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GB/T 16977-2019 / ISO 9787:2013

Replacing GB/T 16977-2005

Robots and robotic devices -
Coordinate systems and motion nomenclatures

机器人与机器人装备 坐标系和运动命名原则

(ISO 9787:2013, IDT)

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Table of Contents

Foreword	3
Introduction.....	4
1 Scope	5
2 Normative references	5
3 Terms and definitions	5
4 General rules for coordinate systems and motion nomenclature	7
4.1 Right-hand coordinate systems.....	7
4.2 Translations	8
4.3 Rotations	8
4.4 Nomenclature for manipulator axes	9
5 Coordinate systems.....	9
5.1 World coordinate system, $O_0 - X_0 - Y_0 - Z_0$	9
5.2 Base coordinate system, $O_1 - X_1 - Y_1 - Z_1$	9
5.3 Mechanical interface coordinate system, $O_m - X_m - Y_m - Z_m$	10
5.4 Tool coordinate system (TCS), $O_t - X_t - Y_t - Z_t$	11
5.5 Mobile platform coordinate system, $O_p - X_p - Y_p - Z_p$	12
5.6 Task coordinate system, $O_k - X_k - Y_k - Z_k$	13
5.7 Object coordinate system, $O_j - X_j - Y_j - Z_j$	14
5.8 Camera coordinate system, $O_c - X_c - Y_c - Z_c$	14
Annex A (Informative) Examples of applications for robots of different mechanical structures	15
Bibliography.....	18

Foreword

This Standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard replaces GB/T 16977-2005 "Industrial robots - Coordinate systems and motion nomenclatures". Compared with GB/T 16977-2005, the main technical changes of this Standard are as follows:

- The scope of application of the standard extends from industrial robots to robots;
- Clause 3 lists the terms and definitions involved;
- ADD the mobile platform coordinate system, task coordinate system, object coordinate system, and camera coordinate system related to the service robot.

This Standard, using translation method, is identical to ISO 9787:2013 "Robots and robotic devices - Coordinate systems and motion nomenclatures".

This Standard was proposed by China Machinery Industry Federation.

This Standard shall be under the jurisdiction of China National Technical Committee for Automation Systems and Integration Standardization (SAC/TC 159).

Drafting organizations of this Standard: Beijing Research Institute of Automation for Machinery Industry Co., Ltd., Li Hong Safety Equipment Engineering (Shanghai) Co., Ltd., Aubo (Jiangsu) Robots Co., Ltd., Ninebot (Tianjin) Technology Co., Ltd., Ecovacs Robotics Co., Ltd., Shanghai Jiao Tong University, Chongqing Luban Robot Technology Research Institute Co., Ltd.

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The previous editions of the standard replaced by this Standard were released as follows:

- GB/T 16977-2005.

Robots and robotic devices -

Coordinate systems and motion nomenclatures

1 Scope

This Standard defines and specifies robot coordinate systems. It also provides nomenclature, including notations, for the basic robot motions. It is intended to aid in robot alignment, testing, and programming.

This Standard applies to all robots and robotic devices as defined in GB/T 12643-2013.

2 Normative references

The following documents are indispensable for the application of this document. For the dated references, only the editions with the dates indicated are applicable to this document. For the undated references, the latest edition (including all the amendments) are applicable to this document.

GB/T 12643-2013 Robots and robotic devices - Vocabulary (ISO 8373:2012, IDT)

3 Terms and definitions

For the purposes of this document, the terms and definitions given in GB/T 12643-2013 and the following apply. For ease of use, some of the terms and definitions in GB/T 12643-2013 are repeated below.

3.1 Configuration

A set of displacement values for all joints that completely determines the shape of the robot at any time.

[GB/T 12643-2013, definition 3.5]

3.2 Base mounting surface

Connection surface between the robot and its supporting structure.

[GB/T 12643-2013, definition 3.9]

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