

STN	Geometrické špecifikácie výrobkov (GPS) Prístroje na meranie tvaru s rotačnou osou Konštrukcia a metrologické charakteristiky (ISO 5463: 2024)	STN EN ISO 5463 01 4414
------------	---	---

Geometrical product specifications (GPS) - Rotary axis form-measuring instruments - Design and metrological characteristics (ISO 5463:2024)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/24

Obsahuje: EN ISO 5463:2024, ISO 5463:2024

139518

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2024
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii v znení neskorších predpisov.

EUROPEAN STANDARD

EN ISO 5463

NORME EUROPÉENNE

EUROPÄISCHE NORM

September 2024

ICS 17.040.30; 17.040.40

English Version

Geometrical product specifications (GPS) - Rotary axis form-measuring instruments - Design and metrological characteristics (ISO 5463:2024)

Spécification géométrique des produits (GPS) -
Instruments de mesure de forme à axe rotatif -
Caractéristiques de conception et caractéristiques
métrologiques (ISO 5463:2024)

Geometrische Produktspezifikationen (GPS) -
Formmessgeräte mit Drehachse - Konstruktion und
messtechnische Eigenschaften (ISO 5463:2024)

This European Standard was approved by CEN on 7 September 2024.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN ISO 5463:2024 (E)

Contents	Page
European foreword.....	3

European foreword

This document (EN ISO 5463:2024) has been prepared by Technical Committee ISO/TC 213 "Dimensional and geometrical product specifications and verification" in collaboration with Technical Committee CEN/TC 290 "Dimensional and geometrical product specification and verification" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2025, and conflicting national standards shall be withdrawn at the latest by March 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 5463:2024 has been approved by CEN as EN ISO 5463:2024 without any modification.



International Standard

ISO 5463

Geometrical product specifications (GPS) — Rotary axis form- measuring instruments — Design and metrological characteristics

*Spécification géométrique des produits (GPS) — Instruments de
mesure de forme à axe rotatif — Caractéristiques de conception
et caractéristiques métrologiques*

**First edition
2024-09**

ISO 5463:2024(en)**COPYRIGHT PROTECTED DOCUMENT**

© ISO 2024

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

ISO 5463:2024(en)

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
3.1 General terms.....	2
3.2 Terms relating to probe system.....	3
4 Design characteristics	3
4.1 General.....	3
4.2 Types of rotary axis form-measuring instruments.....	4
4.2.1 General.....	4
4.2.2 Rotating workpiece instrument.....	4
4.2.3 Stationary workpiece instrument.....	6
4.3 Design characteristics of probe.....	8
4.3.1 Contact probe.....	8
4.3.2 Other types of probe.....	9
5 Metrological characteristics	9
5.1 General.....	9
5.2 Rating operating condition.....	9
5.2.1 Environmental conditions.....	9
5.2.2 Operating conditions.....	10
5.3 Correction of form deviations on material measure.....	10
5.4 Probe characteristics.....	10
5.4.1 Reference point.....	10
5.4.2 Probe error.....	10
6 Determination of conformity to specification	12
6.1 General.....	12
6.2 Measurement uncertainty.....	12
6.3 Decision rule.....	13
Annex A (normative) Design and metrological characteristics for rotating workpiece instruments	14
Annex B (informative) Artefacts for metrological characteristics	38
Annex C (informative) Dynamic response of the probe	42
Annex D (informative) Incidental machine characteristics “Cresting”	45
Annex E (informative) Other types of probes	46
Annex F (informative) Relationship to the GPS matrix model	48
Bibliography	49

ISO 5463:2024(en)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 213, *Dimensional and geometrical product specifications and verification*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 290, *Dimensional and geometrical product specification and verification*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

ISO 5463:2024(en)

Introduction

This document is a geometrical product specification standard and is to be regarded as a general GPS standard (see ISO 14638). It influences chain link F of the chains of standards on form, orientation, location and run-out.

The ISO GPS matrix model given in ISO 14638 gives an overview of the ISO GPS system, of which this document is a part. The fundamental rules of ISO GPS given in ISO 8015 apply to this document and the default decision rules given in ISO 14253-1 apply to specifications made in accordance with this document, unless otherwise indicated. For more detailed information of the relation of this document to other standards and the GPS matrix model, see [Annex F](#).

See ISO/TR 14253-6 for additional information on the selection of alternative decision rules.

There are different types and variants of rotary axis form-measuring instrument. The metrological characteristics described in this document apply to all types and variants.

Geometrical product specifications (GPS) — Rotary axis form-measuring instruments — Design and metrological characteristics

1 Scope

This document specifies the most important design and metrological characteristics of rotary axis form-measuring instruments.

It is not applicable to coordinate measurement systems as defined by the ISO 10360 series, whether the systems are fitted with a rotary axis or not, except by special agreement.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 1101, *Geometrical product specifications (GPS) — Geometrical tolerancing — Tolerances of form, orientation, location and run-out*

ISO 14253-5, *Geometrical product specifications (GPS) — Inspection by measurement of workpieces and measuring equipment — Part 5: Uncertainty in verification testing of indicating measuring instruments*

ISO/TR 14253-6, *Geometrical product specifications (GPS) — Inspection by measurement of workpieces and measuring equipment — Part 6: Generalized decision rules for the acceptance and rejection of instruments and workpieces*

ISO 14978:2018, *Geometrical product specifications (GPS) — General concepts and requirements for GPS measuring equipment*

ISO/IEC Guide 98-3, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

ISO/IEC Guide 99:2007, *International vocabulary of metrology — Basic and general concepts and associated terms (VIM)*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN