding document.

2. Brake disc inspection and maintenance requirements

2.1 Tools/materials

Calipers, micrometers and/or gauges, in addition to the standard tools carried by maintenance personnel, are required for this maintenance task. No specific materials are required.

2.2 Safety/personal protective equipment

Personal protective equipment, as required by the railroad, shall be worn at all times in the performance of this maintenance task.

2.3 Training requirement

Railroads and their contractors shall develop and execute training programs that equip employees with the knowledge and skills necessary to safely and effectively perform the tasks outlined in this standard.

3. Inspection and maintenance procedures

CAUTION: Ensure that equipment is secured against uncontrolled movement before commencing inspection and maintenance procedures. Follow proper blue flag protection of worker procedures as required by the Railroad and in accordance with applicable regulations.

3.1 Brake discs

The inspection and maintenance procedure for brake discs consists of the following steps.

- a) Visually inspect the disc faces for damage, cracks or nicks along the outer periphery of the disc. Some radial checks and thermal checks are normal during operation. Refer to OEM instructions on disc inspection and the railroad standard maintenance procedure (SMP) for condemning and inspection requirements.
- b) Visually inspect hub for cracks, broken or missing tangs, or damage. Refer to OEM/SMP for condemning and inspection requirements.
- c) If applicable, visually inspect disc mounting hardware (such as bolts, nuts, washers and retaining mechanisms) for proper attachment and broken or missing components. Refer to OEM/SMP for condemning and inspection requirements.

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- d) Measure the disc wear locations. Refer to OEM/SMP for condemning and inspection requirements. Discs with wear indicators can be visually inspected to ensure they do not exceed allowable limits.
- e) Visually inspect the disc for any fin obstructions or damage, and remove any and all foreign material from cooling fins. Refer to OEM/SMP for condemning and inspection requirements.

Related APTA standards

APTA PR-IM-S-009-98, “Passenger Car Tread Brake Shoe and Disc Brake Pad Periodic Inspection and Maintenance”

APTA PR-IM-S-011-98, Rev. 2, “Passenger Car Tread Brake Unit and Brake Cylinder Periodic Inspection and Maintenance”

APTA PR-IM-S-013-99, Rev. 1, “Passenger Car Periodic Inspection and Maintenance” (previously numbered as APTA SS-I&M-013-99 Rev. 1)

References

Code of Federal Regulations:

49 CFR, Part 229, “Railroad Locomotive Safety Standards”

49 CFR, Part 238, “Passenger Equipment Safety Standards”.

This standard shall also be used in conjunction with the following publications. When the following standards are superseded by an approved revision, the revision shall apply.

- Original equipment manufacturer (OEM) instructions
- Standard maintenance procedure (SMP) (see Definitions)

Definitions

original equipment manufacturer (OEM): The technical documentation produced by the organization that built or manufactured a specific piece of passenger rail equipment describing maintenance procedures and frequencies for that piece of equipment.

periodic maintenance: The performance of selected inspection and maintenance actions on systems or sub-systems. Regulatory agencies or the operating authority may set the frequency of these actions. The frequency may be expressed as a function of time (i.e., days, weeks or months) or of utilization (mileage, cycles, etc.). The scope of these inspection and maintenance actions must be in full compliance with all applicable federal, state and local regulations.

standard maintenance procedure (SMP): The internal railroad document giving specific instruction on how to perform maintenance on a specific system or compound.

Abbreviations and acronyms

APTA	American Public Transportation Association
CFR	Code of Federal Regulations
NATSA	North American Transportation Services Association
OEM	original equipment manufacturer
PRESS	Passenger Rail Equipment Safety Standards
SMP	standard maintenance procedure

Summary of document changes

- Document formatted to the new APTA standard format.
- Sections have been moved and renumbered.
- Scope and summary moved to the front page.
- Sections of definitions, abbreviations and acronyms moved to the rear of the document.
- Two new sections added: “Summary of document changes” and “Document history.”

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- Some global changes to section headings and numberings resulted when sections dealing with references and acronyms were moved to the end of the document, along with other cosmetic changes, such as capitalization, punctuation, spelling, grammar and general flow of text.
- Addition of blue flag protection to note at the beginning of section 3.
- Addition of wear indicator information to Section 3.1.
- Addition of removal of foreign material to Section 3.1 e).
- Addition of APTA-PR-IM-S-009-98, “Passenger Car Tread Brake Shoe and Disc Brake Pad Periodic Inspection and Maintenance” and APTA PR-IM-S-011-98, Rev. 2, “Passenger Car Tread Brake Unit and Brake Cylinder Periodic Inspection and Maintenance” to “Related APTA standards.”
- Addition of reference to 49 CFR, Part 238.
- References updated to reflect current (as of May 1st, 2017) information.
- Addition of APTA to “Abbreviations and acronyms.”
- Participants list updated.

Document history

Document Version	Working Group Vote	Public Comment/ Technical Oversight	CEO Approval	Policy & Planning Approval	Publish Date
First published	Oct. 14, 1998	—	—	March 17, 1999	March 1999
First revision					Feb. 13, 2004
Second revision	April 28, 2017	May 1, 2017	July 19, 2017	Aug. 1, 2017	Aug. 9, 2017