

ICS 53.060
CCS J 83



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 10827.5-2023

Replacing GB/T 10827.5-2013

**Industrial trucks - Safety requirements and verification - Part 5:
Pedestrian-propelled trucks**

工业车辆 安全要求和验证 第5部分：步行式车辆

(English Translation)

Issued on: November 27, 2023

Implemented on: June 1, 2024

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

- 1 Scope
- 2 Normative reference documents
- 3 Terms and definitions
- 4 Security requirements and/or protective measures
 - 4.1 General
 - 4.2 Operation and steering
 - 4.3 Load lifting control device
 - 4.4 Lifting system
 - 4.5 Parking brake
 - 4.6 Stability
 - 4.7 Lateral stabilizer
 - 4.8 Protection against crushing, shearing and pinching
 - 4.9 Sides and angles
 - 4.10 Protective devices
 - 4.11 Additional requirements for battery-powered lifting vehicles

1 Scope

This document specifies the safety requirements and verification methods for the following types of pedestrian vehicles (hereinafter referred to as "vehicles").

Equipped with load handling devices such as forks and platforms for common industrial applications, or integral attachments for special applications.

---Insert leg forklift;

---Pallet stacker;

--- Manual or electric (battery-powered) lifting industrial vehicles with a lifting capacity of no more than 1,000kg;

---Low-lift pallet trucks with a lifting height of no more than 300mm and a rated lifting capacity of no more than 2300kg;

---Manual or electric (battery-powered) lifting with a lifting height not greater than 1000mm or a rated lifting capacity not greater than 1000kg of walking scissor pallet trucks.

This document applies to other vehicles that are manually or electrically lifted and can be

operated on solid, smooth, level and paved roads.

NOTE: The on-board battery charger is considered part of the vehicle. Removable attachments mounted on the carrier or forks are not part of the vehicle.

This document covers all important matters listed in Appendix C when the relevant machinery is used according to the manufacturer's intended use and misused under foreseeable conditions.

Major hazards, hazardous situations and hazardous events.

This document does not include additional requirements where hazards may occur in the following situations.

- a) Climatic conditions;
- b) Operate under harsh conditions (such as extreme environmental conditions such as freezing, high temperature, corrosion, strong magnetic field);
- c) Electromagnetic compatibility (emission/immunity);
- d) Handling goods that may cause hazardous conditions (such as molten metal, acids/alkalis, radioactive materials, especially fragile items);
- e) Handle suspended loads that can swing freely;
- f) Use on public roads;
- g) Direct contact with food;
- h) Operate on slopes or uneven hard roads;
- i) Lifting device using belt;
- j) Personnel lifting;
- k) The overturning moment of the vehicle is greater than 40000N·m;
- l) Scissor-type lifting vehicles driven by external power (electric, pneumatic);
- m) Tank truck (universal container);
- n) Vehicles towed by motor vehicles;
- o) Vehicles used for special purposes (such as trolleys for hospitals or restaurants);
- p) Vehicles with winches;
- q) Mobile lifting platform.

Noise, vibration and vision are not considered major hazards and are not covered by this document.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

ISO 2328 Fork-lift trucks-Hook-on type fork arms and fork arm carriages-Mounting dimensions) Note. GB/T 5184-2016 Forklift hook-type forks and fork frame installation dimensions (ISO 2328:2011, IDT) ISO 3287 Symbols for driver controls and other display devices on powered industrial vehicles (Powered industrial trucks-Symbols for operator controls and other displays) Note. GB/T 7593-2008 Symbols for driver control devices and other display devices of motorized industrial vehicles (ISO 3287:1999, IDT) ISO 5053 (all parts) Industrial trucks-Vocabulary Note. GB/T 6104.1-2018 Industrial vehicle terminology and classification Part 1: Industrial vehicle types (ISO 5053-1:2015, IDT) GB/T 6104.2-2022 Industrial vehicle terminology Part 2: Forks and attachments (ISO 5053-2:2019, IDT) ISO 12100 Safety of machinery-General risk assessment and risk reduction (Safety of machinery-General principles for design-Risk assessment and risk reduction) Note. GB/T 15706-2012 General principles for mechanical safety design risk assessment and risk reduction (ISO 12100:2010, IDT) ISO 13857 Safety of machinery Safety distance to prevent upper and lower limbs from touching the danger zone (Safety of machinery-Safety distance to prevent hazard zones being reached by upper and lower limbs) Note. GB/T 23821-2022 Mechanical safety distance to prevent upper and lower limbs from touching dangerous areas (ISO 13857:2019, IDT) ISO 15870 General principles for safety signs and hazard pictures on powered industrial vehicles (Powered industrial trucks-Safety signs and hazard pictorials-General principles) Note. GB/T 26560-2011 General principles for safety signs and hazard illustrations of motorized industrial vehicles (ISO 15870:2000, IDT) ISO 20898 Industrial Trucks-Electrical requirements Note. GB/T 27544-2011 Industrial vehicle electrical requirements (ISO 20898:2008, IDT)

3 Terms and definitions

The following terms and definitions as defined in ISO 5053 (all parts) and ISO 12100 apply to this document.

4.1 General

Vehicles shall comply with the safety requirements and/or protective measures of this chapter. In addition, for non-significant hazards not covered in this document, ISO 12100 for vehicle design.

4.2.1 Push/pull handle

Vertical or horizontal push/pull rods and/or a tiller should be provided for the operator to push, pull and steer the vehicle and lift the load when necessary.

load. The force should be measured and the measured value should be within the range specified in Appendix A.

4.2.2 Tiller

The tiller should be equipped with a closed-loop handle or other handle that protects the outside of the operator's hand from injury.

The cross-section of the grip is a closed ring or similar structure, and the outer diameter is 25mm~35mm. The grip width of one hand should not be less than 120mm.

4.2.3 Push/pull lever

The height from the ground to the center of the push/pull rod should be between 1100mm~1300mm, see Figure 8~Figure 11.

The vertical length of the vertical push/pull rod should not be less than 300mm, see Figure 9.

There should be a minimum distance of 50mm between the lateral outside of the push/pull rod and the lateral outer contour of the vehicle.

The cross section of the grip should be a closed ring or similar structure between two concentric circles with an inner diameter of 25mm and an outer diameter of 35mm.

4.3.1 General

The hoist and lower controls can be mounted on the tiller or as a stand-alone unit. Controls should be designed so that accidental operation the risk is minimized, and when the down gear is released, it should automatically return to the neutral position and stop moving.

4.3.2 The load control device is installed on the tiller If the lift control device is installed on the tiller, it should be located so that the operator can operate it without releasing the tiller grip.

The lift and neutral position should remain in the selected position. The lowering position should automatically return to the neutral position after the control lever is released, and the fork or platform should Stop falling.

The activation force of the control lever should not exceed 150N.

When the movement of the control rod is within the parallel plane of the tiller plane, the control rod should be pushed toward the hinge point of the tiller to achieve lifting control and