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Cutting tool data representation and exchange —

Part 406: Creation and exchange of 3D models — Modelling of connection interface

Représentation et échange des données relatives aux outils coupants —

Partie 406: Création et échanges de modèles 3D — Conception d'interfaces de connexion



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Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Abbreviated terms	2
5 Starting elements, coordinate systems and planes	3
5.1 General.....	3
5.2 Reference system (PCS — Primary coordinate system).....	3
5.3 Position of the connection interface.....	4
5.3.1 General.....	4
5.3.2 Prismatic connection interface.....	4
5.3.3 Round connection interface.....	4
5.4 Mounting coordinate system.....	4
5.5 Planes.....	5
6 Design of the connection interface	6
7 BFA-drill chuck taper	6
7.1 General.....	6
7.2 Necessary properties.....	6
7.3 Contours (sketches) for solid bodies.....	7
7.4 Solid bodies of the drill chuck taper.....	7
8 CCS-polygonal taper interface with flange contact surface	9
8.1 General.....	9
8.2 Necessary properties.....	9
8.3 Contours (sketches) for solid bodies.....	9
8.3.1 Outside sketch.....	9
8.3.2 Inside sketch.....	10
8.4 Solid bodies of the polygonal taper.....	11
8.4.1 Tapered shank.....	11
8.4.2 Internal contour.....	11
8.4.3 Flange and tool changer grooves.....	12
8.4.4 Completed polygonal taper shank.....	12
8.4.5 Tapered hole of receiver.....	13
8.4.6 Completed polygonal receiver.....	13
9 FDA-milling arbour connection	14
9.1 General.....	14
9.2 Necessary properties.....	14
9.3 Contours (sketches) for solid bodies.....	14
9.3.1 Sketch for connection on workpiece side.....	14
9.3.2 Sketch for connection on machine side.....	15
9.4 Solid bodies of the connection.....	16
9.4.1 Solid body for connection on workpiece side.....	16
9.4.2 Solid body for connection on machine side.....	16
10 HSK-hollow taper interface with flange contact	17
10.1 General.....	17
10.2 Necessary properties.....	18
10.3 Contours (sketches) for solid bodies.....	18
10.3.1 Outside sketch.....	18
10.3.2 Inside sketch.....	19
10.4 Solid bodies of the hollow taper interface with flange contact.....	19

This is a preview of "ISO/TS 13399-406:201...". [Click here to purchase the full version from the ANSI store.](#)

	10.4.1	Solid body for connection on machine side.....	19
	10.4.2	Solid body for connection on workpiece side.....	20
11		KMT-modular taper interface with ball track system.....	21
	11.1	General.....	21
	11.2	Necessary properties.....	21
	11.3	Contours (sketches) for solid bodies.....	22
	11.3.1	Outside sketch.....	22
	11.3.2	Inside sketch.....	22
	11.4	Solid bodies of the modular taper with ball track system.....	23
	11.4.1	Solid body for connection on machine side.....	23
	11.4.2	Solid body for connection on workpiece side.....	24
12		MEG/MKG-metric/Morse taper.....	25
	12.1	General.....	25
	12.2	Necessary properties.....	25
	12.3	Contours (sketches) for solid bodies.....	26
	12.3.1	Outside sketch.....	26
	12.3.2	Inside sketch.....	26
	12.4	Solid bodies of the metric or Morse taper.....	27
	12.4.1	Solid body for connection on machine side.....	27
	12.4.2	Solid body for connection on workpiece side.....	28
13		SKG-tool shanks with 7/24 and steep tapers.....	29
	13.1	General.....	29
	13.2	Necessary properties.....	29
	13.3	Contours (sketches) for solid bodies.....	30
	13.3.1	Outside sketch.....	30
	13.3.2	Inside sketch.....	31
	13.4	Solid bodies of the 7/24 taper.....	31
	13.4.1	Solid body for connection on machine side.....	31
	13.4.2	Solid body for connection on workpiece side.....	33
14		SZD-collet standard connection.....	34
	14.1	General.....	34
	14.2	Necessary properties.....	34
	14.3	Contour (sketch) for solid body.....	34
	14.4	Solid bodies of the collet receiver.....	35
15		ZYL-cylindrical shanks.....	36
	15.1	General.....	36
	15.2	Necessary properties.....	36
	15.3	Contours (sketches) for solid bodies.....	36
	15.4	Solid bodies of the cylindrical connections.....	37
	15.4.1	Solid body for connection on machine side.....	37
	15.4.2	Solid body for connection on workpiece side.....	38
16		ZYV-cylindrical connection for stationary tools — ISO 10889-1.....	38
	16.1	General.....	38
	16.2	Necessary properties.....	39
	16.3	Contours (sketches) for solid bodies.....	39
	16.4	Solid bodies of the cylindrical connection for stationary tools.....	39
	16.4.1	Solid body for connection on machine side.....	39
	16.4.2	Solid body for connection on workpiece side.....	40
17		Manufacturer specific connection interfaces.....	41
18		Structure of the design elements (tree of model).....	41
		Annex A (informative) Nominal dimensions.....	42
		Bibliography.....	43

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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.

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A list of all parts in the ISO 13399 series can be found on the ISO website.

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.

Introduction

This document defines the concept, terms and definitions of how to design simplified 3D models of connection interfaces for the design of cutting tools that can be used for NC-programming, simulation of the manufacturing processes and the determination of collision within machining processes. It is not intended to standardize the design of the cutting tool itself.

A cutting tool is used in a machine to remove material from a workpiece by a shearing action at the cutting edges of the tool. Cutting tool data that can be described by the ISO 13399 series include, but are not limited to, everything between the workpiece and the machine tool. Information about inserts, solid tools, assembled tools, adaptors, components and their relationships can be represented by this document. The increasing demand for providing the end user with 3D models for the purposes defined above is the basis for the development of this series of International Standards.

The objective of the ISO 13399 series is to provide the means to represent the information that describes cutting tools in a computer sensible form that is independent from any particular computer system. The representation will facilitate the processing and exchange of cutting tool data within and between different software systems and computer platforms and support the application of this data in manufacturing planning, cutting operations and the supply of tools. The nature of this description makes it suitable not only for neutral file exchange, but also as a basis for implementing and sharing product databases and for archiving. The methods that are used for these representations are those developed by ISO/TC 184, *Automation systems and integration, SC 4, Industrial data*, for the representation of product data by using standardized information models and reference dictionaries.

Definitions and identifications of dictionary entries are defined by means of standard data that consist of instances of the EXPRESS entity data types defined in the common dictionary schema, resulting from a joint effort between ISO/TC 184/SC 4 and IEC/TC 3/SC 3D, *Product properties and classes and their identification*, and in its extensions defined in ISO 13584-24 and ISO 13584-25.