

INTERNATIONAL STANDARD

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Manipulating industrial robots — Performance criteria and related test methods

AMENDMENT 1: Guide for selection of performance criteria for typical applications

*Robots manipulateurs industriels — Critères de performance et méthodes d'essai
correspondantes*

*AMENDEMENT 1: Guide pour le choix des critères de performance pour des
applications typiques*



Reference number
ISO 9283 : 1990/Amd.1 : 1991 (E)

Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Amendment 1 to International Standard ISO 9283 was prepared by Technical Committee ISO/TC 184, *Industrial automation systems and integration*, Sub-Committee SC 2, *Robots for manufacturing environment*.

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Introduction

In the introduction to ISO 9283 : 1990 it is stated that the tests described may be applied in whole or in part, depending upon the robot type and requirements. The selection of tests is made by the users of ISO 9283 in accordance with their own specific requirements.

The aim of this amendment is to give guidance for the selection of essential robot tests for typical applications. Consequently the number of tests may be limited.

Table 1 on page 2 contains a list of some typical robot applications; the essential tests for the different applications have been marked with an "X".

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Table 1 — Guide for selection of performance criteria for typical applications

Criteria to be tested	Reference in ISO 9283	Applications									
		Spot welding	Handling/ loading/ unloading	Assembly		Inspection		Machining/ deburring/ polishing/ cutting	Spray-painting	Arc-welding	Adhesive/ sealing
		1)	1)	1)	2)	1)	2)	2)	2)	2)	2)
Unidirectional pose accuracy	7.2.1	X	X	X	X	X	X			X	
Unidirectional pose repeatability	7.2.2	X	X	X	X	X	X			X	
Multi-directional pose accuracy variation	7.2.3		X	X	X	X	X				
Distance accuracy	7.3.2	X ³⁾	X ³⁾	X ³⁾	X ³⁾	X ³⁾	X ³⁾				
Distance repeatability	7.3.3	X ³⁾	X ³⁾	X ³⁾	X ³⁾	X ³⁾	X ³⁾				
Pose stabilization time	7.4	X	X	X	X	X	X				
Pose overshoot	7.5	X	X	X	X	X	X			X	
Drift of pose characteristics	7.6	X	X	X	X	X	X			X	
Path accuracy	8.2				X		X	X	X	X	X
Path repeatability	8.3				X		X	X	X	X	X
Cornering deviations	8.4				X		X	X		X	X
Stabilization path length	8.4.2				X		X	X		X	X
Path velocity accuracy	8.5.2							X	X	X	X
Path velocity repeatability	8.5.3							X	X	X	X
Path velocity fluctuation	8.5.4							X	X	X	X
Minimum positioning time	9	X	X	X	X					X	
Static compliance	10	X	X	X	X			X			

1) Application where pose-to-pose control is normally used.

2) Application where continuous path control is normally used.

3) Only in case of explicit programming.