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

JB/T 10215-2020

**Vertical circulating mechanical parking system
(English Translation)**

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1 Scope

This standard specifies the terms and definitions, types, basic parameters, technical requirements, test methods, inspection rules, marking, packaging, transportation, storage of vertical circulating mechanical parking system.

This standard applies to the vertical circulating mechanical parking system (hereinafter referred to as equipment), which is defined in GB/T 26476.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

GB/T 700-2006 Carbon structural steels

GB/T 1228 High strength bolts with large hexagon head for steel structures

GB/T 1229 High strength large hexagon nuts for steel structures

GB/T 1230 High strength plain washers for steel structures

GB/T 1231 Specifications of high strength bolts with large hexagon head, large hexagon nuts, plain washers for steel structures

GB/T 3632 Sets of torshear type high strength bolt hexagon nut and plain washer for steel structures

GB/T 3811 Design rules for cranes

GB/T 4208 Degrees of protection provided by enclosure(IP code)

GB/T 4942.1 Degrees of protection provided by the integral design of rotating electrical machinery (IP code) - Classification

GB/T 8350 Conveyor chains, attachments and chain-wheels

GB/T 8923.1 Preparation of steel substrates before application of paints and mode:

a) Fork type;

- b) Chain-wheel type;
- c) Pin-gear type.

4.1.4 The equipment is divided into the following, based on structural types:

- a) Independent frame type;
- b) Building bearing type.

4.2.1 Group, size, quality of suitable parking vehicles

The group, size, quality of suitable parking vehicles shall meet the requirements of Table 2 in GB/T 26559-2011.

4.2.2 Maximum single vehicle enter/exit time

For equipment, which has a storage capacity of no more than 10 vehicles, the maximum time for a single vehicle to enter (exit) shall not be greater than 120 s. For equipment, which has a storage capacity of more than 10 vehicles, the maximum time for a single vehicle to enter (exit) shall not be greater than 180 s.

4.2.3 Number of floors of parking spaces

The number of floors of equipment parking spaces should not exceed 11.

4.3 Model representation method

The model is composed of equipment general code, category code, feature code, manufacturer specific code, etc. The method of expression is as follows:

5.1.3 The altitude shall not exceed 1000 m.

5.1.4 For equipment installed in the open air, when it is not fully enclosed, the wind pressure, during operation, shall not exceed 150 Pa (equivalent to class 6 wind).

5.1.5 There shall be no flammable, explosive, corrosive, insulation-damaging, conduction-impacting media in the use environment.

5.1.6 The power supply is a three-phase five-wire AC power supply, which has a voltage of 380 V and a frequency of 50 Hz. The voltage fluctuation of the power supply system, at the access point of the equipment feeder, shall not exceed $\pm 10\%$ of the rated voltage. The internal voltage drop of the equipment shall not exceed 5%.

Note: When the use environment conditions exceed the above range, the user and the manufacturer shall negotiate to resolve it.

5.2 Design and configuration requirements

5.2.1

The equipment design shall comply with the requirements of 5.2.2 in GB/T 17907-2010 and 5.6 of this standard.

5.2.2

The basic dimensions of the equipment shall comply with the provisions of 5.3 in GB/T 17907-2010.

5.2.3

The design of the metal structure shall meet the requirements of GB/T 3811.

5.2.4

When the equipment is installed inside OR connected to the main building, it shall consider the load-bearing condition of the building.

5.2.5 If the equipment adopts an independent frame structure, when the height is greater than 12 m, the design shall meet the requirements of GB 50017.

5.3.1 The rated speed of the vertical circulation mechanism of the equipment

shall conform to the design value; the allowable deviation is $\pm 8\%$.

5.3.2 During the operation of the equipment, the carrier board shall be kept level;

the lateral inclination angle shall not be greater than 3° ; the longitudinal inclination angle shall not be greater than 1° .

5.3.3 The parking accuracy of the carrier board, at the entrance and exit, shall not exceed 30 mm.

5.3.4 The horizontal distance, between the end of the parking surface of the

carrier board and the ground of the entrance and exit, shall not be greater than

40 mm; the vertical height difference shall not be greater than 50 mm.

5.3.5 When the equipment is subjected to rated load test, maximum unbalanced load test, overload operation test, continuous operation test, the mechanism shall operate normally, without rail gnawing or jamming, visible plastic deformation, abnormal noise. The limit device shall move normally; the stopping position is accurate; the components are not damaged; the joints are neither loose nor damaged.