

ICS 53.020.99

CCS J 80



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

GB/T 33082-2016

**Mechanical parking systems - Safety requirements for the
application and operation**

机械式停车设备 使用与操作安全要求

Issued on: October 13, 2016

Implemented on: May 1, 2017

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

Foreword...	3
1 Scope...	4
2 Normative references... 4 3Terms and definitions...	5
4 Safety management requirements...	5
5 Personnel requirements...	6
6 Safety requirements for the application and operation...	7
7 Emergency measures...	9

Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009. This Standard was proposed by the China Machinery Industry Federation of the People's Republic of China. This Standard shall be under the jurisdiction of National Technical Committee of Crane Standardization (SAC/TC 227). Main drafting organizations of this Standard. Leimeng Mechanical and Electrical Co., Ltd., Beijing Materials Handling Research Institute Co., Ltd. and China Hoisting & Conveying Equipment Quality Supervision and Inspection Center. Drafting organizations of this Standard. Beijing Aerospace Credition Sci-Tech Co., Ltd., Jiangsu Qiliang Parking Equipment Co., Ltd., Shandong Tianchen Intelligent Parking Equipment Co., Ltd., Shanghai Special Equipment Supervision and Inspection Technical Institute, Hangzhou Good Friend Precision Machinery Co., Ltd., Shenzhen CIMC-Tianda Airport Support Co., Ltd., Shenzhen Yee Fung Automation Technology Co., Ltd., Dayang Parking Co., Ltd., Anhui Honglu Steel Structure (Group) Co., Ltd., Shaanxi Longxiang Parking Equipment Group Co., Ltd., Jiangsu Parktec Parking Equipment Co., Ltd., Qingdao Maoyuan Metal Group Co., Ltd., Guangxi Construction Engineering Group Machinery Manufacturing Co., Ltd., Shanqi Heavy Machinery Co., Ltd., Zhejiang Zihua Parking Equipment Tech Co., Ltd., Shanghai HYTONE Parking Equipment Co., Ltd., Nanjing Special Equipment Safety Supervision and Inspection Institute, and Zhejiang Giant Holdings Co., Ltd. Main drafters of this Standard. Zhou Jie, Wu Guo Fa, Shi Xiaoyu, Ma Jingshan, Qian Huijun, Liu Jian, Gong Wen, Yao Weiping, Fu Rongfeng, Xu Weijun, Wang Zhiwu, Xu Mingjin, Feng Xiaolong, Ma Mingchu, Che Mingqun, Lin Yong, Xu Xinmin, Hong Kaijiang, Shen Jian, Ding Shuqing, Yu Tianming. Mechanical parking systems - Safety requirements for the application and operation

1 Scope

China's national standard for the safe use and operation of mechanical parking systems. It

specifies the safety management requirements, the personnel requirements, the safety requirements for application and operation, and the emergency measures for the mechanical parking systems defined in GB/T 26476, and it applies to the categories of system listed in its scope. A mechanical parking system is a machine that stacks cars: lifts, shuttles, turntables and pallets that move vehicles into and out of storage positions in a structure far smaller than a conventional car park would need. Chinese cities adopted them at scale because the arithmetic is unanswerable - a puzzle or tower system stores three to twenty times as many cars per square metre of land as a ramped garage - and the result is that a machine capable of moving a two-tonne mass several storeys is now operated daily by the general public. That is what makes this standard different from the design standards for the same equipment. The machinery may be sound and still be dangerous in use, because the hazards belong to the operation: a person walking into a bay while a pallet is moving, a car left out of position or with a door ajar, a vehicle larger or heavier than the system was built for, a power failure with someone's car half-way up a tower. So the document is written around the operator rather than the manufacturer. It requires a safety management system, sets requirements for the people who run the equipment, specifies how it may be used, and requires emergency measures for the situations the equipment cannot resolve by itself. Issued on 13 October 2016 and in force since 1 May 2017.

This Standard specifies the safety requirements for the application and operating of the mechanical parking systems as defined in GB/T 26476. This Standard applies to following categories of the mechanical parking systems as defined in GB/T 26559.

- a) Lift-sliding mechanical parking system;
- b) Mini mechanical parking system;
- c) Plane moving mechanical parking system;
- d) Aisle-stacking mechanical parking system;
- e) Vertical lifting mechanical parking system;
- f) Vertical circulating mechanical parking system;
- g) Level circulating mechanical parking system;
- h) Multi-layer circulating of mechanical parking system;
- i) Elevator for car.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB/T 26476 Mechanical parking system - Vocabulary

GB/T 26559 Mechanical parking system - Classification

GB/T 31052.11 Lifting appliances - Code of inspection of maintenance - Part 11.
Mechanical parking system

6.2.1 The size, quality and other precautions of the suitable car for parking shall be clearly marked at obvious position of the entrance-exit of the parking systems.

6.2.2 The cautions to be observed by the parking personnel shall be clearly marked; if necessary, they shall be verbally communicated to the parking personnel.

6.2.3 The parking systems shall ensure that the waiting areas in front of the garage flow smoothly.

6.2.4 No smoking or fire in the parking systems.

6.2.5 The parking systems shall immediately stop applying when a failure occurs.

6.2.6 When cleaning the parking systems, they shall not be operated.

6.2.7 Don't permit the personnel who are not involved in the management of the parking systems to enter the transfer area or working area.

6.2.8 The users shall inspect and maintain the parking systems according to the provisions of GB/T 31052.11.

6.2.9 The users shall not modify or remove the safety protection devices of the parking systems without permission.

6.2.10 When there are extreme weather conditions, such as earthquakes or storms, that are identified in the service instruction, the parking systems shall be temporarily stopped.