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

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**Test methods for fastening systems of high-speed railway - Part
5: Determination of electrical resistance
(English Translation)**

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Table of Contents

Foreword...	3
1 Scope...	4
2 Terms and definitions...	4
3 Basic management...	4
4 Preliminary management...	6
5 Use management...	9
6 Maintenance and repair management...	11
7 Upgrading, renewal, and scrapping management...	14
8 Technical training management...	15
9 File management...	15

1 Scope

This standard specifies the basic management, preliminary management, use management, maintenance and repair management, upgrading and renewal, personnel training, file management, and other management requirements of automated picking equipment (hereinafter referred to as equipment).

This standard applies to the management requirements for various types of automated picking equipment.

2 Terms and definitions

The following terms and definitions apply to this document.

2.1

automated picking equipment

An automatic system that can identify the items' ID (identity) attributes through the identification system and can classify, reorganize and transmit the items according to their identity attributes, which is mainly composed of a transmission and supply device, an identification system, a control system, a mechanical sorting mechanism, and an information processing system.

2.2

partition

It is used to accommodate the sorted items, and it can be a chute with a certain capacity or

a conveying mechanism.

2.3

supply device

In an automated picking and transmission system, it is the part before the sorting mechanism; it can identify the sorting information of the items (generally a manual auxiliary station is set to sort the items), and control the rhythm of the operation. In some high-speed sorting equipment, multiple supply devices automatically coordinate to ensure synchronization with the host, and send items to the corresponding position of the picking equipment.

3 Basic management

3.1

The organization that uses the automated picking equipment system shall set up an

--- Major accident. It causes the equipment to be out of use for one month or more, or the direct economic loss is greater than 50,000 yuan.

--- Larger accident. It causes the equipment to be out of use for more than a week, within a month, or the direct economic loss is 5,000 yuan to 50,000 yuan.

--- General accident. It causes the equipment to be out of use for a week or less, or the direct economic loss is less than 5,000 yuan.

3.5

The handling of equipment accidents shall adhere to the principle of "three not to let go", that is, not let it go if the cause of the accident is not clearly analyzed, not let it go if the person who is responsible for the accident and the public are not educated, and not let it go if there is no preventive measure.

3.5.1

After the accident occurs, the site shall be strictly protected. The operator and the parties shall immediately report the time of the accident, the circumstances of the accident, the degree of damage to the equipment, etc. to the management department.

The site shall not be damaged until the situation is investigated clearly.

3.5.2

The equipment management department shall organize relevant personnel to conduct accident investigation and analysis, write out accident reports, endorse the handling opinions to the supervisor, and archive the files.

3.5.3

After the cause of the accident is identified, the equipment shall be repaired in time to resume production as soon as possible.

4 Preliminary management

4.1

Before the automated picking equipment is officially put into operation, the purchase planning, purchase, installation and debugging, appraisal and acceptance of the equipment shall be taken as an important part of management.

4.2

The purchase plan shall be prepared by the user department in conjunction with the equipment management department. If necessary, the supplier of the automated picking equipment shall be invited to participate in order to better integrate the system.

4.2.1

The planning shall at least include the logistics technological process, site environment, type of automated picking equipment, system composition, as well as main technical parameters, budgetary funds, and performance-price ratio, etc.

4.2.2

The following factors shall be considered when preparing the plan.

- According to the overall business needs of the enterprise, the technological process design shall be carried out after technical and economic analysis, and the workshop shall be designed according to the technological process.
- The sorting efficiency of the corresponding picking equipment, the number of seats for supplying pieces, and the number of sorting partitions shall be selected according to the needs of the technological process, the total amount of sorting business, the time requirements of the operation, and the number of pieces processed per unit time.
- The type of sorting mechanism shall be selected according to the site environment, and the size range, quality, brittleness, packaging method, and the packaging standardization degree of the items to be sorted.
- The scalability, easy maintenance, operation simplicity, and error correction ability of the picking equipment system.
- Practicality. Whether the selected picking equipment conforms to the technological process of logistics, and whether the technological process is suitable for the items to be sorted.
- Economy. The economic evaluation of the selected automated picking equipment shall

reach satisfactory economic and technical indicators.

--- Reliability. The extent to which the sorting equipment system operates without faults and sorting errors.

--- Environmental protection and energy saving.

4.3

The purchase of automated picking equipment shall be subject to bidding and demonstration according to the approved planning and budgetary funds.

4.4

Installation, debugging, and acceptance.

4.4.1 The management personnel, and maintenance and repair personnel of the

automated picking equipment shall participate in the installation, debugging, and acceptance of the equipment, and shall master the equipment maintenance and repair methods.

4.4.2 The installation of the automated picking equipment system shall comply with the requirements of working drawings, assembly drawings, and technical instructions.

4.4.3 Equipment debugging shall be carried out in accordance with the technical standards and agreement requirements provided by the supplier.

4.4.4 The main technical performance of the automated picking equipment after

installation and debugging shall meet the specified requirements.

4.4.4.1 The technical indicators such as sorting efficiency, sorting error rate, and

running speed shall meet the requirements stipulated in the contract.

--- The wiring terminals of field actuators and devices shall be protected and shall not be exposed, and all joints shall be crimped firmly. Detection devices and similar devices shall be arranged neatly, and the optical axis of the light-emitting device and the receiving device shall be aligned. The alarm, early warning, and prompting devices shall work reliably.

--- There shall be overheating, overcurrent, short circuit, and phase loss protection devices for power supply equipment; overload protection devices for linear motors and various strong current parts, and electric drive overcurrent protection shall work reliably.

--- The system status detection function shall be reliable, the monitoring information shall be displayed for hardware detection, and faults shall be alarmed.

4.4.4.6 The main performance requirements of the information system.