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**Cutting tool data representation and  
exchange —**

**Part 2:  
Reference dictionary for the cutting  
items**

*Représentation et échange des données relatives aux outils  
coupants —*

*Partie 2: Dictionnaire de référence pour les éléments coupants*

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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.

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 documents 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](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 29, *Small tools*.

This third edition cancels and replaces the second edition (ISO/TS 13399-2:2014), which has been technically revised.

The main change is as follows:

- update of the classes and properties in line with the modifications in the cutting tool dictionary.

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](http://www.iso.org/members.html).

## Introduction

This document defines the terms, properties, and definitions for portions of a cutting tool that remove material from a workpiece. Cutting items include replaceable inserts, brazed tips, and the cutting portions of solid cutting tools. The purpose of this document is to provide a reference dictionary to support the use of the general information model defined in ISO 13399-1.

A cutting tool with defined cutting edges is used on 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 (e.g. regular and irregular shaped replaceable cutting items), solid tools (e.g. solid drill and solid end mill), assembled tools (e.g. boring bars, indexable drills and indexable milling cutters), adaptors (e.g. milling arbor and drilling chuck), components (e.g. shims, screws and clamps) and their relationships can be represented by the ISO 13399 series. The principles of the ISO 13399 series are given in [Annex A](#); and possible assemblies of the components of a cutting tool are illustrated in [Figure A.1](#).

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 facilitates the processing and exchange of cutting tool data within and between different software systems and computer platforms and supports 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 used for these representations are those developed by ISO/TC 184/SC 4 for the representation of product data by using standardized information models and reference dictionaries.

An information model is a formal specification of types of ideas, facts, and processes which together describes a portion of interest of the real world and which provides an explicit set of interpretation rules. Information is knowledge of ideas, facts, and/or processes. Data are symbols or functions that represent information for processing purposes. Data are interpreted to extract information by using rules for how that should be done and a dictionary to define the terms that identify the data. Everyone in a communication process is expected to use the same information model, the same set of explicit rules and the same dictionary in order to avoid misunderstanding. If an information model and its dictionary are written in a computer-sensible language, then there is the additional benefit that they can be computer processable.

An engineering information model is therefore a specification for data that establishes the meaning of that data in a particular engineering context. A model has to be developed by formal methods to ensure that it meets the needs of the situation that it represents. An engineering information model defines the information objects that represent the concepts in an engineering application, the attributes of the objects, their relationships, and the constraints that add further meaning. An information model is an abstract concept that can be used repeatedly for any example of the real-world situation that it represents. An instance of the model is produced when it is populated with the data items and their values that are applicable to a particular example of that situation.

This document uses the following International Standards developed by ISO/TC 184/SC 4:

- the EXPRESS language defined in ISO 10303-11 for defining the information model in ISO 13399-1;
- the file format for data exchange derived from the model and defined in ISO 10303-21;
- the data dictionary defined in the ISO 13584 series.

Each class, property, or domain of values of this application domain constitutes an entry of the reference dictionary defined in this document. It is associated with a computer-sensible and human-readable definition and with a computer-sensible identification. Identification of a dictionary entry allows unambiguous reference to it from any application that implements the information model defined in ISO 13399-1.

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 SC 3D, and in its extensions defined in ISO 13584-24 and ISO 13584-25.

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# Cutting tool data representation and exchange —

## Part 2: Reference dictionary for the cutting items

### 1 Scope

This document specifies a reference dictionary for cutting items, together with their descriptive properties and domains of values.

This document specifies a reference dictionary containing:

- definitions and identifications of the classes of cutting items and their features, with an associated classification scheme;
- definitions and identifications of the data element types that represent the properties of cutting items and their features;
- definitions and identifications of domains of values for describing the above-mentioned data element types.

The following are within the scope of this document:

- standard data that represent the various classes of cutting items and cutting item features;
- standard data that represent the various properties of cutting items and cutting item features;
- standard data that represent domains of values used for properties of cutting items and cutting item features;
- definitions of reference systems for cutting items and their properties;
- one implementation method by which the standard data defined in this document can be exchanged.

NOTE 1 The implementation method by which the standard data defined in this document can be exchanged is specified in ISO 10303-21.

The following are outside the scope of this document:

- applications where these standard data can be stored or referenced;
- implementation methods other than the one defined in this document by which the standard data can be exchanged and referenced;
- information model for cutting tools;
- definitions of classes and properties for tool items;
- definitions of classes and properties for adaptive items;
- definitions of classes and properties for assembly items and auxiliary items.

NOTE 2 The information model for cutting tools is defined in ISO 13399-1.

NOTE 3 The definitions of classes and properties for tool items, adaptive items, assembly items, and auxiliary items are provided in ISO/TS 13399-3, ISO/TS 13399-4, and ISO/TS 13399-5, respectively.

## 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/TS 13399-100, *Cutting tool data representation and exchange — Part 100: Definitions, principles and methods for reference dictionaries*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/TS 13399-100 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

### 3.1

#### **applicable property**

*property* (3.17) that is defined for some family of items and that applies to any member of this family

[SOURCE: ISO 13584-24:2003, 3.3, modified — "family of parts" has been replaced by "family of items"; "shall apply" has been replaced by "applies"; "any part" has been replaced by "any member"; the EXAMPLE has been removed.]

### 3.2

#### **basic semantic unit**

*entity* (3.10) that provides an absolute and universally unique identification of a certain object of the application domain that is represented as a *dictionary* (3.9) element

[SOURCE: ISO 13584-42:2010, 3.4, modified — The 3 EXAMPLES and note 1 to entry have been removed.]

### 3.3

#### **chip**

material removed from a *workpiece* (3.21) by a cutting process

### 3.4

#### **cutting tool**

device or assembly of items for removing material from a *workpiece* (3.21) through a shearing action at the defined cutting edge or edges of the device

Note 1 to entry: A cutting tool can be the assembly of one or more adaptive items, a tool item, and several cutting items on a tool item. See [Figure A.1](#).

[SOURCE: ISO 13399-1:2006, 3.1]

### 3.5

#### **data**

representation of *information* (3.13) in a formal manner suitable for communication, interpretation, or processing by human beings or computers

[SOURCE: ISO 10303-1:2021, 3.1.29]

### 3.6

#### **data element type**

unit of *data* (3.5) for which the identification, description, and value representation have been specified

[SOURCE: ISO 13584-42:2010, 3.13, modified — Note 1 to entry has been removed.]

**3.7****data exchange**

storing, accessing, transferring, and archiving of *data* (3.5)

[SOURCE: ISO 10303-1:2021, 3.1.31]

**3.8****data type**

domain of values

[SOURCE: ISO 10303-11:2004, 3.3.5]

**3.9****dictionary**

table consisting of a series of entries with one meaning corresponding to each entry in the dictionary and one dictionary entry identifying a single meaning

Note 1 to entry: In the ISO 13399 series, a dictionary is a formal and computer-sensible representation of an *ontology* (3.16).

[SOURCE: ISO 13584-511:2006, 3.1.9, modified — The original notes 1 to 3 to entry have been replaced by a new note 1 to entry.]

**3.10****entity**

class of *information* (3.13) defined by its attributes which establishes a domain of values defined by common attributes and constraints

**3.11****entity data type**

representation of an *entity* (3.10)

**3.12****implementation method**

means for computers to exchange *data* (3.5)

**3.13****information**

facts, concepts, or instructions

[SOURCE: ISO 10303-1:2021, 3.1.41]

**3.14****information model**

formal model of a bounded set of facts, concepts, or instructions to meet a specific requirement

**3.15****irregular insert**

replaceable cutting item that cannot be described by a regular geometric shape

**3.16****ontology**

explicit and consensual specification of concepts of an application domain independent of any use of these concepts

Note 1 to entry: In the ISO 13399 series, a *dictionary* (3.9) is the formal and computer-sensible representation of ontology.

[SOURCE: ISO 13584-511:2006, 3.1.20, modified — In note 1 to entry, the reference to "ISO 13584" has been replaced by "the ISO 13399 series".]

**3.17**

**property**

defined parameter suitable for the description and differentiation of products

[SOURCE: ISO 13584-42:2010, 3.37, modified — Notes 1 to 5 to entry have been removed.]

**3.18**

**regular insert**

replaceable cutting item that can be described by a regular geometric shape

**3.19**

**transient surface**

part of the surface which is formed on the *workpiece* (3.21) by the cutting edge and removed during the following cutting stroke, during the following revolution of the tool or workpiece, or by the following cutting edge

[SOURCE: ISO 3002-1:1982, 3.1.3]

**3.20**

**visible property**

*property* (3.17) that has a definition meaningful in the scope of a given characterization class, but that does not necessarily apply to the various products belonging to this class

[SOURCE: ISO 13584-42:2010, 3.46]

**3.21**

**workpiece**

object on which a cutting action is performed

**3.22**

**work surface**

surface on the *workpiece* (3.21) to be removed by machining

[SOURCE: ISO 3002-1:1982, 3.1.1]

## 4 Abbreviated terms

BSU basic semantic unit

DET data element type

## 5 Representation of the ontological concepts as dictionary entries

### 5.1 General

A concept in the ontology is identified by a name in lower-case characters. The name of a class that represents the concept in the dictionary is identified by lower-case letters with multiple words joined by an underscore character.

EXAMPLE "cutting item type" is the name of a concept in the ontology. "cutting\_item\_type" is the identifier of the class in the dictionary that represents the concept.

Cutting items are represented by two main classes: cutting\_item\_feature and cutting\_item\_type.

The ISO 13399 series shall follow the principles in [Annex A](#). The structure of the classification is provided in [Annex B](#). The definitions of the cutting item classes are provided in [Annex C](#).

## 5.2 cutting\_item\_feature

### 5.2.1 General

Characteristic of a cutting item that cannot exist independently of the cutting item.

cutting\_item\_feature has the following subclasses:

- chip\_breaker;
- cutting\_corner;
- cutting\_edge;
- cutting\_item\_coating;
- cutting\_item\_material;
- cutting\_item\_profile;
- fixing\_hole;
- flank;
- gauge\_circle;
- inscribed\_circle;
- regrinding;
- top\_face.

### 5.2.2 chip\_breaker

Modification of the face of a cutting item to control or break the chip.

NOTE A chip breaker is either an integral groove or an obstruction attached to the face.

### 5.2.3 cutting\_corner

Transition between two cutting edges.

cutting\_corner has the following subclasses:

- chamfered\_corner;
- rounded\_corner.

### 5.2.4 cutting\_edge

Junction between two surfaces that performs the cutting operation.

cutting\_edge has the following subclasses:

- cutting\_edge\_conditioned;
- cutting\_edge\_interrupted;
- cutting\_edge\_major;
- cutting\_edge\_minior;
- wiper\_edge.

### 5.2.5 cutting\_item\_coating

Additional material deposited on the surface of a cutting item.

NOTE A cutting item coating can consist of layers of several materials.

### 5.2.6 cutting\_item\_material

Substance from which a cutting item is made.

### 5.2.7 cutting\_item\_profile

Shape traced out by the cutting edges of a cutting item.

cutting\_item\_profile has the following subclasses:

- ball\_nosed\_profile;
- drilling\_profile;
- grooving\_parting\_profile;
- threading\_profile.

### 5.2.8 fixing\_hole

Hole through the body of a replaceable cutting item that is used for attaching the cutting item to a tool item.

### 5.2.9 flank

Surface or surfaces of a cutting item that pass over the transient surface of the workpiece.

flank has the following subclasses:

- flank\_major;
- flank\_minor;
- flank\_wiper\_edge.

### 5.2.10 gauge\_circle

Circle established by a measurement device on a cutting item that does not have an inscribed circle.

### 5.2.11 inscribed\_circle

Circle to which all edges of an equilateral and round regular insert are tangential.

## 5.3 cutting\_item\_type

### 5.3.1 General

Family of items that can be held by a tool item or be part of a solid tool.

NOTE 1 The cutting item is the part of the cutting tool that is in contact with the workpiece during the cutting operation.

NOTE 2 The names of items in this class are not intended to refer to the use of the item in a particular cutting operation.

cutting\_item\_type has the following simple families of items as subclasses:

- drilling\_insert;
- equilateral\_equiangular;
- equilateral\_nonequiangular;
- non\_replaceable\_cutting\_item;
- nonequilateral\_equiangular;
- nonequilateral\_nonequiangular;
- reaming\_insert;
- round\_insert;
- specific\_profile\_insert.

### 5.3.2 equilateral\_equiangular

Type of cutting item of regular geometric shape with sides of equal length and equal included angles.

NOTE The class contains inserts with the ISO shape codes H, O, P, S, and T.

equilateral\_equiangular has the following items as subclasses:

- hexagonal\_insert;
- octagonal\_insert;
- pentagonal\_insert;
- square\_insert;
- triangular\_insert.

### 5.3.3 equilateral\_nonequiangular

Type of cutting item of regular geometric shape with sides of equal length and non-equal included angles.

NOTE The class contains inserts with the ISO shape codes C, D, E, M, and V for rhombic inserts and W for trigon inserts.

equilateral\_nonequiangular has the following items as subclasses:

- rhombic\_insert;
- trigon\_insert.

### 5.3.4 non\_replaceable\_cutting\_item

Cutting item that is permanently fixed to, or part of, a tool item.

### 5.3.5 nonequilateral\_equiangular

Type of cutting item of regular geometric shape with sides of non-equal length and equal included angles.

NOTE The class contains inserts with the ISO shape code L.

nonequilateral\_equiangular has the following item as a subclass: rectangular\_insert.

### 5.3.6 nonequilateral\_nonequangular

Type of cutting item of regular geometric shape with sides of non-equal length and non-equal included angles.

NOTE The class contains inserts with the ISO shape codes A, B, and K.

nonequilateral\_nonequangular has the following item as a subclass: parallelogram\_insert.

### 5.3.7 round\_insert

Type of cutting item with circular cutting edges.

NOTE This class contains inserts with the ISO shape code R.

### 5.3.8 specific\_profile\_insert

Type of cutting item that possesses a defined profile shape.

NOTE A synonymous name is irregular\_insert.

## 5.4 Reference systems for cutting items

### 5.4.1 General

Reference systems are geometrical coordinate axes with planes and locations on these axes that allow the definition of properties of cutting items and other components of a cutting tool. Reference systems are illustrated in [Annex G](#).

NOTE The convention for all the reference systems is the tool-in-hand system (ISO 3002-1).

The classes of reference systems for cutting items are as follows:

- primary\_coordinate\_system;
- irregular\_insert\_position;
- mirror\_plane;
- regular\_insert\_position;
- xy\_plane;
- xz\_plane;
- yz\_plane.

### 5.4.2 primary\_coordinate\_system

The primary\_coordinate\_system is a right-handed, rectangular Cartesian system in three-dimensional space with three principal axes labelled X, Y, and Z.

### 5.4.3 irregular\_insert\_position

An irregular insert is located on the primary coordinate system in the XY quadrant with the cutting edges in the xy-plane, the cutting profile pointing in the negative Y direction, the forward extremity of the cutting profile on the positive x-axis, and the side extremity of the insert on the y-axis.

NOTE The definition applies to right-hand inserts. The position of left-hand inserts is as mirrored through the yz-plane.

### 5.4.4 mirror\_plane

The mirror\_plane is the yz-plane in the primary coordinate system.

### 5.4.5 regular\_insert\_position

A regular insert is located on the primary coordinate system in the XY quadrant with the cutting edges on the xy-plane, the major cutting edge on the positive x-axis, and the theoretical sharp point of the insert on the y-axis.

NOTE 1 The definition applies to right-hand inserts. The position of left-hand inserts is as mirrored through the yz-plane.

NOTE 2 The positions of right-hand and left-hand regular inserts are illustrated in [Figure G.12](#).

### 5.4.6 xy\_plane

The xy\_plane is the plane in the primary coordinate system that contains the X and Y axes with the normal of the plane in the positive Z direction.

### 5.4.7 xz\_plane

The xz\_plane is the plane in the primary coordinate system that contains the X and Z axes with the normal of the plane in the positive Y direction.

### 5.4.8 yz\_plane

The yz\_plane is the plane in the primary coordinate system that contains the Y and Z axes with the normal of the plane in the positive X direction.

## 6 Properties for cutting item features and cutting item types

The properties of cutting item types and cutting item features are defined in [Annex D](#), where the association of a property with a class is specified. In the compilation of the dictionary, all properties are visible properties at the root class of the dictionary and are made applicable properties at the class level where they apply. The names of properties that can be applicable for cutting item features and cutting item types, with their identification codes (BSU), are shown in [Table 1](#). The order of names in the table should be read in rows from left to right.

The ISYC pictures showing the properties for cutting item features and cutting item types are illustrated in [Annex H](#).

NOTE The BSU can be made unique by the addition of the supplier of the dictionary as a prefix to the identification code.

EXAMPLE The unique BSU for chip\_breaker\_face\_count would be: 0112/1///13399\_2-71CE7A85CC4F9 for version two of the dictionary.

**Table 1 — Names of properties for cutting items**

Property name	Symbol	Identification code (BSU)
body angle workpiece side	BAWS	72C4A71D1B94B
brand	BRAND	728ECFD658014
chamfer corner property	CCP	72550DF97C965
chip breaker face count	CB	71CE7A85CC4F9
chip breaker manufacturers designation	CBMD	71CE7A86A4264
chip breaker property	CBP	71CED0217FA18
chip breaker width	LBB	71CE7A870948A
clearance angle major	AN	71DD70308D3E3
clearance angle minor	ANN	71DD7030E0A00
clearance angle wiper edge	AS	71DD7031A98E9
coating name	COATN	72719B186A232
coating process	COATP	72719B18D1F27
coating property	CTP	71DD703B84298
corner chamfer angle	KCH	71DD6C88F9210
corner chamfer angle minor	KCHN	726E3AADC0ABE
corner chamfer length	BCH	71DD6C895C25B
corner chamfer length minor	BCHN	726E3AACF1BB4
corner chamfer width	CHW	71DD6C89A120F
corner count	CNC	71CEAE9B67E4C
corner identity	CNID	71DD6C8802580
corner radius	RE	71DD6C8ACA503
corner radius left hand	REL	726E3E65CBE4E
corner radius lower tolerance	RETOLL	72C4A7228B53D
corner radius minor	REN	727C2F69C65AE
corner radius right hand	RER	726E3E66CF011
corner radius upper tolerance	RETOLU	72C4A722B2E35
cutting data association code	CDAC	72719B2427AED
cutting data association property	CDAP	72719B23A5008
cutting diameter	DC	71D084653E57F
cutting diameter insert	DCINS	71CF30F02C968
cutting edge angle major	KRINS	71CE7AA02C1CC
cutting edge angle major left hand	PSIRL	71CE7AA3440B4
cutting edge angle major right hand	PSIRR	71CE7AA78C2F0
cutting edge condition code	CECC	71DD6C90953D8
cutting edge count	CEDC	71CEAE9B489F4
cutting edge curvature	CECV	71DD6C950E7CC
cutting edge effective length	LE	71DD6C958C615
cutting edge identity	CEID	71DD6C8B86265
cutting edge length	L	71DD6C95DA49B
cutting edge major radius	CEMR	726E3E6E8B8EB
cutting point translation X-direction	CTX	71FD1E2EDD973
cutting point translation Y-direction	CTY	71FD1E2F66B38
cutting width	CW	71CEAE9E2B825
cutting width lower tolerance	CWTOLL	72C4A721F1835

Table 1 (continued)

Property name	Symbol	Identification code (BSU)
cutting width upper tolerance	CWTOLU	72C4A72270CF9
depth of cut maximum	APMX	71D07576C0558
designation	DES	728ECFD4A0629
face land angle	GB	71DD6C9332D2C
face land size code	FLSC	71DD6C9371B86
face land width	BN	71DD6C9394F40
fixing hole chamfer angle	FHCA	726E3AAFFFC9
fixing hole chamfer width	FHCW	726E3AB7AACED
fixing hole countersunk angle	FHCSA	726E3AB5E90FD
fixing hole countersunk depth	FHCSDP	726E3AB6E5726
fixing hole countersunk diameter	FHCSD	726E3AB654EA6
fixing hole countersunk radius	FHCSR	726E3AB757259
fixing hole diameter	D1	71CE7A968C8FE
fixing hole property	FXHLP	71D1C829BC044
flank identity	FLID	71DD70158265C
functional length	LF	71DCD39338974
gauge circle property	GACIRP	72550A75A58F9
gauge diameter	DG	71EBC1E1074AB
grade application main	GRDAPPM	729A91AB4451E
grade application range max	GRDAPRX	729A91AAEB181
grade application range min	GRDAPRN	729A91A635147
grade identification	GRDID	729A919BF211A
grade main application group identification letter	GRDAPID	729A919C3D239
grade manufacturers designation	GRDMFG	726E3EA930D39
grade standard designation main application	GRDPRIO	726E3EA8A9ED6
grind style code	GRDSYC	72550E3BD998C
hand	HAND	71CF29872F0AB
hole type	HTY	72719B167AE15
inscribed circle diameter	IC	71CE7A96D9F7D
inscribed circle property	INCLP	71D1C82A5036D
insert body diameter	INSBD	728F4E7B06CA7
insert hand	IH	71CE7A979F41C
insert included angle	EPSR	71CE7A96BC122
insert included angle minor (deprecated)	EPSRN	727C7D93D0F08
insert index count	NOI	71CE7AA1998FF
insert interface code	IIC	71CE7A9936610
insert lead angle	PSIRINS	71CF30F9DFE37
insert length	INSL	71CE7A9DFA23A
insert mounting style code	IFS	71CE7A97711B8
insert rake angle	GAN	71CE7A9EDACA1
insert shape code	SC	71CE7A9F0C79F
insert side count	NIS	72719B203D712
insert thickness	S	71CE7A9F5308C
insert thickness total	S1	72550E143C993

Table 1 (continued)

Property name	Symbol	Identification code (BSU)
insert width	W1	71CE7A9FB11C3
interrupted edge property	IEP	71DD701175021
item style code	ISYC	726E424FE9EC2
m2-dimension	M2	71CE7AA05C819
m-dimension	M	71CE7AA0972DB
profile angle left hand	PAL	71CEAEBEAB020
profile angle right hand	PAR	71CEAEBED837E
profile distance ex	PDX	71CEAEBFEF1B4
profile distance ey	PDY	71CEAEC0139BB
profile included angle	PNA	71CEAEBF0C234
profile radius	PRFRAD	71E019EBAE1B1
profile style code	PFS	71CEAEBDE5798
relief angle	RA	71DD9D00193A7
relief angle left hand	RAL	71CE7E6520B87
relief angle right hand	RAR	71CE7E6569AB5
rounded corner property	RCP	71DD7011A3D86
seal	SALP	72719B2B51519
standard letter	STDLET	72807E1CC4B50
taper gradient	TG	71CEAEC02FEBD
taper thread count	ZTT	71DF154901E44
thread cutting part length	THL	72550E426D771
thread designation inside	THID	726E3E7863BBC
thread designation outside	THOD	726E3E73D1CF2
thread form type	THFT	71D1A69F60053
thread hand	THDH	71E033FCBB61C
thread height actual	HC	71DF5BE65F86F
thread height difference	HB	71DF5BE617131
thread height theoretical	HA	71DF5BE5BCEBE
thread pitch	TP	71CEAEC08D4B0
thread pitch maximum	TPX	71D1A6A283836
thread pitch minimum	TPN	71D1A6A247E1F
thread profile type	TPT	71CEAEC114603
thread type	TTP	71D1A6A16E6ED
threads per inch	TPI	71D1A6AAC8707
threads per inch maximum	TPIX	71D1A6AB8F739
threads per inch minimum	TPIN	71D1A6AB6FB19
tipped cutting edge code	TCE	71CE7AA1E3D75
tolerance class insert	TCINS	71CE7AA215888
tooth count	NT	71CEAEBF8A68E
weight of item	WT	71CED03C97AAB
wiper edge length	BS	71CE7AA249F88
wiper edge property	BSR	71CED022114EC
wiper edge radius	WEP	71CE7AA2E50BE

## Annex A (normative)

### Principles of the ISO 13399 series

#### A.1 General

The ISO 13399 series is intended for use by, among others, tool producers and vendors, manufacturers, and developers of manufacturing software. The ISO 13399 series provides a common structure for exchanging data about cutting tools with defined cutting edges. The ISO 13399 series is intended to provide for, or improve, several manufacturing activities, including:

- the integration and sharing of data for cutting tools and assemblies between different stages for the manufacturing cycle and between different software applications;
- the direct import of data from cutting tool suppliers into a customer's database;
- the management of cutting tool information from multiple sources and for multiple applications.

Different companies use different business models that determine their need for the communication of information about their products. For example, one cutting tool manufacturer can regrind its customers' tools while another can allow its customers to do the regrinding and provide the information to enable them to do so. Therefore, the two cutting tool manufacturers can have a different set of cutting tool properties to communicate using the information model and dictionaries provided in the ISO 13399 series.

The ISO 13399 series defines only the information that can be communicated, but does not specify what information shall be communicated.

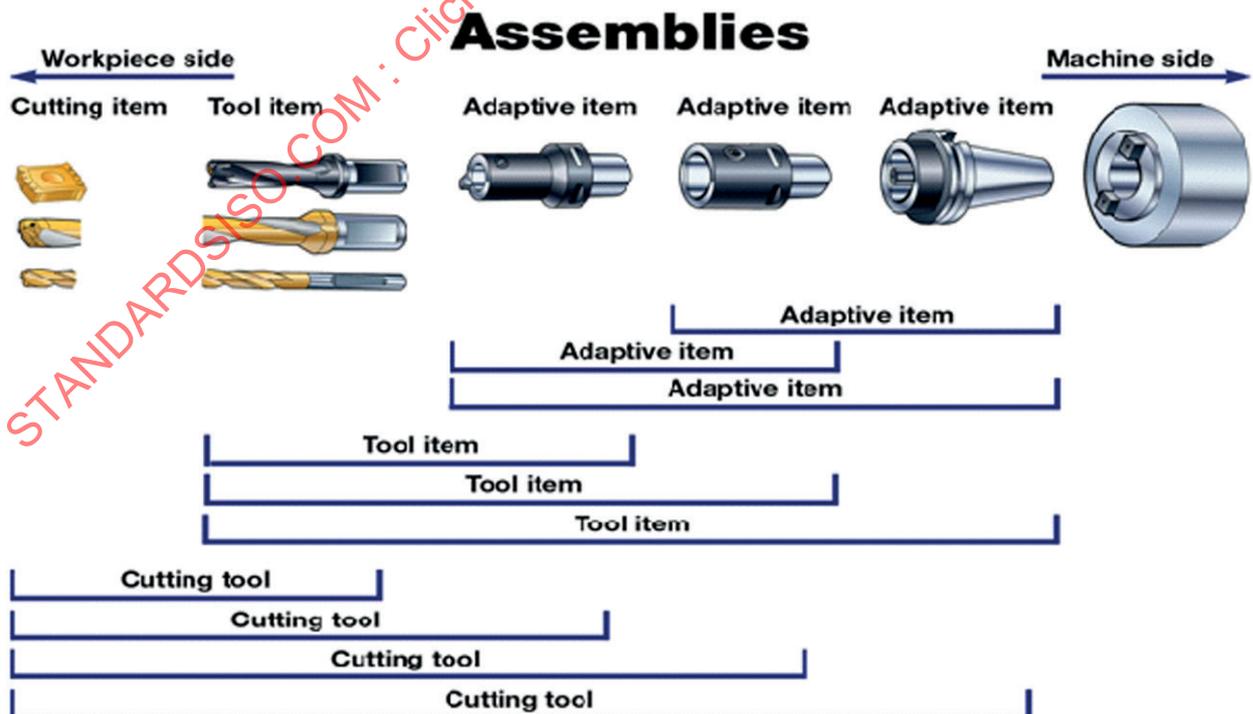


Figure A.1 — Possible assemblies of components of a cutting tool

Since the content of those dictionaries evolves according to industrial innovations and constant improvement of technology in cutting tools, a Maintenance Agency has been established for the purposes of:

- correcting errors in the entries of existing classes and properties;
- adding new properties to existing classes;
- adding new classes and their properties;
- managing the status of those properties and classes;
- migrating the dictionary to subsequent editions of the ISO 13399 series.

The name, address and contact information of the Maintenance Agency is available at: [https://www.iso.org/maintenance\\_agencies.html](https://www.iso.org/maintenance_agencies.html).

The reference dictionaries are available in the form of EXPRESS files on the website of the Maintenance Agency. These files are considered complementary to this document; they can be freely downloaded and used for cutting tool data representation and exchange.

The following permission notice and disclaimer shall be included in all copies of this EXPRESS schema ("the Schema"), and derivations of the Schema:

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THIS SCHEMA HAS BEEN MODIFIED FROM THE SCHEMA DEFINED IN THE ISO 13399 SERIES, AND SHOULD NOT BE INTERPRETED AS COMPLYING WITH THAT INTERNATIONAL STANDARD.

## A.2 Information object registration

### A.2.1 Document identification

In order to provide for unambiguous identification of an information object in an open system, the object identifier:

{iso technical specification 13399 part (2) version (3)}

is assigned to this document. The meaning of this value is defined in ISO/IEC 8824-1 and is described in ISO 13584-1.

### A.2.2 Dictionary identification

The dictionary defined in this document is assigned the object identifier:

{iso technical specification 13399 part (2) version (3) object (2) cutting items (2)}

## Annex B (informative)

### Classification table

[Table B.1](#) shows the classification structure of the generic families in the dictionary with an expanded structure for the classes of cutting items feature and cutting item type. The purpose of [Table B.1](#) is to show the relationships between the classes of cutting items and the other classes in the ISO 13399 series.

NOTE [Annex C](#) contains the definition of all the classes that are relevant to cutting items and definitions of those classes of reference systems that are used in the definition of the properties of cutting item types and cutting item features.

**Table B.1 — Classification table**

Classification structure		Parent	BSU
cutting tool library			71CE7A72B6DA7
	adaptive item type	71CE7A72B6DA7	71EAD37F18F34
	adjustment	71CE7A72B6DA7	71ED884159C90
	assembly item type	71CE7A72B6DA7	71CE7A795C05C
	bolt hole circle	71CE7A72B6DA7	71E02520881F1
	connection interface feature	71CE7A72B6DA7	72719B234F9E0
	coolant supply	71CE7A72B6DA7	71DF8C3C065EB
	cutting data association	71CE7A72B6DA7	71DF8C37D9115
	cutting item feature	71CE7A72B6DA7	71DD6C82F72DA
	chip breaker	71DD6C82F72DA	71DD6C870BCCA
	cutting corner	71DD6C82F72DA	71DD6C87BB5E1
	chamfered corner	71DD6C87BB5E1	71DD6C884C4BD
	rounded corner	71DD6C87BB5E1	71DD6C8A9985E
	cutting edge	71DD6C82F72DA	71DD6C8B42A9E
	cutting edge condition	71DD6C8B42A9E	71DD6C8C4F46C
	cutting edge interrupted	71DD6C8B42A9E	71DD6C93E8F02
	cutting edge major	71DD6C8B42A9E	71DD6C9466F30
	cutting edge minor	71DD6C8B42A9E	71DD6C961D7FE
	wiper edge	71DD6C8B42A9E	71DD6C9A21689
	cutting item coating	71DD6C82F72DA	71DD9D01038CF
	cutting item material	71DD6C82F72DA	71DD703BE6B82
	cutting item profile	71DD6C82F72DA	71DD70030304C
	ball nosed profile	71DD70030304C	71DD700BC8BE2
	drilling profile	71DD70030304C	71DD700BE1D04
	grooving parting profile	71DD70030304C	71DD700BFD9B9
	threading profile	71DD70030304C	71DD700C151B5
	fixing hole	71DD6C82F72DA	71DD7014BF2A1
	flank	71DD6C82F72DA	71DD70155A4B1
	flank major	71DD70155A4B1	71DD7015F073B
	flank minor	71DD70155A4B1	71DD701618C71

Table B.1 (continued)

Classification structure		Parent	BSU
	flank wiper edge	71DD70155A4B1	71DD70163AA42
	gauge circle	71DD6C82F72DA	72550A77D9DB9
	inscribed circle	71DD6C82F72DA	71DD7032B51CD
	regrinding	71DD6C82F72DA	71EAC81A64368
	top face	71DD6C82F72DA	726E3AB882A33
	cutting item type	71CE7A72B6DA7	71D1AA6C8FC75
	drilling insert	71D1AA6C8FC75	72550E1361C6C
	equilateral equiangular	71D1AA6C8FC75	71D1AA486FF89
	hexagonal insert	71D1AA486FF89	71DD68D7A8E5F
	octagonal insert	71D1AA486FF89	71DD68D7CB4FA
	pentagonal insert	71D1AA486FF89	71DD68D80B094
	square insert	71D1AA486FF89	71DD68D829217
	triangular insert	71D1AA486FF89	71DD68D8446CE
	equilateral nonequangular	71D1AA6C8FC75	71D1AE11B8B77
	rhombic insert	71D1AE11B8B77	71DD68D301C30
	trigon insert	71D1AE11B8B77	71DD68D73218C
	non replaceable cutting item	71D1AA6C8FC75	7224CCDD587CF
	nonequilateral equiangular	71D1AA6C8FC75	71D1AE120D96E
	rectangular insert	71D1AE120D96E	71DD68D91938A
	nonequilateral nonequangular	71D1AA6C8FC75	71D1AA489FD6E
	parallelogram insert	71D1AA489FD6E	71DD68D966F52
	reaming insert	71D1AA6C8FC75	726E3AAC68D91
	round insert	71D1AA6C8FC75	71D1AA6635E76
	specific profile insert	71D1AA6C8FC75	71DDA089C8D1E
	cutting operation	71CE7A72B6DA7	71DFF83D21D50
	cutting tool	71CE7A72B6DA7	71CE7A7A5038B
	dependency	71CE7A72B6DA7	727CE22063F8E
	flange	71CE7A72B6DA7	71EC5A767182E
	keyway	71CE7A72B6DA7	71DF5C026BCE7
	locking mechanism	71CE7A72B6DA7	71EBAB85BB5FA
	reference system	71CE7A72B6DA7	71CF2968F7A9E
	runout axial	71CE7A72B6DA7	71EDD2B84143C
	runout radial	71CE7A72B6DA7	71EDD2B858274
	tool item feature	71CE7A72B6DA7	71DD70376771D
	tool item type	71CE7A72B6DA7	71E01A004C775
	tool thread external	71CE7A72B6DA7	71FC1D22BF4CD
	tool thread internal	71CE7A72B6DA7	71FC1D25097D7

## Annex C (informative)

### Class definitions

#### C.1 Content and presentation

The content of this annex is limited to the classes of cutting item features, cutting item types, and the reference systems required to define the properties of these classes.

The layout of the information for each class in this annex is:

**BSU code–version number    Revision number**

**Preferred name    Short name**

Definition

NOTE

REMARKS

**Subclasses:**

**Properties:**

#### C.2 Classes

**71DD6C82F72DA-001    001**

**cutting item feature    cif**

Characteristic of a cutting item that cannot exist independently of the cutting item

**Subclasses:**

71DD70155A4B1 flank

726E3AB882A33 top face

72550A77D9DB9 gauge circle

71DD6C87BB5E1 cutting corner

71DD6C870BCCA chip breaker

71DD6C8B42A9E cutting edge

71DD70030304C cutting item profile

71DD7032B51CD inscribed circle

71DD703BE6B82 cutting item material

71DD7014BF2A1 fixing hole

71DD9D01038CF cutting item coating

**71DD6C870BCCA-001 001**

**chip breaker   cbkr**

Modification of the face of a cutting item to control or break the chip

NOTE     A chip breaker is either an integral groove or an obstruction attached to the face.

**Properties:**

71CE7A86A4264 chip breaker manufacturers designation

71CE7A870948A chip breaker width

71CE7A9EDACA1 insert rake angle

**71DD6C87BB5E1-001 001**

**cutting corner   corner**

Transition between two cutting edges

**Subclasses:**

71DD6C884C4BD chamfered corner

71DD6C8A9985E rounded corner

**Properties:**

71DD6C8802580 corner identity

**71DD6C884C4BD-001 001**

**chamfered corner   chcc**

Linear transition between two cutting edges

**Properties:**

71DD6C8802580 corner identity

71DD6C88F9210 corner chamfer angle

71DD6C895C25B corner chamfer length

71DD6C89A120F corner chamfer width

**71DD6C8A9985E-001 001**

**rounded corner   rndc**

Curved transition between two cutting edges

**Properties:**

71DD6C8802580 corner identity

71DD6C8ACA503 corner radius

72C4A7228B53D corner radius lower tolerance

72C4A722B2E35 corner radius upper tolerance

**71DD6C8B42A9E-001 001**

**cutting edge ctedg**

Junction between two surfaces that performs the cutting operation

**Subclasses:**

71DD6C9A21689 wiper edge

71DD6C961D7FE cutting edge minor

71DD6C9466F30 cutting edge major

71DD6C8C4F46C cutting edge condition

71DD6C93E8F02 cutting edge interrupted

**Properties:**

71DD6C8B86265 cutting edge identity

71DD6C9332D2C face land angle

71DD6C9371B86 face land size code

71DD6C9394F40 face land width

**71DD6C8C4F46C-001 001**

**cutting edge condition ctec**

The possession by the cutting edge of specific characteristics

**Properties:**

71DD6C8B86265 cutting edge identity

71DD6C90953D8 cutting edge condition code

71DD6C9332D2C face land angle

71DD6C9371B86 face land size code

71DD6C9394F40 face land width

**71DD6C93E8F02-001 001**

**cutting edge interrupted ceint**

Cutting edge with discontinuities of sufficient magnitude to prevent chip formation at the point where they occur

REMARKS The purpose of the discontinuities is to reduce the size of individual chips from certain types of tools.

**Properties:**

71DD6C8B86265 cutting edge identity

71DD6C9332D2C face land angle

71DD6C9371B86 face land size code

71DD6C9394F40 face land width

**71DD6C9466F30-001 001**

**cutting edge major cemj**

Junction between the face and the main flank that performs the cutting action to create the transient surface on a workpiece

**Properties:**

71CE7AA3440B4 cutting edge angle major left hand

71CE7AA78C2F0 cutting edge angle major right hand

71DD6C8B86265 cutting edge identity

71DD6C9332D2C face land angle

71DD6C9371B86 face land size code

71DD6C9394F40 face land width

71DD6C950E7CC cutting edge curvature

71DD6C958C615 cutting edge effective length

71DD6C95DA49B cutting edge length

**71DD6C961D7FE-001 001**

**cutting edge minor cemn**

Junction between the face and the minor flank that does not contribute to the creation of the transient surface on the workpiece

**Properties:**

71DD6C8B86265 cutting edge identity

71DD6C9332D2C face land angle

71DD6C9371B86 face land size code

71DD6C9394F40 face land width

**71DD6C9A21689-001 002**

**wiper edge wpe**

Cutting edge with a wiper configuration

**Properties:**

71CE7AA02C1CC cutting edge angle major  
 71CE7AA249F88 wiper edge length  
 71CE7AA2E50BE wiper edge radius  
 71CF30F9DFE37 insert lead angle  
 71DD6C8B86265 cutting edge identity  
 71DD6C9332D2C face land angle  
 71DD6C9371B86 face land size code  
 71DD6C9394F40 face land width  
 71DD7031A98E9 clearance angle wiper edge

**71DD70030304C-001 001****cutting item profile ciprf**

Shape traced out by the cutting edges of a cutting item

**Subclasses:**

71DD700BC8BE2 ball nosed profile  
 71DD700BFD9B9 grooving parting profile  
 71DD700BE1D04 drilling profile  
 71DD700C151B5 threading profile

**71DD700BC8BE2-002 001****ball nosed profile bnprf**

Shape of the perimeter of a cutting item that creates a semi-spherical profile

**Properties:**

71CE7A9DFA23A insert length  
 71CE7A9F5308C insert thickness  
 71CE7A9FB11C3 insert width  
 71DD6C8802580 corner identity  
 71DD6C8ACA503 corner radius  
 71DD9D00193A7 relief angle

**71DD700BE1D04-003 002**

**drilling profile drprf**

Shape of the perimeter of a cutting item that creates a drilled hole

**Properties:**

71CE7AA1E3D75 tipped cutting edge code

71CEAE9B67E4C corner count

71CF30F02C968 cutting diameter insert

71DD701175021 interrupted edge property

71DD7011A3D86 rounded corner property

72550E3BD998C grind style code

**71DD700BFD9B9-003 005**

**grooving parting profile gpprf**

Shape of the perimeter of a cutting item that creates the profile of a groove

**Properties:**

71CE7A85CC4F9 chip breaker face count

71CE7AA1E3D75 tipped cutting edge code

71CE7E6520B87 relief angle left hand

71CE7E6569AB5 relief angle right hand

71CEAE9B67E4C corner count

71CEAEBDE5798 profile style code

71CEAEBE2B825 cutting width

71CEAEBEAB020 profile angle left hand

71CEAEBED837E profile angle right hand

71CEAEBF0C234 profile included angle

71D07576C0558 depth of cut maximum

71DD6C8802580 corner identity

71DD7011A3D86 rounded corner property

71E019EBAE1B1 profile radius

72550DF97C965 chamfer corner property

726E3E65CBE4E corner radius left hand

726E3E66CF011 corner radius right hand

72C4A721F1835 cutting width lower tolerance

72C4A72270CF9 cutting width upper tolerance

**71DD700C151B5-003 004**

**threading profile thprf**

Shape of the perimeter of a cutting item that creates a screw thread

**Properties:**

71CE7A85CC4F9 chip breaker face count

71CE7AA1E3D75 tipped cutting edge code

71CEAE9B67E4C corner count

71CEAEBDE5798 profile style code

71CEAEBEAB020 profile angle left hand

71CEAEBED837E profile angle right hand

71CEAEBF0C234 profile included angle

71CEAEBF8A68E tooth count

71CEAEBFEF1B4 profile distance ex

71CEAEC0139BB profile distance ey

71CEAEC02FEBD taper gradient

71CEAEC08D4B0 thread pitch

71CEAEC114603 thread profile type

71D1A69F60053 thread form type

71D1A6A16E6ED thread type

71D1A6A247E1F thread pitch minimum

71D1A6A283836 thread pitch maximum

71D1A6AAC8707 threads per inch

71D1A6AB6FB19 threads per inch minimum

71D1A6AB8F739 threads per inch maximum

71DD6C8802580 corner identity

71DD7011A3D86 rounded corner property

71DF154901E44 taper thread count

71DF5BE5BCEBE thread height theoretical

71DF5BE617131 thread height difference

71DF5BE65F86F thread height actual

71E033FCBB61C thread hand

## ISO/TS 13399-2:2021(E)

72550E426D771 thread cutting part length

726E3E65CBE4E corner radius left hand

726E3E66CF011 corner radius right hand

726E3E73D1CF2 thread designation outside

726E3E7863BBC thread designation inside

### 71DD7014BF2A1-003 002

#### fixing hole fxhl

Hole through the body of a replaceable cutting item that is used for attaching the cutting item to a tool item

#### Properties:

71CE7A968C8FE fixing hole diameter

71CE7A97711B8 insert mounting style code

726E3AFFFF0C9 fixing hole chamfer angle

726E3AB5E90FD fixing hole countersunk angle

726E3AB654EA6 fixing hole countersunk diameter

726E3AB6E5726 fixing hole countersunk depth

726E3AB757259 fixing hole countersunk radius

726E3AB7AACED fixing hole chamfer width

### 71DD70155A4B1-002 001

#### flank flnk

Surface or surfaces of a cutting item that pass over the transient surface of the workpiece

#### Subclasses:

71DD70163AA42 flank wiper edge

71DD7015F073B flank major

71DD701618C71 flank minor

#### Properties:

71DD70158265C flank identity

### 71DD7015F073B-001 001

#### flank major flmj

Surface of a cutting item that moves over the transient surface of the workpiece

#### Properties:

71DD70158265C flank identity

71DD70308D3E3 clearance angle major

**71DD701618C71-001 001**

**flank minor flmn**

Surface of a cutting item that does not move over the transient surface of the workpiece

**Properties:**

71DD70158265C flank identity

71DD7030E0A00 clearance angle minor

**71DD70163AA42-001 001**

**flank wiper edge flwe**

Flank of a cutting item that has a wiper edge

**Properties:**

71DD70158265C flank identity

71DD7031A98E9 clearance angle wiper edge

**71DD7032B51CD-001 001**

**inscribed circle insc**

Circle to which all edges of an equilateral and round regular insert are tangential

**Properties:**

71CE7A96D9F7D inscribed circle diameter

**71EAC81A64368-002 002**

**regrinding rgnd**

Modifying the shape of a component of a cutting tool to restore the original shape or to create a new shape

**Properties:**

71EAC81F88336-003 body clearance depth

71EAC82B2A50E-003 chisel edge angle

71EAC82ADE5EA-003 chisel edge length

71EAC83CD450B-003 clearance angle axial

71EAC83B73825-003 clearance angle radial

71EAC81AD9AE1-003 drill back taper

## ISO/TS 13399-2:2021(E)

71EAC8210DF36-003 fluted land width

71EAC828C8308-003 margin width

727BE4E2C07C2-003 residual grinding length (missing for class rgnd)

71EBC1E8857BE-003 overall length minimum (deprecated substituted by LRGRD - residual grinding length)

71EAC823D95A7-003 web taper

71EAC82313165-003 web thickness

### 726E3AB882A33-003 001

#### top face tfac

Definition of a cutting item that is above the cutting edge, but is not applicable for the cutting process

#### Properties:

726E3AB9B8041-003 top face angle

726E3AB8CCB85-003 top face distance

726E3AB92F70D-003 top face radius

### 71D1AA6C8FC75-003 003

#### cutting item type cins

Family of items that can be held by a tool item or be part of a solid tool

NOTE The cutting item is the part of the cutting tool that is in contact with the workpiece during the cutting operation.

REMARKS The names of items in this class are not intended to refer to the use of the item in a particular cutting operation.

#### Subclasses:

71D1AE120D96E nonequilateral equiangular

71D1AA489FD6E nonequilateral nonequiangular

71D1AA486FF89 equilateral equiangular

72550E1361C6C drilling insert

7224CCDD587CF non replaceable cutting item

71D1AE11B8B77 equilateral nonequiangular

71D1AA6635E76 round insert

726E3AAC68D91 reaming insert

71DDA089C8D1E specific profile insert

#### Properties:

71CED0217FA18 chip breaker property

71DD6C90953D8 cutting edge condition code  
 71DD703B84298 coating property  
 726E3EA8A9ED6 grade standard designation main application  
 726E3EA930D39 grade manufacturers designation  
 726E424FE9EC2 item style code  
 72719B167AE15 hole type  
 72719B203D712 insert side count  
 72719B23A5008 cutting data association property  
 72719B2427AED cutting data association code  
 72719B2B51519 seal  
 72807E1CC4B50 standard letter  
 728ECFD4A0629 designation  
 728ECFD658014 brand  
 728F4E7B06CA7 insert body diameter  
 729A919BF211A grade identification  
 729A919C3D239 grade main application group identification letter  
 729A91A635147 grade application range min  
 729A91AAEB181 grade application range max  
 729A91AB4451E grade application main  
 72C4A71D1B94B body angle workpiece side

### **72550E1361C6C-003 002**

#### **drilling insert drills**

Type of cutting item that is used for drilling operations

#### **Properties:**

71CE7A9751A90	insert body width
71CE7A9936610	insert interface code
71CE7AA1998FF	insert index count
71CEAE9B489F4	cutting edge count
71CEAEBF2A69F	insert seat size code
71CED0217FA18	chip breaker property
71CF2985DCED3	coolant entry style code
71CF2985FC5FC	coolant exit style code

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71CF30F02C968	cutting diameter insert
71D084653E57F	cutting diameter
71D1C829BC044	fixing hole property
71D1C82A5036D	inscribed circle property
71DCCC4FEF366	point angle
71DCCFD064042	point length
71DCD39338974	functional length
71DCD394BB20E	protruding length
71DD6C90953D8	cutting edge condition code
71DD7011A3D86	rounded corner property
71DD703B84298	coating property
71EAC8210DF36	fluted land width
71EAC828C8308	margin width
71EAC82B2A50E	chisel edge angle
71EBC1E8857BE	overall length minimum (deprecated substituted by residual grinding length)
72550DF97C965	chamfer corner property
72550E143C993	insert thickness total
726E3EA8A9ED6	grade standard designation main application
726E3EA930D39	grade manufacturers designation
726E424FE9EC2	item style code
72719B167AE15	hole type
72719B197DA99	tolerance class machined hole diameter
72719B203D712	insert side count
72719B23A5008	cutting data association property
72719B2427AED	cutting data association code
72719B2B51519	seal
727BE4E2C07C2	residual grinding length
72807E1CC4B50	standard letter
728B074A39EBC	tool assembly length
728ECFD4A0629	designation
728ECFD658014	brand
728F4E7B06CA7	insert body diameter
729A919BF211A	grade identification

729A919C3D239	grade main application group identification letter
729A91A635147	grade application range min
729A91AAEB181	grade application range max
729A91AB4451E	grade application main
72C4A71D1B94B	body angle workpiece side

**71D1AE11B8B77-003 003****equilateral nonequiangular eqlnqa**

Type of cutting item of regular geometric shape with sides of equal length and non-equal included angles

NOTE The class contains inserts with the ISO shape codes C, D, and V for rhombic inserts and W for trigon inserts.

**Subclasses:**

71DD68D73218C trigon insert

71DD68D301C30 rhombic insert

**Properties:**

71CE7A85CC4F9 chip breaker face count

71CE7A96BC122 insert included angle

71CE7A979F41C insert hand

71CE7A9936610 insert interface code

71CE7A9DFA23A insert length

71CE7A9F0C79F insert shape code

71CE7A9F5308C insert thickness

71CE7A9FB11C3 insert width

71CE7AA05C819 m2-dimension

71CE7AA0972DB m-dimension

71CE7AA1998FF insert index count

71CE7AA1E3D75 tipped cutting edge code

71CE7AA215888 tolerance class insert

71CEAE9B489F4 cutting edge count

71CEAE9B67E4C corner count

71CED0217FA18 chip breaker property

71CED022114EC wiper edge property

71CF29872F0AB hand

71D1C829BC044 fixing hole property  
71D1C82A5036D inscribed circle property  
71DD6C90953D8 cutting edge condition code  
71DD6C958C615 cutting edge effective length  
71DD6C95DA49B cutting edge length  
71DD7011A3D86 rounded corner property  
71DD703B84298 coating property  
71FD1E2EDD973 cutting point translation X-direction  
71FD1E2F66B38 cutting point translation Y-direction  
72550DF97C965 chamfer corner property  
72550E143C993 insert thickness total  
726E3AACF1BB4 corner chamfer length minor  
726E3AADC0ABE corner chamfer angle minor  
726E3EA8A9ED6 grade standard designation main application  
726E3EA930D39 grade manufacturers designation  
726E424FE9EC2 item style code  
72719B167AE15 hole type  
72719B203D712 insert side count  
72719B23A5008 cutting data association property  
72719B2427AED cutting data association code  
72719B2B51519 seal  
727C2F69C65AE corner radius minor  
72807E1CC4B50 standard letter  
728ECFD4A0629 designation  
728ECFD658014 brand  
728F4E7B06CA7 insert body diameter  
729A919BF211A grade identification  
729A919C3D239 grade main application group identification letter  
729A91A635147 grade application range min  
729A91AAEB181 grade application range max  
729A91AB4451E grade application main  
72C4A71D1B94B body angle workpiece side

**71D1AE120D96E-003 003****nonequilateral equiangular nqleqa**

Type of cutting item of regular geometric shape with sides of non-equal length and equal included angles

NOTE The class contains inserts with the ISO shape code L.

**Subclasses:**

71DD68D91938A rectangular insert

**Properties:**

71CE7A85CC4F9 chip breaker face count

71CE7A96BC122 insert included angle

71CE7A979F41C insert hand

71CE7A9936610 insert interface code

71CE7A9DFA23A insert length

71CE7A9F0C79F insert shape code

71CE7A9F5308C insert thickness

71CE7A9FB11C3 insert width

71CE7AA05C819 m2-dimension

71CE7AA0972DB m-dimension

71CE7AA1998FF insert index count

71CE7AA1E3D75 tipped cutting edge code

71CE7AA215888 tolerance class insert

71CEAE9B489F4 cutting edge count

71CEAE9B67E4C corner count

71CED0217FA18 chip breaker property

71CED022114EC wiper edge property

71CF29872F0AB hand

71D1C829BC044 fixing hole property

71DD6C90953D8 cutting edge condition code

71DD6C958C615 cutting edge effective length

71DD6C95DA49B cutting edge length

71DD7011A3D86 rounded corner property

71DD703B84298 coating property

71EBC1E1074AB gauge diameter

71FD1E2EDD973 cutting point translation X-direction

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71FD1E2F66B38 cutting point translation Y-direction  
72550A75A58F9 gauge circle property  
72550E143C993 insert thickness total  
726E3AACF1BB4 corner chamfer length minor  
726E3AADC0ABE corner chamfer angle minor  
726E3EA8A9ED6 grade standard designation main application  
726E3EA930D39 grade manufacturers designation  
726E424FE9EC2 item style code  
72719B167AE15 hole type  
72719B203D712 insert side count  
72719B23A5008 cutting data association property  
72719B2427AED cutting data association code  
72719B2B51519 seal  
727C2F69C65AE corner radius minor  
72807E1CC4B50 standard letter  
728ECFD4A0629 designation  
728ECFD658014 brand  
728F4E7B06CA7 insert body diameter  
729A919BF211A grade identification  
729A919C3D239 grade main application group identification letter  
729A91A635147 grade application range min  
729A91AAEB181 grade application range max  
729A91AB4451E grade application main  
72C4A71D1B94B body angle workpiece side

**7224CCDD587CF-003 003**

**non replaceable cutting item nrci**

Cutting item that is permanently fixed to, or part of, a tool item

### **Properties:**

72550DF97C965-003 chamfer corner property  
71CEAE9B67E4C-003 corner count  
71CEAE9B489F4-003 cutting edge count  
71DD6C958C615-003 cutting edge effective length

71DD6C95DA49B-003 cutting edge length  
 71FD1E2EDD973-003 cutting point translation X-direction  
 71FD1E2F66B38-003 cutting point translation Y-direction  
 71CF29872F0AB-003 hand  
 71CE7A96BC122-003 insert included angle  
 727BE4EA8C69D-003 mating radius  
 71DD7011A3D86-003 rounded corner property

### **726E3AAC68D91-003 001**

#### **reaming insert reains**

Type of cutting item that shall be mainly used for reaming operations and is not a regular or irregular insert

Note The class contains manufacturer specific inserts.

#### **Properties:**

7272127D97F87-003 chip breaker length  
 7272128E2CCE4-003 cutting edge distance  
 728055355A516-003 face cutting edge  
 726F30BC507E3-003 plug angle  
 726E372E4FBE9-003 plug length  
 71DCCC3DFA23A-003 step diameter length  
 71DCCC47221E0-003 step distance

### **71DD68D301C30-001 001**

#### **rhombic insert rhmbins**

Replaceable cutting item with two cutting corners, four sides of equal length and four internal angles none of which are equal to ninety degrees

REMARKS This class contains inserts with the ISO shape codes C, D, E, M and V.

#### **Properties:**

71CE7A85CC4F9 chip breaker face count  
 71CE7A96BC122 insert included angle  
 71CE7A979F41C insert hand  
 71CE7A9936610 insert interface code  
 71CE7A9DFA23A insert length  
 71CE7A9F0C79F insert shape code

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71CE7A9F5308C insert thickness  
71CE7A9FB11C3 insert width  
71CE7AA05C819 m2-dimension  
71CE7AA0972DB m-dimension  
71CE7AA1998FF insert index count  
71CE7AA1E3D75 tipped cutting edge code  
71CE7AA215888 tolerance class insert  
71CEAE9B489F4 cutting edge count  
71CEAE9B67E4C corner count  
71CED0217FA18 chip breaker property  
71CED022114EC wiper edge property  
71CF29872F0AB hand  
71D1C829BC044 fixing hole property  
71D1C82A5036D inscribed circle property  
71DD6C90953D8 cutting edge condition code  
71DD6C958C615 cutting edge effective length  
71DD6C95DA49B cutting edge length  
71DD7011A3D86 rounded corner property  
71DD703B84298 coating property  
71FD1E2EDD973 cutting point translation X-direction  
71FD1E2F66B38 cutting point translation Y-direction  
72550DF97C965 chamfer corner property  
72550E143C993 insert thickness total  
726E3AACF1BB4 corner chamfer length minor  
726E3AADC0ABE corner chamfer angle minor  
726E3EA8A9ED6 grade standard designation main application  
726E3EA930D39 grade manufacturers designation  
726E424FE9EC2 item style code  
72719B167AE15 hole type  
72719B203D712 insert side count  
72719B23A5008 cutting data association property  
72719B2427AED cutting data association code  
72719B2B51519 seal

727C2F69C65AE corner radius minor  
 72807E1CC4B50 standard letter  
 728ECFD4A0629 designation  
 728ECFD658014 brand  
 728F4E7B06CA7 insert body diameter  
 729A919BF211A grade identification  
 729A919C3D239 grade main application group identification letter  
 729A91A635147 grade application range min  
 729A91AAEB181 grade application range max  
 729A91AB4451E grade application main  
 72C4A71D1B94B body angle workpiece side

**71DDA089C8D1E-003 004**

**specific profile insert spins**

Type of cutting item that possess a defined profile shape

**Properties:**

72719B181D75D-003 central flat  
 72550DF97C965-003 chamfer corner property  
 71CE7A85CC4F9-003 chip breaker face count  
 7272127EBE942-003 clearance angle flank left hand  
 7272127FC0C98-003 clearance angle flank right hand  
 72724DF0F6A58-003 corner chamfer angle left hand  
 72724DF15A080-003 corner chamfer angle right hand  
 727233F2FE845-003 corner chamfer width left hand  
 727233F34CCF7-003 corner chamfer width right hand  
 71CEAE9B67E4C-003 corner count  
 71DD6C8802580-002 corner identity  
 726E3E65CBE4E-003 corner radius left hand  
 72C4A7228B53D-001 corner radius lower tolerance  
 726E3E66CF011-003 corner radius right hand  
 72C4A722B2E35-001 corner radius upper tolerance  
 71CEAEBD5A66A-003 cutting depth maximum  
 71D084653E57F-003 cutting diameter

71CF30F02C968-003	cutting diameter insert
71CE7AA3440B4-003	cutting edge angle major left hand
71CE7AA78C2F0-003	cutting edge angle major right hand
71CEAE9B489F4-003	cutting edge count
71DD6C950E7CC-003	cutting edge curvature
71DD6C8B86265-003	cutting edge identity
726E3E6E8B8EB-003	cutting edge major radius
71FD1E2EDD973-003	cutting point translation X-direction
71FD1E2F66B38-003	cutting point translation Y-direction
71CEAEBE2B825-003	cutting width
72C4A721F1835-001	cutting width lower tolerance
72C4A72270CF9-001	cutting width upper tolerance
71D1C829BC044-003	fixing hole property
72724DF1A9960-003	flank chamfer angle left hand
72724DF1F0064-003	flank chamfer angle right hand
727233F3ACD12-003	flank chamfer width left hand
727233F41008D-003	flank chamfer width right hand
72724DF27E860-003	flank radius left hand
72724DF2B776B-003	flank radius right hand
71DCD39338974-003	functional length
71CF29984CDA7-003	functional width
72550A75A58F9-003	gauge circle property
71CF29872F0AB-003	hand
71D1C82A5036D-003	inscribed circle property
71CE7A9751A90-003	insert body width
726E3E6875C52-003	insert gauge length
71CE7A979F41C-003	insert hand
71CE7A96BC122-003	insert included angle
71CE7AA1998FF-003	insert index count
71CE7A9936610-003	insert interface code
71CE7A9DFA23A-003	insert length
71CEAEBF2A69F-003	insert seat size code
71CE7A9F5308C-003	insert thickness

72550E143C993-003 insert thickness total  
 71CE7A9FB11C3-003 insert width  
 71CEAEBEAB020-003 profile angle left hand  
 71CEAEBED837E-003 profile angle right hand  
 727BE4E96AD88-003 profile depth insert  
 71CEAEBFEF1B4-003 profile distance ex  
 71CEAEC0139BB-003 profile distance ey  
 71CEAEBF0C234-003 profile included angle  
 71E019EBAE1B1-003 profile radius  
 71CEAEBDE5798-003 profile style code  
 71DCD394BB20E-003 protruding length  
 71CE7E6520B87-003 relief angle left hand  
 71CE7E6569AB5-003 relief angle right hand  
 71DD7011A3D86-003 rounded corner property  
 726E42319756D-003 spot chamfer distance  
 72550E426D771-003 thread cutting part length  
 71D1A69F60053-003 thread form type  
 71CEAEC08D4B0-003 thread pitch  
 71D1A6A283836-003 thread pitch maximum  
 71D1A6A247E1F-003 thread pitch minimum  
 71CEAEC114603-003 thread profile type  
 71DF153FA5F85-003 thread tolerance class  
 71D1A6A16E6ED-003 thread type  
 71D1A6AAC8707-003 threads per inch  
 71D1A6AB8F739-003 threads per inch maximum  
 71D1A6AB6FB19-003 threads per inch minimum  
 71CE7AA1E3D75-003 tipped cutting edge code  
 728B074A39EBC-001 tool assembly length  
 728B074B7B0B5-001 tool assembly width  
 71CEAEBF8A68E-003 tooth count  
 71CED022114EC-003 wiper edge property

**71DD68D73218C-003 002**

**trigon insert trigins**

Replaceable cutting item with a generally triangular shape with enlarged included angles

NOTE The edges between the corners can be curved or straight.

REMARKS The ISO shape code for this insert is W when the edges are straight.

**Properties:**

- 71CE7A85CC4F9 chip breaker face count
- 71CE7A96BC122 insert included angle
- 71CE7A979F41C insert hand
- 71CE7A9936610 insert interface code
- 71CE7A9DFA23A insert length
- 71CE7A9F0C79F insert shape code
- 71CE7A9F5308C insert thickness
- 71CE7A9FB11C3 insert width
- 71CE7AA05C819 m2-dimension
- 71CE7AA0972DB m-dimension
- 71CE7AA1998FF insert index count
- 71CE7AA1E3D75 tipped cutting edge code
- 71CE7AA215888 tolerance class insert
- 71CEAE9B489F4 cutting edge count
- 71CEAE9B67E4C corner count
- 71CED0217FA18 chip breaker property
- 71CED022114EC wiper edge property
- 71CF29872F0AB hand
- 71D1C829BC044 fixing hole property
- 71D1C82A5036D inscribed circle property
- 71DD6C90953D8 cutting edge condition code
- 71DD6C958C615 cutting edge effective length
- 71DD6C95DA49B cutting edge length
- 71DD7011A3D86 rounded corner property
- 71DD703B84298 coating property
- 71FD1E2EDD973 cutting point translation X-direction
- 71FD1E2F66B38 cutting point translation Y-direction
- 72550DF97C965 chamfer corner property

72550E143C993 insert thickness total  
 726E3AACF1BB4 corner chamfer length minor  
 726E3AADC0ABE corner chamfer angle minor  
 726E3E6E8B8EB cutting edge major radius  
 726E3EA8A9ED6 grade standard designation main application  
 726E3EA930D39 grade manufacturers designation  
 726E424FE9EC2 item style code  
 72719B167AE15 hole type  
 72719B203D712 insert side count  
 72719B23A5008 cutting data association property  
 72719B2427AED cutting data association code  
 72719B2B51519 seal  
 727C2F69C65AE corner radius minor  
 727C7D93D0F08 insert included angle minor (deprecated)  
 72807E1CC4B50 standard letter  
 728ECFD4A0629 designation  
 728ECFD658014 brand  
 728F4E7B06CA7 insert body diameter  
 729A919BF211A grade identification  
 729A919C3D239 grade main application group identification letter  
 729A91A635147 grade application range min  
 729A91AAEB181 grade application range max  
 729A91AB4451E grade application main  
 72C4A71D1B94B body angle workpiece side

**71DD68D7A8E5F-001 001**

**hexagonal insert hexin**

Replaceable cutting item with six equal sides and six equal internal angles

REMARKS This shape is identified with the ISO shape code H.

**Properties:**

71CE7A85CC4F9 chip breaker face count

71CE7A96BC122 insert included angle

71CE7A979F41C insert hand

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71CE7A9936610 insert interface code  
71CE7A9DFA23A insert length  
71CE7A9F0C79F insert shape code  
71CE7A9F5308C insert thickness  
71CE7A9FB11C3 insert width  
71CE7AA05C819 m2-dimension  
71CE7AA0972DB m-dimension  
71CE7AA1998FF insert index count  
71CE7AA1E3D75 tipped cutting edge code  
71CE7AA215888 tolerance class insert  
71CEAE9B489F4 cutting edge count  
71CEAE9B67E4C corner count  
71CED0217FA18 chip breaker property  
71CED022114EC wiper edge property  
71CF29872F0AB hand  
71D1C829BC044 fixing hole property  
71D1C82A5036D inscribed circle property  
71DD6C90953D8 cutting edge condition code  
71DD6C958C615 cutting edge effective length  
71DD6C95DA49B cutting edge length  
71DD7011A3D86 rounded corner property  
71DD703B84298 coating property  
71FD1E2EDD973 cutting point translation X-direction  
71FD1E2F66B38 cutting point translation Y-direction  
72550DF97C965 chamfer corner property  
72550E143C993 insert thickness total  
726E3EA8A9ED6 grade standard designation main application  
726E3EA930D39 grade manufacturers designation  
726E424FE9EC2 item style code  
72719B167AE15 hole type  
72719B203D712 insert side count  
72719B23A5008 cutting data association property  
72719B2427AED cutting data association code

72719B2B51519 seal  
 72807E1CC4B50 standard letter  
 728ECFD4A0629 designation  
 728ECFD658014 brand  
 728F4E7B06CA7 insert body diameter  
 729A919BF211A grade identification  
 729A919C3D239 grade main application group identification letter  
 729A91A635147 grade application range min  
 729A91AAEB181 grade application range max  
 729A91AB4451E grade application main  
 72C4A71D1B94B body angle workpiece side

**71DD68D7CB4FA-001 001**

**octagonal insert octins**

Replaceable cutting item with eight equal sides and eight equal internal angles

REMARKS This shape is identified by the ISO shape code O.

**Properties:**

71CE7A85CC4F9 chip breaker face count  
 71CE7A96BC122 insert included angle  
 71CE7A979F41C insert hand  
 71CE7A9936610 insert interface code  
 71CE7A9DFA23A insert length  
 71CE7A9F0C79F insert shape code  
 71CE7A9F5308C insert thickness  
 71CE7A9FB11C3 insert width  
 71CE7AA05C819 m2-dimension  
 71CE7AA0972DB m-dimension  
 71CE7AA1998FF insert index count  
 71CE7AA1E3D75 tipped cutting edge code  
 71CE7AA215888 tolerance class insert  
 71CEAE9B489F4 cutting edge count  
 71CEAE9B67E4C corner count  
 71CED0217FA18 chip breaker property

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71CED022114EC wiper edge property  
71CF29872F0AB hand  
71D1C829BC044 fixing hole property  
71D1C82A5036D inscribed circle property  
71DD6C90953D8 cutting edge condition code  
71DD6C958C615 cutting edge effective length  
71DD6C95DA49B cutting edge length  
71DD7011A3D86 rounded corner property  
71DD703B84298 coating property  
71FD1E2EDD973 cutting point translation X-direction  
71FD1E2F66B38 cutting point translation Y-direction  
72550DF97C965 chamfer corner property  
72550E143C993 insert thickness total  
726E3EA8A9ED6 grade standard designation main application  
726E3EA930D39 grade manufacturers designation  
726E424FE9EC2 item style code  
72719B167AE15 hole type  
72719B203D712 insert side count  
72719B23A5008 cutting data association property  
72719B2427AED cutting data association code  
72719B2B51519 seal  
72807E1CC4B50 standard letter  
728ECFD4A0629 designation  
728ECFD658014 brand  
728F4E7B06CA7 insert body diameter  
729A919BF211A grade identification  
729A919C3D239 grade main application group identification letter  
729A91A635147 grade application range min  
729A91AAEB181 grade application range max  
729A91AB4451E grade application main  
72C4A71D1B94B body angle workpiece side

**71DD68D80B094-001 001**

**pentagonal insert pentins**

Replaceable cutting item with five equal sides and five equal internal angles

REMARKS This shape is identified by the ISO shape code P.

**Properties:**

71CE7A85CC4F9 chip breaker face count  
 71CE7A96BC122 insert included angle  
 71CE7A979F41C insert hand  
 71CE7A9936610 insert interface code  
 71CE7A9DFA23A insert length  
 71CE7A9F0C79F insert shape code  
 71CE7A9F5308C insert thickness  
 71CE7A9FB11C3 insert width  
 71CE7AA05C819 m2-dimension  
 71CE7AA0972DB m-dimension  
 71CE7AA1998FF insert index count  
 71CE7AA1E3D75 tipped cutting edge code  
 71CE7AA215888 tolerance class insert  
 71CEAE9B489F4 cutting edge count  
 71CEAE9B67E4C corner count  
 71CED0217FA18 chip breaker property  
 71CED022114EC wiper edge property  
 71CF29872F0AB hand  
 71D1C829BC044 fixing hole property  
 71D1C82A5036D inscribed circle property  
 71DD6C90953D8 cutting edge condition code  
 71DD6C958C615 cutting edge effective length  
 71DD6C95DA49B cutting edge length  
 71DD7011A3D86 rounded corner property  
 71DD703B84298 coating property  
 71FD1E2EDD973 cutting point translation X-direction  
 71FD1E2F66B38 cutting point translation Y-direction  
 72550DF97C965 chamfer corner property  
 72550E143C993 insert thickness total

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726E3EA8A9ED6 grade standard designation main application

726E3EA930D39 grade manufacturers designation

726E424FE9EC2 item style code

72719B167AE15 hole type

72719B203D712 insert side count

72719B23A5008 cutting data association property

72719B2427AED cutting data association code

72719B2B51519 seal

72807E1CC4B50 standard letter

728ECFD4A0629 designation

728ECFD658014 brand

728F4E7B06CA7 insert body diameter

729A919BF211A grade identification

729A919C3D239 grade main application group identification letter

729A91A635147 grade application range min

729A91AAEB181 grade application range max

729A91AB4451E grade application main

72C4A71D1B94B body angle workpiece side

### **71DD68D829217-001 001**

#### **square insert sqins**

Replaceable cutting item with four equal sides and four equal internal angles

REMARKS: This shape is identified by the ISO shape code S.

#### **Properties:**

71CE7A85CC4F9 chip breaker face count

71CE7A96BC122 insert included angle

71CE7A979F41C insert hand

71CE7A9936610 insert interface code

71CE7A9DFA23A insert length

71CE7A9F0C79F insert shape code

71CE7A9F5308C insert thickness

71CE7A9FB11C3 insert width

71CE7AA05C819 m2-dimension

71CE7AA0972DB m-dimension  
 71CE7AA1998FF insert index count  
 71CE7AA1E3D75 tipped cutting edge code  
 71CE7AA215888 tolerance class insert  
 71CEAE9B489F4 cutting edge count  
 71CEAE9B67E4C corner count  
 71CED0217FA18 chip breaker property  
 71CED022114EC wiper edge property  
 71CF29872F0AB hand  
 71D1C829BC044 fixing hole property  
 71D1C82A5036D inscribed circle property  
 71DD6C90953D8 cutting edge condition code  
 71DD6C958C615 cutting edge effective length  
 71DD6C95DA49B cutting edge length  
 71DD7011A3D86 rounded corner property  
 71DD703B84298 coating property  
 71FD1E2EDD973 cutting point translation X-direction  
 71FD1E2F66B38 cutting point translation Y-direction  
 72550DF97C965 chamfer corner property  
 72550E143C993 insert thickness total  
 726E3EA8A9ED6 grade standard designation main application  
 726E3EA930D39 grade manufacturers designation  
 726E424FE9EC2 item style code  
 72719B167AE15 hole type  
 72719B203D712 insert side count  
 72719B23A5008 cutting data association property  
 72719B2427AED cutting data association code  
 72719B2B51519 seal  
 72807E1CC4B50 standard letter  
 728ECFD4A0629 designation  
 728ECFD658014 brand  
 728F4E7B06CA7 insert body diameter  
 729A919BF211A grade identification

## ISO/TS 13399-2:2021(E)

729A919C3D239 grade main application group identification letter

729A91A635147 grade application range min

729A91AAEB181 grade application range max

729A91AB4451E grade application main

72C4A71D1B94B body angle workpiece side

### **71DD68D8446CE-001 001**

#### **triangular insert trianins**

Replaceable cutting item with three equal sides and three equal internal angles

REMARKS This shape is identified by the ISO shape code T.

#### **Properties:**

71CE7A85CC4F9 chip breaker face count

71CE7A96BC122 insert included angle

71CE7A979F41C insert hand

71CE7A9936610 insert interface code

71CE7A9DFA23A insert length

71CE7A9F0C79F insert shape code

71CE7A9F5308C insert thickness

71CE7A9FB11C3 insert width

71CE7AA05C819 m2-dimension

71CE7AA0972DB m-dimension

71CE7AA1998FF insert index count

71CE7AA1E3D75 tipped cutting edge code

71CE7AA215888 tolerance class insert

71CEAE9B489F4 cutting edge count

71CEAE9B67E4C corner count

71CED0217FA18 chip breaker property

71CED022114EC wiper edge property

71CF29872F0AB hand

71D1C829BC044 fixing hole property

71D1C82A5036D inscribed circle property

71DD6C90953D8 cutting edge condition code

71DD6C958C615 cutting edge effective length

71DD6C95DA49B cutting edge length  
 71DD7011A3D86 rounded corner property  
 71DD703B84298 coating property  
 71FD1E2EDD973 cutting point translation X-direction  
 71FD1E2F66B38 cutting point translation Y-direction  
 72550DF97C965 chamfer corner property  
 72550E143C993 insert thickness total  
 726E3EA8A9ED6 grade standard designation main application  
 726E3EA930D39 grade manufacturers designation  
 726E424FE9EC2 item style code  
 72719B167AE15 hole type  
 72719B203D712 insert side count  
 72719B23A5008 cutting data association property  
 72719B2427AED cutting data association code  
 72719B2B51519 seal  
 72807E1CC4B50 standard letter  
 728ECFD4A0629 designation  
 728ECFD658014 brand  
 728F4E7B06CA7 insert body diameter  
 729A919BF211A grade identification  
 729A919C3D239 grade main application group identification letter  
 729A91A635147 grade application range min  
 729A91AAEB181 grade application range max  
 729A91AB4451E grade application main  
 72C4A71D1B94B body angle workpiece side

**71DD68D91938A-001 001**

**rectangular insert rectins**

Replaceable cutting item with four sides and four equal internal angles

NOTE Opposing sides are equal in length but adjacent sides are not equal in length.

REMARKS This shape is identified by the ISO shape code L.

**Properties:**

71CE7A85CC4F9 chip breaker face count

## ISO/TS 13399-2:2021(E)

71CE7A96BC122 insert included angle  
71CE7A979F41C insert hand  
71CE7A9936610 insert interface code  
71CE7A9DFA23A insert length  
71CE7A9F0C79F insert shape code  
71CE7A9F5308C insert thickness  
71CE7A9FB11C3 insert width  
71CE7AA05C819 m2-dimension  
71CE7AA0972DB m-dimension  
71CE7AA1998FF insert index count  
71CE7AA1E3D75 tipped cutting edge code  
71CE7AA215888 tolerance class insert  
71CEAE9B489F4 cutting edge count  
71CEAE9B67E4C corner count  
71CED0217FA18 chip breaker property  
71CED022114EC wiper edge property  
71CF29872F0AB hand  
71D1C829BC044 fixing hole property  
71DD6C90953D8 cutting edge condition code  
71DD6C958C615 cutting edge effective length  
71DD6C95DA49B cutting edge length  
71DD7011A3D86 rounded corner property  
71DD703B84298 coating property  
71EBC1E1074AB gauge diameter  
71FD1E2EDD973 cutting point translation X-direction  
71FD1E2F66B38 cutting point translation Y-direction  
72550A75A58F9 gauge circle property  
72550E143C993 insert thickness total  
726E3AACF1BB4 corner chamfer length minor  
726E3AADC0ABE corner chamfer angle minor  
726E3EA8A9ED6 grade standard designation main application  
726E3EA930D39 grade manufacturers designation  
726E424FE9EC2 item style code

72719B167AE15 hole type  
 72719B203D712 insert side count  
 72719B23A5008 cutting data association property  
 72719B2427AED cutting data association code  
 72719B2B51519 seal  
 727C2F69C65AE corner radius minor  
 72807E1CC4B50 standard letter  
 728ECFD4A0629 designation  
 728ECFD658014 brand  
 728F4E7B06CA7 insert body diameter  
 729A919BF211A grade identification  
 729A919C3D239 grade main application group identification letter  
 729A91A635147 grade application range min  
 729A91AAEB181 grade application range max  
 729A91AB4451E grade application main  
 72C4A71D1B94B body angle workpiece side

**71DD68D966F52-002 002****parallelogram insert parins**

Replaceable cutting item with four sides and four internal angles none of which are equal to ninety degrees

NOTE Opposing sides are parallel and equal in length.

REMARKS This shape is identified by the ISO shape code K.

**Properties:**

71CE7A85CC4F9 chip breaker face count  
 71CE7A96BC122 insert included angle  
 71CE7A979F41C insert hand  
 71CE7A9936610 insert interface code  
 71CE7A9DFA23A insert length  
 71CE7A9F0C79F insert shape code  
 71CE7A9F5308C insert thickness  
 71CE7A9FB11C3 insert width  
 71CE7AA05C819 m2-dimension  
 71CE7AA0972DB m-dimension

71CE7AA1998FF insert index count  
71CE7AA1E3D75 tipped cutting edge code  
71CE7AA215888 tolerance class insert  
71CEAE9B489F4 cutting edge count  
71CEAE9B67E4C corner count  
71CED0217FA18 chip breaker property  
71CED022114EC wiper edge property  
71CED03C97AAB weight of item  
71CF29872F0AB hand  
71D1C829BC044 fixing hole property  
71DD6C90953D8 cutting edge condition code  
71DD6C958C615 cutting edge effective length  
71DD6C95DA49B cutting edge length  
71DD7011A3D86 rounded corner property  
71DD703B84298 coating property  
71EBC1E1074AB gauge diameter  
71FD1E2EDD973 cutting point translation X-direction  
71FD1E2F66B38 cutting point translation Y-direction  
72550A75A58F9 gauge circle property  
72550DF97C965 chamfer corner property  
72550E143C993 insert thickness total  
726E3AACF1BB4 corner chamfer length minor  
726E3AADC0ABE corner chamfer angle minor  
726E3EA8A9ED6 grade standard designation main application  
726E3EA930D39 grade manufacturers designation  
726E424FE9EC2 item style code  
72719B167AE15 hole type  
72719B203D712 insert side count  
72719B23A5008 cutting data association property  
72719B2427AED cutting data association code  
72719B2B51519 seal  
727C2F69C65AE corner radius minor  
72807E1CC4B50 standard letter

728ECFD4A0629 designation

728ECFD658014 brand

728F4E7B06CA7 insert body diameter

729A919BF211A grade identification

729A919C3D239 grade main application group identification letter

729A91A635147 grade application range min

729A91AAEB181 grade application range max

729A91AB4451E grade application main

72C4A71D1B94B body angle workpiece side

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## Annex D (informative)

### Cutting item property definitions

#### D.1 Presentation

The layout of the entries in this annex is as follows.

**BSU-version number    Revision number    Value format**

data type group    data type    unit identifier

**preferred name    short name    SYMBOL**

definition

source of definition

BSU of condition property = name of condition property

Code = meaning of code

Source of code definition

NOTE

REMARKS

BSU of reference diagram

Illustration reference: Figure number

**Visible class:**

**Applicable classes:**

Allowed values: Available through the website of the Maintenance Agency.

NOTE 1    It is possible that an entry does not contain all the information specified.

NOTE 2    The value formats of properties are specified in ISO/TS 13399-100.

Some of the properties are illustrated in [Annexes E, F and G](#).

#### D.2 Cutting item properties

**72C4A71D1B94B-001    001    NR2S..3.6**

Real measure    degree of angle

**body angle workpiece side    bodangworsid    BAWS**

NOTE    Applicable to this document, ISO/TS 13399-3 and ISO/TS 13399-4.

**Visible class:**

71CE7A72B6DA7-003    cutting tool library

**Applicable classes:**

71EAD37F18F34-003 adaptive item type  
 71EAD388173EE-003 driver  
 71EAD3871D313-003 converter  
 726F59BDC3B08-003 collet  
 727BE50E057F1-003 adaptive feature type  
 727BE50E9FE57-001 torque bracing  
 71EEBDADB63BE-002 extender  
 71EAD385E51A0-002 reducer  
 71D1AA6C8FC75-003 cutting item type  
 71D1AE120D96E-003 nonequilateral equiangular  
 71DD68D91938A-001 rectangular insert  
 71D1AA489FD6E-003 nonequilateral nonequiangular  
 71DD68D966F52-002 parallelogram insert  
 71D1AA486FF89-004 equilateral equiangular  
 71DD68D829217-001 square insert  
 71DD68D7CB4FA-001 octagonal insert  
 71DD68D8446CE-001 triangular insert  
 71DD68D7A8E5F-001 hexagonal insert  
 71DD68D80B094-001 pentagonal insert  
 72550E1361C6C-003 drilling insert  
 7224CCDD587CF-003 non replaceable cutting item  
 71D1AE11B8B77-003 equilateral nonequiangular  
 71DD68D73218C-003 trigon insert  
 71DD68D301C30-001 rhombic insert  
 71D1AA6635E76-003 round insert  
 726E3AAC68D91-003 reaming insert  
 71DDA089C8D1E-003 specific profile insert  
 71E01A004C775-003 tool item type  
 71E01A00BD93C-003 drill  
 71E01A065F635-002 deep hole drill  
 71FAE7AAE8247-003 core drill  
 71E01A073CA28-003 centre drill

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71E01A069566C-002 chamfer drill  
71E01D8A88F65-002 pilot drill  
71E01A0608FE4-002 twist drill  
71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill  
71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill  
71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach  
71E01A081855D-003 tapered broach  
71E0250E32A07-002 cylindrical broach  
7272127CBD7B8-003 feed-out tool, machine operated

71E01A04E0236-003 threading tap  
 71E01A0E34C7F-002 conical tap  
 71E01A0A5355D-001 cylindrical tap  
 71E01A04A8AEC-003 ream  
 71E01A07BC535-001 cylindrical reamer  
 71E01A07ECCCF-001 profile reamer  
 71E01A07FF350-001 stepped reamer  
 71E01A07D2A1B-003 tapered reamer

**728ECFD658014-003 001 X25**

String

**brand brn BRAND**

Name that describes the brand of an item

NOTE Applicable to this document, ISO/TS 13399-3, ISO/TS 13399-4 and ISO/TS 13399-5.

REMARKS: e.g. WalterTitex.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71EAD37F18F34-003 adaptive item type  
 71EAD388173EE-003 driver  
 71EAD3871D313-003 converter  
 726F59BDC3B08-003 collet  
 727BE50E057F1-003 adaptive feature type  
 727BE50E9FE57-001 torque bracing  
 71EEBDADB63BE-002 extender  
 71EAD385E51A0-002 reducer  
 71D1AA6C8FC75-003 cutting item type  
 71D1AE120D96E-003 nonequilateral equiangular  
 71DD68D91938A-001 rectangular insert  
 71D1AA489FD6E-003 nonequilateral nonequangular  
 71DD68D966F52-002 parallelogram insert  
 71D1AA486FF89-004 equilateral equiangular  
 71DD68D829217-001 square insert

## ISO/TS 13399-2:2021(E)

71DD68D7CB4FA-001 octagonal insert  
71DD68D8446CE-001 triangular insert  
71DD68D7A8E5F-001 hexagonal insert  
71DD68D80B094-001 pentagonal insert  
72550E1361C6C-003 drilling insert  
7224CCDD587CF-003 non replaceable cutting item  
71D1AE11B8B77-003 equilateral nonequiangular  
71DD68D73218C-003 trigon insert  
71DD68D301C30-001 rhombic insert  
71D1AA6635E76-003 round insert  
726E3AAC68D91-003 reaming insert  
71DDA089C8D1E-003 specific profile insert  
71CE7A795C05C-003 assembly item type  
71EC56BBA9A2E-001 sleeve  
71FAD519268DE-001 centre pin  
71EC56BA16ACB-001 spring  
71EC56E106606-001 flat wire compression spring  
71EC56E165BC7-001 cup spring  
71EC56E223664-001 leaf spring  
71EC56E04199D-001 helical coil spring  
71EC56E0D4D19-001 helical disk spring  
71EC56E1C4C7D-001 gas spring  
71EC56BD5DCD8-001 insert shim  
71ED80DF6F976-002 insert clamp  
71FAD54E5A5BF-001 floating wedge clamp  
71FAD54E002D6-001 cantilever clamp  
71FAD54EABA17-001 wedge clamp  
71FAD54E2FE26-001 lever top clamp  
72719B3479E49-003 retention knob  
727CE214BF281-003 nut  
727CE216A3092-001 adjustment nut  
727CE21C733E3-001 lock nut  
71EC56B608ADC-001 insert wedge

71ED80E1EC9F6-001 nozzle  
 71EC56BC68ED7-001 bearing  
 71EC56B51596E-001 driving key  
 71EC56B58A355-001 driving ring  
 71EC56BAC1A7E-001 insert clamping system  
 71EC56D6D0499-001 cantilever clamping  
 71EC56D828198-001 wedge clamping  
 71EC6588A8C9E-001 lever insert clamping  
 71EC56D8A655A-001 insert screw clamping  
 71EC56D7601AD-001 floating wedge clamping  
 71EC56D97E8B0-001 deflection screw clamping  
 71EC56D908782-001 eccentric screw clamping  
 71FAD547E744B-001 integrated clamping  
 71EC56D71B815-001 lever top clamping  
 71EC56BA2E64E-001 screw thread lining  
 71EC61E259139-001 bush  
 71EC56B5B6465-001 pin  
 71EC5A6CFD68B-001 spacer  
 71EAD70F1B95A-001 nest  
 71ED80DFB6371-001 insert lever  
 71EC5A6E85D77-001 sealing ring  
 71EC5A6E9F6F0-001 retaining ring  
 71FA4B678C52A-002 externally threaded fastener component  
 71ED798F61BC2-002 insert screw  
 71FAE07C0A4A6-001 differential screw  
 71FAE07B90EEC-002 eccentric screw  
 71FC030E04050-002 deflection screw  
 71FAE07BCAC80-002 lever screw  
 71FC81BA3ECE9-002 shim screw  
 71ED80E62E75A-001 coolant deflector  
 71E01A004C775-003 tool item type  
 71E01A00BD93C-003 drill  
 71E01A065F635-002 deep hole drill

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71FAE7AAE8247-003 core drill  
71E01A073CA28-003 centre drill  
71E01A069566C-002 chamfer drill  
71E01D8A88F65-002 pilot drill  
71E01A0608FE4-002 twist drill  
71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill  
71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill  
71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach  
71E01A081855D-003 tapered broach

71E0250E32A07-002 cylindrical broach  
 7272127CBD7B8-003 feed-out tool, machine operated  
 71E01A04E0236-003 threading tap  
 71E01A0E34C7F-002 conical tap  
 71E01A0A5355D-001 cylindrical tap  
 71E01A04A8AEC-003 ream  
 71E01A07BC535-001 cylindrical reamer  
 71E01A07ECCCF-001 profile reamer  
 71E01A07FF350-001 stepped reamer  
 71E01A07D2A1B-003 tapered reamer

**72550DF97C965-003 003 B 1**

Boolean type

**chamfer corner property chacorpro CCP**

Possession of a chamfered corner

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AA489FD6E-003 nonequilateral nonequangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

72550E1361C6C-003 drilling insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71DD700BFD9B9-003 grooving parting profile

71DDA089C8D1E-003 specific profile insert

**71CE7A85CC4F9-003 002 NR1S..4**

Integer

**chip breaker face count chibrefaccou CB**

Number of faces of a cutting item that have chipbreakers

NOTE The allowed values are 0, 1 or 2.

REMARKS: A value of 0 means that there is not a chipbreaker on the cutting item.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71DD700BFD9B9-003 grooving parting profile

71D1AA6635E76-003 round insert

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71CE7A86A4264-003 002 X 17**

String

**chip breaker manufacturers designation chibremandes CBMD**

Manufacturer's identifier for a chip breaker

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD6C870BCCA-001 chip breaker

**71CED0217FA18-003 002 B 1**

Boolean type

**chip breaker property chibrepro CBP**

Possession by a profile of a chip breaker

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AA6C8FC75-003 cutting item type

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

72550E1361C6C-003 drilling insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D1AA6635E76-003 round insert

726E3AAC68D91-003 reaming insert

71DDA089C8D1E-003 specific profile insert

**71CE7A870948A-003 002 NR2S..4.6**

Real measure mm

**chip breaker width    chibrewid    LBB**

Width of a chip breaker measured at the mid-point of its length

Illustration reference: [Figure E.6](#), [Figure E.10](#), [Figure F.1](#), [Figure F.2](#), [Figure F.3](#), [Figure F.4](#), [Figure F.5](#), [Figure F.6](#), [Figure F.7](#), [Figure F.8](#), [Figure H.25](#), [Figure H.26](#), [Figure H.27](#), [Figure H.28](#), [Figure H.29](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD6C870BCCA-001 chip breaker

**71DD70308D3E3-003    002    NR2S..3.6**

Real measure degree of angle

**clearance angle major    cleangmaj    AN**

Angle of the major flank of the insert measured from a plane tangential to the cutting edge and perpendicular to the XY-plane of the coordinate system

NOTE This property is applicable to regular and irregular cutting items.

Illustration reference: [Figure E.6](#), [Figure E.7](#), [Figure E.8](#), [Figure E.11](#), [Figure E.19](#), [Figure F.1](#), [Figure F.2](#), [Figure F.4](#), [Figure F.8](#), [Figure H.1](#), [Figure H.2](#), [Figure H.3](#), [Figure H.4](#), [Figure H.5](#), [Figure H.6](#), [Figure H.7](#), [Figure H.8](#), [Figure H.9](#), [Figure H.10](#), [Figure H.12](#), [Figure H.13](#), [Figure H.14](#), [Figure H.15](#), [Figure H.16](#), [Figure H.17](#), [Figure H.20](#), [Figure H.25](#), [Figure H.26](#), [Figure H.27](#), [Figure H.28](#), [Figure H.29](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD7015F073B-001 flank major

**71DD7030E0A00-003    002    NR2S..3.6**

Real measure degree of angle

**clearance angle minor    cleangmin    ANN**

Angle of the minor flank of the insert measured from a plane tangential to the minor cutting edge and perpendicular to the XY-plane of the coordinate system

NOTE This property is applicable to both regular and irregular cutting items.

Illustration reference: [Figure E.8](#), [Figure E.10](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD701618C71-001 flank minor

**71DD7031A98E9-003 002 NR2S..3.6**

Real measure degree of angle

**clearance angle wiper edge cleangwipedg AS**

Angle of the flank of the wiper edge of the insert measured from a plane tangential to the wiper edge and perpendicular to the XY-plane of the coordinate system

NOTE This property is applicable to regular cutting items only.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD70163AA42-001 flank wiper edge

71DD6C9A21689-001 wiper edge

**72719B186A232-003 001 X 17**

String

**coating name coanam COATN**

Designation of an additional material that will be layered onto the surface of a cutting or tool item

NOTE The designation is upon manufacturer's discretion.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD9D01038CF-001 cutting item coating

**72719B18D1F27-003 001 X 17**

Enumeration of codes

**coating process coapro COATP**

Label for the method used for applying the coating

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD9D01038CF-001 cutting item coating

**71DD703B84298-003 003 B 1**

Boolean type

**coating property coapry CTP**

## ISO/TS 13399-2:2021(E)

Possession of a coating by a cutting item type

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71D1AA6C8FC75-003 cutting item type  
71D1AE120D96E-003 nonequilateral equiangular  
71DD68D91938A-001 rectangular insert  
71D1AA489FD6E-003 nonequilateral nonequiangular  
71DD68D966F52-002 parallelogram insert  
71D1AA486FF89-004 equilateral equiangular  
71DD68D829217-001 square insert  
71DD68D7CB4FA-001 octagonal insert  
71DD68D8446CE-001 triangular insert  
71DD68D7A8E5F-001 hexagonal insert  
71DD68D80B094-001 pentagonal insert  
72550E1361C6C-003 drilling insert  
7224CCDD587CF-003 non replaceable cutting item  
71D1AE11B8B77-003 equilateral nonequiangular  
71DD68D73218C-003 trigon insert  
71DD68D301C30-001 rhombic insert  
71D1AA6635E76-003 round insert  
726E3AAC68D91-003 reaming insert  
71DDA089C8D1E-003 specific profile insert  
71E01A004C775-003 tool item type  
71E01A00BD93C-003 drill  
71E01A065F635-002 deep hole drill  
71FAE7AAE8247-003 core drill  
71E01A073CA28-003 centre drill  
71E01A069566C-002 chamfer drill  
71E01D8A88F65-002 pilot drill  
71E01A0608FE4-002 twist drill  
71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill

71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill  
71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach  
71E01A081855D-003 tapered broach  
71E0250E32A07-002 cylindrical broach  
7272127CBD7B8-003 feed-out tool, machine operated  
71E01A04E0236-003 threading tap  
71E01A0E34C7F-002 conical tap  
71E01A0A5355D-001 cylindrical tap  
71E01A04A8AEC-003 ream  
71E01A07BC535-001 cylindrical reamer

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71E01A07ECCCF-001 profile reamer

71E01A07FF350-001 stepped reamer

71E01A07D2A1B-003 tapered reamer

### **71DD6C88F9210-003 002 NR2S..3.6**

Real measure degree of angle

**corner chamfer angle corchaang KCH**

Angle of a chamfer on a corner measured from the major cutting edge

REMARKS: Applies to cutting items with a regular geometric shape.

Illustration reference: [Figure E.5](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD6C884C4BD-001 chamfered corner

### **726E3AADC0ABE-003 001 NR2S..3.6**

Real measure degree of angle

**corner chamfer angle minor corchangmin KCHN**

Nominal angle of a chamfer measured in the XY plane from the major cutting edge that is located on the transition between the major and minor cutting edge where the insert included angle is not located

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

### **71DD6C895C25B-003 002 NR2S..4.6**

Real measure mm

**corner chamfer length corchalen BCH**

Nominal length of a chamfered corner measured in the XY-plane

NOTE See ISO 3002-1:1982, 3.1.2.

REMARKS: Applies to cutting items with a regular geometric shape.

Illustration reference: [Figure E.1](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD6C884C4BD-001 chamfered corner

**726E3AACF1BB4-003 001 NR2S..4.6**

Real measure mm

**corner chamfer length minor corchalenmin BCHN**

Nominal length of a chamfer measured in the XY plane that is located on the transition between the major and minor cutting edge where the insert included angle is not located

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

**71DD6C89A120F-003 002 NR2S..4.6**

Real measure mm

**corner chamfer width corchawid CHW**

Projected length of the chamfer on a corner of a cutting item measured in the XY-plane parallel to the X-axis

Illustration reference: [Figure E.5](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

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71DD6C884C4BD-001 chamfered corner

**71CEAE9B67E4C-003 002 NR1S..4**

Integer

**corner count corcou CNC**

Number of corners that participate in the cutting process

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71DD700BFD9B9-003 grooving parting profile

71DD700BE1D04-003 drilling profile

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71DD6C8802580-002 003 NR1S..4**

Integer

**corner identity coride CNID**

Integer number in the range  $-n < 0 <$  that identifies a cutting corner

**NOTE** The identifier 0 is applied to the corner on the X-axis of the cutting item reference system with the least value of the x dimension. From this point, corners are numbered in sequence by negative integers in a clockwise direction and by positive integers in a counter-clockwise direction.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700BC8BE2-002 ball nosed profile

71DD6C87BB5E1-001 cutting corner

71DD6C884C4BD-001 chamfered corner

71DD6C8A9985E-001 rounded corner

71DD700BFD9B9-003 grooving parting profile

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71DD6C8ACA503-003 002 NR2S..4.6**

Real measure mm

**corner radius corrad RE**

Nominal radius of a rounded corner measured in the XY-plane

Illustration reference: [Figure E.3](#), [Figure E.4](#), [Figure E.10](#), [Figure F.3](#), [Figure F.5](#), [Figure F.7](#), [Figure F.8](#), [Figure F.9](#), [Figure F.10](#), [Figure H.1](#), [Figure H.2](#), [Figure H.3](#), [Figure H.4](#), [Figure H.5](#), [Figure H.6](#), [Figure H.7](#), [Figure H.8](#), [Figure H.9](#), [Figure H.15](#), [Figure H.16](#), [Figure H.18](#), [Figure H.19](#), [Figure H.20](#), [Figure H.21](#), [Figure H.27](#), [Figure H.28](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700BC8BE2-002 ball nosed profile

71DD6C8A9985E-001 rounded corner

**726E3E65CBE4E-003 002 NR2S..4.6**

Real measure mm

**corner radius left hand corradlefhan REL**

Nominal radius of a rounded corner on the left side of a cutting profile measured on the XY-plane

Illustration reference: [Figure F.1](#), [Figure F.2](#), [Figure F.4](#), [Figure F.6](#), [Figure F.10](#), [Figure H.11](#), [Figure H.12](#), [Figure H.13](#), [Figure H.14](#), [Figure H.17](#).

**Visible class:**

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71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71DD700BFD9B9-003 grooving parting profile

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

### 72C4A7228B53D-001 001 NR2S..3.3

Real measure mm

### corner radius lower tolerance corradlowtol RETOLL

Lower tolerance for the corner radius, corner radius left hand and corner radius right hand

NOTE Applicable to this document and ISO/TS 13399-3.

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71DD6C8A9985E-001 rounded corner

71DDA089C8D1E-003 specific profile insert

### 727C2F69C65AE-003 001 NR2S..4.6

Real measure mm

### corner radius minor corradmin REN

Nominal radius of a rounded corner on that corner where the complementary insert included angle is located, measured in the XY-plane

Illustration reference: [Figure H.3](#), [Figure H.7](#).

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

**726E3E66CF011-003 002 NR2S..4.6**

Real measure mm

**corner radius right hand corradrighan RER**

Nominal radius of a rounded corner on the right side of a cutting profile measured in the XY-plane

Illustration reference: [Figure F.1](#), [Figure F.2](#), [Figure F.4](#), [Figure F.6](#), [Figure F.10](#), [Figure H.11](#), [Figure H.12](#), [Figure H.13](#), [Figure H.14](#), [Figure H.17](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700BFD9B9-003 grooving parting profile

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**72C4A722B2E35-001 001 NR2S..3.3**

Real measure mm

**corner radius upper tolerance corraduptol RETOLU**

Angle due to change of body direction measured counter clockwise from the yz plane of the MCS of tool item and cutting item

NOTE Applicable to this document and ISO/TS 13399-3.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD6C8A9985E-001 rounded corner

71DDA089C8D1E-003 specific profile insert

**72719B2427AED-003 001 X 30**

String

**cutting data association code cutdatasscod CDAC**

Label that provides an association to cutting data tables

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AA6C8FC75-003 cutting item type

71D1AE120D96E-003 nonequilateral equiangular

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71DD68D91938A-001 rectangular insert  
71D1AA489FD6E-003 nonequilateral nonequiangular  
71DD68D966F52-002 parallelogram insert  
71D1AA486FF89-004 equilateral equiangular  
71DD68D829217-001 square insert  
71DD68D7CB4FA-001 octagonal insert  
71DD68D8446CE-001 triangular insert  
71DD68D7A8E5F-001 hexagonal insert  
71DD68D80B094-001 pentagonal insert  
72550E1361C6C-003 drilling insert  
7224CCDD587CF-003 non replaceable cutting item  
71D1AE11B8B77-003 equilateral nonequiangular  
71DD68D73218C-003 trigon insert  
71DD68D301C30-001 rhombic insert  
71D1AA6635E76-003 round insert  
726E3AAC68D91-003 reaming insert  
71DDA089C8D1E-003 specific profile insert  
71E01A004C775-003 tool item type  
71E01A00BD93C-003 drill  
71E01A065F635-002 deep hole drill  
71FAE7AAE8247-003 core drill  
71E01A073CA28-003 centre drill  
71E01A069566C-002 chamfer drill  
71E01D8A88F65-002 pilot drill  
71E01A0608FE4-002 twist drill  
71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill  
71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill

71E01A05D27A8-003 end mill  
 71E01A0600702-003 ring mill  
 71EF07E037025-003 slotting cutter  
 71EF07E083383-003 threading grooving mill  
 71EF07DFC283C-003 double half side mill  
 71E01A0540BE7-003 slab mill  
 71E01A04F70F7-003 threading die  
 71E01A0E4EE75-001 cylindrical die  
 71E01A0E79239-001 hexagonal die  
 71E02C544BABE-003 burr tool  
 71E0251F304E1-003 rotating borer  
 71E01A05104CF-003 turn  
 71E01A0E9CBA9-003 boring bar  
 71E01A0EAF067-003 system tool  
 71E01A0E85121-003 prismatic tool holder  
 71D1066F279AD-002 cartridge  
 71E01A04C377D-003 broach  
 71E01A082DE72-002 disk broach  
 71E01A0838E9B-002 prismatic broach  
 71E01A081855D-003 tapered broach  
 71E0250E32A07-002 cylindrical broach  
 7272127CBD7B8-003 feed-out tool, machine operated  
 71E01A04E0236-003 threading tap  
 71E01A0E34C7F-002 conical tap  
 71E01A0A5355D-001 cylindrical tap  
 71E01A04A8AEC-003 ream  
 71E01A07BC535-001 cylindrical reamer  
 71E01A07ECCCF-001 profile reamer  
 71E01A07FF350-001 stepped reamer  
 71E01A07D2A1B-003 tapered reamer  
 72719B234F9E0-003 cutting data association

**71D084653E57F-003 002 NR2S..4.6**

Real measure mm

**cutting diameter cutdia DC**

Diameter of a circle created by a cutting reference point revolving around the tool axis of a rotating tool item

NOTE The normal of the machined peripheral surface points towards the axis of the cutting tool.

Illustration reference: [Figure H.22](#), [Figure H.23](#), [Figure H.24](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71E01A00BD93C-003 drill

71E01A065F635-002 deep hole drill

71FAE7AAE8247-003 core drill

71E01A073CA28-003 centre drill

71E01A069566C-002 chamfer drill

71E01D8A88F65-002 pilot drill

71E01A0608FE4-002 twist drill

71E01A0751456-003 conical drill

71E01A06BF88D-003 counterbore drill

71E01A06A8A08-003 countersink drill

71E01A067F73C-002 step drill

71E01A0769982-002 trepanning drill

71E01A008D13F-003 mill

71E01A05B627B-003 face mill

71E01A05EA320-003 half side mill

71E01A05D27A8-003 end mill

71E01A0600702-003 ring mill

71EF07E037025-003 slotting cutter

71EF07E083383-003 threading grooving mill

71EF07DFC283C-003 double half side mill

71E01A0540BE7-003 slab mill

71E02C544BABE-003 burr tool

71E0251F304E1-003 rotating borer

72550E1361C6C-003 drilling insert

71E01A082DE72-002 disk broach

71E01A081855D-003 tapered broach  
 71E0250E32A07-002 cylindrical broach  
 71DDA089C8D1E-003 specific profile insert  
 71E01A04A8AEC-003 ream  
 71E01A07BC535-001 cylindrical reamer  
 71E01A07ECCCF-001 profile reamer  
 71E01A07FF350-001 stepped reamer  
 71E01A07D2A1B-003 tapered reamer

**72719B23A5008-003 001 B 1**

Boolean type

**cutting data association property cutdatasspro CDAP**

Identifier whether an item has a cutting data association

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AA6C8FC75-003 cutting item type  
 71D1AE120D96E-003 nonequilateral equiangular  
 71DD68D91938A-001 rectangular insert  
 71D1AA489FD6E-003 nonequilateral nonequiangular  
 71DD68D966F52-002 parallelogram insert  
 71D1AA486FF89-004 equilateral equiangular  
 71DD68D829217-001 square insert  
 71DD68D7CB4FA-001 octagonal insert  
 71DD68D8446CE-001 triangular insert  
 71DD68D7A8E5F-001 hexagonal insert  
 71DD68D80B094-001 pentagonal insert  
 72550E1361C6C-003 drilling insert  
 7224CCDD587CF-003 non replaceable cutting item  
 71D1AE11B8B77-003 equilateral nonequiangular  
 71DD68D73218C-003 trigon insert  
 71DD68D301C30-001 rhombic insert  
 71D1AA6635E76-003 round insert

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726E3AAC68D91-003 reaming insert  
71DDA089C8D1E-003 specific profile insert  
71E01A004C775-003 tool item type  
71E01A00BD93C-003 drill  
71E01A065F635-002 deep hole drill  
71FAE7AAE8247-003 core drill  
71E01A073CA28-003 centre drill  
71E01A069566C-002 chamfer drill  
71E01D8A88F65-002 pilot drill  
71E01A0608FE4-002 twist drill  
71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill  
71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill  
71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder

71D1066F279AD-002 cartridge  
 71E01A04C377D-003 broach  
 71E01A082DE72-002 disk broach  
 71E01A0838E9B-002 prismatic broach  
 71E01A081855D-003 tapered broach  
 71E0250E32A07-002 cylindrical broach  
 7272127CBD7B8-003 feed-out tool, machine operated  
 71E01A04E0236-003 threading tap  
 71E01A0E34C7F-002 conical tap  
 71E01A0A5355D-001 cylindrical tap  
 71E01A04A8AEC-003 ream  
 71E01A07BC535-001 cylindrical reamer  
 71E01A07ECCCF-001 profile reamer  
 71E01A07FF350-001 stepped reamer  
 71E01A07D2A1B-003 tapered reamer  
 72719B234F9E0-003 cutting data association

**71CF30F02C968-003 004 NR2S..4.6**

Real measure mm

**cutting diameter insert cutdiains DCINS**

Diameter cut by a full diameter cutting insert when revolved around the tool axis

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

72550E1361C6C-003 drilling insert  
 71DD700BE1D04-003 drilling profile  
 71DDA089C8D1E-003 specific profile insert

**71CE7AA02C1CC-003 002 NR2S..3.6**

Real measure degree of angle

**cutting edge angle major cutedgangmaj KRINS**

Angle between the major cutting edge and the wiper edge

NOTE See ISO 3365.

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REMARKS: Used mainly for regular inserts with wiper edges.

Illustration reference: [Figure E.1](#), [Figure E.5](#).

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71DD6C9A21689-001 wiper edge

**71CE7AA3440B4-003 002 NR2S..3.6**

Real measure degree of angle

**cutting edge angle major left hand cutedgangmajlefhan PSIRL**

Angle in the XY-plane between the X-axis and the major cutting edge measured in a negative direction (clockwise)

NOTE Used for irregular inserts.

Illustration reference: [Figure F.2](#), [Figure F.3](#), [Figure F.4](#).

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71DD6C9466F30-001 cutting edge major

71DDA089C8D1E-003 specific profile insert

**71CE7AA78C2F0-003 002 NR2S..3.6**

Real measure degree of angle

**cutting edge angle major right hand cutedgangmajrighan PSIRR**

Angle in the XY-plane between the X-axis and the major cutting edge measured in a positive direction (counter clockwise)

NOTE Used for irregular inserts.

Illustration reference: [Figure F.2](#), [Figure F.3](#), [Figure F.4](#), [Figure H.14](#).

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71DD6C9466F30-001 cutting edge major

71DDA089C8D1E-003 specific profile insert

**71DD6C90953D8-003 002 X 1**

Enumeration of codes

**cutting edge condition code**    **cutedgconcod**    **CECC**

Identifier for the state of a cutting edge

NOTE    See ISO 1832:2017, 6.2.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AA6C8FC75-003 cutting item type

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

72550E1361C6C-003 drilling insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D1AA6635E76-003 round insert

726E3AAC68D91-003 reaming insert

71DDA089C8D1E-003 specific profile insert

71DD6C8C4F46C-001 cutting edge condition

**71CEAE9B489F4-003    002    NR1S..4**

Integer

**cutting edge count**    **cutedgcou**    **CEDC**

Number of edges of a cutting profile that can participate in the cutting process

**Visible class:**

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71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

72550E1361C6C-003 drilling insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D1AA6635E76-003 round insert

71DDA089C8D1E-003 specific profile insert

**71DD6C950E7CC-003 003 NR2S..4.6**

Real measure mm

**cutting edge curvature** **cutedgcur** **CECV**

Curvature of the major cutting edge measured in the xy-plane

NOTE Curvature is the inverse of the radius.

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71DD6C9466F30-001 cutting edge major

71DDA089C8D1E-003 specific profile insert

**71DD6C958C615-003 002 NR2S..4.6**

Real measure mm

**cutting edge effective length**    **cutedgeflen**    **LE**

Portion of the length of a cutting edge of a cutting item that is intended to perform the cutting operation

Illustration reference: [Figure E.9](#), [Figure E.10](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71DD6C9466F30-001 cutting edge major

**71DD6C8B86265-003    003    NR1S..4**

Integer

**cutting edge identity**    **cutedge**    **CEID**

Integer number in the range  $-n < 0 < n$  that identifies a cutting edge

NOTE    The identifier 0 is applied to the edge on the X-axis of the cutting item reference system with the least value of the x dimension. From this point, edges are numbered in sequence by negative integers in a clockwise direction and by positive integers in a counter-clockwise direction.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD6C8B42A9E-001 cutting edge

71DD6C9A21689-001 wiper edge

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71DD6C961D7FE-001 cutting edge minor  
71DD6C9466F30-001 cutting edge major  
71DD6C8C4F46C-001 cutting edge condition  
71DD6C93E8F02-001 cutting edge interrupted  
71DDA089C8D1E-003 specific profile insert

### 71DD6C95DA49B-003 003 NR2S..4.6

Real measure mm

#### **cutting edge length** **cutedglen** **L**

Theoretical length of the cutting edge of a cutting item over sharp corners

Illustration reference: [Figure E.2](#), [Figure E.3](#), [Figure E.4](#), [Figure E.9](#), [Figure E.10](#), [Figure E.12](#), [Figure E.14](#), [Figure E.16](#), [Figure E.17](#), [Figure E.18](#), [Figure H.1](#), [Figure H.2](#), [Figure H.3](#), [Figure H.4](#), [Figure H.5](#), [Figure H.6](#), [Figure H.7](#), [Figure H.8](#), [Figure H.9](#), [Figure H.25](#), [Figure H.26](#), [Figure H.27](#), [Figure H.28](#).

#### **Visible class:**

71CE7A72B6DA7-003 cutting tool library

#### **Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular  
71DD68D91938A-001 rectangular insert  
71D1AA489FD6E-003 nonequilateral nonequiangular  
71DD68D966F52-002 parallelogram insert  
71D1AA486FF89-004 equilateral equiangular  
71DD68D829217-001 square insert  
71DD68D7CB4FA-001 octagonal insert  
71DD68D8446CE-001 triangular insert  
71DD68D7A8E5F-001 hexagonal insert  
71DD68D80B094-001 pentagonal insert  
7224CCDD587CF-003 non replaceable cutting item  
71D1AE11B8B77-003 equilateral nonequiangular  
71DD68D73218C-003 trigon insert  
71DD68D301C30-001 rhombic insert  
71DD6C9466F30-001 cutting edge major  
71E01A04A8AEC-003 ream  
71E01A07BC535-001 cylindrical reamer  
71E01A07ECCCF-001 profile reamer

71E01A07FF350-001 stepped reamer

71E01A07D2A1B-003 tapered reamer

**726E3E6E8B8EB-003 001 NR2S..4.6**

Real measure mm

**cutting edge major radius cutedmajrad CEMR**

Dimension of the curved major cutting edge that creates a radius

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD68D73218C-003 trigon insert

71DDA089C8D1E-003 specific profile insert

**71FD1E2EDD973-003 002 NR2S..4.6**

Real measure mm

**cutting point translation X-direction cutpoitraxdir CTX**

Difference in the direction of the X-axis between the cutting reference point and the theoretical sharp point

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequangular

71DD68D73218C-003 trigon insert

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71DD68D301C30-001 rhombic insert

71D0808DA853B-003 master insert

71DDA089C8D1E-003 specific profile insert

### **71FD1E2F66B38-003 002 NR2S..4.6**

Real measure mm

#### **cutting point translation Y-direction cutpoitraydir CTY**

Difference in the direction of the Y-axis between the cutting reference point and the theoretical sharp point

#### **Visible class:**

71CE7A72B6DA7-003 cutting tool library

#### **Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D0808DA853B-003 master insert

71DDA089C8D1E-003 specific profile insert

### **71CEAEBE2B825-003 003 R2S..4.6**

Real measure mm

#### **cutting width cutwid CW**

Width of the cut made by the cutting item(s) as it (they) penetrates into the work surface

REMARKS: This is also used as a property of a tool item.

Illustration reference: [Figure H.1](#), [Figure H.12](#), [Figure H.13](#), [Figure H.14](#), [Figure H.15](#), [Figure H.16](#), [Figure H.17](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700BFD9B9-003 grooving parting profile

71DDA089C8D1E-003 specific profile insert

**72C4A721F1835-001 001 NR2S..3.3**

Real measure mm

**cutting width lower tolerance cutwidlowtol CWTOLL**

Lower tolerance for the cutting width

NOTE Applicable to this document and ISO/TS 13399-3.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700BFD9B9-003 grooving parting profile

71DDA089C8D1E-003 specific profile insert

**72C4A72270CF9-001 001 NR2S..3.3**

Real measure mm

**cutting width upper tolerance cutwidupptol CWTOLU**

Upper tolerance for the cutting width

NOTE Applicable to this document and ISO/TS 13399-3.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700BFD9B9-003 grooving parting profile

71DDA089C8D1E-003 specific profile insert

**71D07576C0558-003 002**

Level mm

**depth of cut maximum depofcutmax APMX**

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Maximum engagement of the cutting edge or edges with the workpiece measured perpendicular to the feed motion

NOTE See ISO 3002-3:1984, 6.1.1.

Illustration reference: [Figure F.1](#).

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71E01A008D13F-003 mill

71E01A05B627B-003 face mill

71E01A05EA320-003 half side mill

71E01A05D27A8-003 end mill

71E01A0600702-003 ring mill

71EF07E037025-003 slotting cutter

71EF07E083383-003 threading grooving mill

71EF07DFC283C-003 double half side mill

71E01A0540BE7-003 slab mill

71E0251F304E1-003 rotating borer

71DD700BFD9B9-003 grooving parting profile

71E0250E32A07-002 cylindrical broach

71E01A04E0236-003 threading tap

71E01A0E34C7F-002 conical tap

71E01A0A5355D-001 cylindrical tap

**728ECFD4A0629-003 001 X40**

String

**designation des DES**

Code of an item that describes the item without material specification

NOTE See this document, ISO/TS 13399-3, ISO/TS 13399-4 and ISO/TS 13399-5.

REMARKS: e.g. ISO 1832, ISO 11529.

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71EAD37F18F34-003 adaptive item type

71EAD388173EE-003 driver

71EAD3871D313-003 converter  
 726F59BDC3B08-003 collet  
 727BE50E057F1-003 adaptive feature type  
 727BE50E9FE57-001 torque bracing  
 71EEBDADB63BE-002 extender  
 71EAD385E51A0-002 reducer  
 71D1AA6C8FC75-003 cutting item type  
 71D1AE120D96E-003 nonequilateral equiangular  
 71DD68D91938A-001 rectangular insert  
 71D1AA489FD6E-003 nonequilateral nonequiangular  
 71DD68D966F52-002 parallelogram insert  
 71D1AA486FF89-004 equilateral equiangular  
 71DD68D829217-001 square insert  
 71DD68D7CB4FA-001 octagonal insert  
 71DD68D8446CE-001 triangular insert  
 71DD68D7A8E5F-001 hexagonal insert  
 71DD68D80B094-001 pentagonal insert  
 72550E1361C6C-003 drilling insert  
 7224CCDD587CF-003 non replaceable cutting item  
 71D1AE11B8B77-003 equilateral nonequiangular  
 71DD68D73218C-003 trigon insert  
 71DD68D301C30-001 rhombic insert  
 71D1AA6635E76-003 round insert  
 726E3AAC68D91-003 reaming insert  
 71DDA089C8D1E-003 specific profile insert  
 71CE7A795C05C-003 assembly item type  
 71EC56BBA9A2E-001 sleeve  
 71FAD519268DE-001 centre pin  
 71EC56BA16ACB-001 spring  
 71EC56E106606-001 flat wire compression spring  
 71EC56E165BC7-001 cup spring  
 71EC56E223664-001 leaf spring  
 71EC56E04199D-001 helical coil spring

71EC56E0D4D19-001 helical disk spring  
71EC56E1C4C7D-001 gas spring  
71EC56BD5DCD8-001 insert shim  
71ED80DF6F976-002 insert clamp  
71FAD54E5A5BF-001 floating wedge clamp  
71FAD54E002D6-001 cantilever clamp  
71FAD54EABA17-001 wedge clamp  
71FAD54E2FE26-001 lever top clamp  
72719B3479E49-003 retention knob  
727CE214BF281-003 nut  
727CE216A3092-001 adjustment nut  
727CE21C733E3-001 lock nut  
71EC56B608ADC-001 insert wedge  
71ED80E1EC9F6-001 nozzle  
71EC56BC68ED7-001 bearing  
71EC56B51596E-001 driving key  
71EC56B58A355-001 driving ring  
71EC56BAC1A7E-001 insert clamping system  
71EC56D6D0499-001 cantilever clamping  
71EC56D828198-001 wedge clamping  
71EC6588A8C9E-001 lever insert clamping  
71EC56D8A655A-001 insert screw clamping  
71EC56D7601AD-001 floating wedge clamping  
71EC56D97E8B0-001 deflection screw clamping  
71EC56D908782-001 eccentric screw clamping  
71FAD547E744B-001 integrated clamping  
71EC56D71B815-001 lever top clamping  
71EC56BA2E64E-001 screw thread lining  
71EC61E259139-001 bush  
71EC56B5B6465-001 pin  
71EC5A6CFD68B-001 spacer  
71EAD70F1B95A-001 nest  
71ED80DFB6371-001 insert lever

71EC5A6E85D77-001 sealing ring  
 71EC5A6E9F6F0-001 retaining ring  
 71FA4B678C52A-002 externally threaded fastener component  
 71ED798F61BC2-002 insert screw  
 71FAE07C0A4A6-001 differential screw  
 71FAE07B90EEC-002 eccentric screw  
 71FC030E04050-002 deflection screw  
 71FAE07BCAC80-002 lever screw  
 71FC81BA3ECE9-002 shim screw  
 71ED80E62E75A-001 coolant deflector  
 71E01A004C775-003 tool item type  
 71E01A00BD93C-003 drill  
 71E01A065F635-002 deep hole drill  
 71FAE7AAE8247-003 core drill  
 71E01A073CA28-003 centre drill  
 71E01A069566C-002 chamfer drill  
 71E01D8A88F65-002 pilot drill  
 71E01A0608FE4-002 twist drill  
 71E01A0751456-003 conical drill  
 71E01A06BF88D-003 counterbore drill  
 71E01A06A8A08-003 countersink drill  
 71E01A067F73C-002 step drill  
 71E01A0769982-002 trepanning drill  
 71E01A008D13F-003 mill  
 71E01A05B627B-003 face mill  
 71E01A05EA320-003 half side mill  
 71E01A05D27A8-003 end mill  
 71E01A0600702-003 ring mill  
 71EF07E037025-003 slotting cutter  
 71EF07E083383-003 threading grooving mill  
 71EF07DFC283C-003 double half side mill  
 71E01A0540BE7-003 slab mill  
 71E01A04F70F7-003 threading die

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71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach  
71E01A081855D-003 tapered broach  
71E0250E32A07-002 cylindrical broach  
7272127CBD7B8-003 feed-out tool, machine operated  
71E01A04E0236-003 threading tap  
71E01A0E34C7F-002 conical tap  
71E01A0A5355D-001 cylindrical tap  
71E01A04A8AEC-003 ream  
71E01A07BC535-001 cylindrical reamer  
71E01A07ECCCF-001 profile reamer  
71E01A07FF350-001 stepped reamer  
71E01A07D2A1B-003 tapered reamer

### **71DD6C9332D2C-003 002 NR2S..3.6**

Real measure degree of angle

**face land angle faclanang GB**

Angle of the face land measured from the xy-plane

#### **Visible class:**

71CE7A72B6DA7-003 cutting tool library

#### **Applicable classes:**

71DD6C8B42A9E-001 cutting edge

71DD6C9A21689-001 wiper edge

71DD6C961D7FE-001 cutting edge minor  
 71DD6C9466F30-001 cutting edge major  
 71DD6C8C4F46C-001 cutting edge condition  
 71DD6C93E8F02-001 cutting edge interrupted

**71DD6C9371B86-003 002 X 17**

String

**face land size code faclansizcod FLSC**

Identifier for the width and the angle of a face land

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD6C8B42A9E-001 cutting edge  
 71DD6C9A21689-001 wiper edge  
 71DD6C961D7FE-001 cutting edge minor  
 71DD6C9466F30-001 cutting edge major  
 71DD6C8C4F46C-001 cutting edge condition  
 71DD6C93E8F02-001 cutting edge interrupted

**71DD6C9394F40-003 002 NR2S..4.6**

Real measure mm

**face land width faclanwid BN**

Projected length of the face land measured from a plane that is orthogonal to the xy- plane and passes through the cutting edge

Illustration reference: [Figure E.7](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD6C8B42A9E-001 cutting edge  
 71DD6C9A21689-001 wiper edge  
 71DD6C961D7FE-001 cutting edge minor  
 71DD6C9466F30-001 cutting edge major  
 71DD6C8C4F46C-001 cutting edge condition  
 71DD6C93E8F02-001 cutting edge interrupted

**726E3AAFF0C9-003 001 NR2S..3.6**

Real measure degree of angle

**fixing hole chamfer angle** fixholchaang FHCA

Nominal angle of a chamfer measured in the XZ plane from the axis of the fixing hole

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD7014BF2A1-003 fixing hole

**726E3AB7AACED-003 001 NR2S..4.6**

Real measure mm

**fixing hole chamfer width** fixholchawid FHCW

Projected length of the chamfer on a fixing hole of a cutting item measured in the XZ-plane parallel to the X-axis

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD7014BF2A1-003 fixing hole

**726E3AB5E90FD-003 001 NR2S..3.6**

Real measure degree of angle

**fixing hole countersunk angle** fixholcouang FHCSA

Included angle between generatrices of a conical part of the fixing hole measured in the XZ plane

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD7014BF2A1-003 fixing hole

**726E3AB6E5726-003 001 NR2S..4.6**

Real measure mm

**fixing hole countersunk depth** fixholcoudep FHCSDP

Depth of the countersunk of a fixing hole measured from the top face of an insert in negative Z-direction

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD7014BF2A1-003 fixing hole

**726E3AB654EA6-003 001 NR2S..4.6**

Real measure mm

**fixing hole countersunk diameter fixholcoudia FHCS D**

Diameter of the enlarged portion of a hole through the body of an insert

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD7014BF2A1-003 fixing hole

**726E3AB757259-003 001 NR2S..4.6**

Real measure mm

**fixing hole countersunk radius fixholcourad FHCSR**

Radius of the curved section of the countersunk of a fixing hole

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD7014BF2A1-003 fixing hole

**71CE7A968C8FE-003 002 NR2S..4.6**

Real measure mm

**fixing hole diameter fixholdia D1**

Diameter of the hole through the body of an insert

Illustration reference: [Figure E.16](#), [Figure E.19](#), [Figure H.11](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD7014BF2A1-003 fixing hole

**71D1C829BC044-003 003 B 1**

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Boolean type

**fixing hole property**   **fixholpro**   **FXHLP**

Possession by a cutting insert type of a hole through the body of the insert that is used for attaching the insert to a tool item

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

72550E1361C6C-003 drilling insert

71D1AE11B8B77-003 equilateral nonequangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D1AA6635E76-003 round insert

71DDA089C8D1E-003 specific profile insert

**71DD70158265C-003 002 NR1S..4**

Integer

**flank identity**   **flaide**   **FLID**

Ordinal number of a flank

REMARKS: Flank surfaces of a cutting item are numbered in sequence starting from the cutting edge.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD70155A4B1-002 flank

71DD70163AA42-001 flank wiper edge

71DD7015F073B-001 flank major

71DD701618C71-001 flank minor

**71DCD39338974-003 002 NR2S..4.6**

Real measure mm

**functional length funlen LF**

Distance from the gauge plane or from the end of the shank, if a gauge plane does not exist, to the cutting reference point determined by the main function of the tool on tool item types or to the gauge plane on the workpiece side or the seating surface on adaptive items, if a gauge plane does not exist

NOTE The functional length is multiplied on stepped tools.

REMARKS: The positioning of LF can be different for cylindrical shanks according to ISYC 307-01 (cylindrical shanks), ISYC 307-02 (weldon shanks) and cylindrical shanks with planar contact surface.

Illustration reference: [Figure H.22](#), [Figure H.23](#) and [Figure H.24](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71E01A00BD93C-003 drill

71E01A065F635-002 deep hole drill

71FAE7AAE8247-003 core drill

71E01A073CA28-003 centre drill

71E01A069566C-002 chamfer drill

71E01D8A88F65-002 pilot drill

71E01A0608FE4-002 twist drill

71E01A0751456-003 conical drill

71E01A06BF88D-003 counterbore drill

71E01A06A8A08-003 countersink drill

71E01A067F73C-002 step drill

71E01A0769982-002 trepanning drill

71E01A008D13F-003 mill

71E01A05B627B-003 face mill

71E01A05EA320-003 half side mill

71E01A05D27A8-003 end mill

71E01A0600702-003 ring mill

71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E02C544BABE-003 burr tool  
71EAD37F18F34-003 adaptive item type  
71EAD388173EE-003 driver  
71EAD3871D313-003 converter  
726F59BDC3B08-003 collet  
727BE50E057F1-003 adaptive feature type  
727BE50E9FE57-001 torque bracing  
71EEBDADB63BE-002 extender  
71EAD385E51A0-002 reducer  
72550E1361C6C-003 drilling insert  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach  
71E01A081855D-003 tapered broach  
71E0250E32A07-002 cylindrical broach  
71E01A04E0236-003 threading tap  
71E01A0E34C7F-002 conical tap  
71E01A0A5355D-001 cylindrical tap  
71DDA089C8D1E-003 specific profile insert  
71E01A04A8AEC-003 ream  
71E01A07BC535-001 cylindrical reamer  
71E01A07ECCCF-001 profile reamer  
71E01A07FF350-001 stepped reamer  
71E01A07D2A1B-003 tapered reamer

**72550A75A58F9-003 003 B 1**

Boolean type

**gauge circle property gaucirpro GACIRP**

Possession of a measuring device such as gauge roll or gauge ball to control dimensions of an item

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71DDA089C8D1E-003 specific profile insert

**71EBC1E1074AB-003 003 NR2S..4.6**

Real measure mm

**gauge diameter gaudia DG**

Dimension of a measuring device such as a cylinder or a ball

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

72550A77D9DB9-001 gauge circle

**729A91AB4451E-001 001 X 3**

Enumeration of codes

**grade application main graappmai GRDAPPM**

Recommended value of hard cutting material range

NOTE See this document and ISO/TS 13399-3.

REMARKS: Indexable item.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

- 71D1AA6C8FC75-003 cutting item type
- 71D1AE120D96E-003 nonequilateral equiangular
- 71DD68D91938A-001 rectangular insert
- 71D1AA489FD6E-003 nonequilateral nonequiangular
- 71DD68D966F52-002 parallelogram insert
- 71D1AA486FF89-004 equilateral equiangular
- 71DD68D829217-001 square insert
- 71DD68D7CB4FA-001 octagonal insert
- 71DD68D8446CE-001 triangular insert
- 71DD68D7A8E5F-001 hexagonal insert
- 71DD68D80B094-001 pentagonal insert
- 72550E1361C6C-003 drilling insert
- 7224CCDD587CF-003 non replaceable cutting item
- 71D1AE11B8B77-003 equilateral nonequiangular
- 71DD68D73218C-003 trigon insert
- 71DD68D301C30-001 rhombic insert
- 71D1AA6635E76-003 round insert
- 726E3AAC68D91-003 reaming insert
- 71DDA089C8D1E-003 specific profile insert
- 71E01A004C775-003 tool item type
- 71E01A00BD93C-003 drill
- 71E01A065F635-002 deep hole drill
- 71FAE7AAE8247-003 core drill
- 71E01A073CA28-003 centre drill
- 71E01A069566C-002 chamfer drill
- 71E01D8A88F65-002 pilot drill
- 71E01A0608FE4-002 twist drill
- 71E01A0751456-003 conical drill
- 71E01A06BF88D-003 counterbore drill
- 71E01A06A8A08-003 countersink drill

71E01A067F73C-002 step drill  
 71E01A0769982-002 trepanning drill  
 71E01A008D13F-003 mill  
 71E01A05B627B-003 face mill  
 71E01A05EA320-003 half side mill  
 71E01A05D27A8-003 end mill  
 71E01A0600702-003 ring mill  
 71EF07E037025-003 slotting cutter  
 71EF07E083383-003 threading grooving mill  
 71EF07DFC283C-003 double half side mill  
 71E01A0540BE7-003 slab mill  
 71E01A04F70F7-003 threading die  
 71E01A0E4EE75-001 cylindrical die  
 71E01A0E79239-001 hexagonal die  
 71E02C544BABE-003 burr tool  
 71E0251F304E1-003 rotating borer  
 71E01A05104CF-003 turn  
 71E01A0E9CBA9-003 boring bar  
 71E01A0EAF067-003 system tool  
 71E01A0E85121-003 prismatic tool holder  
 71D1066F279AD-002 cartridge  
 71E01A04C377D-003 broach  
 71E01A082DE72-002 disk broach  
 71E01A0838E9B-002 prismatic broach  
 71E01A081855D-003 tapered broach  
 71E0250E32A07-002 cylindrical broach  
 7272127CBD7B8-003 feed-out tool, machine operated  
 71E01A04E0236-003 threading tap  
 71E01A0E34C7F-002 conical tap  
 71E01A0A5355D-001 cylindrical tap  
 71E01A04A8AEC-003 ream  
 71E01A07BC535-001 cylindrical reamer  
 71E01A07ECCCF-001 profile reamer

## ISO/TS 13399-2:2021(E)

71E01A07FF350-001 stepped reamer

71E01A07D2A1B-003 tapered reamer

**729A91AAEB181-001 001 X 3**

Enumeration of codes

**grade application range max graappranmax GRDAPRX**

Maximum value of hard cutting material application range

NOTE See this document and ISO/TS 13399-3.

REMARKS: Indexable item.

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71D1AA6C8FC75-003 cutting item type

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

72550E1361C6C-003 drilling insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D1AA6635E76-003 round insert

726E3AAC68D91-003 reaming insert

71DDA089C8D1E-003 specific profile insert

71E01A004C775-003 tool item type

71E01A00BD93C-003 drill

71E01A065F635-002 deep hole drill  
71FAE7AAE8247-003 core drill  
71E01A073CA28-003 centre drill  
71E01A069566C-002 chamfer drill  
71E01D8A88F65-002 pilot drill  
71E01A0608FE4-002 twist drill  
71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill  
71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill  
71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach

## ISO/TS 13399-2:2021(E)

71E01A081855D-003 tapered broach  
71E0250E32A07-002 cylindrical broach  
7272127CBD7B8-003 feed-out tool, machine operated  
71E01A04E0236-003 threading tap  
71E01A0E34C7F-002 conical tap  
71E01A0A5355D-001 cylindrical tap  
71E01A04A8AEC-003 ream  
71E01A07BC535-001 cylindrical reamer  
71E01A07ECCCF-001 profile reamer  
71E01A07FF350-001 stepped reamer  
71E01A07D2A1B-003 tapered reamer

**729A91A635147-001 001 X 3**

Enumeration of codes

**grade application range min graappranmin GRDAPRN**

Minimum value of hard cutting material application range

NOTE See this document and ISO/TS 13399-3.

REMARKS: Indexable item.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AA6C8FC75-003 cutting item type  
71D1AE120D96E-003 nonequilateral equiangular  
71DD68D91938A-001 rectangular insert  
71D1AA489FD6E-003 nonequilateral nonequangular  
71DD68D966F52-002 parallelogram insert  
71D1AA486FF89-004 equilateral equiangular  
71DD68D829217-001 square insert  
71DD68D7CB4FA-001 octagonal insert  
71DD68D8446CE-001 triangular insert  
71DD68D7A8E5F-001 hexagonal insert  
71DD68D80B094-001 pentagonal insert  
72550E1361C6C-003 drilling insert

7224CCDD587CF-003 non replaceable cutting item  
71D1AE11B8B77-003 equilateral nonequangular  
71DD68D73218C-003 trigon insert  
71DD68D301C30-001 rhombic insert  
71D1AA6635E76-003 round insert  
726E3AAC68D91-003 reaming insert  
71DDA089C8D1E-003 specific profile insert  
71E01A004C775-003 tool item type  
71E01A00BD93C-003 drill  
71E01A065F635-002 deep hole drill  
71FAE7AAE8247-003 core drill  
71E01A073CA28-003 centre drill  
71E01A069566C-002 chamfer drill  
71E01D8A88F65-002 pilot drill  
71E01A0608FE4-002 twist drill  
71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill  
71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill  
71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool

## ISO/TS 13399-2:2021(E)

71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach  
71E01A081855D-003 tapered broach  
71E0250E32A07-002 cylindrical broach  
7272127CBD7B8-003 feed-out tool, machine operated  
71E01A04E0236-003 threading tap  
71E01A0E34C7F-002 conical tap  
71E01A0A5355D-001 cylindrical tap  
71E01A04A8AEC-003 ream  
71E01A07BC535-001 cylindrical reamer  
71E01A07ECCCF-001 profile reamer  
71E01A07FF350-001 stepped reamer  
71E01A07D2A1B-003 tapered reamer

**729A919BF211A-001 001 X 2**

Enumeration of codes

**grade identification grade GRDID**

Identification letter from ISO 513

NOTE See this document and ISO/TS 13399-3.

### **Visible class:**

71CE7A72B6DA7-003 cutting tool library

### **Applicable classes:**

71D1AA6C8FC75-003 cutting item type  
71D1AE120D96E-003 nonequilateral equiangular  
71DD68D91938A-001 rectangular insert  
71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert  
71D1AA486FF89-004 equilateral equiangular  
71DD68D829217-001 square insert  
71DD68D7CB4FA-001 octagonal insert  
71DD68D8446CE-001 triangular insert  
71DD68D7A8E5F-001 hexagonal insert  
71DD68D80B094-001 pentagonal insert  
72550E1361C6C-003 drilling insert  
7224CCDD587CF-003 non replaceable cutting item  
71D1AE11B8B77-003 equilateral nonequiangular  
71DD68D73218C-003 trigon insert  
71DD68D301C30-001 rhombic insert  
71D1AA6635E76-003 round insert  
726E3AAC68D91-003 reaming insert  
71DDA089C8D1E-003 specific profile insert  
71E01A004C775-003 tool item type  
71E01A00BD93C-003 drill  
71E01A065F635-002 deep hole drill  
71FAE7AAE8247-003 core drill  
71E01A073CA28-003 centre drill  
71E01A069566C-002 chamfer drill  
71E01D8A88F65-002 pilot drill  
71E01A0608FE4-002 twist drill  
71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill  
71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill

## ISO/TS 13399-2:2021(E)

71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach  
71E01A081855D-003 tapered broach  
71E0250E32A07-002 cylindrical broach  
7272127CBD7B8-003 feed-out tool, machine operated  
71E01A04E0236-003 threading tap  
71E01A0E34C7F-002 conical tap  
71E01A0A5355D-001 cylindrical tap  
71E01A04A8AEC-003 ream  
71E01A07BC535-001 cylindrical reamer  
71E01A07ECCCF-001 profile reamer  
71E01A07FF350-001 stepped reamer  
71E01A07D2A1B-003 tapered reamer

**729A919C3D239-001 001 X 1**

Enumeration of codes

**grade main application group identification letter gramaiappgroidalet GRDMAPID**

Group application of hard cutting materials

NOTE See this document and ISO/TS 13399-3.

REMARKS: Indexable item.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AA6C8FC75-003 cutting item type  
 71D1AE120D96E-003 nonequilateral equiangular  
 71DD68D91938A-001 rectangular insert  
 71D1AA489FD6E-003 nonequilateral nonequangular  
 71DD68D966F52-002 parallelogram insert  
 71D1AA486FF89-004 equilateral equiangular  
 71DD68D829217-001 square insert  
 71DD68D7CB4FA-001 octagonal insert  
 71DD68D8446CE-001 triangular insert  
 71DD68D7A8E5F-001 hexagonal insert  
 71DD68D80B094-001 pentagonal insert  
 72550E1361C6C-003 drilling insert  
 7224CCDD587CF-003 non replaceable cutting item  
 71D1AE11B8B77-003 equilateral nonequangular  
 71DD68D73218C-003 trigon insert  
 71DD68D301C30-001 rhombic insert  
 71D1AA6635E76-003 round insert  
 726E3AAC68D91-003 reaming insert  
 71DDA089C8D1E-003 specific profile insert  
 71E01A004C775-003 tool item type  
 71E01A00BD93C-003 drill  
 71E01A065F635-002 deep hole drill  
 71FAE7AAE8247-003 core drill  
 71E01A073CA28-003 centre drill  
 71E01A069566C-002 chamfer drill  
 71E01D8A88F65-002 pilot drill  
 71E01A0608FE4-002 twist drill

71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill  
71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill  
71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach  
71E01A081855D-003 tapered broach  
71E0250E32A07-002 cylindrical broach  
7272127CBD7B8-003 feed-out tool, machine operated  
71E01A04E0236-003 threading tap  
71E01A0E34C7F-002 conical tap  
71E01A0A5355D-001 cylindrical tap

71E01A04A8AEC-003 ream  
 71E01A07BC535-001 cylindrical reamer  
 71E01A07ECCCF-001 profile reamer  
 71E01A07FF350-001 stepped reamer  
 71E01A07D2A1B-003 tapered reamer

**726E3EA930D39-003 001 X 10**

String

**grade manufacturers designation gramandes GRDMFG**

Identifier for the manufacturer's designation of the basic material of the cutting part of a tool or the replaceable insert

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AA6C8FC75-003 cutting item type  
 71D1AE120D96E-003 nonequilateral equiangular  
 71DD68D91938A-001 rectangular insert  
 71D1AA489FD6E-003 nonequilateral nonequilateral  
 71DD68D966F52-002 parallelogram insert  
 71D1AA486FF89-004 equilateral equiangular  
 71DD68D829217-001 square insert  
 71DD68D7CB4FA-001 octagonal insert  
 71DD68D8446CE-001 triangular insert  
 71DD68D7A8E5F-001 hexagonal insert  
 71DD68D80B094-001 pentagonal insert  
 72550E1361C6C-003 drilling insert  
 7224CCDD587CF-003 non replaceable cutting item  
 71D1AE11B8B77-003 equilateral nonequilateral  
 71DD68D73218C-003 trigon insert  
 71DD68D301C30-001 rhombic insert  
 71D1AA6635E76-003 round insert  
 726E3AAC68D91-003 reaming insert  
 71DDA089C8D1E-003 specific profile insert  
 71E01A004C775-003 tool item type

## ISO/TS 13399-2:2021(E)

71E01A00BD93C-003 drill  
71E01A065F635-002 deep hole drill  
71FAE7AAE8247-003 core drill  
71E01A073CA28-003 centre drill  
71E01A069566C-002 chamfer drill  
71E01D8A88F65-002 pilot drill  
71E01A0608FE4-002 twist drill  
71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill  
71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill  
71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach

71E01A0838E9B-002 prismatic broach  
 71E01A081855D-003 tapered broach  
 71E0250E32A07-002 cylindrical broach  
 7272127CBD7B8-003 feed-out tool, machine operated  
 71E01A04E0236-003 threading tap  
 71E01A0E34C7F-002 conical tap  
 71E01A0A5355D-001 cylindrical tap  
 71E01A04A8AEC-003 ream  
 71E01A07BC535-001 cylindrical reamer  
 71E01A07ECCCF-001 profile reamer  
 71E01A07FF350-001 stepped reamer  
 71E01A07D2A1B-003 tapered reamer

**726E3EA8A9ED6-003 001 X 10**

String

**grade standard designation main application** grastadesmaiapp **GRDPRI0**

Identifier for the designation of the basic material of the cutting part of a tool or the replaceable insert that will be suitable for the main application

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AA6C8FC75-003 cutting item type  
 71D1AE120D96E-003 nonequilateral equiangular  
 71DD68D91938A-001 rectangular insert  
 71D1AA489FD6E-003 nonequilateral nonequiangular  
 71DD68D966F52-002 parallelogram insert  
 71D1AA486FF89-004 equilateral equiangular  
 71DD68D829217-001 square insert  
 71DD68D7CB4FA-001 octagonal insert  
 71DD68D8446CE-001 triangular insert  
 71DD68D7A8E5F-001 hexagonal insert  
 71DD68D80B094-001 pentagonal insert  
 72550E1361C6C-003 drilling insert  
 7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequangular  
71DD68D73218C-003 trigon insert  
71DD68D301C30-001 rhombic insert  
71D1AA6635E76-003 round insert  
726E3AAC68D91-003 reaming insert  
71DDA089C8D1E-003 specific profile insert  
71E01A004C775-003 tool item type  
71E01A00BD93C-003 drill  
71E01A065F635-002 deep hole drill  
71FAE7AAE8247-003 core drill  
71E01A073CA28-003 centre drill  
71E01A069566C-002 chamfer drill  
71E01D8A88F65-002 pilot drill  
71E01A0608FE4-002 twist drill  
71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill  
71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill  
71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer

71E01A05104CF-003 turn  
 71E01A0E9CBA9-003 boring bar  
 71E01A0EAF067-003 system tool  
 71E01A0E85121-003 prismatic tool holder  
 71D1066F279AD-002 cartridge  
 71E01A04C377D-003 broach  
 71E01A082DE72-002 disk broach  
 71E01A0838E9B-002 prismatic broach  
 71E01A081855D-003 tapered broach  
 71E0250E32A07-002 cylindrical broach  
 7272127CBD7B8-003 feed-out tool, machine operated  
 71E01A04E0236-003 threading tap  
 71E01A0E34C7F-002 conical tap  
 71E01A0A5355D-001 cylindrical tap  
 71E01A04A8AEC-003 ream  
 71E01A07BC535-001 cylindrical reamer  
 71E01A07ECCCF-001 profile reamer  
 71E01A07FF350-001 stepped reamer  
 71E01A07D2A1B-003 tapered reamer

**72550E3BD998C-003 002 NR1S..2**

Enumeration of integers

**grind style code gristycod GRDSYC**

Identifier for the general form of the cutting edges of a drilling profile, a drilling insert or a drill

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700BE1D04-003 drilling profile

**71CF29872F0AB-003 002 X 1**

Enumeration of codes

**hand han HAND**

Identifier used for the direction of rotation of rotating tool items and rotating adaptive items and for the position of the cutting edge of a stationary tool item and for the position of the connection used for

a tool item or adaptive item with respect to the axis of the item and for the orientation of a replaceable cutting item with respect to the insert reference system and for the orientation of a clamp

NOTE See ISO 3002-1.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71E01A004C775-003 tool item type

71E01A00BD93C-003 drill

71E01A065F635-002 deep hole drill

71FAE7AAE8247-003 core drill

71E01A073CA28-003 centre drill

71E01A069566C-002 chamfer drill

71E01D8A88F65-002 pilot drill

71E01A0608FE4-002 twist drill

71E01A0751456-003 conical drill

71E01A06BF88D-003 counterbore drill

71E01A06A8A08-003 countersink drill

71E01A067F73C-002 step drill

71E01A0769982-002 trepanning drill

71E01A008D13F-003 mill

71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill  
71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach  
71E01A081855D-003 tapered broach  
71E0250E32A07-002 cylindrical broach  
7272127CBD7B8-003 feed-out tool, machine operated  
71E01A04E0236-003 threading tap  
71E01A0E34C7F-002 conical tap  
71E01A0A5355D-001 cylindrical tap  
71E01A04A8AEC-003 ream  
71E01A07BC535-001 cylindrical reamer  
71E01A07ECCCF-001 profile reamer  
71E01A07FF350-001 stepped reamer  
71E01A07D2A1B-003 tapered reamer  
71EC56B608ADC-001 insert wedge

## ISO/TS 13399-2:2021(E)

71FAD54E2FE26-001 lever top clamp

71D0808DA853B-003 master insert

71DDA089C8D1E-003 specific profile insert

### **72719B167AE15-003 001 NR1S..4**

Enumeration of integers

#### **hole type holtyp HTY**

Identifier for the capability to machine or to work in such kind of holes

#### **Visible class:**

71CE7A72B6DA7-003 cutting tool library

#### **Applicable classes:**

71D1AA6C8FC75-003 cutting item type

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

72550E1361C6C-003 drilling insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D1AA6635E76-003 round insert

726E3AAC68D91-003 reaming insert

71DDA089C8D1E-003 specific profile insert

71E01A004C775-003 tool item type

71E01A00BD93C-003 drill

71E01A065F635-002 deep hole drill

71FAE7AAE8247-003 core drill  
71E01A073CA28-003 centre drill  
71E01A069566C-002 chamfer drill  
71E01D8A88F65-002 pilot drill  
71E01A0608FE4-002 twist drill  
71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill  
71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill  
71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach  
71E01A081855D-003 tapered broach

## ISO/TS 13399-2:2021(E)

71E0250E32A07-002 cylindrical broach  
7272127CBD7B8-003 feed-out tool, machine operated  
71E01A04E0236-003 threading tap  
71E01A0E34C7F-002 conical tap  
71E01A0A5355D-001 cylindrical tap  
71E01A04A8AEC-003 ream  
71E01A07BC535-001 cylindrical reamer  
71E01A07ECCCF-001 profile reamer  
71E01A07FF350-001 stepped reamer  
71E01A07D2A1B-003 tapered reamer

### **71CE7A96D9F7D-003 002 NR2S..4.6**

Real measure mm

#### **inscribed circle diameter inscirdia IC**

Diameter of a circle to which all edges of an equilateral insert are tangential

Illustration reference: [Figure E.1](#), [Figure E.2](#), [Figure E.3](#), [Figure E.4](#), [Figure E.5](#), [Figure E.8](#), [Figure E.12](#), [Figure E.13](#), [Figure E.15](#), [Figure E.16](#), [Figure H.1](#), [Figure H.2](#), [Figure H.3](#), [Figure H.6](#), [Figure H.7](#), [Figure H.8](#), [Figure H.9](#), [Figure H.10](#), [Figure H.17](#), [Figure H.18](#), [Figure H.19](#).

#### **Visible class:**

71CE7A72B6DA7-003 cutting tool library

#### **Applicable classes:**

71DD7032B51CD-001 inscribed circle

### **71D1C82A5036D-003 003 B 1**

Boolean type

#### **inscribed circle property inscirpro INCLP**

Possession by a cutting insert type of an inscribed circle

#### **Visible class:**

71CE7A72B6DA7-003 cutting tool library

#### **Applicable classes:**

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert  
 71DD68D80B094-001 pentagonal insert  
 72550E1361C6C-003 drilling insert  
 71D1AE11B8B77-003 equilateral nonequangular  
 71DD68D73218C-003 trigon insert  
 71DD68D301C30-001 rhombic insert  
 71D1AA6635E76-003 round insert  
 71DDA089C8D1E-003 specific profile insert

**728F4E7B06CA7-003 001 NR2S..4.6**

Real measure mm

**insert body diameter insboddia INSD**

Diameter of the cylinder designed at the bottom of the insert to be seated in the pocket mating hole

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AA6C8FC75-003 cutting item type  
 71D1AE120D96E-003 nonequilateral equiangular  
 71DD68D91938A-001 rectangular insert  
 71D1AA489FD6E-003 nonequilateral nonequangular  
 71DD68D966F52-002 parallelogram insert  
 71D1AA486FF89-004 equilateral equiangular  
 71DD68D829217-001 square insert  
 71DD68D7CB4FA-001 octagonal insert  
 71DD68D8446CE-001 triangular insert  
 71DD68D7A8E5F-001 hexagonal insert  
 71DD68D80B094-001 pentagonal insert  
 72550E1361C6C-003 drilling insert  
 7224CCDD587CF-003 non replaceable cutting item  
 71D1AE11B8B77-003 equilateral nonequangular  
 71DD68D73218C-003 trigon insert  
 71DD68D301C30-001 rhombic insert  
 71D1AA6635E76-003 round insert

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726E3AAC68D91-003 reaming insert

71DDA089C8D1E-003 specific profile insert

**71CE7A979F41C-003 003 X 1**

Enumeration of codes

**insert hand inshan IH**

Identifier for the orientation of a replaceable cutting item with respect to the insert reference system

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71DDA089C8D1E-003 specific profile insert

**71CE7A96BC122-003 002 NR2S..3.6**

Real measure degree of angle

**insert included angle insincang EPSR**

Angle between the major and the minor cutting edges of a cutting item

Illustration reference: [Figure E.3](#), [Figure E.4](#), [Figure E.9](#), [Figure E.10](#), [Figure E.18](#), [Figure H.1](#), [Figure H.2](#), [Figure H.3](#), [Figure H.4](#), [Figure H.5](#), [Figure H.6](#), [Figure H.7](#), [Figure H.8](#), [Figure H.9](#), [Figure H.18](#), [Figure H.19](#), [Figure H.25](#), [Figure H.26](#), [Figure H.27](#), [Figure H.28](#), [Figure H.29](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular  
 71DD68D91938A-001 rectangular insert  
 71D1AA489FD6E-003 nonequilateral nonequiangular  
 71DD68D966F52-002 parallelogram insert  
 71D1AA486FF89-004 equilateral equiangular  
 71DD68D829217-001 square insert  
 71DD68D7CB4FA-001 octagonal insert  
 71DD68D8446CE-001 triangular insert  
 71DD68D7A8E5F-001 hexagonal insert  
 71DD68D80B094-001 pentagonal insert  
 7224CCDD587CF-003 non replaceable cutting item  
 71D1AE11B8B77-003 equilateral nonequiangular  
 71DD68D73218C-003 trigon insert  
 71DD68D301C30-001 rhombic insert  
 71D0808DA853B-003 master insert  
 71DDA089C8D1E-003 specific profile insert

**727C7D93D0F08-003 001 NR2S..3.6**

Real measure degree of angle

**insert included angle minor (deprecated) insincangmin EPSRN**

Angle between two minor cutting edges of a trigon-shaped cutting item

REMARKS: The value of this minor included angle is always 60 degrees.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD68D73218C-003 trigon insert

**71CE7AA1998FF-003 003 NR1S..4**

Integer

**insert index count insindcou NOI**

Maximum recommended times an insert can be mounted until the tool is worn out

REMARKS: Valid only for indexable tools.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

72550E1361C6C-003 drilling insert

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71E01A004C775-003 tool item type

71E01A00BD93C-003 drill

71E01A065F635-002 deep hole drill

71FAE7AAE8247-003 core drill

71E01A073CA28-003 centre drill

71E01A069566C-002 chamfer drill

71E01D8A88F65-002 pilot drill

71E01A0608FE4-002 twist drill

71E01A0751456-003 conical drill

71E01A06BF88D-003 counterbore drill

71E01A06A8A08-003 countersink drill

71E01A067F73C-002 step drill

71E01A0769982-002 trepanning drill

71E01A008D13F-003 mill

71E01A05B627B-003 face mill

71E01A05EA320-003 half side mill

71E01A05D27A8-003 end mill  
 71E01A0600702-003 ring mill  
 71EF07E037025-003 slotting cutter  
 71EF07E083383-003 threading grooving mill  
 71EF07DFC283C-003 double half side mill  
 71E01A0540BE7-003 slab mill  
 71E01A04F70F7-003 threading die  
 71E01A0E4EE75-001 cylindrical die  
 71E01A0E79239-001 hexagonal die  
 71E02C544BABE-003 burr tool  
 71E0251F304E1-003 rotating borer  
 71E01A05104CF-003 turn  
 71E01A0E9CBA9-003 boring bar  
 71E01A0EAF067-003 system tool  
 71E01A0E85121-003 prismatic tool holder  
 71D1066F279AD-002 cartridge  
 71E01A04C377D-003 broach  
 71E01A082DE72-002 disk broach  
 71E01A0838E9B-002 prismatic broach  
 71E01A081855D-003 tapered broach  
 71E0250E32A07-002 cylindrical broach  
 7272127CBD7B8-003 feed-out tool, machine operated  
 71E01A04E0236-003 threading tap  
 71E01A0E34C7F-002 conical tap  
 71E01A0A5355D-001 cylindrical tap  
 71E01A04A8AEC-003 ream  
 71E01A07BC535-001 cylindrical reamer  
 71E01A07ECCCF-001 profile reamer  
 71E01A07FF350-001 stepped reamer  
 71E01A07D2A1B-003 tapered reamer  
 71DDA089C8D1E-003 specific profile insert

**71CE7A9936610-003 002 X 17**

String

**insert interface code** insintcod IIC

Identifier for the condition that a particular replaceable cutting item can be mounted on a particular tool item

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

72550E1361C6C-003 drilling insert

71D1AE11B8B77-003 equilateral nonequangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D1AA6635E76-003 round insert

71DDA089C8D1E-003 specific profile insert

**71CF30F9DFE37-003 002 NR2S..3.6**

Real measure degree of angle

**insert lead angle** insleaang PSIRINS

Angle between the major edge and a plane that is perpendicular to the wiper edge

REMARKS: Used mainly for regular inserts with wiper edges.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD6C9A21689-001 wiper edge

**71CE7A9DFA23A-003 002 NR2S..4.6**

Real measure mm

**insert length inslen INSL**

Distance between two sides of an insert when the inscribed circle cannot be used because of the shape of the insert

REMARKS: Measured between the two minor cutting edges.

Illustration reference: [Figure E.13](#), [Figure E.17](#), [Figure E.19](#), [Figure H.5](#), [Figure H.11](#), [Figure H.12](#), [Figure H.13](#), [Figure H.14](#), [Figure H.15](#), [Figure H.16](#), [Figure H.18](#), [Figure H.19](#), [Figure H.20](#), [Figure H.21](#), [Figure H.25](#), [Figure H.26](#), [Figure H.27](#), [Figure H.28](#), [Figure H.29](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

71DD700BC8BE2-002 ball nosed profile

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D0808DA853B-003 master insert

71DDA089C8D1E-003 specific profile insert

**71CE7A97711B8-003 002 NR1S..4**

Enumeration of integers

**insert mounting style code insmoustycod IFS**

Identifier for the method of holding a cutting item onto a tool item

NOTE See DIN 4000-95.

Illustration reference: [Figure F.12](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD7014BF2A1-003 fixing hole

**71CE7A9EDACA1-003 002 NR2S..3.6**

Real measure degree of angle

**insert rake angle insrakang GAN**

Angle of the rake measured from the XY-plane perpendicular to the cutting edge

Illustration reference: [Figure E.6](#), [Figure E.7](#), [Figure F.1](#), [Figure F.2](#), [Figure F.3](#), [Figure F.4](#), [Figure F.5](#), [Figure F.6](#), [Figure F.7](#), [Figure F.8](#), [Figure H.11](#), [Figure H.17](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD6C870BCCA-001 chip breaker

**71CE7A9F0C79F-001 001 X 17**

Enumeration of codes

**insert shape code insshacod SC**

Identifier for the shape of a regular insert

NOTE See ISO 1832:2017, 5.1.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert  
 71D1AE11B8B77-003 equilateral nonequangular  
 71DD68D73218C-003 trigon insert  
 71DD68D301C30-001 rhombic insert  
 71D1AA6635E76-003 round insert  
 71D0808DA853B-003 master insert  
 71EAD70F1B95A-001 nest

**72719B203D712-003 001 X 17**

Enumeration of codes

**insert side count inssidcou NIS**

Identifier for the number of sides of a cutting item that can be used for a machining process

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AA6C8FC75-003 cutting item type  
 71D1AE120D96E-003 nonequilateral equiangular  
 71DD68D91938A-001 rectangular insert  
 71D1AA489FD6E-003 nonequilateral nonequangular  
 71DD68D966F52-002 parallelogram insert  
 71D1AA486FF89-004 equilateral equiangular  
 71DD68D829217-001 square insert  
 71DD68D7CB4FA-001 octagonal insert  
 71DD68D8446CE-001 triangular insert  
 71DD68D7A8E5F-001 hexagonal insert  
 71DD68D80B094-001 pentagonal insert  
 72550E1361C6C-003 drilling insert  
 7224CCDD587CF-003 non replaceable cutting item  
 71D1AE11B8B77-003 equilateral nonequangular  
 71DD68D73218C-003 trigon insert  
 71DD68D301C30-001 rhombic insert  
 71D1AA6635E76-003 round insert  
 726E3AAC68D91-003 reaming insert

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71DDA089C8D1E-003 specific profile insert

**71CE7A9F5308C-003 002 NR2S..4.6**

Real measure mm

**insert thickness insthi S**

Distance between the bottom and the cutting edge of a replaceable cutting item

Illustration reference: [Figure E.1](#), [Figure E.2](#), [Figure E.8](#), [Figure E.11](#), [Figure E.16](#), [Figure E.19](#), [Figure F.1](#), [Figure F.8](#), [Figure H.1](#), [Figure H.2](#), [Figure H.3](#), [Figure H.4](#), [Figure H.5](#), [Figure H.6](#), [Figure H.7](#), [Figure H.8](#), [Figure H.9](#), [Figure H.10](#), [Figure H.11](#), [Figure H.12](#), [Figure H.13](#), [Figure H.14](#), [Figure H.15](#), [Figure H.16](#), [Figure H.18](#), [Figure H.19](#), [Figure H.20](#), [Figure H.21](#), [Figure H.25](#), [Figure H.26](#), [Figure H.27](#), [Figure H.28](#), [Figure H.29](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

71DD700BC8BE2-002 ball nosed profile

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D1AA6635E76-003 round insert

71D0808DA853B-003 master insert

71DDA089C8D1E-003 specific profile insert

**72550E143C993-003 003 NR2S..4.6**

Real measure mm

**insert thickness total insthitot S1**

Distance between the bottom and the top surface of a replaceable cutting item, if the top of the surface is above or below the cutting edge

NOTE If the insert thickness and the insert thickness total of a replaceable cutting item show the same value, only the insert thickness will be shown.

Illustration reference: [Figure H.13](#), [Figure H.14](#), [Figure H.15](#), [Figure H.16](#), [Figure H.18](#), [Figure H.19](#), [Figure H.20](#), [Figure H.21](#), [Figure H.23](#), [Figure H.25](#), [Figure H.26](#), [Figure H.27](#), [Figure H.28](#), [Figure H.29](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

72550E1361C6C-003 drilling insert

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D1AA6635E76-003 round insert

71DDA089C8D1E-003 specific profile insert

**71CE7A9FB11C3-003 002 NR2S..4.6**

Real measure mm

**insert width inswid W1**

Distance between two sides of an insert when the inscribed circle cannot be used because of the shape of the insert

REMARKS: Measured between the two major cutting edges.

Illustration reference: [Figure E.9](#), [Figure E.10](#), [Figure E.14](#), [Figure E.19](#), [Figure H.4](#), [Figure H.5](#), [Figure H.11](#), [Figure H.17](#), [Figure H.21](#), [Figure H.25](#), [Figure H.26](#), [Figure H.27](#), [Figure H.28](#), [Figure H.29](#).

**Visible class:**

## ISO/TS 13399-2:2021(E)

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

71DD700BC8BE2-002 ball nosed profile

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D0808DA853B-003 master insert

71DDA089C8D1E-003 specific profile insert

**71DD701175021-003 002 B 1**

Boolean type

**interrupted edge property intedgpro IEP**

Possession by a cutting item of an interrupted cutting edge

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71DD700BE1D04-003 drilling profile

**726E424FE9EC2-003 001 X..6**

Enumeration of codes

**item style code itestycod ISYC**

Identifier for the main design or shape of cutting item, tool item or adaptive item

### Visible class:

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71EAD37F18F34-003 adaptive item type

71EAD388173EE-003 driver

71EAD3871D313-003 converter

726F59BDC3B08-003 collet

727BE50E057F1-003 adaptive feature type

727BE50E9FE57-001 torque bracing

71EEBDADB63BE-002 extender

71EAD385E51A0-002 reducer

71D1AA6C8FC75-003 cutting item type

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

72550E1361C6C-003 drilling insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D1AA6635E76-003 round insert

726E3AAC68D91-003 reaming insert

71DDA089C8D1E-003 specific profile insert

71E01A004C775-003 tool item type

71E01A00BD93C-003 drill

71E01A065F635-002 deep hole drill

71FAE7AAE8247-003 core drill

## ISO/TS 13399-2:2021(E)

71E01A073CA28-003 centre drill  
71E01A069566C-002 chamfer drill  
71E01D8A88F65-002 pilot drill  
71E01A0608FE4-002 twist drill  
71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill  
71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill  
71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach  
71E01A081855D-003 tapered broach  
71E0250E32A07-002 cylindrical broach

7272127CBD7B8-003 feed-out tool, machine operated

71E01A04E0236-003 threading tap

71E01A0E34C7F-002 conical tap

71E01A0A5355D-001 cylindrical tap

71E01A04A8AEC-003 ream

71E01A07BC535-001 cylindrical reamer

71E01A07ECCCF-001 profile reamer

71E01A07FF350-001 stepped reamer

71E01A07D2A1B-003 tapered reamer

**71CE7AA05C819-003 003 NR2S.4.6**

Real measure mm

**m2-dimension m2dim M2**

Distance between the nominal inscribed circle and the corner of an insert that has the secondary included angle

NOTE This is used only for regular inserts with the ISO identifiers C, D, E, F, M and V. See also ISO 1832:2017, 5.3.

REMARKS: For inserts with the ISO identifiers A, B, K and L, the distance is measured between the gauge diameter and the secondary included angle.

Illustration reference: [Figure E.4](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

71D1AE11B8B77-003 equilateral nonequangular

71DD68D73218C-003 trigon insert

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71DD68D301C30-001 rhombic insert

**71CE7AA0972DB-003 002 NR2S..4.6**

Real measure mm

**m-dimension mdim M**

Distance between the nominal inscribed circle and the corner of an insert that has the primary included angle

NOTE See ISO 1832:2017, 5.3.

REMARKS: This property is defined for different shapes of regular inserts in ISO 1832.

Illustration reference: [Figure E.1](#), [Figure E.3](#), [Figure E.5](#), [Figure E.8](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

**71CEAEBEAB020-003 002 NR2S..3.6**

Real measure degree of angle

**profile angle left hand proanglefhan PAL**

Angle measured in the XY-plane in a positive direction (counter clockwise) between a plane parallel to the Y-axis and the left hand cutting edge of the profile of a cutting item

NOTE Applies to irregular inserts.

Illustration reference: [Figure F.3](#), [Figure F.5](#), [Figure F.8](#), [Figure H.15](#), [Figure H.18](#), [Figure H.19](#), [Figure H.20](#), [Figure H.21](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700BFD9B9-003 grooving parting profile

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71CEAEBED837E-003 002 NR2S..3.6**

Real measure degree of angle

**profile angle right hand proangrighan PAR**

Angle measured in the XY-plane in a negative direction (clockwise) between a plane parallel to the Y-axis and the right hand cutting edge of the profile of a cutting item

Illustration reference: [Figure F.3](#), [Figure F.5](#), [Figure F.8](#), [Figure H.15](#), [Figure H.18](#), [Figure H.19](#), [Figure H.20](#), [Figure H.21](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700BFD9B9-003 grooving parting profile

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71CEAEBFEF1B4-003 003 NR2S..4.6**

Real measure mm

**profile distance ex prodisex PDX**

Distance measured in the XY-plane from the profile point of a threading insert to the side of the insert that is parallel to the YZ-plane

NOTE Only applicable to laid-down triangular threading inserts.

Illustration reference: [Figure E.12](#), [Figure E.14](#), [Figure E.16](#), [Figure F.2](#), [Figure F.10](#), [Figure H.11](#), [Figure H.17](#), [Figure H.18](#), [Figure H.19](#), [Figure H.20](#), [Figure H.21](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DDA089C8D1E-003 specific profile insert

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71DD700C151B5-003 threading profile

**71CEAEC0139BB-003 003 NR2S..4.6**

Real measure mm

**profile distance ey prodisey PDY**

Distance measured in the XY-plane from the profile point of a threading insert to a plane parallel to the XZ-plane that passes through the theoretical sharp corner of the sides of the insert

NOTE Only applicable to laid-down triangular threading inserts.

Illustration reference: [Figure E.12](#), [Figure E.13](#), [Figure E.14](#), [Figure E.16](#), [Figure F.6](#), [Figure F.7](#), [Figure F.8](#), [Figure F.9](#), [Figure H.11](#), [Figure H.18](#), [Figure H.19](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71CEAEBF0C234-003 004 NR2S..3.6**

Real measure degree of angle

**profile included angle proincang PNA**

Angle subtended by the cutting edges of a cutting profile either on irregular insert or tool items

REMARKS: Mainly applies to threading profiles.

Illustration reference: [Figure E.12](#), [Figure E.13](#), [Figure E.14](#), [Figure E.16](#), [Figure F.7](#), [Figure F.8](#), [Figure F.9](#), [Figure H.15](#), [Figure H.18](#), [Figure H.19](#), [Figure H.20](#), [Figure H.21](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71E01A008D13F-003 mill

71E01A05B627B-003 face mill

71E01A05EA320-003 half side mill

71E01A05D27A8-003 end mill

71E01A0600702-003 ring mill

71EF07E037025-003 slotting cutter

71EF07E083383-003 threading grooving mill

71EF07DFC283C-003 double half side mill

71E01A0540BE7-003 slab mill  
 71DD700BFD9B9-003 grooving parting profile  
 71DDA089C8D1E-003 specific profile insert  
 71DD700C151B5-003 threading profile

**71E019EBAE1B1-003 003 NR2S..4.6**

Real measure mm

**profile radius prorad PRFRAD**

Radius of a cutting profile

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71E01A008D13F-003 mill  
 71E01A05B627B-003 face mill  
 71E01A05EA320-003 half side mill  
 71E01A05D27A8-003 end mill  
 71E01A0600702-003 ring mill  
 71EF07E037025-003 slotting cutter  
 71EF07E083383-003 threading grooving mill  
 71EF07DFC283C-003 double half side mill  
 71E01A0540BE7-003 slab mill  
 71E02C544BABE-003 burr tool  
 71DD700BFD9B9-003 grooving parting profile  
 71DDA089C8D1E-003 specific profile insert

**71CEAEBDE5798-003 003 NR1S..2**

Enumeration of integers

**profile style code prostycod PFS**

Identifier for the profile of an irregular insert

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700BFD9B9-003 grooving parting profile

## ISO/TS 13399-2:2021(E)

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

### 71DD9D00193A7-003 003 NR2S..3.6

Real measure degree of angle

**relief angle relang RA**

Angle measured in the xy-plane between a plane parallel to the Y-axis and the relief edge of the profile of a cutting item

NOTE A relief edge is a non-cutting portion of a profile.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700BC8BE2-002 ball nosed profile

### 71CE7E6520B87-003 003 NR2S..3.6

Real measure degree of angle

**relief angle left hand relanglefhan RAL**

Angle measured in the xy-plane in a negative direction (clockwise) between a plane parallel to the Y-axis and the left hand relief edge of the profile of a cutting item

NOTE A relief edge is a non-cutting portion of a profile.

REMARKS: Applies to irregular inserts.

Illustration reference: [Figure F.1](#), [Figure F.2](#), [Figure F.4](#), [Figure F.5](#), [Figure F.10](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700BFD9B9-003 grooving parting profile

71DDA089C8D1E-003 specific profile insert

### 71CE7E6569AB5-003 003 NR2S..3.6

Real measure degree of angle

**relief angle right hand relangrighan RAR**

Angle measured in the xy-plane in a positive direction (counter clockwise) between a plane parallel to the Y-axis and the right hand relief edge of the profile of a cutting item

NOTE A relief edge is a non-cutting portion of a profile.

REMARKS: Applies to irregular inserts.

Illustration reference: [Figure F.1](#), [Figure F.5](#), [Figure F.10](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700BFD9B9-003 grooving parting profile

71DDA089C8D1E-003 specific profile insert

**71DD7011A3D86-003 003 B 1**

Boolean type

**rounded corner property roucorpro RCP**

Possession of a corner with a constant radius

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

72550E1361C6C-003 drilling insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71DD700BFD9B9-003 grooving parting profile

71DD700BE1D04-003 drilling profile

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**72719B2B51519-003 001 B 1**

Boolean type

**seal sea SALP**

Identifier whether a seal is existing to be used within a coolant, hydraulic or pneumatic system to prevent the media from flowing out of the system

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AA6C8FC75-003 cutting item type

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

72550E1361C6C-003 drilling insert

7224CCDD587CF-003 non replaceable cutting item

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D1AA6635E76-003 round insert

726E3AAC68D91-003 reaming insert

71DDA089C8D1E-003 specific profile insert

71E01A004C775-003 tool item type

71E01A00BD93C-003 drill

71E01A065F635-002 deep hole drill

71FAE7AAE8247-003 core drill

71E01A073CA28-003 centre drill

71E01A069566C-002 chamfer drill  
71E01D8A88F65-002 pilot drill  
71E01A0608FE4-002 twist drill  
71E01A0751456-003 conical drill  
71E01A06BF88D-003 counterbore drill  
71E01A06A8A08-003 countersink drill  
71E01A067F73C-002 step drill  
71E01A0769982-002 trepanning drill  
71E01A008D13F-003 mill  
71E01A05B627B-003 face mill  
71E01A05EA320-003 half side mill  
71E01A05D27A8-003 end mill  
71E01A0600702-003 ring mill  
71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach  
71E01A081855D-003 tapered broach  
71E0250E32A07-002 cylindrical broach  
7272127CBD7B8-003 feed-out tool, machine operated

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71E01A04E0236-003 threading tap  
71E01A0E34C7F-002 conical tap  
71E01A0A5355D-001 cylindrical tap  
71E01A04A8AEC-003 ream  
71E01A07BC535-001 cylindrical reamer  
71E01A07ECCCF-001 profile reamer  
71E01A07FF350-001 stepped reamer  
71E01A07D2A1B-003 tapered reamer  
72719B234F9E0-003 cutting data association

### 72807E1CC4B50-003 001 X..5

String

**standard letter** stalet STDLET

Label for the identification of different products or different designs of a product that is based on a standard referenced in the property "standard number"

NOTE If applicable, the property shall only be used in conjunction with the property "standard number" value. See this document, ISO/TS 13399-3 and ISO/TS 13399-4.

REMARKS: For example, ISO 6462 contains forms A, B, C, D for a milling cutter. The valid value for a milling cutter with tenon drive and cutter retaining screw according to ISO 6462 is "B", in connection with the property "standard number" where the entry shall be "ISO6462".

#### Visible class:

71CE7A72B6DA7-003 cutting tool library

#### Applicable classes:

71EAD37F18F34-003 adaptive item type  
71EAD388173EE-003 driver  
71EAD3871D313-003 converter  
726F59BDC3B08-003 collet  
727BE50E057F1-003 adaptive feature type  
727BE50E9FE57-001 torque bracing  
71EEBDADB63BE-002 extender  
71EAD385E51A0-002 reducer  
71D1AA6C8FC75-003 cutting item type  
71D1AE120D96E-003 nonequilateral equiangular  
71DD68D91938A-001 rectangular insert  
71D1AA489FD6E-003 nonequilateral nonequangular

71DD68D966F52-002 parallelogram insert  
 71D1AA486FF89-004 equilateral equiangular  
 71DD68D829217-001 square insert  
 71DD68D7CB4FA-001 octagonal insert  
 71DD68D8446CE-001 triangular insert  
 71DD68D7A8E5F-001 hexagonal insert  
 71DD68D80B094-001 pentagonal insert  
 72550E1361C6C-003 drilling insert  
 7224CCDD587CF-003 non replaceable cutting item  
 71D1AE11B8B77-003 equilateral nonequiangular  
 71DD68D73218C-003 trigon insert  
 71DD68D301C30-001 rhombic insert  
 71D1AA6635E76-003 round insert  
 726E3AAC68D91-003 reaming insert  
 71DDA089C8D1E-003 specific profile insert  
 71E01A004C775-003 tool item type  
 71E01A00BD93C-003 drill  
 71E01A065F635-002 deep hole drill  
 71FAE7AAE8247-003 core drill  
 71E01A073CA28-003 centre drill  
 71E01A069566C-002 chamfer drill  
 71E01D8A88F65-002 pilot drill  
 71E01A0608FE4-002 twist drill  
 71E01A0751456-003 conical drill  
 71E01A06BF88D-003 counterbore drill  
 71E01A06A8A08-003 countersink drill  
 71E01A067F73C-002 step drill  
 71E01A0769982-002 trepanning drill  
 71E01A008D13F-003 mill  
 71E01A05B627B-003 face mill  
 71E01A05EA320-003 half side mill  
 71E01A05D27A8-003 end mill  
 71E01A0600702-003 ring mill

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71EF07E037025-003 slotting cutter  
71EF07E083383-003 threading grooving mill  
71EF07DFC283C-003 double half side mill  
71E01A0540BE7-003 slab mill  
71E01A04F70F7-003 threading die  
71E01A0E4EE75-001 cylindrical die  
71E01A0E79239-001 hexagonal die  
71E02C544BABE-003 burr tool  
71E0251F304E1-003 rotating borer  
71E01A05104CF-003 turn  
71E01A0E9CBA9-003 boring bar  
71E01A0EAF067-003 system tool  
71E01A0E85121-003 prismatic tool holder  
71D1066F279AD-002 cartridge  
71E01A04C377D-003 broach  
71E01A082DE72-002 disk broach  
71E01A0838E9B-002 prismatic broach  
71E01A081855D-003 tapered broach  
71E0250E32A07-002 cylindrical broach  
7272127CBD7B8-003 feed-out tool, machine operated  
71E01A04E0236-003 threading tap  
71E01A0E34C7F-002 conical tap  
71E01A0A5355D-001 cylindrical tap  
71E01A04A8AEC-003 ream  
71E01A07BC535-001 cylindrical reamer  
71E01A07ECCCF-001 profile reamer  
71E01A07FF350-001 stepped reamer  
71E01A07D2A1B-003 tapered reamer

**71CEAEC02FEBD-003 003 NR2S..3.3**

Real

**taper gradient tapgra TG**

Ratio of the difference between the diameters of two sections to the distance between these sections

NOTE See ISO 1119.

REMARKS: Also known as rate of taper.

Illustration reference: [Figure E.14](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71E01A07D2A1B-003 tapered reamer

71DD700C151B5-003 threading profile

**71DF154901E44-003 002 NR1S..4**

Integer

**taper thread count tapthrcou ZTT**

Number of incomplete threads in the tapered section of a threading tool

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700C151B5-003 threading profile

**72550E426D771-003 003 NR2S..4.6**

Real measure mm

**thread cutting part length thrcutparlen THL**

Distance between the ends of a portion of an item that includes the full and incomplete profile of a thread

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71E01A04F70F7-003 threading die

71E01A0E4EE75-001 cylindrical die

71E01A0E79239-001 hexagonal die

71E01A04E0236-003 threading tap

71E01A0E34C7F-002 conical tap

71E01A0A5355D-001 cylindrical tap

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**726E3E7863BBC-003 001 X 17**

String

**thread designation inside thrdesins THID**

Label that describes an inner thread like form, size, pitch or hand

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71E02520881F1-003 bolt hole circle

71DD700C151B5-003 threading profile

**726E3E73D1CF2-003 001 X 17**

String

**thread designation outside thrdesout THOD**

Label that describes an outer thread like form, size, pitch or hand

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71E02520881F1-003 bolt hole circle

71DD700C151B5-003 threading profile

**71D1A69F60053-003 003 X..20**

Enumeration of codes

**thread form type thrfortyp THFT**

Identifier for the cross section shape of a thread profile

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71E033FCBB61C-003 002 X 17**

Enumeration of codes

**thread hand** thrhan THDH

Direction of the screwing motion of a screw thread

NOTE See ISO 5408.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700C151B5-003 threading profile

**71DF5BE65F86F-003 002 NR2S..4.6**

Real measure mm

**thread height actual** thrheiact HC

Distance along the axis of symmetry of the thread cutting profile from the actual cutting edge to the point where a normal to this axis meets the cutting profile at the maximum usable cutting edge length

Illustration reference: [Figure F.12](#), [Figure H.18](#), [Figure H.19](#), [Figure H.21](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700C151B5-003 threading profile

**71DF5BE617131-003 002 NR2S..4.6**

Real measure mm

**thread height difference** thrheidif HB

Distance along the axis of symmetry of the thread cutting profile from the theoretical sharp point to the actual cutting edge

Illustration reference: [Figure F.12](#), [Figure H.18](#), [Figure H.19](#), [Figure H.21](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD700C151B5-003 threading profile

**71DF5BE5BCEBE-003 002 NR2S..4.6**

Real measure mm

**thread height theoretical** thrheithe HA

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Distance along the axis of symmetry of the thread cutting profile from the theoretical sharp point to the point where a normal to this axis meets the cutting profile at the maximum usable cutting edge length

Illustration reference: [Figure F.12](#), [Figure H.18](#), [Figure H.19](#), [Figure H.21](#).

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71DD700C151B5-003 threading profile

**71CEAEC08D4B0-003 002 NR2S..4.6**

Real measure mm

**thread pitch thrpit TP**

Axial distance between a point on a thread flank and the equivalent point of the immediately adjacent and corresponding flank

NOTE See ISO 5408.

Illustration reference: [Figure E.14](#), [Figure E.15](#), [Figure E.18](#), [Figure H.19](#), [Figure H.21](#).

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71D1A6A283836-003 002**

Level mm

**thread pitch maximum thrpitmax TPX**

Maximum thread pitch that a cutting item can produce

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71D1A6A247E1F-003 002**

Level mm

**thread pitch minimum thrpitmin TPN**

Minimum thread pitch which a cutting item can produce

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71CEAEC114603-003 003 X 1**

Enumeration of codes

**thread profile type thrprotyp TPT**

Identifier for how much of the profile of a threading insert is used

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71D1A6A16E6ED-003 003 X 3**

Enumeration of codes

**thread type thrtyp TTP**

Identifier for whether a thread is internal or external or both

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71D1A6AAC8707-003 003 NR2S..3.3**

Real

**threads per inch thrperinc TPI**

Number of threads in a one-inch length of a thread

Illustration reference: [Figure E.18](#).

**Visible class:**

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71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71FC1D22BF4CD-002 tool thread external  
71FC20991AEE8-001 thread inch external  
71FC2098BC963-001 thread metric external  
71FC209969F43-001 thread trapezoidal external  
71FC1D25097D7-002 tool thread internal  
71FC209A5C7F3-001 thread metric internal  
71FC209B39D51-001 thread trapezoidal internal  
71FC209ACEA25-001 thread inch internal  
71DDA089C8D1E-003 specific profile insert  
71DD700C151B5-003 threading profile

### 71D1A6AB8F739-003 003

Level

**threads per inch maximum** thrperincmax TPIX

Maximum number of threads in a one-inch length of a threaded work piece that can be produced by a cutting item

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71DDA089C8D1E-003 specific profile insert  
71DD700C151B5-003 threading profile

### 71D1A6AB6FB19-003 003

Level

**threads per inch minimum** thrperincmin TPIN

Minimum number of threads in a one-inch length of a threaded work piece that can be produced by a cutting item

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71DDA089C8D1E-003 specific profile insert  
71DD700C151B5-003 threading profile

**71CE7AA1E3D75-003 003 X 1**

Enumeration of codes

**tipped cutting edge code tipcutedgcod TCE**

Identifier for the style and the numbers of modified cutting edges composed of materials other than the main body of the cutting item

NOTE See ISO 1832.

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71DD700BFD9B9-003 grooving parting profile

71DD700BE1D04-003 drilling profile

71D1AA6635E76-003 round insert

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71CE7AA215888-003 003 X 17**

Enumeration of codes

**tolerance class insert tolclains TCINS**

Identifier for the tolerances of the inscribed circle, the insert thickness and the m-dimension on a replaceable cutting item

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### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71D1AA6635E76-003 round insert

**71CEAEBF8A68E-003 003 NR1S..4**

Integer

**tooth count toocou NT**

Number of teeth per cutting edge on a threading insert

### Visible class:

71CE7A72B6DA7-003 cutting tool library

### Applicable classes:

71DDA089C8D1E-003 specific profile insert

71DD700C151B5-003 threading profile

**71CED03C97AAB-003 003 NR2S..3.3**

Real measure kg

**weight of item weiofite WT**

Force exerted by the mass of an item

### Visible class:

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

**71CE7AA249F88-003 002 NR2S..4.6**

Real measure mm

**wiper edge length wipedge BS**

Measure of the length of a wiper edge of a cutting item

Illustration reference: [Figure E.1](#), [Figure E.5](#), [Figure E.8](#).

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD6C9A21689-001 wiper edge

**71CE7AA2E50BE-003 002 NR2S..4.6**

Real measure mm

**wiper edge radius wipedge BSR**

Measure of the radius of a curved wiper edge

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71DD6C9A21689-001 wiper edge

**71CED022114EC-003 003 B 1**

Boolean type

**wiper edge property wipedgepro WEP**

Possession of a wiper edge on a cutting item

**Visible class:**

71CE7A72B6DA7-003 cutting tool library

**Applicable classes:**

71D1AE120D96E-003 nonequilateral equiangular

71DD68D91938A-001 rectangular insert

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71D1AA489FD6E-003 nonequilateral nonequiangular

71DD68D966F52-002 parallelogram insert

71D1AA486FF89-004 equilateral equiangular

71DD68D829217-001 square insert

71DD68D7CB4FA-001 octagonal insert

71DD68D8446CE-001 triangular insert

71DD68D7A8E5F-001 hexagonal insert

71DD68D80B094-001 pentagonal insert

71D1AE11B8B77-003 equilateral nonequiangular

71DD68D73218C-003 trigon insert

71DD68D301C30-001 rhombic insert

71DDA089C8D1E-003 specific profile insert

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**Annex E**  
(informative)

**Illustration of properties**

Figures E.1 to E.21 illustrate properties that are defined in Annex D.

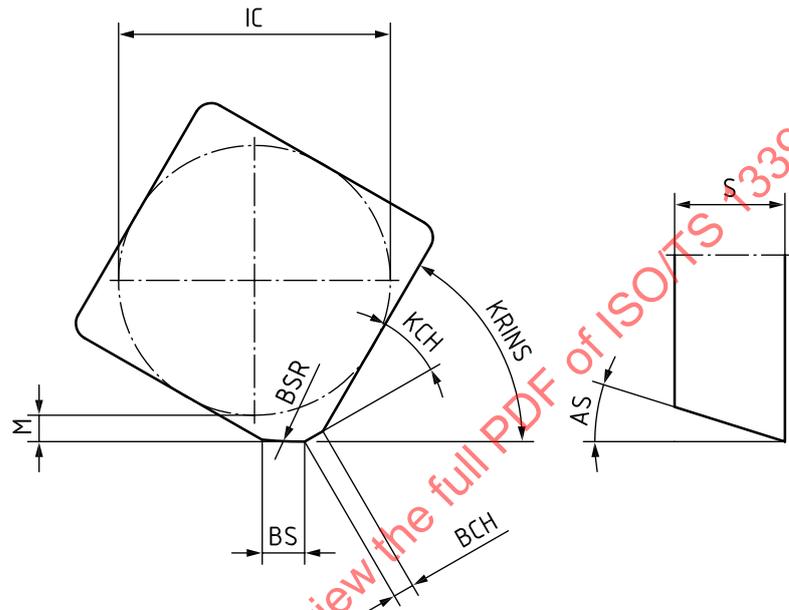


Figure E.1

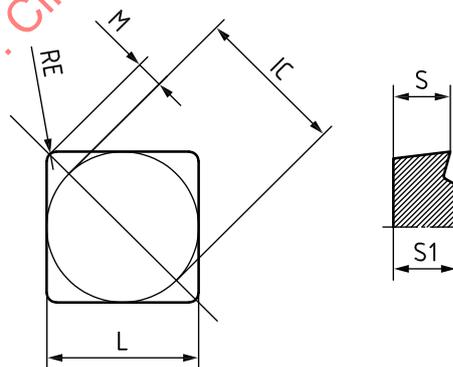


Figure E.2

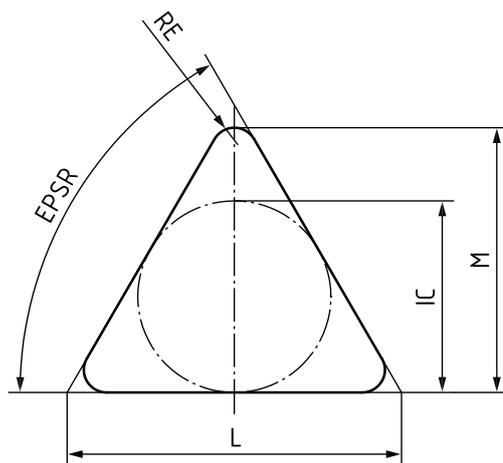


Figure E.3

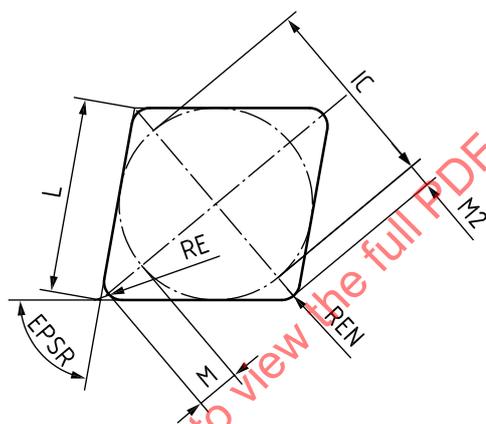


Figure E.4

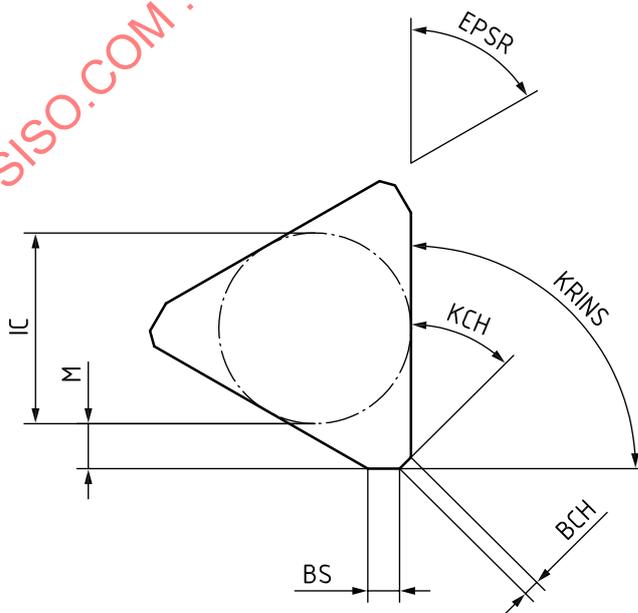


Figure E.5

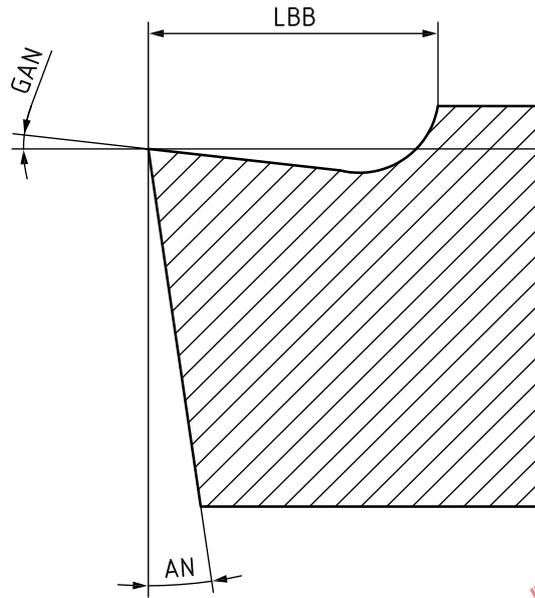


Figure E.6

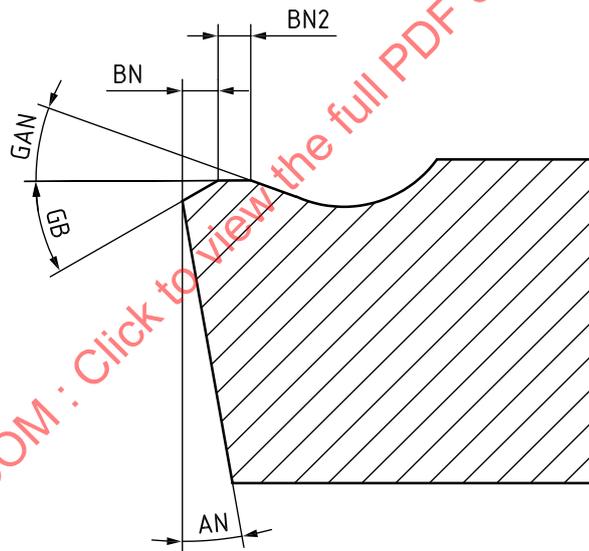


Figure E.7

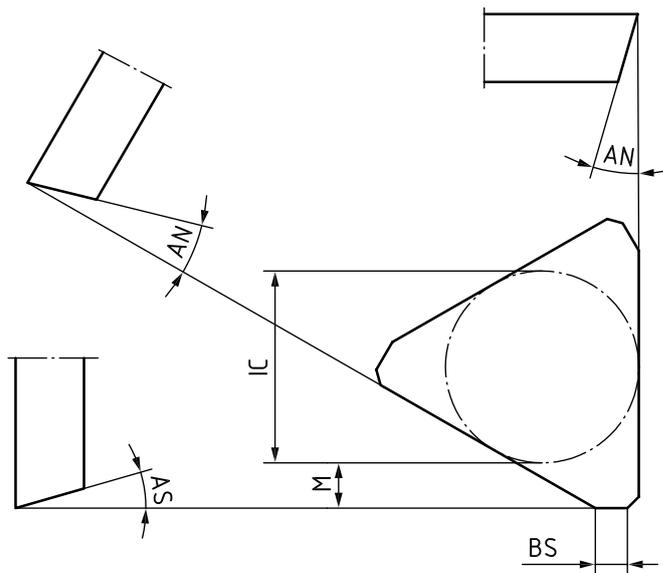


Figure E.8

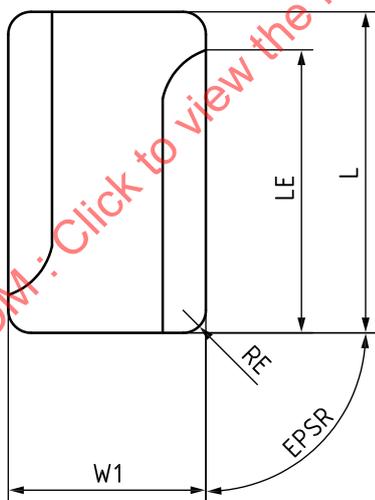


Figure E.9

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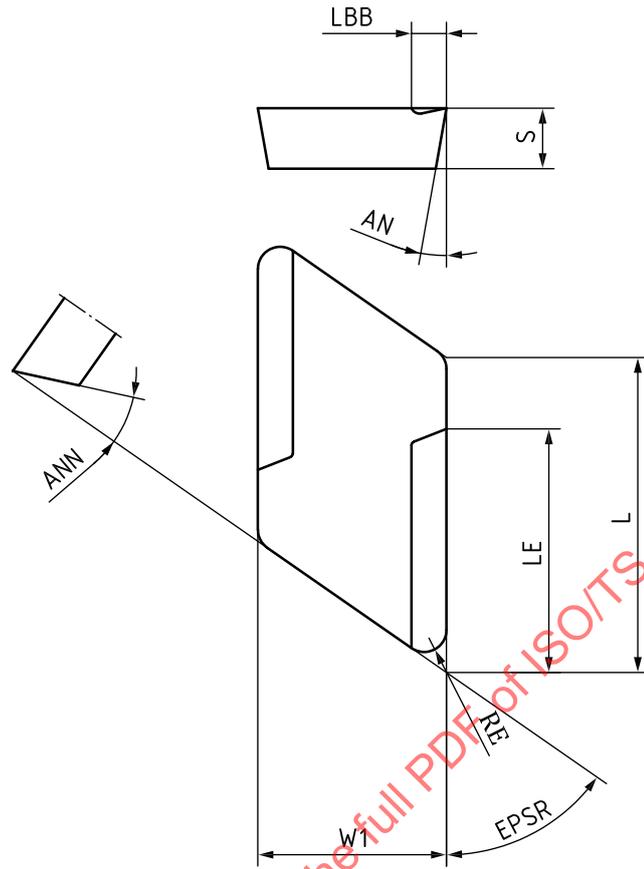


Figure E.10

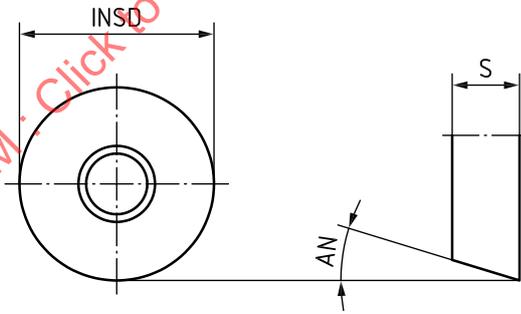


Figure E.11

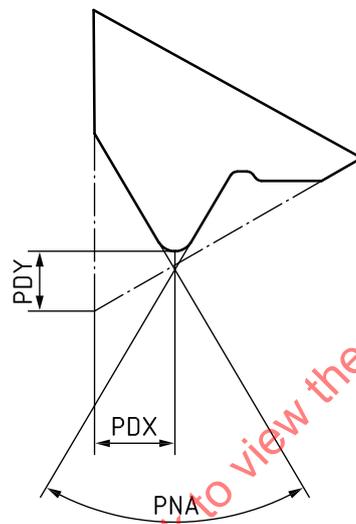
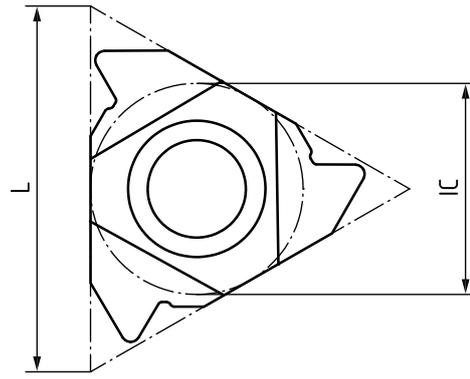


Figure E.12

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