

Translated English of Chinese Standard: GB/T36507-2018

www.ChineseStandard.net → Buy True-PDF → Auto-delivery.

Sales@ChineseStandard.net

GB

NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA

ICS 53.060
J 83

GB/T 36507-2018

Industrial Trucks - Safety Rules for the Application, Operation and Maintenance

工业车辆 使用、操作与维护安全规范

Issued on: July 13, 2018

Implemented on: February 1, 2019

Issued by: State Administration for Market Regulation;

**Standardization Administration Committee of the People's
Republic of China.**

Table of Contents

Foreword.....	3
1 Scope.....	4
2 Normative References	5
3 Terms and Definitions	5
4 Basic Requirements.....	5
5 Additional Requirements of Industrial Trucks	16
6 Attachment Requirements of Industrial Trucks.....	21
7 Carriage, Hauling, Assembling and Storage of Industrial Trucks	22
8 Maintenance Requirements	24
Appendix A (Informative) Prone to Occur Accidents.....	26
A.1 Traffic Collision	26
A.2 Sprain Accident.....	26
A.3 Squeezing and Shearing Accident.....	26
A.4 Rolling-over of Industrial Trucks	26

Industrial Trucks - Safety Rules for the Application, Operation and Maintenance

1 Scope

This Standard specifies safety requirements for industrial trucks during the application, operation, maintenance, handling, hauling, assembly and storage that are defined in GB/T 6104.1.

This Standard is applicable to the following types of automobile:

- a) Counterbalanced forklift truck;
- b) Reach forklift truck (equipped with flexible door rack or fork rack);
- c) Straddle forklift truck;
- d) Pallet stacking truck;
- e) Platform stacker;
- f) Double-layered stacker;
- g) Side forklift truck (single-side);
- h) Side stacker forklift truck (two-side and three-side);
- i) Order picker;
- j) Bi-directional and multi-directional operating forklift;
- k) Balanced heavy container stacker;
- l) Articulated counterbalanced forklift truck;
- m) Telescopic forklift truck;
- n) Pallet truck;
- o) Platform truck;
- p) Tractor whose traction is not more than 20,000 N;
- q) Cargo and personnel carrier;

4.2.2 Operators shall understand their rights and obligations, and become familiar with all the safety instructions, including instructions, etc.

4.2.3 Operators shall pay attention to the working environment, including other personnel that are nearby and fixed or movable objects.

4.2.4 If the floor of the operating position is 300 mm higher than the ground, operators shall adopt the mode of three-point support when getting on and off the truck, for example, they can maintain one hand and two feet or two hands and one foot that are simultaneously contacting the industrial trucks.

4.2.5 While driving industrial trucks, operators shall wear protective suits and shoes that are corresponding with the working conditions. In hazard zones where objects might fall, operators shall wear a safety helmet.

4.2.6 Operators shall be responsible for industrial trucks at work and prohibit unauthorized personnel from operating the industrial trucks. When they leave the industrial trucks, they shall prevent the industrial trucks from being operated by unauthorized personnel (except from walkable industrial trucks).

4.2.7 Self-propelled industrial trucks shall not carry passengers, unless there are facilities that could carry passengers on the industrial trucks. Under this circumstance, the number of passengers shall not exceed the allowable number of passengers.

4.2.8 Operators shall warn all the nearby personnel about the possible dangers. Before starting an industrial truck, operators shall guarantee that nobody stay in the hazard zone. When the industrial trucks are in service, operators shall send out a warning signal in time once they find out possible dangers to the personnel. If personnel still refuse to leave the hazard zone after receiving the warning, operators shall immediately stop the industrial truck.

4.2.9 When sitting-driving industrial trucks are running without any load, operators shall prevent the industrial trucks from rolling over. When the industrial trucks are about to roll over, operators shall tightly grip the steering wheel with both hands and lean towards the opposite direction of the rolling-over. Under this circumstance, operators shall not jump out of the industrial trucks.

4.3 Working Conditions

4.3.1 Pavement

4.3.1.1 Workplaces and pavements where industrial trucks are operated shall comply with the stipulation provided by the manufacturer.

4.3.1.2 Pavements in workplaces shall be sufficiently firm, flat and accessible. In terms of gutters, railroad crossings, and similar pavements, springboard or transition board shall be paved if necessary, so that the industrial trucks can pass by with as few bumps

4.5.1.8 If visual aids (such as rearview mirror and video monitoring device, etc.) are needed to broaden the view, operators shall grasp skills of operating the devices beforehand.

4.5.1.9 Operators shall not start or operate any functions or attachments of industrial trucks in any position other than the normal operating position. Operators shall not start sitting-driving or standing-driving industrial trucks on the ground, except from industrial trucks that are equipped with special devices.

4.5.1.10 Except when it is requested by the operation condition, the steering wheel shall not be in an extreme position when the industrial trucks are about to start.

4.5.1.11 Operators shall stably initiate, brake, swerve or back industrial trucks. In dangerous sections or sections with poor vision, operators shall avoid emergency braking, steep turn and overtaking.

4.5.1.12 When industrial trucks are in service, operators and passengers (if allowable) shall not stretch their arms or legs out of the trucks; or lean out of the external profile of the trucks; or stride from one truck to the other truck or other objects.

4.5.1.13 When industrial trucks are in service, the load or load carrying devices shall maintain at the lowest service height (apart from off-road forklift, whose lifting height is generally not more than 300 mm) that is sufficient to pass road surface and partial obstacles. If possible, lean the load backwards and retract the door rack/fork (applicable to reach forklift truck). Apart from stacking operation, the load shall not be lifted. This stipulation is not applicable to industrial trucks that can be operated with lifting load.

4.5.1.14 When industrial trucks are in service, they shall not be operated jointly (operation and loading operation are conducted simultaneously), apart from industrial trucks that are allowed to do so in design.

4.5.1.15 When industrial trucks manifest malfunction during the operation, for example, a failure with the steering gear or the brake, operators shall stop the trucks as quickly as possible.

4.5.1.16 When industrial trucks are in service, operators shall avoid the danger of rolling over. Please refer to Appendix A for reasons of the rolling-over.

4.5.2 Operation on ramps

4.5.2.1 Industrial trucks are merely allowed to be operated on ramps that are accessible in accordance with the stipulation of technical conditions of the industrial trucks.

4.5.2.2 When the value of slope exceeds 10%, if possible, when industrial trucks with load lifting and platform stacker (apart from side forklift truck, off-road forklift, straddle

requirement and only stably stacked and safe loadings can be carried.

4.6.1.3 Generally speaking, tray (unit cargo) shall be transported individually. Only when it can comply with industrial trucks' technical conditions and when the mode of transportation is approved by the manufacturer can multiple unit cargos be transported simultaneously.

4.6.1.4 If small-dimension loadings have the potential of falling from the middle of beams of the overhead guard, proper load-backrest shall be used, or additional fences shall be added on the overhead guard.

4.6.1.5 If the overhead guard that is equipped on industrial trucks is detachable, after the overhead guard is detached, the lifting height of the industrial trucks shall not be more than 1,800 mm.

4.6.1.6 During the operation in a narrow aisle, merely trays whose stacking does not exceed the maximum stipulated dimension are allowed. Damaged auxiliary loading devices or improperly stacked unit cargo shall not be stacked. Steadily place the loadings onto the load carrying device and guarantee that it will not move or fall. During the storage of unit cargo, the unit cargo shall not come out and occupy the narrow aisle.

4.6.1.7 After the load carrying device is lifted, start industrial trucks. No matter whether the industrial trucks are empty-loaded or fully-loaded, slowly and steadily control the steering gear and the brake.

4.6.1.8 After the load carrying device is lifted, it can only be leaning forward in the front or the upward side of the stockpile, unless it is otherwise stipulated by the industrial trucks.

4.6.1.9 Only after receiving the approval from the manufacturer of industrial trucks can suspended loadings or high-temperature melted loadings be transported.

4.6.1.10 During loading and transportation of loadings, try to make the centroid of the loadings on the longitudinal center plane of the industrial trucks.

4.6.1.11 Other parts of the fork and industrial trucks (except when it is approved by design), or loaded cargo shall not be utilized to push, top or pull other cargos.

4.6.2 Loading and unloading

4.6.2.1 In order to guarantee that loadings are safely supported, operators shall open the fork to a sufficient width and insert the fork to the underneath side of the loadings (objects other than the loadings shall not be touched by the point of the fork) as deeply as possible, then, lift the fork to fetch the loadings.

4.6.2.2 When carrying a unit cargo with a high centroid or multiple stacked unit cargos,

- a) Complete stop the industrial trucks;
- b) Place all the controlling devices in the neutral position;
- c) Impose parking brake;
- d) Descend the load carrying device to the lowest position, except when the lifting platform has a support frame;
- e) Shut down the driving device;
- f) Pull out the initiating key or card. Unless when it is specifically instructed, the initiating key or card shall not be handed over to others.

4.7.2 Under special circumstances, safety precautions shall be adopted on industrial trucks, for example, the application of wedge.

4.7.3 Industrial trucks shall not be parked on ramps.

4.7.4 Fuel gas-driven industrial trucks shall not be parked near the source of heat, naked flame or similar combustion source; fuel gas-driven industrial trucks shall not approach open pit, underground channel, lift shaft or other similar areas. When fuel gas-driven industrial trucks need to be parked overnight, the container's air supply valve shall be closed.

4.7.5 In places where industrial trucks are parked, it shall be guaranteed that fire escape, the channel to stairs and firefighting equipment maintain unblocked.

5 Additional Requirements of Industrial Trucks

5.1 Power-driven Industrial Trucks

5.1.1 Charging station shall be established within appointed areas. Charging station shall be equipped with equipment that rinses and neutralizes overflowed electrolyte; proper ventilation equipment that dispels gas exhausted from storage battery; firefighting equipment; measures that prevent charging devices from being damaged by industrial trucks. Meanwhile, measures shall be adopted to prevent naked flame, sparkle or electric arc. Smoking is prohibited in the charging area, and warning signs shall be set up.

5.1.2 The charging, maintenance and replacement of storage battery shall be conducted by trained and authorized personnel in accordance with the instructions of storage battery, charger and manufacturers of industrial trucks. Relevant stipulations in the operation specification of storage battery and the operation instruction of charger shall be abided by.

5.1.3 Smoking and the usage of naked flame are prohibited nearby the storage battery.

areas and closed space. During the refilling of the fuel container, scorching objects shall not be used; smoking and the usage of naked flame are prohibited.

5.2.9 In closed space where internal combustion-driven industrial trucks are operated, sufficient ventilation shall be guaranteed. Only when the indoor air quality complies with the stipulation of GB/T 18883 can industrial trucks be operated in completely or partially closed space (for example, trailer, container, cold storage, refrigerator car, room or building). In terms of diesel-driven industrial trucks, soot filter shall be installed if necessary. Please pay attention to special stipulations in the operation of fuel-driven industrial trucks.

5.3 Tractors and Industrial Trucks Equipped with Trailers

5.3.1 Tractors or trailers are merely allowed to be utilized when it is stipulated by the manufacturer of industrial trucks and when corresponding trailer hooks are equipped.

5.3.2 Please refer to the instruction or inquire the manufacturer about technical parameters that are needed to calculate the allowable traction loadings of industrial trucks. The stipulated or calculated maximum traction loadings for trailers with or without the brake shall not be exceeded. It shall be guaranteed that industrial trucks can be safely operated and reliably braked during the traction process.

5.3.3 After the trailer hooks are connected, operators shall check the following items before starting the industrial trucks:

- a) Whether there are safety precautions that prevent trailer hooks from becoming disconnected;
- b) Whether the brake and illumination are properly connected;
- c) Whether the brake regulator is adjusted in accordance with the practical traction loadings.

5.3.4 Any accidental motion of the parked trailer shall be prevented, for example, through the adoption of wedge.

5.3.5 If the hooking operation is conducted externally of industrial trucks, proper devices shall be equipped for this. Moreover, operators shall not access the area between the industrial trucks and the trailers. If auxiliary force is adopted for hook connection, operators shall guarantee that the hooking will not cause any dangers to the personnel during the connection.

5.3.6 Pay attention to the dimension of the trailers and the loadings while driving through narrow sections. If an industrial truck is hauling several trailers, make sure there is a sufficient gap between the industrial truck and fixed objects in the ambient environment while steering and operating on curved roads.

Appendix A

(Informative)

Prone to Occur Accidents

A.1 Traffic Collision

If the view is blocked by loadings, traffic collisions will easily occur. Therefore, operators shall be especially cautious during the operation of industrial trucks and stop the trucks immediately once there is any doubt. If loadings (such as several trays that are in parallel arrangement and superimposed arrangement) that would block the view need to be transported regularly, view auxiliary tools that have already been tested shall be adopted, for example, video monitoring device. Even in brief backing-up, operators shall be able to always look at the operating direction.

A.2 Sprain Accident

When getting on and off the industrial trucks, severe ankle injury might occur. Therefore, under general circumstance, operators shall always face to the trucks while getting on and off the trucks.

A.3 Squeezing and Shearing Accident

If operators are negligent, they might confront with the risks of fingers, hands or arms being squeezed or sheared by door rack. Therefore, they shall avoid stretching their hands into the door rack. If somebody is approaching the door rack, they shall immediately stop operations like lifting and descending.

A.4 Rolling-over of Industrial Trucks

If industrial trucks are rolling over, operators often will suffer from severe injuries and even death. The main causes for rolling-over are as followings:

- a) Making a turn when the truck is unloaded;
- b) Making a sudden turn or emergency brake;
- c) Operating with lifted loadings or load carrying device;
- d) Operating with loadings that are tilting to one side;
- e) Turning around or slanting on the uphill and downhill;
- f) Place the loadings on the downhill side on the uphill and downhill;
- g) Operating with wide loadings;

This is an excerpt of the PDF (Some pages are marked off intentionally)

Full-copy PDF can be purchased from 1 of 2 websites:

1. <https://www.ChineseStandard.us>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Select your country (currency), for example: USA (USD); Germany (Euro).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Tax invoice can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with download links).

2. <https://www.ChineseStandard.net>

- SEARCH the standard ID, such as GB 4943.1-2022.
- Add to cart. Only accept USD (other currencies - <https://www.ChineseStandard.us>).
- Full-copy of PDF (text-editable, true-PDF) can be downloaded in 9 seconds.
- Receiving emails in 9 seconds (with PDFs attached, invoice and download links).

Translated by: Field Test Asia Pte. Ltd. (Incorporated & taxed in Singapore. Tax ID: 201302277C)

About Us (Goodwill, Policies, Fair Trading...): <https://www.chinesestandard.net/AboutUs.aspx>

Contact: Wayne Zheng, Sales@ChineseStandard.net

Linkin: <https://www.linkedin.com/in/waynezhengwenrui/>

----- The End -----