



APTA STANDARDS DEVELOPMENT PROGRAM

## STANDARD

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PRESS Inspection & Maintenance  
Working Group

# Passenger Car Handbrake Periodic Inspection and Maintenance

**Abstract:** This standard establishes the basic procedure for handbrake inspection and maintenance. The standard covers vertical wheel, horizontal wheel, and lever type handbrakes.

**Keywords:** handbrakes, handbrake periodic inspection and maintenance

**Summary:** Passenger car handbrakes provide safety and security in the storage/layover of passenger equipment at terminals, maintenance facilities, passenger stations (where applicable), outlying layover/storage points, and during emergency situations. These systems (if applicable) are essential in the safe operation of passenger cars. This standard establishes a procedure for handbrake inspection and maintenance. It covers vertical wheel, horizontal wheel and lever type handbrakes.

**Scope and purpose:** This standard for handbrake inspection, lubrication and maintenance applies to all passenger cars. It is intended to be applied by individual railroads for cyclic inspection, lubrication and maintenance of passenger car handbrakes. It is intended for railroads in order to apply basic procedures for periodic inspection, servicing, lubrication, testing and repair of handbrakes for passenger cars with emphasis on maintenance of safety-critical systems.

“This document represents a common viewpoint of those parties concerned with its provisions, namely transit operating/planning agencies, manufacturers, consultants, engineers and general interest groups. APTA standards are mandatory to the extent incorporated by an applicable statute or regulation. In some cases, federal and/or state regulations govern portions of a transit system’s operations. In cases where this is a conflict or contradiction between an applicable law or regulation and this document, consult with a legal advisor to determine which document takes precedence.”

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## Introduction

*This introduction is not part of APTA PR-IM-S-009-98, Rev. 3, "Passenger Car Handbrake Periodic Inspection and Maintenance."*

This standard describes the basic inspection and maintenance functions for handbrakes on passenger cars.  
This standard applies to all:

1. Railroads that operate intercity or commuter passenger train service on the general railroad system of transportation; and
2. Railroads that provide commuter or other short-haul rail passenger train service in a metropolitan or suburban area, including public authorities operating passenger train service.

This standard does not apply to:

1. Rapid transit operations in an urban area that are not connected to the general railroad system of transportation;
2. Tourist, scenic, historic or excursion operations, whether on or off the general railroad system of transportation;
3. Operation of private cars, including business/office cars and circus trains; or
4. Railroads that operate only on track inside an installation that is not part of the general railroad system of transportation.

# Passenger Car Handbrake Periodic Inspection and Maintenance

## 1. Materials

The lubricating materials used on passenger car handbrakes shall meet or exceed the latest specifications of the Association of American Railroads (AAR) and/or the original equipment manufacturer (OEM) instructions.

## 2. Handbrake maintenance and lubrication points

### 2.1 Lubrication points

For all types of handbrakes, refer to the OEM maintenance procedures for lubrication instructions specific to the railroad's application.

### 2.2 Tools/materials

Standard tools carried by maintenance personnel are sufficient for this maintenance task.

### 2.3 Safety/personal protective equipment

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

### 2.4 Training requirement

Maintenance personnel shall be adequately trained to perform all aspects of handbrake maintenance.

## 3. Inspection and testing

### 3.1 Handbrakes

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

The inspection and testing of handbrakes consists of the following steps:

- a) Visually inspect the handbrake for worn pins, pawls and gears. Inspect to confirm proper hand clearance.
- b) Fully apply the handbrake.
- c) Release the pneumatic brake.
- d) Visually inspect to ensure that all shoes/pads applied by the handbrake are firmly set against the wheel/disc.

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**NOTE:** This is achieved by tapping the wheel/disc with a hammer and listening for a dull sound rather than ringing.

- e) With the handbrake in the applied position, inspect to ensure that all associated linkage and cables do not bind or foul. If the rail vehicle is equipped with a handbrake-applied indicator, then ensure that the indicator displays that the handbrakes are applied.
- f) Fully release the handbrake while inspecting the mechanism for proper operation. If the rail vehicle is equipped with a handbrake-applied indicator, ensure that the indicator displays that the handbrakes are released.
- g) Inspect to ensure that all shoes/pads applied by the handbrake are fully released.
- h) Reapply the pneumatic brakes.
- i) With the handbrake released, inspect to ensure that associated linkage and cables do not bind or foul and do not have any damage or excessive wear. Linkage includes all chains, levers, clevises, pulleys, pins, cotter pins, bushings and rods.
- j) Using an appropriate marking device, apply the test date to the handbrake apparatus in a conspicuous place approved by the railroad.

### **3.2 Spring-applied parking brake**

- a) Inspect spring-applied parking brake equipment for damage, leaks or loose components. Correct any damage or leaks found, and secure loose components. Refer to OEM.
- b) Apply and release the spring applied parking brake equipment; verify proper operation, and inspect for interference and damage.
- c) Lubricate the spring-applied parking brake equipment as required by OEM/SMP instructions.
- d) Ensure that the spring-applied parking brake is set. Verify manual quick-release mechanism and proper reset of spring-applied parking brake.

## References

In addition to OEM instructions, this standard shall be used with the following publication. If the publication is superseded by an approved revision, the revision shall apply.

Association of American Railroad Technical Services Division, Mechanical Section, Manual of Standards and Recommended Practices, Rule 13–Handbrakes, Geared and Non-Geared, and Rule 8–Inspection and Lubrication of Handbrakes.

## Definitions

**original equipment manufacturer (OEM) instructions:** 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 subsystems. Regulatory agencies or the operating authority may set the frequency of these actions. The frequency may be expressed as a function of time (e.g., days, weeks, or months) or of utilization (e.g., mileage or cycles). The scope of these inspection and maintenance actions must be in full compliance with all applicable federal, state, and local regulations.

## Abbreviations and acronyms

<b>AAR</b>	Association of American Railroads
<b>NATSA</b>	North American Transportation Services Association
<b>OEM</b>	original equipment manufacturer
<b>PRESS</b>	Passenger Rail Equipment Safety Standards
<b>SMP</b>	standard maintenance procedure

## Summary of document changes

- Removal of all figures and tables.
- Addition of the reference for OEM compliance in Section 2.1.
- Addition of blue flag protection to note at the beginning of Section 3.
- Addition of handbrake indicator test for cars so equipped to Sections 3 d) and e).
- Slight wording changes to periodic maintenance definition to bring it in line with the standard PRESS definition for periodic maintenance.
- Removal of the word “instructions” from OEM under “Abbreviations and acronyms.”
- Addition of NATSA to “Abbreviations and acronyms.”
- Removal of the contents of the section formerly known as Annex B (informative) “Figures and charts for lubrication points,” which contained subsections “B.1 Vertical wheel handbrakes,” “B.2 Lever type handbrakes,” “B.3 Horizontal wheel type handbrakes” and “B.4 Arrow and comet equipment.”
- References updated to reflect current (as of May 1, 2019) information.
- Participants list updated.
- Added 3.1 b) and h).
- Added Spring Applied Parking Brakes (Section 3.2).

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**Document history**

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