INTERNATIONAL STANDARD

ISO 13584-511

First edition
2006-12-15

Industrial automation systems and integration — Parts library —

Part 511: Mechanical systems and components for general use — Reference dictionary for fasteners

Systèmes d'automatisation industrielle et intégration — Bibliothèque de composants —

Partie 511: Systèmes mécaniques et composants pour utilisation générale — Dictionnaire de référence pour éléments de fixation

Reference number
ISO 13584-511:2006(E)

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Figures

Tables

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC directives, Part 2.

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

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.

ISO 13584-511 was prepared by Technical Committee ISO/TC 184, *Industrial automation systems and integration*, Subcommittee SC 4, *Industrial data*.

ISO 13584 consists of the following parts, under the general title *Industrial automation systems and integration — Parts library*:

— *Part 1: Overview and fundamental principles*;

— *Part 20: Logical resource: Logical model of expressions*;

— *Part 24: Logical resource: Logical model of supplier library*;

— *Part 25: Logical resource: Logical model of supplier library with aggregate values and explicit content*;

— *Part 26: Logical resource: Information supplier identification*;

— *Part 31: Implementation resource: Geometric programming interface*;

— *Part 42: Description methodology: Methodology for structuring part families*;

— *Part 101: Geometric view exchange protocol by parametric program*;

— *Part 102: View exchange protocol by ISO 10303 conforming specification*;

— *Part 501: Reference dictionary for measuring instruments: Registration procedure*;

— *Part 511: Mechanical systems and components for general use: Reference dictionary for fasteners*.

The structure of the ISO 13584 series is described in ISO 13584-1. The numbering of the parts of ISO 13584 reflects its structure:

— Parts 10 to 19 specify the conceptual descriptions;

— Parts 20 to 29 specify the logical resources;

— Parts 30 to 39 specify the implementation resources;

— Parts 40 to 49 specify the description methodology;

— Parts 100 to 199 specify the view exchange protocols;

— Parts 500 to 599 specify the reference dictionaries.

Should further parts of ISO 13584 be published, they will follow the same numbering pattern.

Introduction

ISO 13584 is an International Standard for the computer interpretable representation and exchange of parts library data. The objective is to provide a neutral mechanism capable of transferring parts library data, independent of any application that is using a parts library data system. The nature of this description makes it suitable not only for the exchange of files containing parts, but also as a basis for implementing and sharing databases of parts library data.

This International Standard is organized as a series of parts, each published separately. The parts of ISO 13854 fall into one of the following series: conceptual descriptions, logical resources, implementation resources, description methodology, view exchange protocol, and reference dictionaries. The series are described in ISO 13584-1. This part of ISO 13584 is a member of the reference dictionaries series.

The reference dictionaries series of parts of ISO 13584 specify ontologies for representing the entities of an application domain, together with their descriptive properties and domains of values. Each entity, property or domain of values constitutes an entry of a dictionary that is the formal and computer sensible representation of the specified ontology. It is associated with a computer sensible and human readable definition, and with a computer sensible identification. Identification of a dictionary entry allows for unambiguous reference from any application. Definitions and identifications of dictionary entries consist of instances of the EXPRESS entity data types defined in the common dictionary schema, or in its extensions defined in the logical series of parts of ISO 13584.

This part of ISO 13584 specifies a reference dictionary for representing fasteners with their properties and domains of values, as they are described in the various ISO mechanical fastener standards.

The definitions of classes and properties in this fastener dictionary are referenced from:

— various ISO standards (see Bibliography);

— the Federal Item Identification Guide;

— Machinery's Handbook (26th Edition).

Industrial automation systems and integration — Parts library — Part 511: Mechanical systems and components for general use: Reference dictionary for fasteners

1 Scope

This part of ISO 13584 specifies a reference dictionary for all the parts described in the various ISO mechanical fastener standards, together with their descriptive properties and domains of values.

This part of ISO 13584 specifies a reference dictionary that contains:

— definitions and identifications of the classes of fasteners as they are described in the various ISO mechanical fastener standards, with associated classification schemes;

— definitions and identifications of data element types that represents properties of fasteners, and

— definitions and identifications of domains of values that help to describe the above data element types.

Each class, property or domain of values of this application domain constitutes an entry of the reference dictionary defined in this part of ISO 13584. It is associated with a computer sensible and human-readable definition, and with a computer sensible identification. Identification of a dictionary entry allows for unambiguous reference from any application.

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

The following are within the scope of this part of ISO 13584:

— standard data that represents the classes of fasteners;

— standard data that represents the properties of fasteners;

— standard data that represents domains of values used for properties of fasteners.

The following are outside the scope of this part of ISO 13584:

— methodology for structuring parts families used for specifying standard data defined in this part of ISO 13584;

— implementation method by which the standard data defined in this part of ISO 13584 may be exchanged.

NOTE The structure of the physical file used for exchanging the standard data defined in this part of ISO 13584 is specified in ISO 10303-21. Such a physical file containing all the fastener standard data is also provided as Annex F of this part of ISO 13584.

2 Normative references

The following referenced documents are indispensable for the application 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 1891: 1979, *Bolts, screws, nuts and accessories — Terminology and nomenclature.*

ISO/IEC 8824-1, *Information technology — Abstract Syntax Notation One (ASN.1) — Part 1: Specification of basic notation.*

ISO 10303-1:1994, *Industrial automation systems and integration — Product data representation and exchange — Part 1: Overview and fundamental principles.*

ISO 10303-11:1994, *Industrial automation systems and integration — Product data representation and exchange — Part 11: Description methods: The EXPRESS language reference manual.*

ISO 10303-21, *Industrial automation systems and integration — Product data representation and exchange — Part 21: Implementation methods: Clear text encoding of the exchange structure.*

ISO 13584-1:2001, *Industrial automation systems and integration — Parts library — Part 1: Overview and fundamental principles.*

ISO 13584-24:2003, *Industrial automation systems and integration — Parts library — Part 24: Logical resources: Logical model of supplier library.*

ISO 13584-25, *Industrial automation systems and integration — Parts library — Part 25: Logical resources: Logical model of supplier library with aggregate values and explicit content.*

ISO 13584-42:1998, *Industrial automation systems and integration — Parts library — Part 42: Description methodology: Methodology for structuring part families.*

IEC 61360-4:1997, *Standard data element types with associated classification scheme for electric components — Part 4: IEC reference collection of standard data element types and component classes.*

3 Terms, definitions, and abbreviations

For the purposes of this document, the following terms, definitions and abbreviations apply.

Some of these terms and definitions are repeated for convenience from:

— ISO 10303-1:1994;

— ISO 10303-11:1994;

— ISO 13584-1:2001;

— ISO 13584-24:2003;

— ISO 13584-42:1998.

3.1 Terms and definitions

3.1.1

applicable property
a property that is defined for some family of parts and that shall apply to any part that belongs to this family of parts

[ISO 13584-24:2003]

EXAMPLE For a screw generic family of parts, the thread diameter is an applicable property: this characteristic applies to any screw.

3.1.2

basic semantic unit (BSU)
the entity that provides an absolute and universal identification of certain objects of the application domain

[ISO 13584-42:1998]

EXAMPLE Classes, data element types.

3.1.3

characteristic of a part (part characteristic)
a constant property, characteristic of a part, of which the value is fixed once the part is defined

[ISO 13584-24:2003]

NOTE Changing the value of a characteristic of a part would mean changing the part.

EXAMPLE For a washer, the nominal and outside diameters are part characteristics.

3.1.4

common dictionary schema
the information model for a dictionary, using the EXPRESS modelling language, resulting from a joint effort between ISO TC184/SC4/WG2 and IEC SC3D

[ISO 13584-42:1998]

NOTE The common dictionary schema is specified in IEC 61360-2:2004, and its content is provided in ISO 13584-42:1998, Annex D.

3.1.5

data
a representation of facts, concepts or instructions in a formal manner suitable for communication, interpretation, or processing by human beings or computers

[ISO 10303-1:1994]

3.1.6

data element type (DET)
unit of data for which the identification, the description and value representation have been specified

[ISO 13584-42:1998]

3.1.7

data exchange
the storing, accessing, transferring, and archiving of data

[ISO 10303-1:1994]

3.1.8

data type
a domain of values

[ISO 10303-11:1994]

3.1.9

dictionary
a table consisting of a series of entries. One meaning corresponds to each entry in the dictionary and one dictionary entry identifies one single meaning

[ISO 13584-1:2001]

NOTE 1 In ISO 13584, a dictionary is the formal and computer sensible representation of an ontology.

NOTE 2 In ISO 13584, the kinds of meaning intended to constitute dictionary entries are: supplier, class, property, program library, type, table and document.

NOTE 3 In ISO 13584, the information that represents a dictionary entry is split into three entities: a basic_semantic_unit (BSU), that provides for reference, a dictionary_element that describes the dictionary entry by means of attributes, and, possibly, a content_item entity that describes the dictionary entry by describing its content.

3.1.10

dictionary data
the set of data that describes hierarchies of families of parts and properties of these parts

[ISO 13584-42:1998]

3.1.11

dictionary element
the set of attributes that constitutes the dictionary description of certain objects of the application domain

[ISO 13584-42:1998]

EXAMPLE Classes, data element types.

3.1.12

entity
a class of information defined by common properties

[ISO 10303-11:1994]

3.1.13

entity data type
a representation of an entity. An entity data type establishes a domain of values defined by common attributes and constraints

[ISO 10303-11:1994]

3.1.14

entity (data type) instance
a named unit of data that represents a unit of information within the class defined by an entity. It is a member of the domain established by an entity data type

[ISO 10303-11:1994]

3.1.15

family of parts
a simple or generic family of parts

[ISO 13584-42:1998]

3.1.16

generic family of parts
a grouping of simple or generic families of parts done for purposes of classification or for factoring common information

[ISO 13584-42:1998]

3.1.17

implementation method
a technique used by computers to exchange data that is described using the EXPRESS data specification language

[ISO 13584-24:2003]

3.1.18

is-case-of relationship
a relationship providing a formal expression of the fact that an object conforms to the partial specification defined by another object

[ISO 13584-24:2003]

NOTE In ISO 13584, all the families of parts that declare to be case-of the former family can import all the properties and data types visible or applicable for some family of parts. These properties and data types can then be used to describe the latter families.

3.1.19

library integrated information model (LIIM)
an EXPRESS schema that integrates resource constructs from different EXPRESS schemas for representing supplier libraries for the purpose of exchange and that is associated with conformance requirements

[ISO 13584-24:2003]

3.1.20

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

NOTE In ISO 13584, a dictionary is the formal and computer sensible representation of ontology.

3.1.21

part
material or functional element that is intended to constitute a component of different products

[ISO 13584-1:2001]

3.1.22

property
information that may be represented by a data element type

[ISO 13584-42:1998]

3.1.23

simple family of parts
a set of parts of which each part may be described by the same group of properties

[ISO 13584-42:1998]

3.1.24

visible property
a property that is defined for some family of parts and that may or may not apply to the different parts of this family of parts

[ISO 13584-42:1998]

EXAMPLE For a generic family of screws, the non-threaded length is a visible property: it is clearly defined for any screw, but only those screws with a non-threaded part have a value for this property.

NOTE The code of the class where a property is defined as visible is part of the identification of the data element type that represents this property.

3.1.25

standard data
a requirement on a software system defined by means of EXPRESS entity (data type) instances that are supposed to be recognized by this software system

[ISO 13584-24:2003]

3.2 Abbreviations

For the purposes of this document, the following abbreviations apply.

AP	Applicable Property
BSU	Basic Semantic Unit
DC	Definition Class
DCR	Date of Current Revision
DCV	Date of Current Version
DET	Data Element Type
DOD	Date of Original Definition
DT	Data Type
LIIM	Library Integrated Information Model
PLS	Preferred Letter Symbol
PTC	Property Type Classification
SD	Simplified Drawing
SDD	Source Document of Definition
SSP	Sub-class Selection Properties
VF	Value Format
VP	Visible Property

4 Representation of ontology concepts as dictionaries entries

4.1 Fastener class

4.1.1 Modelled class

4.1.1.1 Fastener class and super class

In this part of ISO 13584, fastener class and thread class are located under the super class -- **mechanical component for general use (see Figure 1).**

NOTE Besides **fastener** class, some other classes, e.g. bearing or spring, will be put under '**mechanical component for general use**' in the future reference dictionary standardization.

Fastener class is classified into five subclasses -- **externally threaded fastener, nut, rivet, pin**, and **washer**, which refer to fasteners classification of International Classification for Standards (ICS). All the modelled classes are shown in Annex C.

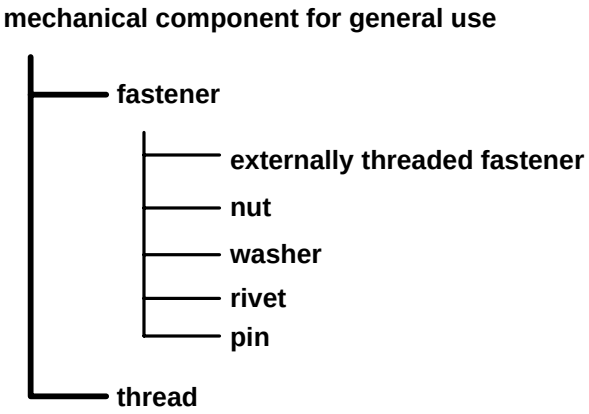


Figure 1 — Item_class under fastener class in this part of ISO 13584

4.1.1.2 Component class

Under top classes, various component classes are defined in this part of ISO 13584 except that **externally threaded fastener** class is classified into two subclasses – **externally threaded fastener component** class and **externally threaded fastener feature** class which describe the components and their geometry features respectively.

EXAMPLE 1 The **externally threaded fastener feature** class is classified into **head**, **shank**, **end**, and **internal drive** class.

All the component classes should be classified into classes of classificatory component, and ulteriorly some corresponding simple family of parts under each classificatory component class. This part of ISO 13584 establishes a mechanism for connecting the component classes to the corresponding feature classes by classification properties and classification property reference properties (see Annex E).

EXAMPLE 2 The **externally threaded fastener component** class is classified into nine component classes — **metric threaded bolt/screw, tapping screw, wood screw, drilling screw, set screw, stud, headless screw with shank, stud bolt** and **thread forming screw**.

EXAMPLE 3 The structure of **externally threaded fastener** class is shown in Figure 2.

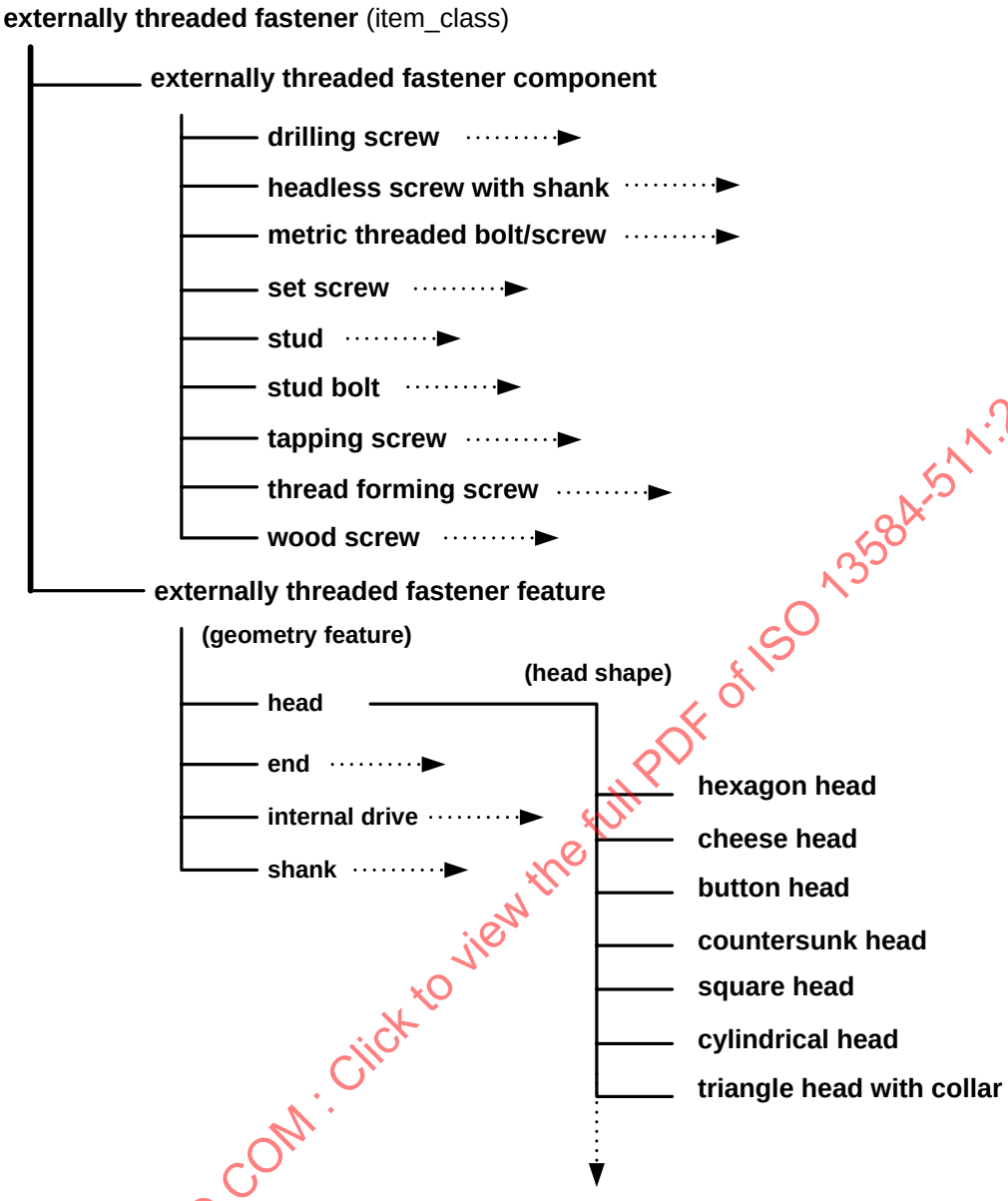


Figure 2 — The structure of externally threaded fastener class

The classification of fasteners is shown in Annex B.

4.1.2 Referenced classes

There is not any referenced class in this part of ISO 13584 from other classifications.

4.1.3 Used attributes

In this part of ISO 13584, classes are defined by means of the following information elements specified in ISO 13584-42:

— Code

— Super Class

— Preferred Name

— Sub-Class Selection Properties

— Visible Properties

— Applicable Properties

— Class Value Assignment

— Definition

— Source Document of Definition

— Date of Current Version

— Date of Current Revision

— Date of Original Definition

— Note

— Remark

— Version Number

— Revision Number

— Simplified Drawing

The following information elements specified in ISO 13584-42 are not used for defining the classes specified in this part of ISO 13584:

— Short Name

— Synonymous Name

— Visible Types

— Applicable Types

4.1.4 Layout

Class definitions of all fastener parts including all their attributes of the classes are listed in Annex C — fastener class definitions. Figure 3 shows the documentation style of fastener class definition.Figure 4 shows the position and some inherited properties of class P511AAA340 in the hierarchy.

(1) (2) (3)

P511AAA340 - 1 001

(4) **hexagon head screw with metric fine pitch thread**

SuperClass: P511AAA005 metric threaded bolt/screw

Definition: metric externally threaded fastener with a hexagon head and with finepitch thread

AP: P511BAA047: radius of under head curvature

P511BAA069: usable thread length

P511BAA357: transition diameter

P511BAA369: length of bolt/screw (flat seating head)

SSP:

Note: ISO 8675:1999,ISO 7411:1984,ISO 7412:1984, ISO 4016:1999 and ISO 4018:1999 belong to the same simple class

SDD: ISO 15978:2002

SD: P511DAA340

DOD: 2006-02-22 **DCV:** 2006-02-22

DCR: 2006-02-22

NOTE (1) — Code
(2) — Version number
(3) — Revision Number

Figure 3 — Layout of class definition

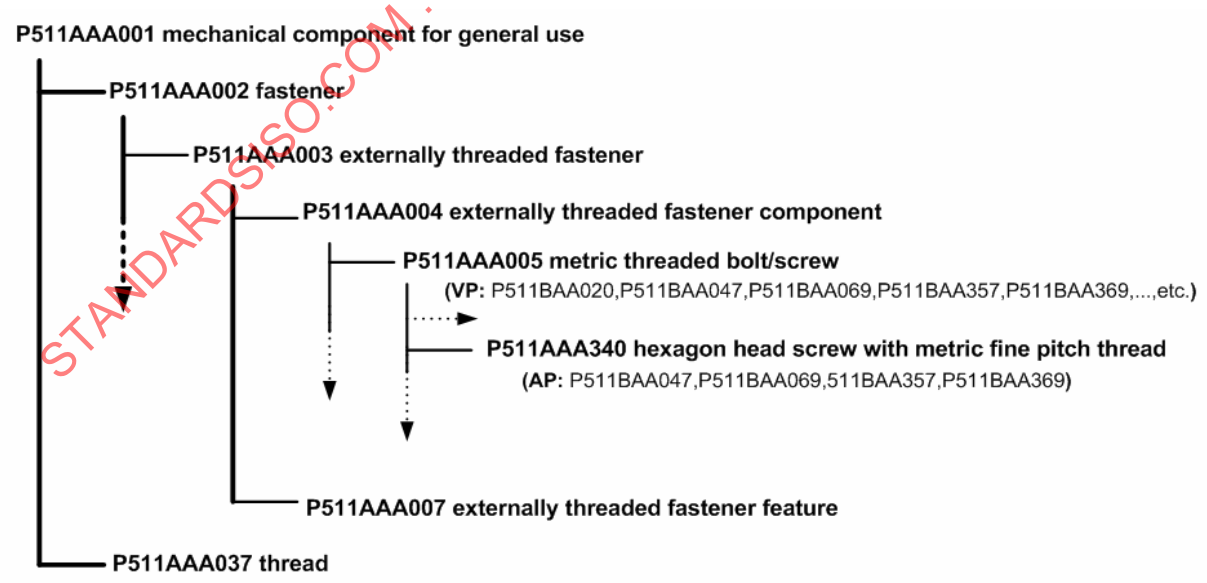


Figure 4 — Position and some inherited properties of class P511AAA340

Layout principle for class definition:

— Abbreviations defined in 3.26 would be used for corresponding attribute names;

— Mandatory attributes should appear in the definition list;

— Optional attributes can be omitted when they are empty;

— Each class indicated in superclass, or property indicated in **applicable property** (AP) or **sub-class selection property** (SSP) should include both its code and preferred name.

4.2 Property DET definitions

4.2.1 Modelled date types

For the purpose of this part of ISO 13584, two different kinds of properties are specified in this part of ISO 13584, **general properties** and **classification properties**.

General properties consist of feature properties and non-feature properties.

Classification properties of which the data type is **non_quantitative_code_type** are only used for **feature classes** to indicate what subclasses belong to the classes of the current level.

NOTE **Feature class** reference properties of which the data type is **class_instance_type** in the component branch are only for connecting each component class to the corresponding referenced **feature class**.

4.2.2 Imported properties

In this part of ISO 13584, the following properties are imported from IEC 61360-4.

— International standard

— Security authentication

— Mass

— National standard

4.2.3 Used attributes

In this part of ISO 13584, property DETs are defined by means of the following information elements specified in ISO 13584-42:

— Code

— Definition Class

— Data Type

— Preferred Name

— Definition

— Preferred Letter Symbol

— Unit

— Format

— Property Type Classification

— Note

— Remark

— Source Document of Definition

— Value Format

— Date of Original Definition

— Date of Current version

— Date of Current revision

— Version Number

— Revision Number

The following information elements specified in ISO 13584-42 are not used for defining the property DETs specified in this part of ISO 13584:

— Condition

— Short Name

— Formula

— Synonymous Letter Symbols

— Synonymous Name

Property DETs are listed in Annex D — Property DET definitions.

4.2.4 Layout

Figure 5 shows the specification for the documentation style of property DET definition.

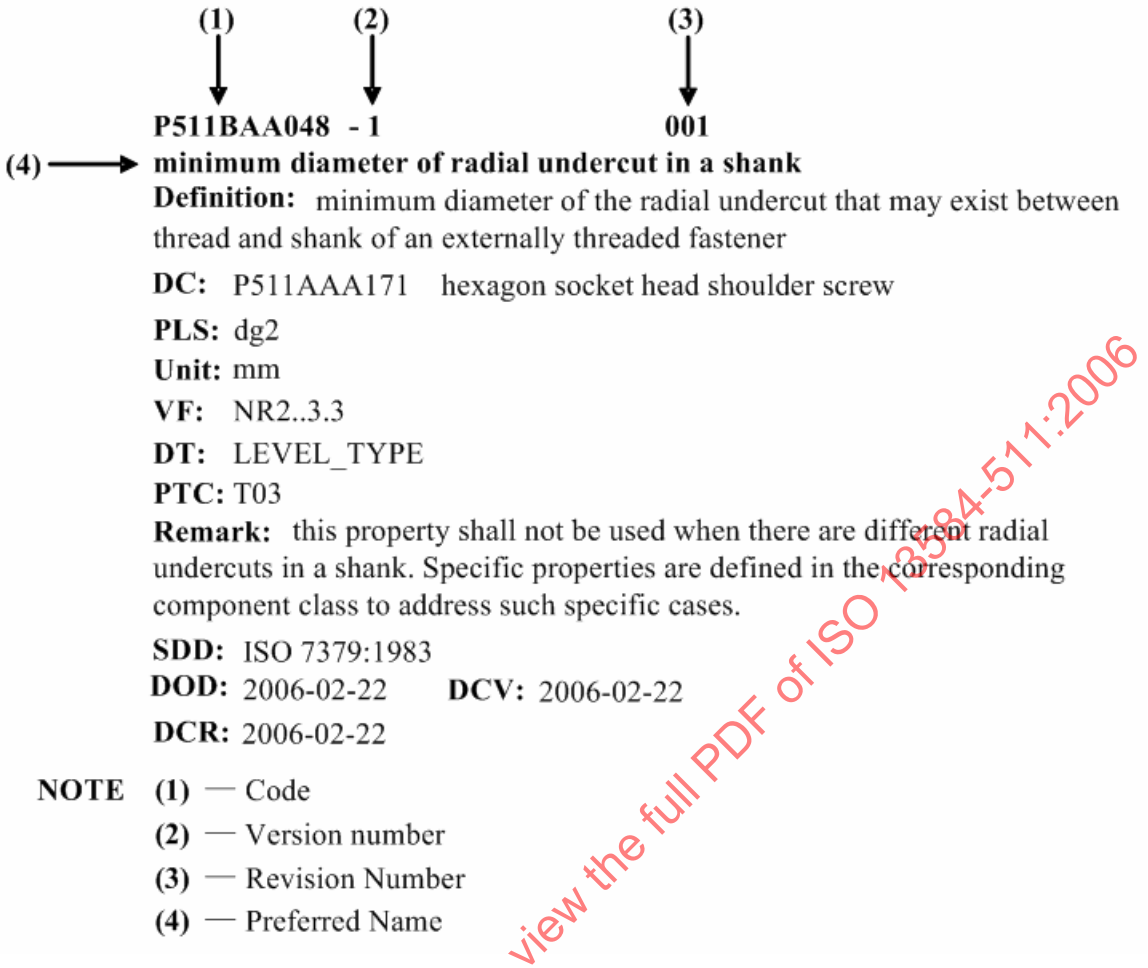


Figure 5 — Layout of property DET definition

Layout principle for property DET definition:

— Abbreviations defined in 3.26 would be used for corresponding attribute names;

— Mandatory attributes should appear in the definition list;

— Optional attributes can be omitted when they are empty;

— The class indicated in class definition (CD) should include both its code and preferred name.

4.3 Data type definitions

4.3.1 Data type properties

Six data types are used for the properties modelled in this part of ISO 13584. They are **real_measure_type** for geometry properties, **non_quantitative_code_type** for code of hardness test method identification, fastener coating code, fastener material identification, thread tolerance properties, property class, and classification properties, **class_instance_type** for reference properties of feature class, **level_type** for value of some hardness properties, **entity_instance_type** for external

picture of non-standardised shape feature properties and **string_type** for other properties that can be described by character string.

4.3.2 Used attributes

This part of ISO 13584 has no used attributes for data type definitions.

4.4 Rules for formulating class and property definitions

Fastener class or property definition shall consist of a single phrase specifying the class or property concept reflecting the position of the concept in the concept system. For the wording of the definition this requirement implies the following rules:

Definition Rule 1 The preferred structure of a definition is a basic part stating the class to which the concept belongs, and another part enumerating the characteristics that distinguish the concept from other members of the class.

Definition Rule 2 The preferred terms defined in other entries of the same document or in other related document shall be used wherever possible. The repetition of other definitions or parts of definitions shall be avoided provided they can be replaced by a preferred term.

Definition Rule 3 Preferred terms used within definitions shall always be given in full as actually occurring.

5 Classification principles

5.1 Connection to pre-existing classification

This part of ISO 13584 has no connection to pre-existing classification except ICS.

NOTE ICS is mainly used for positioning the dictionary defined in this standard with respect to other domain dictionaries defined in other standards. ICS classification does not directly correspond to the internal classification used in this standard which reflects the technical terms used in the fastener field.

5.2 Upper level of the hierarchy

According to the RULE 2 defined in ISO 13584-42: 1998, 6.1.2, the upper level of the hierarchy in this part of ISO 13584 is based on the fasteners hierarchy in the ICS (See 4.1.1 and 4.1.2).

5.3 Lower level of the hierarchy

In order to simplify and reduce the depth of the fasteners classification at the lower level of the hierarchy of this part of ISO 13584, **t**wo branches: feature class and component class are branches specified under item class. (See 4.1.1)

In addition to RULE 1 to RULE 8 defined in ISO 13584-42: 1998, the following rules are also applied to this part of ISO 13584.

Additional Rule 1 Define lower level classes only when needed for properties definition. The role of non-leaf (non-property) classes of the lower section ("generic families of parts") is only to precisely define the meaning of each property. Thus, in the lower level of the hierarchy, introduce a new subclass if and only if it is required to define the domain of meaning of a property. No class shall exist which is distinguished from another class only by the values of some properties.

NOTE Non-leaf component class is allowed for the potential user extension in this part of ISO 13584.

Additional Rule 2 All the properties defined in all the ISO fastener standards shall be defined in the dictionary.

Additional Rule 3 If needed, class valued properties (also called classification properties) can take their values several levels below the level where they are defined.

5.4 Coding style

In order to give a universal identification of Class and Property BSU, the coding style has been defined in this section.

Additional Rule 4 The coding style for this part of ISO 13584 (see Figure 6) is as follows:

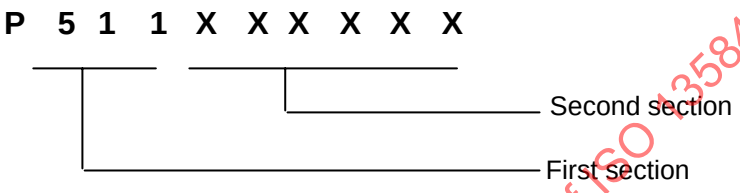


Figure 6 — Coding style

— Totally 10 characters divided into two sections;

— The first section has 4 characters of a constant string ‘P511’ for fastener dictionary of this part of ISO 13584;

— The second section has 6 characters of a meaningless alphanumeric characters sequence.

EXAMPLE P511AAA003 identifies **externally threaded fastener** class; P511BAA024 identifies **pitch** property.

5.5 General and classification property

For the purpose of this part of ISO 13584, property defined in ISO 13584-42 is divided into two types:

— General property

— Classification property

They have the same attributes as defined in ISO 13584-42, but have different functions.

5.5.1 General property

General properties under one class are the definitions for the class (See 4.2.1). For the layout example of general properties, see 4.2.4.

5.5.2 Classification property

Classification property indicates what subclasses are specified under current class by their values — a set of non_quantitative codes.

Classification properties are normally visible at item class level from which the class will be divided into a feature branch and a component branch and applicable at suitable class level in feature branch and component branch of the hierarchy.

Table E.1 specifies classification properties and their values in this part of ISO 13584.

6 Computer sensible description

6.1 External file

ISO 13584 specifies an external file reference mechanism to assign additional documentation in electronic or non-electronic form to the product, task/activity or definitions of the fasteners dictionary. The mechanism makes it easy for users to access information, which is outside the scope of this international standard.

In this part of ISO 13584, the reference mechanism of the external file for the fasteners dictionary is shown in Figure 7.

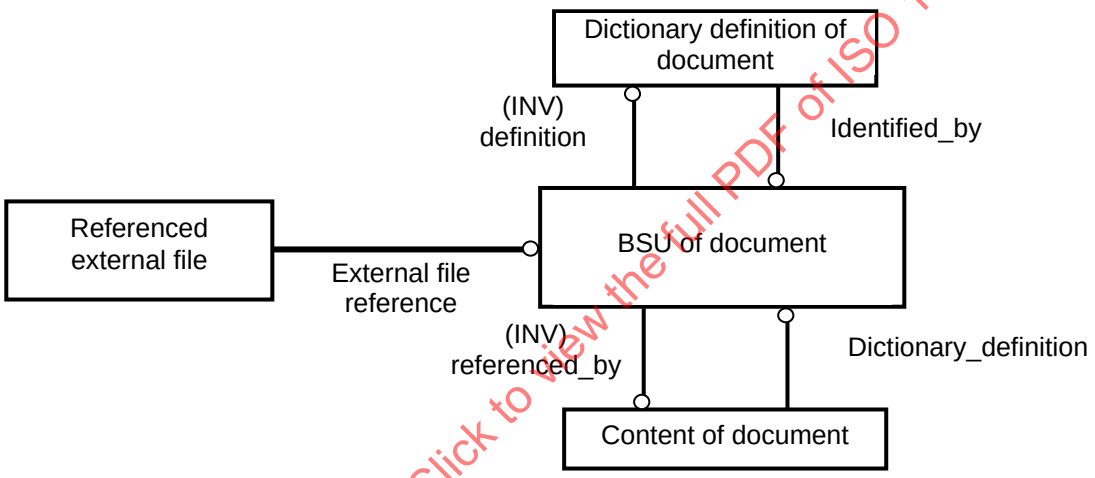


Figure 7 — External reference mechanism

In the fasteners dictionary, one kind of external files is referenced by **referenced_graphics,** which is the subtype of **graphics,** to specify the **simplified_drawing** attributes of the simple family of parts. The domain of the **graphics_reference** attribute of the **referenced_graphics** is **document_BSU**. Based on the **document_BSU**, the computer can find the corresponding **document_element** and **document_content**. So the computer can access and process the document.

EXAMPLE The simplified drawing attribute of the P511AAA015 class (**Round head**) references P511DAA015, which is the code of the external file that represents the round head of bolt/screw. The last five alphanumeric characters of the code are the same as those of the class it belongs.

NOTE All the documents of graphics of parts are provided in this part of ISO 13584 with JPG format.

The description of external file should conform to the **ISO13584_extended_dictionary_schema** and the **ISO13584_external_file_schema** of which EXPRESS specifications are defined in ISO 13584-24: 2003.

6.2 Information model and conformance class

This part of ISO 13584 conforms to the library integrated information model LIIM 25 defined in ISO 13584-25 and the library integrated information model LIIM 24 defined in ISO 13584-24: 2003.

The schema used in this part of ISO 13584 conforms to the conformance class 2 defined in ISO 13584-25. The conformance class 2 addresses those implementations that support conformance class 1 and that support aggregate data types and values. An implementation of conformance class 2 of library integrated information model LIIM 25 shall support the following entities and related constructs.

```
SCHEMA ISO13584_25_IEC61360_5_liim_schema;

USE FROM ISO13584_IEC61360_dictionary_schema
      (axis1_placement_type,
      axis2_placement_2d_type,
      axis2_placement_3d_type,
      boolean_type,
      class_BSU,
      class_instance_type,
      class_value_assignment,
      complex_type,
      component_class,
      condition_DET,
      data_type_BSU,
      data_type_element,
      dates,
      dependent_P_DET,
      dic_unit,
      dic_value,
      entity_instance_type,
      identified_document,
      int_currency_type,
      int_measure_type,
      int_type,
      integer_type,
      item_class,
      item_names,
      label_with_language,
      level_type,
      material_class,
      mathematical_string,
      named_type,
      non_dependent_P_DET,
      non_quantitative_code_type,
      non_quantitative_int_type,
      non_si_unit,
      number_type,
      placement_type,
      property_BSU,
      property_DET,
      real_currency_type,
      real_measure_type,
      real_type,
      string_type,
      supplier_BSU,
      supplier_element,
      value_domain);
```



```
USE FROM ISO13584_IEC61360_language_resource_schema
      (global_language_assignment, present_translations,
      translated_label, translated_text);

USE FROM ISO13584_instance_resource_schema (null_value, primitive_value,
      null_or_primitive_value, simple_value, null_or_simple_value,
      number_value, null_or_number_value, integer_value,
      null_or_integer_value, real_value, null_or_real_value,
      boolean_value, null_or_boolean_value, translatable_string_value,
      translated_string_value, string_value,
      null_or_translatable_string_value, complex_value,
      null_or_complex_value,
      entity_instance_value,
      null_or_entity_instance_value,
      defined_entity_instance_value,
      controlled_entity_instance_value,
      STEP_entity_instance_value,
      PLIB_entity_instance_value,
      property_or_data_type_BSU,
      level_spec_value,
      null_or_level_spec_value,
      int_level_spec_value,
      null_or_int_level_spec_value,
      real_level_spec_value,
      null_or_real_level_spec_value,
      property_value,
      context_dependent_property_value,
      dic_class_instance,
      null_or_dic_class_instance,
      dic_component_instance,
      dic_feature_instance,
      dic_material_instance,
      lib_component_instance,
      lib_feature_instance,
      lib_material_instance,
      dic_f_model_instance,
      lib_f_model_instance);


USE FROM ISO13584_IEC61360_dictionary_aggregate_extension_schema
      (entity_instance_type_for_aggregate, list_type, set_type, bag_type,
      array_type, set_with_subset_constraint_type);

USE FROM ISO13584_extended_dictionary_schema (dictionary,
      dictionary_in_standard_format, library_iim_identification,
      view_exchange_protocol_identification, representation_type,
      geometric_representation_context_type,
      representation_reference_type, program_reference_type,
      program_library_BSU, document_BSU,
      supplier_program_library_relationship, class_document_relationship,
      representation_P_DET, class_related_dictionary_element,
      program_library_element, document_element,
```

```
      document_element_with_http_access,
      document_element_with_translated_http_access,
      referenced_document,
      referenced_graphics,
      feature_class,
      functional_model_class,
      fm_class_view_of,
      functional_view_class,
      non_instantiable_functional_view_class,
      view_control_variable_range,
      item_class_case_of,
      component_class_case_of,
      material_class_case_of,
      feature_class_case_of,
      a_posteriori_case_of,
      a_posteriori_view_of);


  USE FROM ISO13584_external_file_schema
      (standard_simple_program_protocol,
      non_standard_simple_program_protocol,
      linked_interface_program_protocol, standard_data_protocol,
      non_standard_data_protocol, http_protocol, program_library_content,
      document_content, representation_reference, program_reference,
      property_value_external_item, message, illustration,
      A6_illustration, A9_illustration, translated_external_content,
      not_translated_external_content, not_translatable_external_content,
      language_specific_content, external_file_unit, http_file,
      http_class_directory, simple_program_protocol);


  USE FROM ISO13584_aggregate_value_schema
      (aggregate_entity_instance_value, list_value, set_value, bag_value,
      array_value, set_with_subset_constraint_value);

  USE FROM ISO13584_library_content_schema (library,
      library_in_standard_format, explicit_item_class_extension,
      explicit_functional_model_class_extension,
      property_classification, property_value_recommended_presentation);

  USE FROM measure_schema (amount_of_substance_measure, area_measure,
      context_dependent_measure, context_dependent_unit,
      conversion_based_unit, count_measure, derived_unit,
      derived_unit_element, dimensional_exponents,
      electric_current_measure, global_unit_assigned_context,
      length_measure, length_measure_with_unit, length_unit,
      luminous_intensity_measure, mass_measure, measure_value,
      measure_with_unit, named_unit, numeric_measure, parameter_value,
      plane_angle_measure, positive_length_measure,
      positive_plane_angle_measure, ratio_measure, si_unit,
      solid_angle_measure, thermodynamic_temperature_measure,
      time_measure, volume_measure);
```



```
    USE FROM person_organization_schema (address, organization, person);

    USE FROM date_time_schema (date, date_and_time, local_time,
          calendar_date, ordinal_date, week_of_year_and_day_date);

    USE FROM geometry_schema (axis1_placement, axis2_placement_2D,
          axis2_placement_3D, geometric_representation_context, placement);

    USE FROM representation_schema
          (representation,
          representation_context,
          representation_item);


    USE FROM application_context_schema
          (application_context,
          application_context_element,
          application_protocol_definition);


END_SCHEMA; -- ISO13584_25_IEC61360_5_liim_schema
```

Annex A
(normative)

Information object registration

A.1 Document identification

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

{ISO standard 13584 part (511) version (1)}

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

A.2 Dictionary identification

The dictionary defined in this part of ISO 13584 is assigned the object identifier:

{ISO standard 13584 part (511) version (1) object (1) fasteners (1)}

Annex B
(normative)

Classification tables

Table B.1 specifies the classification structure and codes of each class defined in this part of ISO 13584.

Table B.1 — Classification structure of classes

Classification Structure	SuperClass	Code
mechanical component for general use		P511AAA001
fastener	P511AAA001	P511AAA002
externally threaded fastener	P511AAA002	P511AAA003
externally threaded fastener component	P511AAA003	P511AAA004
drilling screw	P511AAA004	P511AAA210
cross recessed (type H) countersunk head drilling screw	P511AAA210	P511AAA213
cross recessed (type H) pan head drilling screw	P511AAA210	P511AAA212
cross recessed (type H) raised countersunk drilling screw	P511AAA210	P511AAA214
cross recessed (type Z) countersunk head drilling screw	P511AAA210	P511AAA287
cross recessed (type Z) pan head drilling screw with tapping screw thread	P511AAA210	P511AAA286
cross recessed (type Z) raised countersunk head drilling screw	P511AAA210	P511AAA288
hexagon washer head drilling screw	P511AAA210	P511AAA211
headless screw with shank	P511AAA004	P511AAA354
slotted headless screw with shank	P511AAA354	P511AAA187

Classification Structure	SuperClass	Code
metric threaded bolt/screw	P511AAA004	P511AAA005
countersunk flat head screw with cross recess (type H)	P511AAA005	P511AAA184
countersunk flat head screw with cross recess (type Z)	P511AAA005	P511AAA281
cross recessed (type H) cheese head screw	P511AAA005	P511AAA181
cross recessed (type H) pan head screw	P511AAA005	P511AAA182
cross recessed (type Z) cheese head screw	P511AAA005	P511AAA279
cross recessed (type Z) pan head screw	P511AAA005	P511AAA280
cup head square neck bolt	P511AAA005	P511AAA051
cup head square neck bolt with large head	P511AAA005	P511AAA158
hexagon head bolt	P511AAA005	P511AAA156
hexagon head bolt with flange with fine pitch thread, full shank	P511AAA005	P511AAA081
hexagon head bolt with flange with fine pitch thread, reduced shank	P511AAA005	P511AAA146
hexagon head bolt with flange, full shank	P511AAA005	P511AAA047
hexagon head bolt with flange, reduced shank	P511AAA005	P511AAA157
hexagon head bolt with metric fine pitch thread	P511AAA005	P511AAA339
hexagon head screw	P511AAA005	P511AAA169
hexagon head screw with metric fine pitch thread	P511AAA005	P511AAA340
hexagon socket button head screw	P511AAA005	P511AAA172

Classification Structure						SuperClass	Code
					hexagon socket countersunk head screw	P511AAA005	P511AAA173
					hexagon socket head cap screw	P511AAA005	P511AAA170
					hexagon socket head cap screw with metric fine pitch thread	P511AAA005	P511AAA342
					hexagon socket head shoulder screw	P511AAA005	P511AAA171
					hexalobular socket cheese head screw	P511AAA005	P511AAA174
					hexalobular socket head cap screw	P511AAA005	P511AAA050
					hexalobular socket pan head screw	P511AAA005	P511AAA175
					hexalobular socket raised countersunk head screw	P511AAA005	P511AAA176
					octagon head bolt	P511AAA005	P511AAA163
					raised countersunk head screw with cross recess (type H)	P511AAA005	P511AAA185
					raised countersunk head screw with cross recess (type Z)	P511AAA005	P511AAA282
					slotted cheese head screw	P511AAA005	P511AAA177
					slotted countersunk flat head screw	P511AAA005	P511AAA179
					slotted pan head screw	P511AAA005	P511AAA178
					slotted raised countersunk head screw	P511AAA005	P511AAA180
					square head bolt	P511AAA005	P511AAA159
					square head bolt with collar	P511AAA005	P511AAA160
					T-head bolt	P511AAA005	P511AAA166
					triangle head bolt	P511AAA005	P511AAA162
				set screw		P511AAA004	P511AAA186

Classification Structure	SuperClass	Code
hexagon socket set screw with cone point	P511AAA186	P511AAA189
hexagon socket set screw with cup point	P511AAA186	P511AAA191
hexagon socket set screw with dog point	P511AAA186	P511AAA190
hexagon socket set screw with flat point	P511AAA186	P511AAA188
slotted set screw with cone point	P511AAA186	P511AAA192
slotted set screw with cup point	P511AAA186	P511AAA195
slotted set screw with flat point	P511AAA186	P511AAA193
slotted set screw with long dog point	P511AAA186	P511AAA194
stud	P511AAA004	P511AAA049
stud with full shank	P511AAA049	P511AAA091
waisted stud	P511AAA049	P511AAA071
stud bolt	P511AAA004	P511AAA099
tapping screw	P511AAA004	P511AAA196
cross recessed (type H) countersunk head tapping screw with a cone end	P511AAA196	P511AAA203
cross recessed (type H) countersunk head tapping screw with a flat end	P511AAA196	P511AAA269
cross recessed (type H) pan head tapping screw with a cone end	P511AAA196	P511AAA201
cross recessed (type H) pan head tapping screw with a flat end	P511AAA196	P511AAA270
cross recessed (type H) raised countersunk head tapping screw with a cone end	P511AAA196	P511AAA204

Classification Structure						SuperClass	Code
					cross recessed (type H) raised countersunk head tapping screw,flat end	P511AAA196	P511AAA244
					cross recessed (type Z) countersunk head tapping screw with a cone end	P511AAA196	P511AAA284
					cross recessed (type Z) countersunk head tapping screw with a flat end	P511AAA196	P511AAA268
					cross recessed (type Z) pan head tapping screw with a cone end	P511AAA196	P511AAA283
					cross recessed (type Z) pan head tapping screw with a flat end	P511AAA196	P511AAA144
					cross recessed (type Z) raised countersunk head tapping screw with a cone end	P511AAA196	P511AAA285
					cross recessed (type Z) raised countersunk head tapping screw with a flat end	P511AAA196	P511AAA267
					hexagon flange head tapping screw with a cone end	P511AAA196	P511AAA202
					hexagon flange head tapping screw with a flat end	P511AAA196	P511AAA271
					hexagon head tapping screw with a cone end	P511AAA196	P511AAA197
					hexagon head tapping screw with a flat end	P511AAA196	P511AAA293
					hexagon washer head tapping screw with a cone end	P511AAA196	P511AAA205
					hexagon washer head tapping screw with a flat end	P511AAA196	P511AAA243
					hexalobular socket countersunk head tapping screw with a cone end	P511AAA196	P511AAA207
					hexalobular socket countersunk head tapping screw with a flat end	P511AAA196	P511AAA226

Classification Structure						SuperClass	Code
					hexalobular socket countersunk head tapping screw with a rounded end	P511AAA196	P511AAA238
					hexalobular socket pan head tapping screw with a cone end	P511AAA196	P511AAA206
					hexalobular socket pan head tapping screw with a flat end	P511AAA196	P511AAA239
					hexalobular socket pan head tapping screw with a rounded end	P511AAA196	P511AAA242
					hexalobular socket raised countersunk head tapping screw with a cone end	P511AAA196	P511AAA208
					hexalobular socket raised countersunk head tapping screw with a flat end	P511AAA196	P511AAA291
					hexalobular socket raised countersunk head tapping screw with a rounded end	P511AAA196	P511AAA292
					slotted countersunk (flat) head tapping screw with a cone end	P511AAA196	P511AAA199
					slotted countersunk(flat) head tapping screw with a flat end	P511AAA196	P511AAA290
					slotted pan head tapping screw with a cone end	P511AAA196	P511AAA198
					slotted pan head tapping screw with a flat end	P511AAA196	P511AAA139
					slotted raised countersunk (oval) head tapping screw with a cone end	P511AAA196	P511AAA200
					slotted raised countersunk(oval) head tapping screw with a flat end	P511AAA196	P511AAA289
				thread forming screw		P511AAA004	P511AAA309
				wood screw		P511AAA004	P511AAA209
			externally threaded fastener feature			P511AAA003	P511AAA007

Classification Structure	SuperClass	Code
end	P511AAA007	P511AAA028
as-rolled end	P511AAA028	P511AAA029
chamfered end	P511AAA028	P511AAA031
cone end (type C) of tapping screw	P511AAA028	P511AAA130
cone point	P511AAA028	P511AAA032
cup point	P511AAA028	P511AAA034
dog point	P511AAA028	P511AAA035
drilling point of drilling screw	P511AAA028	P511AAA012
end of thread forming screw	P511AAA028	P511AAA006
flat end (type F) of tapping screw	P511AAA028	P511AAA132
flat point	P511AAA028	P511AAA131
pilot point	P511AAA028	P511AAA349
rounded end	P511AAA028	P511AAA030
rounded end (type R) of tapping screw	P511AAA028	P511AAA138
scrape point	P511AAA028	P511AAA036
truncated cone point	P511AAA028	P511AAA033
truncated pilot point	P511AAA028	P511AAA350
head	P511AAA007	P511AAA008
12 point flange head	P511AAA008	P511AAA121
button head	P511AAA008	P511AAA223
cheese head	P511AAA008	P511AAA016

Classification Structure						SuperClass	Code
					countersunk head	P511AAA008	P511AAA019
					cup head	P511AAA008	P511AAA353
					cylindrical head	P511AAA008	P511AAA122
					eye shape head	P511AAA008	P511AAA021
					eyelet shape head	P511AAA008	P511AAA022
					head with knurl	P511AAA008	P511AAA351
					head with tommy	P511AAA008	P511AAA046
					head with wings	P511AAA008	P511AAA352
					hexagon head	P511AAA008	P511AAA009
					hexagon head with collar	P511AAA008	P511AAA217
					hexagon head with flange	P511AAA008	P511AAA011
					hexagon head with washer face	P511AAA008	P511AAA010
					octagonal head	P511AAA008	P511AAA120
					pan head	P511AAA008	P511AAA018
					raised cheese head	P511AAA008	P511AAA017
					raised countersunk head	P511AAA008	P511AAA020
					round head	P511AAA008	P511AAA015
					square head	P511AAA008	P511AAA023
					square head with collar	P511AAA008	P511AAA013
					T-head	P511AAA008	P511AAA014
					triangle head with collar	P511AAA008	P511AAA119

Classification Structure	SuperClass	Code
internal drive	P511AAA007	P511AAA042
12 point socket	P511AAA042	P511AAA143
cross hole	P511AAA042	P511AAA147
cross recess (type H)	P511AAA042	P511AAA045
cross recess (type Z)	P511AAA042	P511AAA272
hexagon socket	P511AAA042	P511AAA043
hexalobular socket	P511AAA042	P511AAA222
six-spline socket	P511AAA042	P511AAA142
slot	P511AAA042	P511AAA044
square socket	P511AAA042	P511AAA141
triangle socket	P511AAA042	P511AAA140
shank	P511AAA007	P511AAA024
fit shank	P511AAA024	P511AAA128
full shank	P511AAA024	P511AAA125
reduced shank	P511AAA024	P511AAA126
shank with square neck	P511AAA024	P511AAA025
shoulder	P511AAA024	P511AAA129
waisted shank	P511AAA024	P511AAA127
nut	P511AAA002	P511AAA052
cap nut	P511AAA052	P511AAA311
domed cap(acorn) nut	P511AAA052	P511AAA312

Classification Structure				SuperClass	Code
			hexagon castle nut	P511AAA052	P511AAA229
			hexagon nut (style 1)	P511AAA052	P511AAA313
			hexagon nut with collar	P511AAA052	P511AAA314
			hexagon nut with flange	P511AAA052	P511AAA228
			hexagon nut(style 2)	P511AAA052	P511AAA326
			hexagon thin nut (chamfered)	P511AAA052	P511AAA327
			hexagon thin nut (unchamfered)	P511AAA052	P511AAA338
			octagon nut	P511AAA052	P511AAA323
			pentagon nut	P511AAA052	P511AAA322
			prevailing torque type all-metal hexagon nut (style 1)	P511AAA052	P511AAA330
			prevailing torque type all-metal hexagon nut (style 2)	P511AAA052	P511AAA331
			prevailing torque type all-metal hexagon nut with flange	P511AAA052	P511AAA333
			prevailing torque type hexagon nut with flange, with non-metallic insert	P511AAA052	P511AAA332
			prevailing torque type hexagon nut with non-metallic insert (style 1)	P511AAA052	P511AAA328
			prevailing torque type hexagon nut with non-metallic insert (style 2)	P511AAA052	P511AAA329
			round nut with holes in face	P511AAA052	P511AAA232
			round nut with holes in side	P511AAA052	P511AAA315
			round nut with knurl	P511AAA052	P511AAA318
			round nut with slot in face	P511AAA052	P511AAA316

Classification Structure	SuperClass	Code
round nut with slots in side	P511AAA052	P511AAA317
slotted hexagon nut	P511AAA052	P511AAA227
square nut	P511AAA052	P511AAA319
square nut with collar	P511AAA052	P511AAA320
triangle nut with collar	P511AAA052	P511AAA321
wing nut	P511AAA052	P511AAA324
pin	P511AAA002	P511AAA098
clevis pin	P511AAA098	P511AAA355
clevis pin with head	P511AAA355	P511AAA255
clevis pin without head	P511AAA355	P511AAA334
grooved pin	P511AAA098	P511AAA356
grooved pin with countersunk head	P511AAA356	P511AAA260
grooved pin with round head	P511AAA356	P511AAA259
grooved pin, full-length parallel grooved,with chamfer	P511AAA356	P511AAA258
grooved pin, full-length parallel grooved,with pilot	P511AAA356	P511AAA257
grooved pin, full-length taper grooved	P511AAA356	P511AAA278
grooved pin, half-length centre grooved	P511AAA356	P511AAA335
grooved pin, half-length reverse taper grooved	P511AAA356	P511AAA265
grooved pin, half-length taper grooved	P511AAA356	P511AAA337
grooved pin, one-third-length centre grooved	P511AAA356	P511AAA336

Classification Structure	SuperClass	Code
parallel pin	P511AAA098	P511AAA252
parallel pin with internal thread	P511AAA252	P511AAA253
split pin	P511AAA098	P511AAA248
spring pin	P511AAA098	P511AAA357
spring-type straight pin, coiled	P511AAA357	P511AAA325
spring-type straight pin, slotted	P511AAA357	P511AAA261
taper pin	P511AAA098	P511AAA358
simple taper pin	P511AAA358	P511AAA249
taper pin with external thread	P511AAA358	P511AAA251
taper pin with internal thread	P511AAA358	P511AAA250
rivet	P511AAA002	P511AAA345
blind rivet	P511AAA345	P511AAA083
closed end blind rivet with break pull mandrel and countersunk head	P511AAA083	P511AAA246
closed end blind rivet with break pull mandrel and protruding head	P511AAA083	P511AAA245
open end blind rivet with break pull mandrel and countersunk head	P511AAA083	P511AAA082
open end blind rivet with break pull mandrel and protruding head	P511AAA083	P511AAA093
full shank rivet	P511AAA345	P511AAA346
semi tubular rivet	P511AAA345	P511AAA348
tubular rivet	P511AAA345	P511AAA347
washer	P511AAA002	P511AAA072

Classification Structure	SuperClass	Code
lock washer	P511AAA072	P511AAA241
countersunk lock washer with external teeth	P511AAA241	P511AAA183
countersunk serrated lock washer with external teeth	P511AAA241	P511AAA218
lock washer with external teeth	P511AAA241	P511AAA164
lock washer with internal teeth	P511AAA241	P511AAA168
serrated lock washer with external teeth	P511AAA241	P511AAA215
serrated lock washer with internal teeth	P511AAA241	P511AAA216
plain washer	P511AAA072	P511AAA026
plain washer with double chamfers	P511AAA026	P511AAA359
plain washer with outside chamfer	P511AAA026	P511AAA027
plain washer with square hole	P511AAA026	P511AAA136
plain washer without chamfer	P511AAA026	P511AAA235
square washer with round hole	P511AAA026	P511AAA089
spring washer	P511AAA072	P511AAA236
conical spring washer	P511AAA236	P511AAA137
curved spring washer	P511AAA236	P511AAA150
spring lock washer	P511AAA236	P511AAA148
wave spring washer	P511AAA236	P511AAA161
square taper washer	P511AAA072	P511AAA237
tab washer	P511AAA072	P511AAA240
external tab washer	P511AAA240	P511AAA221

Classification Structure	SuperClass	Code
internal tab washer	P511AAA240	P511AAA225
tab washer with long tab	P511AAA240	P511AAA219
tab washer with long tab and wing	P511AAA240	P511AAA220
thread	P511AAA001	P511AAA037
metric external thread	P511AAA037	P511AAA038
metric internal thread	P511AAA037	P511AAA344
tapping screw thread	P511AAA037	P511AAA039
thread forming screw thread	P511AAA037	P511AAA310
wood screw thread	P511AAA037	P511AAA041

Annex C
(normative)

Fastener class definitions

This annex specifies all definitions of classes defined in this part of ISO 13584.

P511AAA001-1 001
mechanical component for general use
SuperClass:
Definition: at the top of the hierarchy, representing the whole set of the components generally used in mechanical field
AP:
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA002-1 001
fastener
SuperClass: P511AAA001 mechanical component for general use
Definition: covering all types of products designed to mechanically connect two or more structural parts to form a solid or detachable joint or to contribute essentially to establish this function
AP: P511BAA320: fastener material identification
P511BAA322: fastener material name
P511BAA324: fastener coating code
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA003-1 001
externally threaded fastener
SuperClass: P511AAA002 fastener
Definition: fastener with external thread includes bolt,screw and stud
AP:
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA004-1 001
externally threaded fastener component
SuperClass: P511AAA003 externally threaded fastener
Definition: component class which includes all the externally threaded fasteners such as bolt,screw and stud
AP: P511BAA005: manufacturer
P511BAA006: ICD code
P511BAA007: manufacture date
P511BAA008: designation
P511BAA011: EAN/UCC code
P511BAA248: thread tolerance position
P511BAA249: thread tolerance grade
P511BAA256: thread tolerance class
P511BAA319: organization identifier of manufacturer
P511BAA321: steel fastener property class
P511BAA323: stainless steel fastener property class
P511BAA340: thread size
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA005-1 001
metric threaded bolt/screw
SuperClass: P511AAA004 externally threaded fastener component
Definition: headed externally threaded fastener with a cylindrical shank, which may be partly or fully threaded and the head may be furnished with a driving feature
AP: P511BAA103: head shape name
P511BAA104: head shape picture
P511BAA105: shank shape name
P511BAA106: shank shape picture
P511BAA107: end shape name
P511BAA108: end shape picture
P511BAA109: internal drive shape name
P511BAA110: internal drive shape picture
P511BAA243: head properties
P511BAA244: shank properties
P511BAA245: end properties
P511BAA246: thread properties
P511BAA247: internal drive properties
P511BAA303: type of head
P511BAA305: type of shank
P511BAA306: type of end
P511BAA307: type of thread
P511BAA308: type of internal drive
P511BAA326: product grade
SSP: P511BAA303: type of head
P511BAA305: type of shank
P511BAA306: type of end
P511BAA307: type of thread
P511BAA308: type of internal drive
SD:

DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA006-1 001
end of thread forming screw
SuperClass: P511AAA028 end
Definition: the end of a screw which is able to form its own mating thread
AP:
SDD: ISO 1891:1979 clause 27.1
SD: P511DAA006
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA007-1 001
externally threaded fastener feature
SuperClass: P511AAA003 externally threaded fastener
Definition: feature class describing geometry features for externally threaded fasteners
AP:
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA008-1 001
head
SuperClass: P511AAA007 externally threaded fastener feature
Definition: feature class identifying head geometry features of externally threaded fasteners
AP: P511BAA303: type of head
SSP: P511BAA303: type of head
SDD: ISO 1891:1979
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA009-1 001
hexagon head
SuperClass: P511AAA008 head
Definition: head shape which is hexagon
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA034: head height
P511BAA041: diameter of washer face or bearing face
SDD: ISO 4016:1999
SD: P511DAA009
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA010-1 001
hexagon head with washer face
SuperClass: P511AAA008 head
Definition: head shape which is hexagon with a washer face at the bearing face
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA034: head height
P511BAA041: diameter of washer face or bearing face
P511BAA042: height of bearing element of a bolt or screw or nut
SDD: ISO 4016:1999
SD: P511DAA010
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA011-1 001
hexagon head with flange
SuperClass: P511AAA008 head
Definition: head shape which is hexagon with a flange at the bearing face,in order to reduce the pressure under the head
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA034: head height
P511BAA042: height of bearing element of a bolt or screw or nut
P511BAA044: flange angle
P511BAA045: flange(collar) diameter
SDD: ISO 15071:1999
SD: P511DAA011
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA012-1 001
drilling point of drilling screw
SuperClass: P511AAA028 end
Definition: end of drilling screw having a particular shape which performs the drilling operation
AP: P511BAA093: diameter of drilling point
SDD: ISO 15480:1999
SD: P511DAA012
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA013-1 001
square head with collar
SuperClass: P511AAA008 head
Definition: head shape which is square with a cylindrical collar at the bearing face in order to reduce the pressure under the head
AP: P511BAA032: width across flats
P511BAA033: width across corners
P511BAA034: head height
P511BAA042: height of bearing element of a bolt or screw or nut

P511BAA045: flange(collar) diameter
SDD: ISO 1891:1979 clause 3.6
SD: P511DAA013
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA014-1 001
T-head
SuperClass: P511AAA008 head
Definition: head shape which is rectangular and flat and designed to fit in a T-slot and hold against turning
AP: P511BAA034: head height
SDD: ISO 1891:1979 clause 3.10
SD: P511DAA014
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA015-1 001
round head
SuperClass: P511AAA008 head
Definition: head shape which is circular with a domed top surface
AP: P511BAA034: head height
P511BAA051: head diameter
SDD: ISO 1891:1979 clause 3.11
SD: P511DAA015
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA016-1 001
cheese head
SuperClass: P511AAA008 head
Definition: head shape which is cylindrical or slightly conical with a flat top surface with the upper edge rounded
AP: P511BAA034: head height
P511BAA051: head diameter
SDD: ISO 1891:1979, ISO 1207:1992
SD: P511DAA016
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA017-1 001
raised cheese head
SuperClass: P511AAA008 head
Definition: head shape which is cylindrical with a domed top surface
AP: P511BAA034: head height
P511BAA051: head diameter
P511BAA060: radius of the raised portion of the head
SDD: ISO 1891:1979 clause 3.14
SD: P511DAA017
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA018-1 001
pan head
SuperClass: P511AAA008 head
Definition: head shape which is cylindrical with rounded top surface
AP: P511BAA034: head height
P511BAA051: head diameter
P511BAA060: radius of the raised portion of the head
SDD: ISO 1891:1979 clause 3.15, ISO 1580:1994
SD: P511DAA018
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA019-1 001
countersunk head
SuperClass: P511AAA008 head
Definition: head shape which is circular with a conical bearing surface which is able to fit a countersink
AP: P511BAA034: head height
P511BAA051: head diameter
P511BAA368: head angle (countersunk angle)
SDD: ISO 1891:1979 clause 3.16, ISO 2009:1994
SD: P511DAA019
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA020-1 001
raised countersunk head
SuperClass: P511AAA008 head
Definition: countersunk head with a domed top surface
AP: P511BAA034: head height
P511BAA051: head diameter
P511BAA060: radius of the raised portion of the head
P511BAA368: head angle (countersunk angle)
P511BAA376: height of the raised portion of raised countersunk head
SDD: ISO 1891:1979 clause 3.17, ISO 2010:1994
SD: P511DAA020
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA021-1 001
eye shape head
SuperClass: P511AAA008 head
Definition: head has the form of a ring (eye), the axis of which is perpendicular to the bolt axis
AP:
SDD: ISO 1891:1979 clause 19.2
SD: P511DAA021
DOD: 2006-02-22 **DCV:** 2006-02-22

DCR: 2006-02-22

P511AAA022-1 001
eyelet shape head
SuperClass: P511AAA008 head
Definition: head shape which is like an open anchor ring, the axis of which is perpendicular to the bolt axis
AP:
SDD: ISO 1891:1979 clause 19.8
SD: P511DAA022
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA023-1 001
square head
SuperClass: P511AAA008 head
Definition: head shape which is square
AP: P511BAA032: width across flats
P511BAA033: width across corners
P511BAA034: head height
SDD: ISO 1891:1979 clause 3.5
SD: P511DAA023
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA024-1 001
shank
SuperClass: P511AAA007 externally threaded fastener feature
Definition: feature class identifying shank geometry features of externally threaded fasteners
AP: P511BAA305: type of shank
SSP: P511BAA305: type of shank
SDD: ISO 1891:1979
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA025-1 001
shank with square neck
SuperClass: P511AAA024 shank
Definition: shank with square part under the head to prevent rotation
AP: P511BAA067: shank diameter
P511BAA071: square neck width
P511BAA072: square neck length
SDD: ISO 1891:1979 clause 4.6, ISO 8677:1986
SD: P511DAA025
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA026-1 001
plain washer
SuperClass: P511AAA072 washer
Definition: washer with parallel flat surfaces
AP: P511BAA326: product grade
P511BAA337: thickness
SDD: ISO 1891:1979 clause 38.1
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA027-1 001
plain washer with outside chamfer
SuperClass: P511AAA026 plain washer
Definition: plain washer with a chamfer at one of the outer edges
AP: P511BAA333: outside diameter
P511BAA334: hole diameter
SDD: ISO 7090:2000
SD: P511DAA027
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA028-1 001
end
SuperClass: P511AAA007 externally threaded fastener feature
Definition: feature class identifying end geometry features of externally threaded fasteners
AP: P511BAA306: type of end
SSP: P511BAA306: type of end
SDD: ISO 1891:1979
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA029-1 001
as-rolled end
SuperClass: P511AAA028 end
Definition: end of externally threaded fastener resulting after thread rolling
AP: P511BAA082: incomplete thread length
SDD: ISO 4753:1999
SD: P511DAA029
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA030-1 001
rounded end
SuperClass: P511AAA028 end
Definition: spherically formed shank end
AP: P511BAA082: incomplete thread length
P511BAA084: radius of rounded end
SDD: ISO 4753:1999
SD: P511DAA030
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA031-1 001
chamfered end

SuperClass: P511AAA028 end
Definition: end of externally threaded fastener which has been chamfered before thread rolling
AP: P511BAA082: incomplete thread length
SDD: ISO 4753:1999
SD: P511DAA031
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA032-1 001
cone point
SuperClass: P511AAA028 end
Definition: end of externally threaded fastener having the shape of a cone
AP: P511BAA082: incomplete thread length
SDD: ISO 4753:1999
SD: P511DAA032
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA033-1 001
truncated cone point
SuperClass: P511AAA028 end
Definition: end of externally threaded fastener having the shape of a truncated cone
AP: P511BAA077: diameter of truncated cone point
P511BAA082: incomplete thread length
SDD: ISO 4753:1999
SD: P511DAA033
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA034-1 001
cup point
SuperClass: P511AAA028 end
Definition: conical indentation at the end of externally threaded fastener which forms a sharp circular edge at the end face
AP: P511BAA078: diameter of cup point
P511BAA082: incomplete thread length
SDD: ISO 4753:1999
SD: P511DAA034
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA035-1 001
dog point
SuperClass: P511AAA028 end
Definition: cylindrical projection at the end of externally threaded fastener
AP: P511BAA079: length of point
P511BAA082: incomplete thread length
P511BAA085: diameter of dog point or flat point
SDD: ISO 4753:1999
SD: P511DAA035
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA036-1 001
scrape point
SuperClass: P511AAA028 end
Definition: particular shape thread end with a cutting edge
AP: P511BAA080: diameter of scrape point
P511BAA081: length of the cone part of the scrape point
P511BAA083: length of the scrape point
SDD: ISO 4753:1999
SD: P511DAA036
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA037-1 001
thread
SuperClass: P511AAA001 mechanical component for general use
Definition: feature class identifying thread types of mechanical components for general use
AP: P511BAA024: pitch
P511BAA307: type of thread
SSP: P511BAA307: type of thread
SDD: ISO 1891:1979
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA038-1 001
metric external thread
SuperClass: P511AAA037 thread
Definition: external thread for general use defined by the metric unit system
AP: P511BAA327: type of pitch
P511BAA346: major diameter of external thread
P511BAA347: pitch diameter of external thread
P511BAA348: minor diameter of external thread
SDD: ISO 68-1:1998
SD: P511DAA038
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA039-1 001
tapping screw thread
SuperClass: P511AAA037 thread
Definition: external thread designed to form its mating thread in thin metallic materials
AP: P511BAA349: outer diameter
P511BAA350: core diameter
SDD: ISO 1478:1999
SD: P511DAA039

DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA041-1 001
wood screw thread
SuperClass: P511AAA037 thread
Definition: external thread designed to form its mating thread in wooden materials
AP: P511BAA349: outer diameter
P511BAA350: core diameter
SDD: ISO 1891:1979 clause 2.4
SD: P511DAA041
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA042-1 001
internal drive
SuperClass: P511AAA007 externally threaded fastener feature
Definition: driving feature classes like socket, slot or recess at the head or at one end of externally threaded fasteners on which the driving tool is acting
AP: P511BAA308: type of internal drive
SSP: P511BAA308: type of internal drive
SDD: ISO 1891:1979
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA043-1 001
hexagon socket
SuperClass: P511AAA042 internal drive
Definition: internal drive feature with the shape of a hexagonal indentation
AP: P511BAA032: width across flats
P511BAA098: hexagon socket width across corners
P511BAA101: penetration depth
SDD: ISO 1891:1979 clause 6.6, ISO 4762:2004
SD: P511DAA043
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA044-1 001
slot
SuperClass: P511AAA042 internal drive
Definition: internal drive feature with the shape of a rectangular groove perpendicular to the axis of the externally threaded fastener
AP: P511BAA052: slot width
P511BAA101: penetration depth
SDD: ISO 1891:1979 clause 6.11, ISO 7434:1983
SD: P511DAA044
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA045-1 001
cross recess (type H)
SuperClass: P511AAA042 internal drive
Definition: internal drive with the shape of a cross like indentation where the faces on which the tool forces apply are conical (type H)
AP: P511BAA101: penetration depth
P511BAA102: recess number
SDD: ISO 4757:1983
SD: P511DAA045
Note: as a result of the conical faces an axial force appears which tends to push the tool out of the cross recess but, on the other hand, the cross recess type H is insensible to alignment of screw and driving tool
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA046-1 001
head with tommy
SuperClass: P511AAA008 head
Definition: head with a tommy bar inserted in a cylindrical hole, perpendicular to the bolt or screw axis
AP:
SDD: ISO 1891:1979 clause 6.15
SD: P511DAA046
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA047-1 001
hexagon head bolt with flange, full shank
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with hexagon head with a flange and full shank
AP: P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA087: transition length
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
P511BAA383: transition diameter of axial undercut
SDD: ISO 4162:1990
SD: P511DAA047
Note: ISO 15071:1999 belongs to this simple class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA049-1 001
stud
SuperClass: P511AAA004 externally threaded fastener component

Definition: headless externally threaded fastener with threads at both ends and an unthreaded shank between the threads
AP: P511BAA028: overall length
P511BAA105: shank shape name
P511BAA106: shank shape picture
P511BAA107: end shape name
P511BAA108: end shape picture
P511BAA244: shank properties
P511BAA245: end properties
P511BAA246: thread properties
P511BAA306: type of end
P511BAA307: type of thread
P511BAA326: product grade
SSP: P511BAA306: type of end
P511BAA307: type of thread
SDD: ISO 1891:1979 clause 21.1
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA050-1 001
hexalobular socket head cap screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a cylindrical head with a hexalobular indentation
AP: P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA087: transition length
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 14579:2001
SD: P511DAA050
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA051-1 001
cup head square neck bolt
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a cup head and a square neck under the head
AP: P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 8678:1988
SD: P511DAA051
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA052-1 001
nut
SuperClass: P511AAA002 fastener
Definition: fastener with internal thread enabling it to be screwed onto externally threaded fastener
AP: P511BAA005: manufacturer
P511BAA006: ICD code
P511BAA007: manufacture date
P511BAA008: designation
P511BAA011: EAN/UCC code
P511BAA117: nut height
P511BAA246: thread properties
P511BAA248: thread tolerance position
P511BAA249: thread tolerance grade
P511BAA256: thread tolerance class
P511BAA307: type of thread
P511BAA319: organization identifier of manufacturer
P511BAA321: steel fastener property class
P511BAA323: stainless steel fastener property class
P511BAA326: product grade
P511BAA327: type of pitch
P511BAA340: thread size
P511BAA387: nut name
P511BAA388: nut picture
SSP: P511BAA307: type of thread
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA071-1 001
waisted stud
SuperClass: P511AAA049 stud
Definition: stud with shank diameter less than the minor thread diameter
AP: P511BAA025: thread length of stud metal end
P511BAA030: length of thread run-out
P511BAA371: stud length
SDD: ISO 1891:1979 clause 21.3
SD: P511DAA071
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA072-1 001
washer
SuperClass: P511AAA002 fastener
Definition: fastener used in bolted connections in order to reduce pressure on the bearing surface
AP: P511BAA005: manufacturer
P511BAA006: ICD code
P511BAA007: manufacture date
P511BAA008: designation
P511BAA011: EAN/UCC code

P511BAA319: organization identifier of manufacturer
P511BAA335: washer name
P511BAA340: thread size
P511BAA342: core hardness
P511BAA343: surface hardness
P511BAA344: steel fastener hardness class
P511BAA345: hardness test method identification
P511BAA351: washer picture
P511BAA417: stainless steel fastener hardness class
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA081-1 001
hexagon head bolt with flange with fine pitch thread, full shank
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with hexagon head with a flange and full shank and with fine pitch thread
AP: P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA087: transition length
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
P511BAA382: depth of axial undercut
P511BAA383: transition diameter of axial undercut
SDD: ISO 15072:1999
SD: P511DAA081
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA082-1 001
open end blind rivet with break pull mandrel and countersunk head
SuperClass: P511AAA083 blind rivet
Definition: blind rivet with an open end and a break pull mandrel and countersunk head
AP: P511BAA191: blind length
P511BAA411: length of rivet with flat seating head (protruding head)
SDD: ISO 15978:2002
SD: P511DAA082
Remark: ISO 15980:2002,ISO 15982:2002,ISO 15984:2002,ISO 16585:2002 belong to this simple class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA083-1 001
blind rivet
SuperClass: P511AAA345 rivet
Definition: rivet which can be set even though the access for its installation and setting may be limited to one side only
AP: P511BAA013: body material
P511BAA014: mandrel material
P511BAA189: mandrel protrusion
P511BAA190: mandrel diameter
P511BAA254: tensile load
P511BAA255: mandrel break load
P511BAA328: rivet head name
P511BAA329: rivet head picture
P511BAA415: rivet diameter
SDD: ISO 14588:2000
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA089-1 001
square washer with round hole
SuperClass: P511AAA026 plain washer
Definition: plain washer with square outer shape and central round hole
AP: P511BAA334: hole diameter
SDD: ISO 1891:1979 clause 38.3
SD: P511DAA089
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA091-1 001
stud with full shank
SuperClass: P511AAA049 stud
Definition: stud with shank diameter equal to the nominal thread diameter
AP: P511BAA025: thread length of stud metal end
P511BAA030: length of thread run-out
P511BAA371: stud length
P511BAA386: thread length of nut end
SDD: ISO 1891:1979 clause 21.1
SD: P511DAA091
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA093-1 001
open end blind rivet with break pull mandrel and protruding head
SuperClass: P511AAA083 blind rivet
Definition: blind rivet with an open end and a break pull mandrel and protruding head
AP: P511BAA191: blind length
P511BAA412: length of the rivet with countersunk head
SDD: ISO 15977:2002
SD: P511DAA093
Remark: ISO 15979:2002,ISO 15981:2002,ISO

15983:2002,ISO 16583:2002 belong to this simple class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA098-1 001
pin
SuperClass: P511AAA002 fastener
Definition: cylindrical or conical fasteners which are fixed in the components which they are connecting by a "interference fit" or by end features like head and split pin or by split pin on both ends
AP: P511BAA005: manufacturer
P511BAA006: ICD code
P511BAA007: manufacture date
P511BAA008: designation
P511BAA011: EAN/UCC code
P511BAA319: organization identifier of manufacturer
P511BAA342: core hardness
P511BAA343: surface hardness
P511BAA345: hardness test method identification
P511BAA389: pin head name
P511BAA390: pin head picture
P511BAA391: pin shank name
P511BAA392: pin shank picture
P511BAA393: pin end name
P511BAA394: pin end picture
P511BAA414: pin diameter
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA099-1 001
stud bolt
SuperClass: P511AAA004 externally threaded fastener component
Definition: fastener which is threaded over its total length
AP: P511BAA246: thread properties
P511BAA307: type of thread
P511BAA326: product grade
P511BAA401: length of stud bolt
SDD: ISO 1891:1979 clause 21.6
SD: P511DAA099
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA119-1 001
triangle head with collar
SuperClass: P511AAA008 head
Definition: head shape which is triangle with a cylindrical collar at the bearing face,in order to reduce the pressure under the head
AP: P511BAA034: head height
P511BAA042: height of bearing element of a bolt or screw or nut
P511BAA045: flange(collar) diameter
SDD: ISO 1891:1979 clause 3.7
SD: P511DAA119
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA120-1 001
octagonal head
SuperClass: P511AAA008 head
Definition: head shape which is octagonal
AP: P511BAA033: width across corners
P511BAA034: head height
SDD: ISO 1891:1979 clause 3.8
SD: P511DAA120
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA121-1 001
12 point flange head
SuperClass: P511AAA008 head
Definition: head shape which is like a 12 point star with a flange at the side of the bearing face in order to reduce the pressure under the head
AP: P511BAA034: head height
SDD: ISO 1891:1979 clause 3.9
SD: P511DAA121
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA122-1 001
cylindrical head
SuperClass: P511AAA008 head
Definition: head shape which is cylindrical
AP: P511BAA034: head height
P511BAA051: head diameter
SDD: ISO 4762:2004
SD: P511DAA122
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA125-1 001
full shank
SuperClass: P511AAA024 shank
Definition: shank with nominal diameter equal to the nominal thread diameter
AP: P511BAA054: shank length
P511BAA067: shank diameter
SDD: ISO 4014:1999
SD: P511DAA125
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA126-1 001
reduced shank
SuperClass: P511AAA024 shank

Definition: shank with diameter approximately equal to the pitch diameter of the thread
AP: P511BAA054: shank length
P511BAA067: shank diameter
SDD: ISO 4162:1990
SD: P511DAA126
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA127-1 001
waisted shank
SuperClass: P511AAA024 shank
Definition: shank with diameter less than the minor diameter of the thread
AP:
SDD: ISO 1891:1979 clause 7.8
SD: P511DAA127
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA128-1 001
fit shank
SuperClass: P511AAA024 shank
Definition: shank with diameter greater than the nominal thread diameter
AP:
SDD: ISO 1891:1979 clause 7.4
SD: P511DAA128
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA129-1 001
shoulder
SuperClass: P511AAA024 shank
Definition: increased plain shank with a face, which is jammed against the surface of the part to be fixed
AP: P511BAA038: radius of the undercut under head
P511BAA067: shank diameter
P511BAA365: transition diameter of shoulder
SDD: ISO 7379:1983
SD: P511DAA129
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA130-1 001
cone end (type C) of tapping screw
SuperClass: P511AAA028 end
Definition: self-tapping screw end with the shape of a cone, type C
AP: P511BAA096: length of tapping screw end
SDD: ISO 1478:1999
SD: P511DAA130
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA131-1 001
flat point
SuperClass: P511AAA028 end
Definition: flat end of externally threaded fastener
AP: P511BAA082: incomplete thread length
P511BAA085: diameter of dog point or flat point
SDD: ISO 4753:1999
SD: P511DAA131
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA132-1 001
flat end (type F) of tapping screw
SuperClass: P511AAA028 end
Definition: flat end of self-tapping screw, type F
AP: P511BAA090: diameter of flat end
P511BAA096: length of tapping screw end
SDD: ISO 1478:1999
SD: P511DAA132
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA136-1 001
plain washer with square hole
SuperClass: P511AAA026 plain washer
Definition: plain washer with round outer shape and central square hole
AP: P511BAA333: outside diameter
SDD: ISO 1891:1979 clause 38.4
SD: P511DAA136
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA137-1 001
conical spring washer
SuperClass: P511AAA236 spring washer
Definition: spring washer with a conical shape
AP: P511BAA326: product grade
SDD: ISO 1891:1979 clause 39.6
SD: P511DAA137
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA138-1 001
rounded end (type R) of tapping screw
SuperClass: P511AAA028 end
Definition: self-tapping screw end with the shape of a rounded cone, type R
AP: P511BAA096: length of tapping screw end
SDD: ISO 1478:1999
SD: P511DAA138
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA139-1 001

slotted pan head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a slotted pan head and flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 1481:1983
SD: P511DAA139
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA140-1 001
triangle socket
SuperClass: P511AAA042 internal drive
Definition: internal drive feature with the shape of triangle socket
AP: P511BAA101: penetration depth
SDD: ISO 1891:1979 clause 6.7
SD: P511DAA140
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA141-1 001
square socket
SuperClass: P511AAA042 internal drive
Definition: internal drive feature with the shape of square socket
AP: P511BAA101: penetration depth
SDD: ISO 1891:1979 clause 6.8
SD: P511DAA141
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA142-1 001
six-spline socket
SuperClass: P511AAA042 internal drive
Definition: internal drive feature with the shape of a six-spline socket
AP: P511BAA101: penetration depth
SDD: ISO 1891:1979 clause 6.9
SD: P511DAA142
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA143-1 001
12 point socket
SuperClass: P511AAA042 internal drive
Definition: internal drive feature with the shape of a 12 point socket
AP: P511BAA101: penetration depth
SDD: ISO 1891:1979 clause 6.10
SD: P511DAA143
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA144-1 001
cross recessed (type Z) pan head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a pan head with cross recessed (type Z) and with a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 7049:1983
SD: P511DAA144
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA146-1 001
hexagon head bolt with flange with fine pitch thread, reduced shank
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with hexagon head bolt with a flange and reduced shank with fine pitch thread
AP: P511BAA047: radius of curvature under head
P511BAA087: transition length
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
P511BAA383: transition diameter of axial undercut
SDD: ISO 15072:1999
SD: P511DAA146
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA147-1 001
cross hole
SuperClass: P511AAA042 internal drive
Definition: internal drive feature with the shape of a cross hole
AP:
SDD: ISO 1891:1979 clause 6.18
SD: P511DAA147
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA148-1 001
spring lock washer
SuperClass: P511AAA236 spring washer
Definition: spring washer with the shape of an open ring, which is bent in axial direction

AP:
SDD: ISO 1891:1979 clause 39.1
SD: P511DAA148
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA150-1 001
curved spring washer
SuperClass: P511AAA236 spring washer
Definition: spring washer with the shape of a plain washer, which is bent in axial direction
AP:
SDD: ISO 1891:1979 clause 39.4
SD: P511DAA150
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA156-1 001
hexagon head bolt
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a hexagon head and with plain shank
AP: P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA087: transition length
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 4014:1999
SD: P511DAA156
Note: ISO 7411:1984,ISO 7412:1984 and ISO 4016:1999 belong to the same simple class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA157-1 001
hexagon head bolt with flange, reduced shank
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with hexagon head with a flange and reduced shank
AP: P511BAA087: transition length
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
P511BAA383: transition diameter of axial undercut
SDD: ISO 4162:1990
SD: P511DAA157
Remark: ISO 15071:1999 belongs to this simple class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA158-1 001
cup head square neck bolt with large head
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a large cup head and a square neck
AP: P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 8677:1986
SD: P511DAA158
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA159-1 001
square head bolt
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a square head
AP: P511BAA012: thread length
P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 1891:1979
SD: P511DAA159
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA160-1 001
square head bolt with collar
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a square head with collar
AP: P511BAA012: thread length
P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA087: transition length
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 1891:1979
SD: P511DAA160
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA161-1 001
wave spring washer
SuperClass: P511AAA236 spring washer
Definition: spring washer with the shape of a plain washer, which is bent to present more than one wave

AP:
SDD: ISO 1891:1979 clause 39.5
SD: P511DAA161
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA162-1 001
triangle head bolt
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a triangle head
AP: P511BAA012: thread length
P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA087: transition length
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 1891:1979
SD: P511DAA162
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA163-1 001
octagon head bolt
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with an octagon head
AP: P511BAA012: thread length
P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA087: transition length
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 1891:1979
SD: P511DAA163
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA164-1 001
lock washer with external teeth
SuperClass: P511AAA241 lock washer
Definition: lock washer with teeth at the outside
AP:
SDD: ISO 1891:1979 clause 39.7
SD: P511DAA164
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA166-1 001
T-head bolt
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a T-head designed to fit in a T-slot
AP: P511BAA012: thread length
P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 1891:1979
SD: P511DAA166
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA168-1 001
lock washer with internal teeth
SuperClass: P511AAA241 lock washer
Definition: lock washer with teeth at the inside
AP:
SDD: ISO 1891:1979 clause 39.8
SD: P511DAA168
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA169-1 001
hexagon head screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a hexagon head threaded up to the head
AP: P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 4017:1999
SD: P511DAA169
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA170-1 001
hexagon socket head cap screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a high cylindrical head with a hexagon socket
AP: P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA087: transition length
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 4762:2004
SD: P511DAA170
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA171-1 001

hexagon socket head shoulder screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a cylindrical head with a hexagon socket and with a shoulder under the head
AP: P511BAA012: thread length
P511BAA020: minimum diameter of radial undercut
P511BAA022: width of radial undercut
P511BAA037: width of radial undercut in a shank
P511BAA048: minimum diameter of radial undercut in a shank
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
P511BAA383: transition diameter of axial undercut
SDD: ISO 7379:1983
SD: P511DAA171
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA172-1 001
hexagon socket button head screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a button head with a hexagon socket
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 7380:2004
SD: P511DAA172
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA173-1 001
hexagon socket countersunk head screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a countersunk head with hexagon socket
AP: P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA370: length of countersunk bolt/screw
SDD: ISO 10642:2004
SD: P511DAA173
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA174-1 001
hexalobular socket cheese head screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a cheese head with hexalobular socket
AP: P511BAA030: length of thread run-out
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 14580:2001
SD: P511DAA174
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA175-1 001
hexalobular socket pan head screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a pan head with hexalobular socket
AP: P511BAA012: thread length
P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 14583:2001
SD: P511DAA175
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA176-1 001
hexalobular socket raised countersunk head screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a raised countersunk head with hexalobular socket
AP: P511BAA012: thread length
P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 14584:2001
SD: P511DAA176
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA177-1 001
slotted cheese head screw
SuperClass: P511AAA005 metric threaded

bolt/screw
Definition: metric externally threaded fastener with a slotted cheese head
AP: P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 1207:1992
SD: P511DAA177
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA178-1 001
slotted pan head screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a slotted pan head
AP: P511BAA012: thread length
P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 1580:1994
SD: P511DAA178
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA179-1 001
slotted countersunk flat head screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a flat slotted countersunk head
AP: P511BAA012: thread length
P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 2009:1994
SD: P511DAA179
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA180-1 001
slotted raised countersunk head screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a slotted raised countersunk head
AP: P511BAA012: thread length
P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 2010:1994
SD: P511DAA180
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA181-1 001
cross recessed (type H) cheese head screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a cross recessed cheese head (type H)
AP: P511BAA012: thread length
P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 7048:1998
SD: P511DAA181
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA182-1 001
cross recessed (type H) pan head screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a cross recessed pan head (type H)
AP: P511BAA012: thread length
P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 7045:1994
SD: P511DAA182
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA183-1 001
countersunk lock washer with external teeth
SuperClass: P511AAA241 lock washer
Definition: lock washer with external teeth and a conical shape to fit into a countersink
AP:

SDD: ISO 1891:1979 clause 39.9
SD: P511DAA183
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA184-1 001
countersunk flat head screw with cross recess (type H)
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a flat countersunk head with cross recess (type H)
AP: P511BAA012: thread length
P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 7046-1:1994
SD: P511DAA184
Remark: ISO 7046-2:1994 belongs to this simple class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA185-1 001
raised countersunk head screw with cross recess (type H)
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a raised countersunk head and cross recess (type H)
AP: P511BAA012: thread length
P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 7047:1994
SD: P511DAA185
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA186-1 001
set screw
SuperClass: P511AAA004 externally threaded fastener component
Definition: fully externally threaded fastener with a driving feature at one end, whereas the other end is designed to apply pressure on the part to be fixed
AP: P511BAA107: end shape name
P511BAA108: end shape picture
P511BAA109: internal drive shape name
P511BAA110: internal drive shape picture
P511BAA245: end properties
P511BAA246: thread properties
P511BAA247: internal drive properties
P511BAA306: type of end
P511BAA307: type of thread
P511BAA308: type of internal drive
P511BAA326: product grade
P511BAA378: diameter of face
P511BAA400: length of set screw
SSP: P511BAA306: type of end
P511BAA307: type of thread
P511BAA308: type of internal drive
SDD: ISO 1891:1979
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA187-1 001
slotted headless screw with shank
SuperClass: P511AAA354 headless screw with shank
Definition: headless screw with shank with a slot as internal drive
AP: P511BAA402: length of headless screw with shank
SDD: ISO 2342:1972
SD: P511DAA187
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA188-1 001
hexagon socket set screw with flat point
SuperClass: P511AAA186 set screw
Definition: set screw with a hexagon socket and flat point
AP:
SDD: ISO 4026:2003
SD: P511DAA188
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA189-1 001
hexagon socket set screw with cone point
SuperClass: P511AAA186 set screw
Definition: set screw with a hexagon socket and a cone point
AP:
SDD: ISO 4027:2003
SD: P511DAA189
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA190-1 001
hexagon socket set screw with dog point
SuperClass: P511AAA186 set screw

Definition: set screw with a hexagon socket and a dog point
AP:
SDD: ISO 4028:2003
SD: P511DAA190
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA191-1 001
hexagon socket set screw with cup point
SuperClass: P511AAA186 set screw
Definition: set screw with a hexagon socket and a cup point
AP:
SDD: ISO 4029:2003
SD: P511DAA191
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA192-1 001
slotted set screw with cone point
SuperClass: P511AAA186 set screw
Definition: slotted set screw with a cone point
AP:
SDD: ISO 7434:1983
SD: P511DAA192
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA193-1 001
slotted set screw with flat point
SuperClass: P511AAA186 set screw
Definition: slotted set screw with a flat point
AP:
SDD: ISO 4766:1983
SD: P511DAA193
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA194-1 001
slotted set screw with long dog point
SuperClass: P511AAA186 set screw
Definition: slotted set screw with a long dog point
AP:
SDD: ISO 7435:1983
SD: P511DAA194
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA195-1 001
slotted set screw with cup point
SuperClass: P511AAA186 set screw
Definition: slotted set screw with a cup point
AP:
SDD: ISO 7436:1983
SD: P511DAA195
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA196-1 001
tapping screw
SuperClass: P511AAA004 externally threaded fastener component
Definition: externally threaded fastener with a head including a driving feature and with a self-tapping screw thread which is able to form its own mating thread in the metal part to be fastened
AP: P511BAA103: head shape name
P511BAA104: head shape picture
P511BAA107: end shape name
P511BAA108: end shape picture
P511BAA109: internal drive shape name
P511BAA110: internal drive shape picture
P511BAA243: head properties
P511BAA245: end properties
P511BAA246: thread properties
P511BAA247: internal drive properties
P511BAA303: type of head
P511BAA306: type of end
P511BAA307: type of thread
P511BAA308: type of internal drive
P511BAA326: product grade
SSP: P511BAA303: type of head
P511BAA306: type of end
P511BAA307: type of thread
P511BAA308: type of internal drive
SDD: ISO 1891:1979
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA197-1 001
hexagon head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a hexagon head and a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 1479:1983
SD: P511DAA197
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA198-1 001
slotted pan head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a slotted pan

head and a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 1481:1983
SD: P511DAA198
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA199-1 001
slotted countersunk (flat) head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a slotted countersunk (flat) head and a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 1482:1983
SD: P511DAA199
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA200-1 001
slotted raised countersunk (oval) head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a slotted raised countersunk (oval) head and a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 1483:1983
SD: P511DAA200
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA201-1 001
cross recessed (type H) pan head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a pan head with cross recess (type H) and with a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 7049:1983
SD: P511DAA201
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA202-1 001
hexagon flange head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a hexagon flange head and a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 10509:1992
SD: P511DAA202
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA203-1 001
cross recessed (type H) countersunk head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a countersunk head with cross recess (type H) and with a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 7050:1983
SD: P511DAA203
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA204-1 001
cross recessed (type H) raised countersunk head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a raised countersunk head with cross recess (type H) and with a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 7051:1983
SD: P511DAA204
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA205-1 001
hexagon washer head tapping screw with a cone end

SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a hexagon washer head and with a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 7053:1992
SD: P511DAA205
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA206-1 001
hexalobular socket pan head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a pan head with hexalobular socket and with a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 14585:2001
SD: P511DAA206
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA207-1 001
hexalobular socket countersunk head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a countersunk head with hexalobular socket and with a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 14586:2001
SD: P511DAA207
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA208-1 001
hexalobular socket raised countersunk head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a raised countersunk head with hexalobular socket and with a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 14587:2001
SD: P511DAA208
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA209-1 001
wood screw
SuperClass: P511AAA004 externally threaded fastener component
Definition: externally threaded fastener with a head including a driving feature and with a thread, which is able to form its own mating thread in the wooden part to be fastened
AP: P511BAA103: head shape name
P511BAA104: head shape picture
P511BAA105: shank shape name
P511BAA106: shank shape picture
P511BAA107: end shape name
P511BAA108: end shape picture
P511BAA109: internal drive shape name
P511BAA110: internal drive shape picture
P511BAA243: head properties
P511BAA244: shank properties
P511BAA245: end properties
P511BAA246: thread properties
P511BAA247: internal drive properties
P511BAA303: type of head
P511BAA306: type of end
P511BAA307: type of thread
P511BAA308: type of internal drive
P511BAA369: length of bolt/screw (flat seating head)
P511BAA370: length of countersunk bolt/screw
SDD: ISO 1891:1979 clause 2.4
SD: P511DAA209
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA210-1 001
drilling screw
SuperClass: P511AAA004 externally threaded fastener component
Definition: externally threaded fastener with a head including a driving feature and a self-tapping screw thread, the end of which is furnished with a drilling point, which is able to drill a hole and to form its own mating thread in metallic materials
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA103: head shape name
P511BAA104: head shape picture
P511BAA105: shank shape name

P511BAA106: shank shape picture
P511BAA107: end shape name
P511BAA108: end shape picture
P511BAA109: internal drive shape name
P511BAA110: internal drive shape picture
P511BAA243: head properties
P511BAA245: end properties
P511BAA246: thread properties
P511BAA247: internal drive properties
P511BAA303: type of head
P511BAA306: type of end
P511BAA307: type of thread
P511BAA308: type of internal drive
P511BAA326: product grade
SSP: P511BAA303: type of head
P511BAA306: type of end
P511BAA307: type of thread
P511BAA308: type of internal drive
SDD: ISO 15480:1999
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA211-1 001
hexagon washer head drilling screw
SuperClass: P511AAA210 drilling screw
Definition: drilling screw with a hexagon washer head and self-tapping screw thread
AP: P511BAA069: minimum clamp length
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 15480:1999
SD: P511DAA211
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA212-1 001
cross recessed (type H) pan head drilling screw
SuperClass: P511AAA210 drilling screw
Definition: drilling screw with a pan head with cross recess (type H) and with self-tapping screw thread
AP: P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 15481:1999
SD: P511DAA212
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA213-1 001
cross recessed (type H) countersunk head drilling screw
SuperClass: P511AAA210 drilling screw
Definition: drilling screw with a countersunk head with cross recess (type H) and with self-tapping screw thread
AP: P511BAA069: minimum clamp length
P511BAA370: length of countersunk bolt/screw
SDD: ISO 15482:1999
SD: P511DAA213
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA214-1 001
cross recessed (type H) raised countersunk drilling screw
SuperClass: P511AAA210 drilling screw
Definition: drilling screw with a raised countersunk head with cross recess (type H) and with self-tapping screw thread
AP: P511BAA069: minimum clamp length
P511BAA370: length of countersunk bolt/screw
SDD: ISO 15483:1999
SD: P511DAA214
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA215-1 001
serrated lock washer with external teeth
SuperClass: P511AAA241 lock washer
Definition: lock washer with serrated teeth at the outside
AP:
SDD: ISO 1891:1979 clause 39.10
SD: P511DAA215
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA216-1 001
serrated lock washer with internal teeth
SuperClass: P511AAA241 lock washer
Definition: lock washer with serrated teeth at the inside
AP:
SDD: ISO 1891:1979 clause 39.11
SD: P511DAA216
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA217-1 001
hexagon head with collar
SuperClass: P511AAA008 head
Definition: head shape which is hexagon with a cylindrical collar at the bearing face,in order to reduce the pressure under the head
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA034: head height
P511BAA042: height of bearing element of a

bolt or screw or nut
P511BAA045: flange(collar) diameter
P511BAA377: radius of curvature at the hexagon / washer junction
SDD: ISO 15480:1999
SD: P511DAA217
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA218-1 001
countersunk serrated lock washer with external teeth
SuperClass: P511AAA241 lock washer
Definition: lock washer with serrated external teeth and a conical shape to fit into a countersink
AP:
SDD: ISO 1891:1979 clause 39.12
SD: P511DAA218
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA219-1 001
tab washer with long tab
SuperClass: P511AAA240 tab washer
Definition: tab washer with a long tab at the outside
AP:
SDD: ISO 1891:1979 clause 40.1
SD: P511DAA219
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA220-1 001
tab washer with long tab and wing
SuperClass: P511AAA240 tab washer
Definition: tab washer with a long tab and a wing at the outside
AP:
SDD: ISO 1891:1979 clause 40.2
SD: P511DAA220
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA221-1 001
external tab washer
SuperClass: P511AAA240 tab washer
Definition: tab washer with a tab at the outside
AP:
SDD: ISO 1891:1979 clause 40.3
SD: P511DAA221
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA222-1 001
hexalobular socket
SuperClass: P511AAA042 internal drive
Definition: internal drive feature with the shape of a hexalobular indentation
AP: P511BAA057: nominal dimension A
P511BAA075: nominal dimension B
P511BAA092: hexalobular socket number
P511BAA101: penetration depth
SDD: ISO 10664:2005
SD: P511DAA222
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA223-1 001
button head
SuperClass: P511AAA008 head
Definition: head shape which is a truncated round head
AP: P511BAA034: head height
P511BAA051: head diameter
SDD: ISO 7380:2004
SD: P511DAA223
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA225-1 001
internal tab washer
SuperClass: P511AAA240 tab washer
Definition: tab washer with a tab at the inside
AP:
SDD: ISO 1891:1979 clause 40.4
SD: P511DAA225
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA226-1 001
hexalobular socket countersunk head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a countersunk head with hexalobular socket and with a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 14586:2001
SD: P511DAA226
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA227-1 001
slotted hexagon nut
SuperClass: P511AAA052 nut
Definition: hexagon nut with slots at one face perpendicular to the nut axis
AP: P511BAA031: wrenching height
P511BAA032: width across flats

P511BAA033: width across corners
P511BAA052: slot width
P511BAA053: bottom thickness
P511BAA114: diameter of the countersink
SDD: ISO 1891:1979 clause 34.1
SD: P511DAA227
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA228-1 001
hexagon nut with flange
SuperClass: P511AAA052 nut
Definition: hexagon nut with a flange at the bearing face
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA041: diameter of washer face or bearing face
P511BAA042: height of bearing element of a bolt or screw or nut
P511BAA044: flange angle
P511BAA045: flange(collar) diameter
P511BAA114: diameter of the countersink
SDD: ISO 4161:1999
SD: P511DAA228
Remark: ISO 21670:2003 belongs to this simple class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA229-1 001
hexagon castle nut
SuperClass: P511AAA052 nut
Definition: hexagon nut with cylindrical slotted projection
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA041: diameter of washer face or bearing face
P511BAA050: castle diameter
P511BAA052: slot width
P511BAA053: bottom thickness
P511BAA114: diameter of the countersink
SDD: ISO 1891:1979, ISO 225:1983
SD: P511DAA229
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA232-1 001
round nut with holes in face
SuperClass: P511AAA052 nut
Definition: nut with cylindrical shape with holes as driving feature at one of the flat faces
AP:
SDD: ISO 1891:1979 clause 36.6
SD: P511DAA232
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA235-1 001
plain washer without chamfer
SuperClass: P511AAA026 plain washer
Definition: plain washer with round outer shape
AP: P511BAA333: outside diameter
P511BAA334: hole diameter
SDD: ISO 887:2000
SD: P511DAA235
Remark: ISO 7089:2000,ISO 7091:2000,ISO 7092:2000,ISO 7093-1:2000,ISO 7093-2:2000,ISO 7094:2000,ISO 7415:1984,ISO 8738:1986,ISO 10669:1999,ISO 10673:1998 belong to this simple class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA236-1 001
spring washer
SuperClass: P511AAA072 washer
Definition: washer with elastic deformation capability
AP: P511BAA333: outside diameter
P511BAA334: hole diameter
P511BAA336: material thickness
P511BAA338: height of conical spring washer or lock washer
SDD: ISO 1891:1979
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA237-1 001
square taper washer
SuperClass: P511AAA072 washer
Definition: square washer, the bearing faces of which are not parallel
AP: P511BAA334: hole diameter
P511BAA355: mid height
P511BAA356: side length
SDD: ISO 1891:1979 clause 38.5
SD: P511DAA237
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA238-1 001
hexalobular socket countersunk head tapping screw with a rounded end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a countersunk head with hexalobular socket and with a rounded end
AP: P511BAA046: distance from the last full form thread to the head bearing face

P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 14586:2001
SD: P511DAA238
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA239-1 001
hexalobular socket pan head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a pan head with hexalobular socket and with a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 14585:2001
SD: P511DAA239
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA240-1 001
tab washer
SuperClass: P511AAA072 washer
Definition: washer with tab
AP: P511BAA333: outside diameter
P511BAA334: hole diameter
P511BAA336: material thickness
SDD: ISO 1891:1979
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA241-1 001
lock washer
SuperClass: P511AAA072 washer
Definition: washer with a particular shape limiting rotation of associated fastener
AP: P511BAA333: outside diameter
P511BAA334: hole diameter
P511BAA336: material thickness
P511BAA338: height of conical spring washer or lock washer
SDD: ISO 1891:1979
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA242-1 001
hexalobular socket pan head tapping screw with a rounded end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a pan head with hexalobular socket and with a rounded end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 14585:2001
SD: P511DAA242
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA243-1 001
hexagon washer head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a hexagon washer head and a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 7053:1992
SD: P511DAA243
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA244-1 001
cross recessed (type H) raised countersunk head tapping screw,flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a raised countersunk head with cross recess (type H) and with a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 7051:1983
SD: P511DAA244
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA245-1 001
closed end blind rivet with break pull mandrel and protruding head
SuperClass: P511AAA083 blind rivet
Definition: blind rivet with a closed end and with a break pull mandrel and a protruding head
AP: P511BAA411: length of rivet with flat seating head (protruding head)
SDD: ISO 15973:2000
SD: P511DAA245
Remark: ISO 15975:2000,ISO 15976:2000 belong to this simple class

DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA246-1 001
closed end blind rivet with break pull mandrel and countersunk head
SuperClass: P511AAA083 blind rivet
Definition: blind rivet with a closed end and with a break pull mandrel and a countersunk head
AP: P511BAA412: length of the rivet with countersunk head
SDD: ISO 15974:2000
SD: P511DAA246
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA248-1 001
split pin
SuperClass: P511AAA098 pin
Definition: pin with half-round section, folded-up in order to form a split shank
AP: P511BAA193: difference of leg lengths
P511BAA195: eyelet height for split pin
P511BAA196: eyelet diameter for split pin
P511BAA367: length of split pin
SDD: ISO 1234:1997, ISO 8749:1986
SD: P511DAA248
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA249-1 001
simple taper pin
SuperClass: P511AAA358 taper pin
Definition: taper pin without a threaded feature
AP: P511BAA198: large rounded end radius for taper pin
P511BAA199: rounded end height
SDD: ISO 2339:1986, ISO 8749:1986
SD: P511DAA249
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA250-1 001
taper pin with internal thread
SuperClass: P511AAA358 taper pin
Definition: taper pin with internal thread
AP: P511BAA199: rounded end height
P511BAA204: countersink diameter of pin
P511BAA205: internal thread length of pin
P511BAA206: depth of hole
P511BAA207: depth of cylindrical countersink
P511BAA231: crown radius
P511BAA340: thread size
P511BAA362: chamfer angle on the end of pin
SDD: ISO 8736:1986, ISO 8749:1986
SD: P511DAA250

DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA251-1 001
taper pin with external thread
SuperClass: P511AAA358 taper pin
Definition: taper pin with external thread
AP: P511BAA208: length of thread run out to cone
P511BAA209: length of threaded portion
P511BAA210: pilot end length
P511BAA211: diameter of pilot end
P511BAA340: thread size
P511BAA362: chamfer angle on the end of pin
P511BAA395: incomplete thread length of pin with external thread
SDD: ISO 8737:1986, ISO 8749:1986
SD: P511DAA251
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA252-1 001
parallel pin
SuperClass: P511AAA098 pin
Definition: pin with cylindrical shape with specified tolerance of diameter
AP: P511BAA217: chamfer length of pin
P511BAA246: thread properties
P511BAA307: type of thread
P511BAA362: chamfer angle on the end of pin
P511BAA408: length of parallel pin
SSP: P511BAA307: type of thread
SDD: ISO 2338:1997, ISO 8749:1986
SD: P511DAA252
Remark: ISO 8734:1997 belongs to this simple class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA253-1 001
parallel pin with internal thread
SuperClass: P511AAA252 parallel pin
Definition: pin with cylindrical shape and internal thread
AP: P511BAA202: chamfer width for the end with internal thread
P511BAA204: countersink diameter of pin
P511BAA205: internal thread length of pin
P511BAA206: depth of hole
P511BAA207: depth of cylindrical countersink
P511BAA327: type of pitch
P511BAA340: thread size
SDD: ISO 8733:1997, ISO 8749:1986
SD: P511DAA253
Remark: ISO 8735:1997 belongs to this simple

class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA255-1 001
clevis pin with head
SuperClass: P511AAA355 clevis pin
Definition: pin with cylindrical shape and cylindrical head with flat seating bearing face
AP: P511BAA217: chamfer length of pin
P511BAA225: head height of pin
P511BAA229: length from split pin hole to the end
P511BAA230: split pin hole diameter
P511BAA237: head diameter of pin
P511BAA396: chamfer height on the head of pin
P511BAA397: chamfer angle on the head of pin
P511BAA403: length of clevis pin with head
SDD: ISO 2341:1986, ISO 8749:1986
SD: P511DAA255
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA257-1 001
grooved pin, full-length parallel grooved,with pilot
SuperClass: P511AAA356 grooved pin
Definition: pin with full length parallel grooved shank and with a pilot at one end
AP: P511BAA199: rounded end height
P511BAA231: crown radius
P511BAA232: pilot length
P511BAA234: expanded diameter
P511BAA235: groove angle
P511BAA353: shear strength,double
P511BAA398: grooving angle of grooved pin
P511BAA405: length of grooved pin without head
SDD: ISO 8739:1997, ISO 8749:1986
SD: P511DAA257
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA258-1 001
grooved pin, full-length parallel grooved,with chamfer
SuperClass: P511AAA356 grooved pin
Definition: pin with full length parallel grooved shank and with a chamfer at one end
AP: P511BAA199: rounded end height
P511BAA231: crown radius
P511BAA234: expanded diameter
P511BAA235: groove angle
P511BAA241: height of crown
P511BAA242: convexity height
P511BAA353: shear strength,double
P511BAA362: chamfer angle on the end of pin
P511BAA398: grooving angle of grooved pin
P511BAA405: length of grooved pin without head
SDD: ISO 8740:1997, ISO 8749:1986
SD: P511DAA258
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA259-1 001
grooved pin with round head
SuperClass: P511AAA356 grooved pin
Definition: pin with a grooved shank and a round head
AP: P511BAA217: chamfer length of pin
P511BAA225: head height of pin
P511BAA234: expanded diameter
P511BAA235: groove angle
P511BAA237: head diameter of pin
P511BAA362: chamfer angle on the end of pin
P511BAA398: grooving angle of grooved pin
P511BAA406: length of grooved pin with flat seating head
SDD: ISO 8746:1997, ISO 8749:1986
SD: P511DAA259
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA260-1 001
grooved pin with countersunk head
SuperClass: P511AAA356 grooved pin
Definition: pin with a grooved shank and a countersunk head
AP: P511BAA217: chamfer length of pin
P511BAA234: expanded diameter
P511BAA235: groove angle
P511BAA237: head diameter of pin
P511BAA362: chamfer angle on the end of pin
P511BAA398: grooving angle of grooved pin
P511BAA399: head angle of grooved pin with countersunk head
P511BAA407: length of grooved pin with countersunk head
SDD: ISO 8747:1997, ISO 8749:1986
SD: P511DAA260
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA261-1 001
spring-type straight pin, slotted
SuperClass: P511AAA357 spring pin
Definition: spring pin with hollow cylinder shape and with a slot in axial direction

AP: P511BAA239: inner diameter
SD: P511DAA261
Remark: ISO 8752:1997, ISO 8749:1986, ISO 13337:1997 belong to this simple class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA265-1 001
grooved pin, half-length reverse taper grooved
SuperClass: P511AAA356 grooved pin
Definition: pin with a half length reverse taper grooved shank
AP: P511BAA199: rounded end height
P511BAA231: crown radius
P511BAA234: expanded diameter
P511BAA398: grooving angle of grooved pin
P511BAA405: length of grooved pin without head
SDD: ISO 8741:1997, ISO 8749:1986
SD: P511DAA265
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA267-1 001
cross recessed (type Z) raised countersunk head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a raised countersunk head with cross recess (type Z) and with a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 7051:1983
SD: P511DAA267
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA268-1 001
cross recessed (type Z) countersunk head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a countersunk head with cross recess (type Z) and with a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 7050:1983
SD: P511DAA268
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA269-1 001
cross recessed (type H) countersunk head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a countersunk head with cross recess (type H) and with a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 7050:1983
SD: P511DAA269
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA270-1 001
cross recessed (type H) pan head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a pan head with cross recess (type H) and with a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 7049:1983
SD: P511DAA270
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA271-1 001
hexagon flange head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a hexagon flange head and with a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 10509:1992
SD: P511DAA271
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA272-1 001
cross recess (type Z)
SuperClass: P511AAA042 internal drive
Definition: internal drive with the shape of a cross like indentation where the faces on which the tool forces apply are perpendicular to the

driving force(type Z)
AP: P511BAA101: penetration depth
P511BAA102: recess number
SDD: ISO 4757:1983
SD: P511DAA272
Note: the cross recess type Z does not allow disalignment of screw and driving tool
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA278-1 001
grooved pin, full-length taper grooved
SuperClass: P511AAA356 grooved pin
Definition: pin with a taper grooved shank, and the groove length equals to full length of shank
AP: P511BAA199: rounded end height
P511BAA234: expanded diameter
P511BAA353: shear strength,double
P511BAA398: grooving angle of grooved pin
P511BAA405: length of grooved pin without head
SDD: ISO 8744:1997, ISO 8749:1986
SD: P511DAA278
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA279-1 001
cross recessed (type Z) cheese head screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a cheese head with cross recess (type Z)
AP: P511BAA012: thread length
P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 7048:1998
SD: P511DAA279
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA280-1 001
cross recessed (type Z) pan head screw
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a pan head with cross recess (type Z)
AP: P511BAA012: thread length
P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 7045:1994
SD: P511DAA280
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA281-1 001
countersunk flat head screw with cross recess (type Z)
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a countersunk flat head with cross recess (type Z)
AP: P511BAA012: thread length
P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 7046-1:1994
SD: P511DAA281
Remark: ISO 7046-2:1994 belongs to this simple class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA282-1 001
raised countersunk head screw with cross recess (type Z)
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a raised countersunk head with cross recess (type Z)
AP: P511BAA030: length of thread run-out
P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 7047:1994
SD: P511DAA282
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA283-1 001
cross recessed (type Z) pan head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a pan head with cross recess (type Z) and with a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head

P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 7049:1983
SD: P511DAA283
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA284-1 001
cross recessed (type Z) countersunk head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a countersunk head with cross recess (type Z) and with a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 7050:1983
SD: P511DAA284
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA285-1 001
cross recessed (type Z) raised countersunk head tapping screw with a cone end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a raised countersunk head with cross recess (type Z) and with a cone end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 7051:1983
SD: P511DAA285
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA286-1 001
cross recessed (type Z) pan head drilling screw with tapping screw thread
SuperClass: P511AAA210 drilling screw
Definition: drilling screw with a pan head with a cross recess (type Z) and with self-tapping screw thread
AP: P511BAA069: minimum clamp length
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 15481:1999
SD: P511DAA286
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA287-1 001
cross recessed (type Z) countersunk head drilling screw
SuperClass: P511AAA210 drilling screw
Definition: drilling screw with a countersunk head with a cross recess (type Z) and with self-tapping screw thread
AP: P511BAA069: minimum clamp length
P511BAA370: length of countersunk bolt/screw
SDD: ISO 15482:1999
SD: P511DAA287
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA288-1 001
cross recessed (type Z) raised countersunk head drilling screw
SuperClass: P511AAA210 drilling screw
Definition: drilling screw with a raised countersunk head with a cross recess (type Z) and with self-tapping screw thread
AP: P511BAA069: minimum clamp length
P511BAA370: length of countersunk bolt/screw
SDD: ISO 15483:1999
SD: P511DAA288
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA289-1 001
slotted raised countersunk(oval) head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a slotted raised countersunk(oval) head and a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 1483:1983
SD: P511DAA289
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA290-1 001
slotted countersunk(flat) head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a slotted countersunk head with hexalobular socket and with a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head

P511BAA370: length of countersunk bolt/screw
SDD: ISO 1482:1983
SD: P511DAA290
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA291-1 001
hexalobular socket raised countersunk head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a raised countersunk head with hexalobular socket and with a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 14587:2001
SD: P511DAA291
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA292-1 001
hexalobular socket raised countersunk head tapping screw with a rounded end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a raised countersunk head with hexalobular socket and with a rounded end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA370: length of countersunk bolt/screw
SDD: ISO 14587:2001
SD: P511DAA292
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA293-1 001
hexagon head tapping screw with a flat end
SuperClass: P511AAA196 tapping screw
Definition: self-tapping screw with a hexagon head and a flat end
AP: P511BAA046: distance from the last full form thread to the head bearing face
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 1479:1983
SD: P511DAA293
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA309-1 001
thread forming screw
SuperClass: P511AAA004 externally threaded fastener component
Definition: externally threaded fastener with a thread which is able to form an internal metric thread in the metallic parts to be fastened
AP: P511BAA103: head shape name
P511BAA104: head shape picture
P511BAA105: shank shape name
P511BAA106: shank shape picture
P511BAA107: end shape name
P511BAA108: end shape picture
P511BAA109: internal drive shape name
P511BAA110: internal drive shape picture
P511BAA243: head properties
P511BAA244: shank properties
P511BAA245: end properties
P511BAA246: thread properties
P511BAA247: internal drive properties
P511BAA303: type of head
P511BAA305: type of shank
P511BAA306: type of end
P511BAA307: type of thread
P511BAA308: type of internal drive
P511BAA369: length of bolt/screw (flat seating head)
P511BAA370: length of countersunk bolt/screw
SDD: ISO 7085:1999
SD:
Remark: ISO 7085:1999 belongs to this class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA310-1 001
thread forming screw thread
SuperClass: P511AAA037 thread
Definition: thread designed to form its own mating metric screw thread in metallic parts
AP: P511BAA349: outer diameter
P511BAA350: core diameter
SDD: ISO 1891:1979 clause 27.1
SD: P511DAA310
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA311-1 001
cap nut
SuperClass: P511AAA052 nut
Definition: hexagon nut closed at one side by a flat cap
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
SDD: ISO 1891:1979 clause 35.2
SD: P511DAA311

DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA312-1 001
domed cap(acorn) nut
SuperClass: P511AAA052 nut
Definition: hexagon nut closed at one side by a domed cap
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA416: thread length of nut
SDD: ISO 1891:1979 clause 35.1
SD: P511DAA312
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA313-1 001
hexagon nut (style 1)
SuperClass: P511AAA052 nut
Definition: nut with a hexagon shape and with a height according to style 1
AP: P511BAA032: width across flats
P511BAA033: width across corners
P511BAA041: diameter of washer face or bearing face
P511BAA114: diameter of the countersink
SDD: ISO 4032:1999
SD: P511DAA313
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA314-1 001
hexagon nut with collar
SuperClass: P511AAA052 nut
Definition: hexagon nut with a cylindrical collar
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA042: height of bearing element of a bolt or screw or nut
P511BAA045: flange(collar) diameter
P511BAA114: diameter of the countersink
SDD: ISO 1891:1979 clause 28.3
SD: P511DAA314
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA315-1 001
round nut with holes in side
SuperClass: P511AAA052 nut
Definition: round nut with holes on the circumference in radial direction
AP:
SDD: ISO 1891:1979 clause 36.5
SD: P511DAA315
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA316-1 001
round nut with slot in face
SuperClass: P511AAA052 nut
Definition: round nut with a slot in the face opposite to the bearing face
AP:
SDD: ISO 1891:1979 clause 36.3
SD: P511DAA316
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA317-1 001
round nut with slots in side
SuperClass: P511AAA052 nut
Definition: round nut with slots on the circumference
AP:
SDD: ISO 1891:1979 clause 36.4
SD: P511DAA317
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA318-1 001
round nut with knurl
SuperClass: P511AAA052 nut
Definition: round nut with knurled circumference
AP:
SDD: ISO 1891:1979 clause 36.2
SD: P511DAA318
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA319-1 001
square nut
SuperClass: P511AAA052 nut
Definition: nut with square shape
AP: P511BAA033: width across corners
SDD: ISO 1891:1979 clause 29.1
SD: P511DAA319
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA320-1 001
square nut with collar
SuperClass: P511AAA052 nut
Definition: square nut with a collar
AP: P511BAA032: width across flats
P511BAA041: diameter of washer face or bearing face
P511BAA042: height of bearing element of a bolt or screw or nut
SDD: ISO 1891:1979 clause 29.4
SD: P511DAA320
DOD: 2006-02-22 **DCV:** 2006-02-22

DCR: 2006-02-22

P511AAA321-1 001
triangle nut with collar
SuperClass: P511AAA052 nut
Definition: triangle nut with a collar
AP: P511BAA041: diameter of washer face or bearing face
P511BAA042: height of bearing element of a bolt or screw or nut
SDD: ISO 1891:1979 clause 30.1
SD: P511DAA321
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA322-1 001
pentagon nut
SuperClass: P511AAA052 nut
Definition: nut with pentagon shape
AP:
SDD: ISO 1891:1979 clause 31.2
SD: P511DAA322
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA323-1 001
octagon nut
SuperClass: P511AAA052 nut
Definition: nut with octagon shape
AP:
SDD: ISO 1891:1979 clause 31.1
SD: P511DAA323
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA324-1 001
wing nut
SuperClass: P511AAA052 nut
Definition: nut with two wings
AP:
SDD: ISO 1891:1979 clause 37.1
SD: P511DAA324
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA325-1 001
spring-type straight pin, coiled
SuperClass: P511AAA357 spring pin
Definition: spring pin formed by coiling of a steel sheet by more than one turn
AP:
SDD: ISO 8748:1997,ISO 8750:1983,ISO 8751:1983,ISO 8749:1986,ISO 8749:1986
SD: P511DAA325
Remark: ISO 8750:1997,ISO 8751:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA326-1 001
hexagon nut(style 2)
SuperClass: P511AAA052 nut
Definition: nut with a hexagon shape and with a height according to style 2
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA041: diameter of washer face or bearing face
P511BAA114: diameter of the countersink
SDD: ISO 4033:1999
SD: P511DAA326
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA327-1 001
hexagon thin nut (chamfered)
SuperClass: P511AAA052 nut
Definition: hexagon nut with small height and chamfered on both sides
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA041: diameter of washer face or bearing face
P511BAA114: diameter of the countersink
P511BAA380: countersink angle
P511BAA381: angle of the nut chamfer
SDD: ISO 4035:1999
SD: P511DAA327
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA328-1 001
prevailing torque type hexagon nut with non-metallic insert (style 1)
SuperClass: P511AAA052 nut
Definition: hexagon nut with a prevailing torque element in the form of an inserted non-metallic ring and a height according to style 1
AP: P511BAA015: insert material
P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA041: diameter of washer face or bearing face
P511BAA114: diameter of the countersink
P511BAA380: countersink angle
P511BAA381: angle of the nut chamfer
P511BAA416: thread length of nut
SDD: ISO 7040:1997
SD: P511DAA328
Note: ISO 10512:1997 belongs to this class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA329-1 001
prevailing torque type hexagon nut with non-metallic insert (style 2)
SuperClass: P511AAA052 nut
Definition: hexagon nut with a prevailing torqu element in the form of an inserted non-metallic ring and a height according to style 2
AP: P511BAA015: insert material
P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA041: diameter of washer face or bearing face
P511BAA114: diameter of the countersink
P511BAA380: countersink angle
P511BAA381: angle of the nut chamfer
P511BAA416: thread length of nut
SDD: ISO 7041:1997
SD: P511DAA329
Note: ISO 12216:1997 belongs to this class
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA330-1 001
prevailing torque type all-metal hexagon nut (style 1)
SuperClass: P511AAA052 nut
Definition: all metallic hexagon nut with a prevailing torque element in the form of a deformed threaded portion (style 1)
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA041: diameter of washer face or bearing face
P511BAA114: diameter of the countersink
P511BAA380: countersink angle
P511BAA381: angle of the nut chamfer
SDD: ISO 7042:1997
SD: P511DAA330
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA331-1 001
prevailing torque type all-metal hexagon nut (style 2)
SuperClass: P511AAA052 nut
Definition: all metallic hexagon nut with a prevailing torque element in the form of a deformed threaded portion (style 2)
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA041: diameter of washer face or bearing face
P511BAA114: diameter of the countersink
P511BAA380: countersink angle
P511BAA381: angle of the nut chamfer
SDD: ISO 7720:1997
SD: P511DAA331
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA332-1 001
prevailing torque type hexagon nut with flange, with non-metallic insert
SuperClass: P511AAA052 nut
Definition: hexagon nut with a flange, and with a prevailing torque element in the form of an inserted non-metallic ring
AP: P511BAA015: insert material
P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA041: diameter of washer face or bearing face
P511BAA042: height of bearing element of a bolt or screw or nut
P511BAA044: flange angle
P511BAA045: flange(collar) diameter
P511BAA114: diameter of the countersink
P511BAA380: countersink angle
P511BAA416: thread length of nut
SDD: ISO 12125:1997
SD: P511DAA332
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA333-1 001
prevailing torque type all-metal hexagon nut with flange
SuperClass: P511AAA052 nut
Definition: all metallic hexagon nut with a flange and prevailing torque element in the form of a deformed threaded portion
AP: P511BAA031: wrenching height
P511BAA032: width across flats
P511BAA033: width across corners
P511BAA041: diameter of washer face or bearing face
P511BAA042: height of bearing element of a bolt or screw or nut
P511BAA044: flange angle
P511BAA045: flange(collar) diameter
P511BAA114: diameter of the countersink
P511BAA416: thread length of nut
SDD: ISO 12126:1997
SD: P511DAA333
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA334-1 001
clevis pin without head

SuperClass: P511AAA355 clevis pin
Definition: pin with cylindrical shape with h-tolerance
AP: P511BAA217: chamfer length of pin
P511BAA229: length from split pin hole to the end
P511BAA230: split pin hole diameter
P511BAA404: length of clevis pin without head
SDD: ISO 2340:1997, ISO 8749:1986
SD: P511DAA334
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA335-1 001
grooved pin, half-length centre grooved
SuperClass: P511AAA356 grooved pin
Definition: pin with a centrally grooved shank, and the groove length equals to half length of shank
AP: P511BAA199: rounded end height
P511BAA231: crown radius
P511BAA234: expanded diameter
P511BAA353: shear strength,double
P511BAA398: grooving angle of grooved pin
P511BAA405: length of grooved pin without head
SDD: ISO 8743:1997, ISO 8749:1986
SD: P511DAA335
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA336-1 001
grooved pin, one-third-length centre grooved
SuperClass: P511AAA356 grooved pin
Definition: pin with a centrally grooved shank, and the groove length equals to one third length of shank
AP: P511BAA199: rounded end height
P511BAA231: crown radius
P511BAA234: expanded diameter
P511BAA353: shear strength,double
P511BAA398: grooving angle of grooved pin
P511BAA405: length of grooved pin without head
SDD: ISO 8742:1997, ISO 8749:1986
SD: P511DAA336
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA337-1 001
grooved pin, half-length taper grooved
SuperClass: P511AAA356 grooved pin
Definition: pin with a taper grooved shank, and the groove length equals to half length of shank
AP: P511BAA199: rounded end height
P511BAA234: expanded diameter
P511BAA353: shear strength,double
P511BAA398: grooving angle of grooved pin
P511BAA405: length of grooved pin without head
SDD: ISO 8745:1997, ISO 8749:1986
SD: P511DAA337
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA338-1 001
hexagon thin nut (unchamfered)
SuperClass: P511AAA052 nut
Definition: hexagon nut with small height and not chamfered at the bearing faces
AP: P511BAA032: width across flats
P511BAA033: width across corners
SDD: ISO 4036:1999
SD: P511DAA338
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA339-1 001
hexagon head bolt with metric fine pitch thread
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a hexagon head, with plain shank and with fine pitch thread
AP: P511BAA047: radius of curvature under head
P511BAA069: minimum clamp length
P511BAA087: transition length
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 8765:1999
SD: P511DAA339
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA340-1 001
hexagon head screw with metric fine pitch thread
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a hexagon head and with fine pitch thread up to the head
AP: P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 8676:1999
SD: P511DAA340
Note: ISO 4018:1999 belongs to the same simple class

DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA342-1 001
hexagon socket head cap screw with metric fine pitch thread
SuperClass: P511AAA005 metric threaded bolt/screw
Definition: metric externally threaded fastener with a cylindrical head with a hexagon socket and with fine pitch thread
AP: P511BAA012: thread length
P511BAA047: radius of curvature under head
P511BAA357: transition diameter
P511BAA369: length of bolt/screw (flat seating head)
SDD: ISO 21269:2004
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA344-1 001
metric internal thread
SuperClass: P511AAA037 thread
Definition: general internal thread defined by the metric unit system
AP: P511BAA358: pitch diameter of internal thread
P511BAA359: minor diameter of internal thread
P511BAA360: major diameter of internal thread
SDD: ISO 68-1:1998
SD: P511DAA344
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA345-1 001
rivet
SuperClass: P511AAA002 fastener
Definition: cylindrical metal fastener with a preformed head at one end, whereas the head at the other end is formed during setting, such creating a non-detachable joint
AP: P511BAA005: manufacturer
P511BAA006: ICD code
P511BAA007: manufacture date
P511BAA008: designation
P511BAA011: EAN/UCC code
P511BAA179: head height of rivet
P511BAA180: head diameter of rivet
P511BAA253: shear load
P511BAA319: organization identifier of manufacturer
P511BAA330: rivet shank name
P511BAA331: rivet shank picture
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA346-1 001
full shank rivet
SuperClass: P511AAA345 rivet
Definition: a rivet with a full shank
AP:
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA347-1 001
tubular rivet
SuperClass: P511AAA345 rivet
Definition: a rivet with a hollow shank like a tube
AP: P511BAA328: rivet head name
P511BAA329: rivet head picture
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA348-1 001
semi tubular rivet
SuperClass: P511AAA345 rivet
Definition: a rivet with a full shank which is hollow (tubular) at the end where the rivet head is formed during setting
AP: P511BAA328: rivet head name
P511BAA329: rivet head picture
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA349-1 001
pilot point
SuperClass: P511AAA028 end
Definition: cylindrical projection at the bolt/screw end to ease screwing into the nut
AP: P511BAA079: length of point
P511BAA082: incomplete thread length
P511BAA364: diameter of the pilot point
SDD: ISO 4753:1999
SD: P511DAA349
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA350-1 001
truncated pilot point
SuperClass: P511AAA028 end
Definition: pilot point with a truncated cone end
AP: P511BAA079: length of point
P511BAA082: incomplete thread length
P511BAA363: length of cone of pilot point with truncated cone
P511BAA364: diameter of the pilot point

SDD: ISO 4753:1999
SD: P511DAA350
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA351-1 001
head with knurl
SuperClass: P511AAA008 head
Definition: cylindrical head with knurl at the circumference
AP:
SDD: ISO 1891:1979 clause 6.17
SD: P511DAA351
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA352-1 001
head with wings
SuperClass: P511AAA008 head
Definition: head with two wings
AP:
SDD: ISO 1891:1979 clause 6.14
SD: P511DAA352
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA353-1 001
cup head
SuperClass: P511AAA008 head
Definition: head shape which is a sphere section
AP: P511BAA034: head height
P511BAA051: head diameter
SDD: ISO 8677:1986
SD: P511DAA353
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA354-1 001
headless screw with shank
SuperClass: P511AAA004 externally threaded fastener component
Definition: externally threaded fastener without head and with a shank with internal drive
AP: P511BAA012: thread length
P511BAA105: shank shape name
P511BAA106: shank shape picture
P511BAA107: end shape name
P511BAA108: end shape picture
P511BAA109: internal drive shape name
P511BAA110: internal drive shape picture
P511BAA244: shank properties
P511BAA245: end properties
P511BAA246: thread properties
P511BAA247: internal drive properties
P511BAA306: type of end
P511BAA307: type of thread
P511BAA308: type of internal drive
P511BAA326: product grade
SSP: P511BAA306: type of end
P511BAA307: type of thread
P511BAA308: type of internal drive
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA355-1 001
clevis pin
SuperClass: P511AAA098 pin
Definition: pin with cylindrical shape with or without a cylindrical head with flat seating bearing face
AP: P511BAA362: chamfer angle on the end of pin
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA356-1 001
grooved pin
SuperClass: P511AAA098 pin
Definition: cylindrical pin with grooved shank with or without a head
AP:
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA357-1 001
spring pin
SuperClass: P511AAA098 pin
Definition: pin which can be elastically deformed in radial direction
AP: P511BAA215: chamfer diameter
P511BAA216: material thickness
P511BAA217: chamfer length of pin
P511BAA352: duty level
P511BAA353: shear strength, double
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511AAA358-1 001
taper pin
SuperClass: P511AAA098 pin
Definition: pin with conical shape
AP: P511BAA200: taper
P511BAA246: thread properties
P511BAA307: type of thread
P511BAA410: length of taper pin
SSP: P511BAA307: type of thread
SDD: ISO 2339:1986
SD:
DOD: 2006-02-22 **DCV:** 2006-02-22

DCR: 2006-02-22

P511AAA359-1 001
plain washer with double chamfers
SuperClass: P511AAA026 plain washer
Definition: plain washer with outside and inside chamfers on one of the faces
AP: P511BAA333: outside diameter
P511BAA334: hole diameter
SDD: ISO 7416:1984
SD: P511DAA359
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

Annex D
(normative)

Fastener property DET definitions

This annex specifies the property DET definition of properties imported from IEC 61360-4 and properties defined in this part of ISO 13584.

D.1. Property DET definition imported from IEC 61360-4

AAE012-005 02
international standard
Definition: reference to the appropriate international standard
DC: AAA000 IEC reference collection
PLS:
Unit:
VF: M..30
DT: string_type
PTC: A61
Note:
SDD: IEC 61360-4: 1997
DOD: 1997-04-01 **DCV:** 1997-04-01
DCR: 1997-04-01

AAE687-005 01
quality authentication
Definition: the abbreviated name of the office which has tested the quality of fastener
DC: AAA000 IEC reference collection
PLS:
Unit:
VF: M..30
DT: string_type
PTC: A61
Note:
SDD: IEC 61360-4: 1997
DOD: 1997-04-01 **DCV:** 1997-04-01
DCR: 1997-04-01

AAE752-005 01
mass
Definition: the nominal mass of a component
DC: AAA000 IEC reference collection
PLS:
Unit: kg
VF: NR2..3.3
DT: real_measure_type
PTC: K01
Note:
SDD: IEC 61360-4: 1997
DOD: 1997-04-01 **DCV:** 1997-04-01
DCR: 1997-04-01

AAF043-005 03
national standard
Definition: reference to the appropriate national standard
DC: AAA000 IEC reference collection
PLS:
Unit:
VF: M..30
DT: string_type
PTC: A61
Note:
SDD: IEC 61360-4: 1997
DOD: 1997-04-01 **DCV:** 1997-04-01
DCR: 1997-04-01

D.2. Property DET definition defined in this part of ISO 13584

P511BAA005-1 001
manufacturer
Definition: organization who takes the legal responsibility as the producer of the product
DC: P511AAA001 mechanical component for general use
Unit:
VF: M..30
DT: STRING_TYPE
PTC: A11
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA006-1 001
ICD code
Definition: ICD of the organization coding system according to ISO 6523 that identifies the organization who takes the legal responsibility as the producer of the product
DC: P511AAA001 mechanical component for general use
Unit:
VF: M..128
DT: STRING_TYPE
PTC: A52
Remark: ICD means International Code Designator. It is a data element used to uniquely identify an organization identification scheme. If ISO 6523 compliant identification of the organization is defined, it shall be provided using P511BAA006 and P511BAA319. These properties are provided both for those organization that have no ISO6523 compliant identification and for additional use when use of non-standardizes coding system is useful.
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA007-1 001
manufacture date
Definition: date that the component was manufactured
DC: P511AAA001 mechanical component for general use
Unit:
VF: M..30
DT: STRING_TYPE
PTC: A31
SDD: ISO 10303-203:1994
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA008-1 001
designation
Definition: identification of a product with all relevant properties
DC: P511AAA002 fastener
Unit:
VF: M..128
DT: STRING_TYPE
PTC: A51
SDD: ISO 8991:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA011-1 001
EAN/UCC code
Definition: identification number assigned according to EAN International and Uniform Code Council coding system
DC: P511AAA001 mechanical component for general use
Unit:
VF: M..14
DT: STRING_TYPE
PTC: A51
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA012-1 001
thread length
Definition: length of thread on externally threaded fastener
DC: P511AAA002 fastener
PLS: b
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA013-1 001
body material
Definition: material used to manufacture the body of blind rivet
DC: P511AAA083 blind rivet
Unit:
VF: M..30
DT: STRING_TYPE
PTC: A51
SDD: ISO 15973:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA014-1 001
mandrel material
Definition: material used to manufacture the mandrel of blind rivet
DC: P511AAA083 blind rivet
Unit:
VF: M..30
DT: STRING_TYPE
PTC: A51
SDD: ISO 15973:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA015-1 001
insert material
Definition: material of the non-metallic ring inserted in the prevailing torque element of a prevailing torque type nut
DC: P511AAA052 nut
Unit:

VF: M..30
DT: STRING_TYPE
PTC: A51
SDD: ISO 7044:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA020-1 001
minimum diameter of radial undercut
Definition: minimum diameter of the radial undercut that may exist on an externally threaded fastener
DC: P511AAA171 hexagon socket head shoulder screw
PLS: dg/dg1
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4755:1983,ISO 7379:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA022-1 001
width of radial undercut
Definition: width of radial undercut in axial direction that may exist on an externally threaded fastener
DC: P511AAA171 hexagon socket head shoulder screw
PLS: g1
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4755:1983,ISO 7379:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA024-1 001
pitch
Definition: distance between two adjacent threads for any kind of thread
DC: P511AAA037 thread
PLS: P
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4759:1978
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA025-1 001
thread length of stud metal end
Definition: length of the thread of the metal end of a stud
DC: P511AAA049 stud
PLS: bm
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA028-1 001
overall length
Definition: distance between two ends of the stud
DC: P511AAA049 stud
PLS: lf
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA030-1 001
length of thread run-out
Definition: distance between the start of the thread to the first full thread
DC: P511AAA004 externally threaded fastener component
PLS: x
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 3508:1976
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA031-1 001
wrenching height
Definition: height of portion of hexagon bolt / screw and nut used to match with the wrench, which is within the tolerance limits
DC: P511AAA002 fastener
PLS: kw/mw
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
Note: for bolt/screw kw and for nut mw apply
SDD: ISO 4759-1:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA032-1 001
width across flats

Definition: distance between two opposite flats of a square, hexagon or octagon driving feature
DC: P511AAA002 fastener
PLS: s
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA033-1 001
width across corners
Definition: distance between two opposite corners of a square, hexagon or octagon driving feature
DC: P511AAA002 fastener
PLS: e
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA034-1 001
head height
Definition: distance from the bearing face to the top of the head
DC: P511AAA008 head
PLS: k
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA037-1 001
width of radial undercut in a shank
Definition: width of radial undercut in axial direction that may exist else where than under the head in the shank of an externally threaded fastener
DC: P511AAA171 hexagon socket head shoulder screw
PLS: g2
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
Remark: this property shall not be used when there are different radial undercuts in a shank. Specific properties are defined in the corresponding component class to address such specific cases.
SDD: ISO 7379:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA038-1 001
radius of the undercut under head
Definition: radius of curvature of the undercut at the head / shank junction
DC: P511AAA024 shank
PLS: r1
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 7379:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA041-1 001
diameter of washer face or bearing face
Definition: outside diameter of the bearing element of a bolt or screw or nut
DC: P511AAA002 fastener
PLS: dw
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
Note: the bearing element may be e.g.: flange, collar, washer face, or any round head shape
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA042-1 001
height of bearing element of a bolt or screw or nut
Definition: height of the washer face portion or thickness of collar or flange
DC: P511AAA002 fastener
PLS: c
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
Note: the bearing element may be e.g.: flange, collar, washer face
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA044-1 001
flange angle
Definition: angle formed between the bearing face and the flange surface of a hexagon bolt or

nut with flange
DC: P511AAA002 fastener
PLS: Delta
Unit: Degree
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA045-1 001
flange(collar) diameter
Definition: diameter of flange or collar, which is part of a head of externally threaded fastener or nut
DC: P511AAA002 fastener
PLS: dc
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA046-1 001
distance from the last full form thread to the head bearing face
Definition: distance from the last full form thread to the head bearing face of externally threaded bolt/screw which are threaded to the head
DC: P511AAA004 externally threaded fastener component
PLS: a
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA047-1 001
radius of curvature under head
Definition: radius of curvature at the shank / head junction
DC: P511AAA004 externally threaded fastener component
PLS: r/r1
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 885:2000,ISO 10509:1992
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA048-1 001
minimum diameter of radial undercut in a shank
Definition: minimum diameter of the radial undercut that may exist between thread and shank of an externally threaded fastener
DC: P511AAA171 hexagon socket head shoulder screw
PLS: dg2
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
Remark: this property shall not be used when there are different radial undercuts in a shank. Specific properties are defined in the corresponding component class to address such specific cases.
SDD: ISO 7379:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA050-1 001
castle diameter
Definition: outer diameter of the castle which belongs to castle nut
DC: P511AAA229 hexagon castle nut
PLS: de
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA051-1 001
head diameter
Definition: diameter of head for externally threaded fastener
DC: P511AAA008 head
PLS: dk
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA052-1 001
slot width
Definition: width of slot of slotted head screws, slotted set screws, slotted nuts and castle nuts
DC: P511AAA002 fastener

PLS: n
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA053-1 001
bottom thickness
Definition: distance from the bottom of slot to the bearing face on slotted and castle nut
DC: P511AAA052 nut
PLS: w
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA054-1 001
shank length
Definition: length of unthreaded shank including rotation prevention, if any
DC: P511AAA024 shank
PLS: ls
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA057-1 001
nominal dimension A
Definition: outer diameter of the hexalobular socket
DC: P511AAA222 hexalobular socket
PLS: A
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 10664:2005
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA060-1 001
radius of the raised portion of the head
Definition: radius of the raised portion of the head
DC: P511AAA008 head
PLS: rf
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA067-1 001
shank diameter
Definition: diameter of the shank of externally threaded fastener
DC: P511AAA024 shank
PLS: ds
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4014:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA069-1 001
minimum clamp length
Definition: distance from the underside of the head to the last major diameter of the thread of externally threaded fastener with shank
DC: P511AAA004 externally threaded fastener component
PLS: lg
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA071-1 001
square neck width
Definition: width of square neck of bolt shank
DC: P511AAA025 shank with square neck
PLS: v
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 8677:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA072-1 001
square neck length
Definition: length of square neck of bolt shank
DC: P511AAA025 shank with square neck
PLS: f
Unit: mm

VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 8677:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA075-1 001
nominal dimension B
Definition: inner diameter of hexalobular socket
DC: P511AAA222 hexalobular socket
PLS: B
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 10664:2005
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA077-1 001
diameter of truncated cone point
Definition: smallest diameter of the 'truncated cone point'
DC: P511AAA028 end
PLS: dt
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4753:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA078-1 001
diameter of cup point
Definition: diameter of cup edge of the 'cup point'
DC: P511AAA028 end
PLS: dz
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4753:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA079-1 001
length of point
Definition: distance between the thread end and the end of fastener
DC: P511AAA028 end
PLS: z1/z2
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
Note: the preferred litter symbol also include z3,z4
SDD: ISO 4753:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA080-1 001
diameter of scrape point
Definition: smallest diameter of the conical end of scrape point
DC: P511AAA028 end
PLS: dn
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4753:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA081-1 001
length of the cone part of the scrape point
Definition: length of the cone part of the scrape point
DC: P511AAA036 scrape point
PLS: lk
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4753:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA082-1 001
incomplete thread length
Definition: length of incomplete thread over the end of metric externally threaded fastener
DC: P511AAA028 end
PLS: u
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4753:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA083-1 001
length of the scrape point
Definition: the length from the beginning of the cutting edge to the end of the fastener" and PLS is "ln"
DC: P511AAA036 scrape point
PLS: ln
Unit: mm

VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4753:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA084-1 001
radius of rounded end
Definition: radius of the rounded end
DC: P511AAA028 end
PLS: re
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4753:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA085-1 001
diameter of dog point or flat point
Definition: diameter of dog point or end diameter of flat point
DC: P511AAA028 end
PLS: dp
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4753:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA087-1 001
transition length
Definition: length of the conical transition from head to shank.
DC: P511AAA004 externally threaded fastener component
PLS: lf
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983,ISO 4014:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA090-1 001
diameter of flat end
Definition: diameter of flat end of tapping screw
DC: P511AAA132 flat end (type F) of tapping screw
PLS: d3
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 1478:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA092-1 001
hexalobular socket number
Definition: number which defines the size of the hexalobular socket.
DC: P511AAA222 hexalobular socket
Unit:
VF: M..30
DT: STRING_TYPE
PTC: A51
SDD: ISO 10664:2005
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA093-1 001
diameter of drilling point
Definition: diameter of drilling point of drilling screw
DC: P511AAA012 drilling point of drilling screw
PLS: dp
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 15480:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA096-1 001
length of tapping screw end
Definition: distance from the last full thread to the end of tapping screw
DC: P511AAA028 end
PLS: y
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 1478:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA098-1 001
hexagon socket width across corners
Definition: distance between two opposite corners of hexagon socket
DC: P511AAA042 internal drive
PLS: e
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE

PTC: T03
SDD: ISO 4762:2004
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA101-1 001
penetration depth
Definition: depth of penetration of internal drive
DC: P511AAA042 internal drive
PLS: t
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 7434:1983,ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA102-1 001
recess number
Definition: number which defines the size of cross recess
DC: P511AAA042 internal drive
Unit:
VF: NR2..3.3
DT: REAL_TYPE
PTC: T03
SDD: ISO 7048:1998
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA103-1 001
head shape name
Definition: name of head of externally threaded fastener
DC: P511AAA004 externally threaded fastener component
Unit:
VF: M..128
DT: STRING_TYPE
PTC: A51
Remark: this property is intended to be used for non-standard head feature
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA104-1 001
head shape picture
Definition: picture of head of externally threaded fastener
DC: P511AAA004 externally threaded fastener component
Unit:
VF:
ISO13584_25_IEC61360_5_LIBRARY_IMPLICIT_SCHEMA.PROPERTY_VALUE_EXTERNAL_ITEM
DT: ENTITY_INSTANCE_TYPE
PTC: A58
Remark: this property is intended to be used for non-standard head feature
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA105-1 001
shank shape name
Definition: name of shank of externally threaded fastener
DC: P511AAA004 externally threaded fastener component
Unit:
VF: M..128
DT: STRING_TYPE
PTC: A51
Remark: this property is intended to be used for non-standard shank feature
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA106-1 001
shank shape picture
Definition: picture of shank of externally threaded fastener
DC: P511AAA004 externally threaded fastener component
Unit:
VF:
ISO13584_25_IEC61360_5_LIBRARY_IMPLICIT_SCHEMA.PROPERTY_VALUE_EXTERNAL_ITEM
DT: ENTITY_INSTANCE_TYPE
PTC: A58
Remark: this property is intended to be used for non-standard shank feature
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA107-1 001
end shape name
Definition: name of end of externally threaded fastener
DC: P511AAA004 externally threaded fastener component
Unit:
VF: M..128
DT: STRING_TYPE
PTC: A51
Remark: this property is intended to be used for non-standard end feature
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA108-1 001
end shape picture

Definition: picture of end of externally threaded fastener
DC: P511AAA004 externally threaded fastener component
Unit:
VF: ISO13584_25_IEC61360_5_LIBRARY_IMPLICIT_SCHEMA.PROPERTY_VALUE_EXTERNAL_ITEM
DT: ENTITY_INSTANCE_TYPE
PTC: A58
Remark: this property is intended to be used for non-standard end feature
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA109-1 001
internal drive shape name
Definition: name of internal drive feature of externally threaded fastener
DC: P511AAA004 externally threaded fastener component
Unit:
VF: M..128
DT: STRING_TYPE
PTC: A51
Remark: this property is intended to be used for non-standard driving feature
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA110-1 001
internal drive shape picture
Definition: picture of internal drive feature of externally threaded fastener
DC: P511AAA004 externally threaded fastener component
Unit:
VF: ISO13584_25_IEC61360_5_LIBRARY_IMPLICIT_SCHEMA.PROPERTY_VALUE_EXTERNAL_ITEM
DT: ENTITY_INSTANCE_TYPE
PTC: A58
Remark: this property is intended to be used for non-standard driving feature
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA114-1 001
diameter of the countersink
Definition: diameter of the countersink at the end of nut thread
DC: P511AAA052 nut
PLS: da
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA117-1 001
nut height
Definition: overall height of nut
DC: P511AAA052 nut
PLS: m/h
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
Note: h for prevailing torque type nuts
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA179-1 001
head height of rivet
Definition: height of head of rivet
DC: P511AAA345 rivet
PLS: k
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 14588:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA180-1 001
head diameter of rivet
Definition: head diameter of rivet
DC: P511AAA345 rivet
PLS: dk
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 14588:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA189-1 001
mandrel protrusion
Definition: maximum length of the mandrel shank protrusion from the blind rivet head, prior to setting, measure parallel to the axis of the blind rivet body
DC: P511AAA083 blind rivet
PLS: p
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE

PTC: T03
SDD: ISO 14588:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA190-1 001
mandrel diameter
Definition: diameter of mandrel of blind rivet
DC: P511AAA083 blind rivet
PLS: dm
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 14588:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA191-1 001
blind length
Definition: distance, measured parallel to the axis of the blind rivet, either from the under head face of the protruding head or from the top face of the countersunk head to the extreme end of the mandrel head
DC: P511AAA083 blind rivet
PLS: b
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
Note: for closed end blind rivets, the blind length is identical to the rivet length.(see ISO 14588)
SDD: ISO 14588:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA193-1 001
difference of leg lengths
Definition: distance between the two ends of split legs
DC: P511AAA248 split pin
PLS: a
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 1234:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA195-1 001
eyelet height for split pin
Definition: height of eyelet shape head for split pin
DC: P511AAA248 split pin
PLS: b
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 1234:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA196-1 001
eyelet diameter for split pin
Definition: diameter of eyelet shape head for split pin
DC: P511AAA248 split pin
PLS: c
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 1234:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA198-1 001
large rounded end radius for taper pin
Definition: radius of rounded end (at larger end) of taper pin
DC: P511AAA249 simple taper pin
PLS: r2
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 2339:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA199-1 001
rounded end height
Definition: height of rounded end of taper pin or grooved pin
DC: P511AAA098 pin
PLS: a
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 2339:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA200-1 001
taper
Definition: reduction in the diameter of a conical part per unit length
DC: P511AAA358 taper pin
Unit:
VF: NR2..3.3

DT: REAL_TYPE
PTC: T03
SDD: ISO 2339:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA202-1 001
chamfer width for the end with internal thread
Definition: width of chamfer at the end with internal thread of parallel pin with internal thread
DC: P511AAA253 parallel pin with internal thread
PLS: c1
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8733:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA204-1 001
countersink diameter of pin
Definition: diameter of internal thread countersink of pin
DC: P511AAA098 pin
PLS: d3
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8736:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA205-1 001
internal thread length of pin
Definition: length of internal thread of taper pin or parallel pin
DC: P511AAA098 pin
PLS: t1
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8736:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA206-1 001
depth of hole
Definition: depth of entire hole of pins with internal thread
DC: P511AAA098 pin
PLS: t2
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8736:1986,ISO 8735:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA207-1 001
depth of cylindrical countersink
Definition: depth of cylindrical part of the countersink of pins with internal thread
DC: P511AAA098 pin
PLS: t3
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8736:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA208-1 001
length of thread run out to cone
Definition: length of thread run out to cone
DC: P511AAA251 taper pin with external thread
PLS: a
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8737:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA209-1 001
length of threaded portion
Definition: length of threaded portion (including pilot end) of taper pin with external thread
DC: P511AAA251 taper pin with external thread
PLS: b
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 8737:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA210-1 001
pilot end length
Definition: length of pilot (or extruded) end of taper pin with external thread
DC: P511AAA251 taper pin with external thread
PLS: z

Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 8737:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA211-1 001
diameter of pilot end
Definition: diameter of pilot (or extruded) end of taper pin with external thread
DC: P511AAA251 taper pin with external thread
PLS: d3
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 8737:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA215-1 001
chamfer diameter
Definition: chamfer diameter of spring-type straight pin
DC: P511AAA357 spring pin
PLS: d3/d2
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
Remark: this property is intended to be used for ISO 8752:1997,ISO 8748:1997 etc.
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA216-1 001
material thickness
Definition: thickness of wall of spring type pin (slotted or coiled)
DC: P511AAA098 pin
PLS: s
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
Remark: this property is intended to be used for ISO 8752:1997 etc.
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA217-1 001
chamfer length of pin
Definition: chamfer length at the end of pin
DC: P511AAA098 pin
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
Note: for parallel pins and clevis pins the symbol is "c", for parallel pins with internal thread different symbols "c1/c2/c/a" are used, and for spring pins the symbol is "a"
Remark: this property is used for ISO 2338:1997, ISO 8733:1997, ISO 8752:1997 etc.
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA225-1 001
head height of pin
Definition: head height of clevis pin and grooved pin
DC: P511AAA098 pin
PLS: k
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 2341:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA229-1 001
length from split pin hole to the end
Definition: length from split pin hole to the end of clevis pin
DC: P511AAA355 clevis pin
PLS: le
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 2340:1986, ISO 2341:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA230-1 001
split pin hole diameter
Definition: diameter of the hole for the split pin in clevis pin
DC: P511AAA355 clevis pin
PLS: d1
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 2340:1986, ISO 2341:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA231-1 001
crown radius

Definition: radius of crown for grooved pin, or radius of smaller crown for taper pin
DC: P511AAA098 pin
PLS: r
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8739:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA232-1 001
pilot length
Definition: pilot length of grooved pin
DC: P511AAA257 grooved pin, full-length parallel grooved, with pilot
PLS: c
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 8739:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA234-1 001
expanded diameter
Definition: shank diameter of grooved pin measured over the groove edges
DC: P511AAA356 grooved pin
PLS: d2
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8739:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA235-1 001
groove angle
Definition: angle of groove of grooved pin
DC: P511AAA356 grooved pin
Unit: Degree
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T01
SDD: ISO 8739:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA237-1 001
head diameter of pin
Definition: head diameter of clevis pin and grooved pin
DC: P511AAA098 pin
PLS: dk
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 8746:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA239-1 001
inner diameter
Definition: inner diameter of slotted spring pin
DC: P511AAA261 spring-type straight pin, slotted
PLS: d2
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8752:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA241-1 001
height of crown
Definition: height including height of convexity and width of chamfer of grooved pin
DC: P511AAA258 grooved pin, full-length parallel grooved,with chamfer
PLS: c2
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8740:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA242-1 001
convexity height
Definition: height for convexity of one end with chamfer of grooved pin
DC: P511AAA258 grooved pin, full-length parallel grooved, with chamfer
PLS: c1
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8740:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA243-1 001
head properties
Definition: a feature instance of which the properties allow to characterize the head of an

externally threaded fastener
DC: P511AAA004 externally threaded fastener component
Unit:
VF:
DT: CLASS_INSTANCE_TYPE: P511AAA008
PTC: A52
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA244-1 001
shank properties
Definition: a feature instance of which the properties allow to characterize the shank of an externally threaded fastener
DC: P511AAA004 externally threaded fastener component
Unit:
VF:
DT: CLASS_INSTANCE_TYPE: P511AAA024
PTC: A52
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA245-1 001
end properties
Definition: a feature instance of which the properties allow to characterize the end of an externally threaded fastener
DC: P511AAA004 externally threaded fastener component
Unit:
VF:
DT: CLASS_INSTANCE_TYPE: P511AAA028
PTC: A52
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA246-1 001
thread properties
Definition: a feature instance of which the properties allow to characterize the thread of a threaded fastener
DC: P511AAA002 fastener
Unit:
VF:
DT: CLASS_INSTANCE_TYPE: P511AAA037
PTC: A52
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA247-1 001
internal drive properties
Definition: a feature instance of which the properties allow to characterize the internal drive of an externally threaded fastener
DC: P511AAA004 externally threaded fastener component
Unit:
VF:
DT: CLASS_INSTANCE_TYPE: P511AAA042
PTC: A52
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA248-1 001
thread tolerance position
Definition: to specify the position of the tolerance field of thread tolerances
DC: P511AAA002 fastener
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
G=G type (positive) fundamental deviation for internal thread
H=H type (zero) fundamental deviation for internal thread
e=e type (largest negative) fundamental deviation for external thread
f=f type (larger negative) fundamental deviation for external thread
g=g type (small negative) fundamental deviation for external thread
h=h type (zero) fundamental deviation for external thread
PTC: A59
SDD: ISO 965-1:1998
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA249-1 001
thread tolerance grade
Definition: to specify the size of the tolerance field of thread tolerances
DC: P511AAA002 fastener
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
3=a code of thread tolerance grade defined in ISO 965-1
4=a code of thread tolerance grade defined in ISO 965-1
5=a code of thread tolerance grade defined in ISO 965-1
6=a code of thread tolerance grade defined in ISO 965-1
7=a code of thread tolerance grade defined in ISO 965-1
8=a code of thread tolerance grade defined in ISO 965-1
9=a code of thread tolerance grade defined in ISO 965-1
PTC: A59
Note: ext.=external thread int.= internal thread,

MJD= major diameter, MND=minor diameter, PD=pitch diameter
SDD: ISO 965-1:1998
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA253-1 001
shear load
Definition: minimum shear load of rivet
DC: P511AAA345 rivet
Unit: N
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 15974:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA254-1 001
tensile load
Definition: minimum tensile load for rivet
DC: P511AAA083 blind rivet
Unit: N
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 15974:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA255-1 001
mandrel break load
Definition: maximum mandrel break load for blind rivet
DC: P511AAA083 blind rivet
Unit: N
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 15974:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA256-1 001
thread tolerance class
Definition: specifies the size and the position of a thread tolerance field
DC: P511AAA002 fastener
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
3g=thread tolerance grade 3 and tolerance position g
4G=thread tolerance grade 4 and tolerance position G
4H=thread tolerance grade 4 and tolerance position H
4g=thread tolerance grade 4 and tolerance position g
4h=thread tolerance grade 4 and tolerance position h
5G=thread tolerance grade 5 and tolerance position G
5H=thread tolerance grade 5 and tolerance position H
5g=thread tolerance grade 5 and tolerance position g
5h=thread tolerance grade 5 and tolerance position h
6G=thread tolerance grade 6 and tolerance position G
6H=thread tolerance grade 6 and tolerance position H
6g=thread tolerance grade 6 and tolerance position g
6h=thread tolerance grade 6 and tolerance position h
7G=thread tolerance grade 7 and tolerance position G
7H=thread tolerance grade 7 and tolerance position H
7g=thread tolerance grade 7 and tolerance position g
7h=thread tolerance grade 7 and tolerance position h
8G=thread tolerance grade 8 and tolerance position G
8H=thread tolerance grade 8 and tolerance position H
8g=thread tolerance grade 8 and tolerance position g
8h=thread tolerance grade 8 and tolerance position h
9g=thread tolerance grade 9 and tolerance position g
9h=thread tolerance grade 9 and tolerance position h
PTC: A59
Note: the first number means one of tolerance grade of fastener thread diameter, i.e. 4,5,...etc. The second alphabetic characters G and H used for internal threads, g and h used for external threads.
SDD: ISO 965-1:1998
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA303-1 001
type of head
Definition: classification property to which values (non-quantitative codes) are assigned according to head feature of externally threaded fastener
DC: P511AAA003 externally threaded fastener

Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
12PFL=12 point flange head
BUT=button head
CHD=cup head
CHS=cheese head
CLD=cylindrical head
COT=countersunk head
CRAI=cheese raised head
ELS=eyelet shape head
EYS=eye shape head
HEWF=hexagon head with flange
HEX=hexagon head
HEXO=hexagon head with collar
HEXW=hexagon head with washer face
HWK=head with knurl
HWW=head with wings
OTN=octagonal head
PAN=pan head
RADC=raised countersunk head
ROH=round head
SQEC=square head with collar
SQR=square head
THD=t-head
TOM=head with tommy
TRIC=triangle head with collar
PTC: A52
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA305-1 001
type of shank
Definition: classification property to which values (non-quantitative codes) are assigned according to shank feature of externally threaded fastener
DC: P511AAA003 externally threaded fastener
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
FIT=fit shank
FLS=full shank
RDD=reduced shank
SHD=shoulder shank
SQN=shank with square neck
WID=waisted shank
PTC: A52
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA306-1 001
type of end
Definition: classification property to which values (non-quantitative codes) are assigned according to end feature of externally threaded fastener
DC: P511AAA003 externally threaded fastener
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
ARE=as-rolled end
CET=flat end, type F of tapping screw
CFE=chamfered end
CON=cone end, type C of tapping screw
CPP=cup point
CPT=cone point
DGP=dog point
DRD=drilling point of drilling screw
EOT=end of thread forming screw
FLA=flat point
PIP=pilot point
RDE=rounded end
ROU=rounded end,type R of tapping screw
SCP=scrape point
TCP=truncated cone point
TPP=truncated pilot point
PTC: A52
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA307-1 001
type of thread
Definition: classification property to which values (non-quantitative codes) are assigned according to thread feature of mechanical component for general use
DC: P511AAA001 mechanical component for general use
Unit:
VF: M..128
DT: NON_QUANTITATIVE_CODE_TYPE
MEP=thread forming screw thread
MET=metric external thread
MIT=metric internal thread
TST=self-tapping screw thread
WST=wood screw thread
PTC: A52
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA308-1 001
type of internal drive
Definition: classification property to which values (non-quantitative codes) are assigned according to internal drive feature of externally threaded fastener
DC: P511AAA003 externally threaded fastener
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
12 S=12 point socket
CRH=cross hole
CRR=cross recess type H

CZT=cross recess type Z
HXLS=hexalobular socket
HXS=hexagon socket
SLO=slot
SQS=square socket
SSS=six-spline socket
TRS=triangle socket
PTC: A52
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA319-1 001
organization identifier of manufacturer
Definition: identifier of the organization who takes the legal responsibility as the producer of the product in the coding system
DC: P511AAA001 mechanical component for general use
Unit:
VF: M..128
DT: STRING_TYPE
PTC: A21
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA320-1 001
fastener material identification
Definition: identification code representing types of material for fastener
DC: P511AAA002 fastener
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
A=Austenitic steel
A1=Austenitic steel grade A1
A2=Austenitic steel grade A2
A3=Austenitic steel grade A3
A4=Austenitic steel grade A4
A5=Austenitic steel grade A5
AL1=AlMg3
AL2=AlMg5
AL3=AlSiMgMn
AL4=AlCu4MgSi
AL5=AlZnMgCu 0,5
AL6=AlZn5,5MgCu
Alloy steel=Alloy steel
C=Martensitic steel
C1=Martensitic steel grade C1
C3=Martensitic steel grade C3
C4=Martensitic steel grade C4
CU1=Cu-ETP or Cu-FRHC
CU2=CuZn37
CU3=CuZn39ph3
CU4=CuSn6
CU5=CuNi1Si
CU6=CuAl10Ni5Fe4
Carbon steel=Carbon steel
F=Ferritic steel
F1=Ferritic steel grade F1
PTC: A59
SDD: ISO 8992:2005, ISO 8839:1999,ISO 3506-1:1997,ISO 3506-2:1997,ISO 3506-3:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA321-1 001
steel fastener property class
Definition: identification code representing all mechanical and physical properties of a steel fastener e.g. tensile strength, yield strength, elongation after fracture, hardness, etc.
DC: P511AAA002 fastener
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
04=steel fastener property class 04
05=steel fastener property class 05
10=steel fastener property class 10
10.9=steel fastener property class 10.9
12=steel fastener property class 12
12.9=steel fastener property class 12.9
3.6=steel fastener property class 3.6
4= steel fastener property class 4
4.6=steel fastener property class 4.6
4.8=steel fastener property class 4.8
5= steel fastener property class 5
5.6=steel fastener property class 5.6
5.8=steel fastener property class 5.8
6= steel fastener property class 6
6.8=steel fastener property class 6.8
8= steel fastener property class 8
8.8=steel fastener property class 8.8
9= steel fastener property class 9
9.8=steel fastener property class 9.8
PTC: A59
Note: steel fastener property classes apply to threaded fasteners only.
SDD: ISO 898-1:1997,ISO 898-2:1997,ISO 898-6:1994
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA322-1 001
fastener material name
Definition: name of material for fastener
DC: P511AAA002 fastener
Unit:
VF: M..64
DT: STRING_TYPE
PTC: A51
Remark: ISO 3506-1:1997,ISO 3506-2:1997,ISO 3506-3:1997, ISO 898-1:1999, ISO 898-5:1998,ISO 8839:1999, etc.
DOD: 2006-02-22 **DCV:** 2006-02-22

DCR: 2006-02-22

P511BAA323-1 001
stainless steel fastener property class
Definition: identification code representing all mechanical and physical properties of a stainless steel fastener e.g. tensile strength, yield strength, elongation after fracture, hardness, etc.
DC: P511AAA002 fastener
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
020=stainless steel fastener property class 020
025=stainless steel fastener property class 025
030=stainless steel fastener property class 030
035=stainless steel fastener property class 035
040=stainless steel fastener property class 040
055=stainless steel fastener property class 055
110=stainless steel fastener property class 110
45=stainless steel fastener property class 45
50=stainless steel fastener property class 50
60=stainless steel fastener property class 60
70=stainless steel fastener property class 70
80=stainless steel fastener property class 80
PTC: A59
SDD: ISO 3506-1:1997,ISO 3506-2:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA324-1 001
fastener coating code
Definition: identification code to specify the coating metal, minimum coating thickness, finish, and chromate treatment by using the string structure defined in ISO 4042
DC: P511AAA002 fastener
Unit:
VF: M..64
DT: STRING_TYPE
PTC: A51
SDD: ISO 4042:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA326-1 001
product grade
Definition: to specify the dimensional tolerances and tolerances of shape and position
DC: P511AAA002 fastener
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
A=a code for the most precise selection of tolerance
B=a code for the middle precise selection of tolerance
C=a code for the least precise selection of tolerance
PTC: A56
SDD: ISO 4759-1:2000,ISO 4759-3:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA327-1 001
type of pitch
Definition: classification property to specify the pitch of thread which can be coarse or fine pitch
DC: P511AAA001 mechanical component for general use
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
COR=coarse pitch
FINE=fine pitch
PTC: A56
SDD: ISO 68-1:1998
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA328-1 001
rivet head name
Definition: name for representing rivet head feature
DC: P511AAA345 rivet
Unit:
VF: M..30
DT: STRING_TYPE
PTC: A51
Remark: this property is intended to be used for non-standard rivet head feature
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA329-1 001
rivet head picture
Definition: picture identification for representing rivet head feature
DC: P511AAA345 rivet
Unit:
VF:
ISO13584_25_IEC61360_5_LIBRARY_IMPLICIT_SCHEMA.PROPERTY_VALUE_EXTERNAL_ITEM
DT: ENTITY_INSTANCE_TYPE
PTC: A58
Remark: this property is intended to be used for

non-standard rivet head feature
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA330-1 001
rivet shank name
Definition: name for representing rivet shank feature
DC: P511AAA345 rivet
Unit:
VF: M..30
DT: STRING_TYPE
PTC: A51
Remark: this property is intended to be used for non-standard rivet shank feature
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA331-1 001
rivet shank picture
Definition: picture identification for representing rivet shank feature
DC: P511AAA345 rivet
Unit:
VF: ISO13584_25_IEC61360_5_LIBRARY_IMPLICIT_SCHEMA.PROPERTY_VALUE_EXTERNAL_ITEM
DT: ENTITY_INSTANCE_TYPE
PTC: A58
Remark: this property is intended to be used for non-standard rivet shank feature
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA333-1 001
outside diameter
Definition: outer diameter of washer
DC: P511AAA072 washer
PLS: d2
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 7091:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA334-1 001
hole diameter
Definition: hole diameter of washer
DC: P511AAA072 washer
PLS: d1
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 7091:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA335-1 001
washer name
Definition: name of washer, especially for non-standardized washer
DC: P511AAA072 washer
Unit:
VF: M..128
DT: STRING_TYPE
PTC: A51
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA336-1 001
material thickness
Definition: material thickness of spring washer or lock washer
DC: P511AAA072 washer
PLS: s
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA337-1 001
thickness
Definition: thickness of plain washer
DC: P511AAA026 plain washer
PLS: h
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA338-1 001
height of conical spring washer or lock washer
Definition: height of non-flat washer in free status (i.e. not under load) e.g. conical spring washer or lock washer
DC: P511AAA072 washer
PLS: h
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA340-1 001

thread size
Definition: non quantitative code which specifies the thread, e.g. M10, ST4.8 etc
DC: P511AAA002 fastener
Unit:
VF: M..30
DT: STRING_TYPE
PTC: T03
SDD: ISO 1479:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA342-1 001
core hardness
Definition: hardness in the core area of a fastener
DC: P511AAA001 mechanical component for general use
Unit:
VF: NR2 5..3.3
DT: LEVEL_TYPE
PTC: A57
SDD: ISO 6506-1:1999,ISO 6507-1:1999,ISO 6508-1:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA343-1 001
surface hardness
Definition: hardness in the surface area of a fastener
DC: P511AAA001 mechanical component for general use
Unit:
VF: NR2 5..3.3
DT: LEVEL_TYPE
PTC: A57
SDD: ISO 6506-1:1999,ISO 6507-1:1999,ISO 6508-1:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA344-1 001
steel fastener hardness class
Definition: identification code representing a hardness range for steel fasteners
DC: P511AAA002 fastener
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
14H=steel fastener hardness class 14H
22H=steel fastener hardness class 22H
33H=steel fastener hardness class 33H
45H=steel fastener hardness class 45H
PTC: A57
Note: for washers the hardness class is defined in product standards
SDD: ISO 898-5:1998
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA345-1 001
hardness test method identification
Definition: alphanumerical code which specifies the hardness test method and its associated characteristics
DC: P511AAA002 fastener
Unit:
VF: M..300
DT: NON_QUANTITATIVE_CODE_TYPE
HBW1/1=Brinell Hardness by: ball Dia.=1 mm, F=9.807 N, time=10 to 15s.
HBW1/10=Brinell Hardness by: ball Dia.=1 mm, F=98.07 N, time=10 to 15s.
HBW1/2.5=Brinell Hardness by: ball Dia.=1 mm, F=24.52 N, time=10 to 15s.
HBW1/30=Brinell Hardness by: ball Dia.=1 mm, F=294.2 N, time=10 to 15s.
HBW1/5=Brinell Hardness by: ball Dia.=1 mm, F=49.03 N, time=10 to 15s.
HBW10/100=Brinell Hardness by: ball Dia.=10 mm, F=980.7N, time=10 to 15s.
HBW10/1000=Brinell Hardness by: ball Dia.=10 mm, F=9807 N, time=10 to 15s.
HBW10/1500=Brinell Hardness by: ball Dia.=10 mm, F=14710 N, time=10 to 15s.
HBW10/250=Brinell Hardness by: ball Dia.=10 mm, F=2452 N, time=10 to 15s.
HBW10/3000=Brinell Hardness by: ball Dia.=10 mm, F=29421 N, time=10 to 15s.
HBW10/500=Brinell Hardness by: ball Dia.=10 mm, F=4903 N, time=10 to 15s.
HBW2.5/15.625=Brinell Hardness by: ball Dia.=2.5 mm, F=153.2 N, time=10 to 15s.
HBW2.5/187.5=Brinell Hardness by: ball Dia.=2.5 mm, F=1839 N, time=10 to 15s.
HBW2.5/31.25=Brinell Hardness by: ball Dia.=2.5 mm, F=306.5 N , time=10 to 15s.
HBW2.5/6.25=Brinell Hardness by: ball Dia.=2.5 mm, F=61.29 N, time=10 to 15s.
HBW2.5/62.5=Brinell Hardness by: ball Dia.=2.5 mm, F=612.9 N, time=10 to 15s.
HBW5/125=Brinell Hardness by: ball Dia.=5 mm, F=1226 N, time=10 to 15s.
HBW5/25=Brinell Hardness by: ball Dia.=5 mm, F=245.2 N, time=10 to 15s.
HBW5/250=Brinell Hardness by: ball Dia.=5 mm, F=2452 N , time=10 to 15s.
HBW5/62.5=Brinell Hardness by: ball Dia.=5 mm, F=612.9 N, time=10 to 15s.
HBW5/750=Brinell Hardness by: ball Dia.=5 mm, F=7355 N, time=10 to 15s.
HR15N=Rockwell hardness, 15N scale, diamond cone indenter.

HR15TS=Rockwell hardness, 15T scale, steel ball indenter.
HR15TW=Rockwell hardness, 15T scale, hardmetal ball indenter.
HR30N=Rockwell hardness, 30N scale, diamond cone indenter.
HR30TS=Rockwell hardness, 30T scale, steel ball indenter.
HR30TW=Rockwell hardness, 30T scale, hardmetal ball indenter.
HR45N=Rockwell hardness, 45N scale, diamond cone indenter.
HR45TS=Rockwell hardness, 45T scale, steel ball indenter.
HR45TW=Rockwell hardness, 45T scale, hardmetal ball indenter.
HRA=Rockwell hardness, A scale, diamond cone indenter.
HRBS=Rockwell hardness, B scale, steel ball indenter.
HRBW=Rockwell hardness, B scale, hardmetal ball indenter.
HRC=Rockwell hardness, C scale, diamond cone indenter.
HRD=Rockwell hardness, D scale, diamond cone indenter.
HRES=Rockwell hardness, E scale, steel ball indenter.
HREW=Rockwell hardness, E scale, hardmetal ball indenter.
HRFS=Rockwell hardness, F scale, steel ball indenter.
HRFW=Rockwell hardness, F scale, hardmetal ball indenter.
HRGS=Rockwell hardness, G scale, steel ball indenter.
HRGW=Rockwell hardness, G scale, hardmetal ball indenter.
HRHS=Rockwell hardness, H scale, steel ball indenter.
HRHW=Rockwell hardness, H scale, hardmetal ball indenter.
HRKS=Rockwell hardness, K scale, steel ball indenter.
HRKW=Rockwell hardness, K scale, hardmetal ball indenter.
HV0.01=Vickers hardness, F=0.09807 N, time=10 to 15s.
HV0.015=Vickers hardness, F=0.1471 N, time=10 to 15s.
HV0.02=Vickers hardness, F=0.1961 N, time=10 to 15s.
HV0.025=Vickers hardness, F= 0.2452 N, time=10 to 15s.
HV0.05=Vickers hardness, F=0.4903 N, time=10 to 15s.
HV0.1=Vickers hardness, F=0.9807 N, time=10 to 15s.
HV0.2=Vickers hardness, F=1.961 N, time=10 to 15s.
HV0.3=Vickers hardness, F=2.942 N, time=10 to 15s.
HV0.5=Vickers hardness, F=4.903 N, time=10 to 15s.
HV1=Vickers hardness, F=9.807 N, time=10 to 15s.
HV10=Vickers hardness, F=98.07 N, time=10 to 15s.
HV100=Vickers hardness, F=980.7 N, time=10 to 15s.
HV2=Vickers hardness, F=19.61 N, time=10 to 15s.
HV20=Vickers hardness, F=196.1 N, time=10 to 15s.
HV3=Vickers hardness, F=29.42 N, time=10 to 15s.
HV30=Vickers hardness, F=294.2 N, time=10 to 15s.
HV5=Vickers hardness, F=49.03 N, time=10 to 15s.
HV50=Vickers hardness, F=490.4 N, time=10 to 15s.
PTC: A57
SDD: ISO 6506-1:1999,ISO 6507-1:1999,ISO 6508-1:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA346-1 001
major diameter of external thread
Definition: diameter of an imaginary cylindrical surface tangent to the crests of an external thread
DC: P511AAA038 metric external thread
PLS: d
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 68-1:1998
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA347-1 001
pitch diameter of external thread
Definition: diameter of an imaginary cylinder, the external surface of which cuts a external thread where the widths of the ridge and the groove of the thread(s) are equal
DC: P511AAA038 metric external thread
PLS: d2
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE

PTC: T03
SDD: ISO 68-1:1998
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA348-1 001
minor diameter of external thread
Definition: diameter of an imaginary cylindrical surface tangent to the roots of an external thread
DC: P511AAA038 metric external thread
PLS: d1
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 68-1:1998
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA349-1 001
outer diameter
Definition: major diameter of tapping screw thread or wood screw thread(nominal diameter)
DC: P511AAA037 thread
PLS: d1
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 1478:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA350-1 001
core diameter
Definition: minor diameter of tapping screw thread or wood screw thread (minimum diameter)
DC: P511AAA037 thread
PLS: d2
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 1478:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA351-1 001
washer picture
Definition: identification of washer picture, especially for non-standardized washer
DC: P511AAA072 washer
Unit:
VF:
ISO13584_25_IEC61360_5_LIBRARY_IMPLICIT_SCHEMA.PROPERTY_VALUE_EXTERNAL_ITEM
DT: ENTITY_INSTANCE_TYPE
PTC: A58
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA352-1 001
duty level
Definition: shear capacity of pin
DC: P511AAA357 spring pin
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
HEAVY=Heavy duty
LIGHT=Light duty
NORMAL=Normal duty
PTC: A52
Remark: this property is intended to be used for ISO 8748:1997/ISO8750:1997/ISO8751:1997/ISO8752:1997/ISO 13337:1997 etc.
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA353-1 001
shear strength,double
Definition: minimum load to fracture when a tested pin is subjected to a double shear load using a suitable test fixture in a testing machine, according to ISO 8749
DC: P511AAA098 pin
Unit: KN
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8749:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA355-1 001
mid height
Definition: middle height of square taper washer
DC: P511AAA237 square taper washer
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA356-1 001
side length
Definition: side length of taper square washer
DC: P511AAA237 square taper washer
Unit: mm
VF: NR2..3.3

DT: REAL_MEASURE_TYPE
PTC: T03
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA357-1 001
transition diameter
Definition: diameter of the bearing face at the transition to the under head radius
DC: P511AAA004 externally threaded fastener component
PLS: da/da1
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983, ISO 7379:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA358-1 001
pitch diameter of internal thread
Definition: diameter of an imaginary cylinder, the external surface of which cuts a internal thread where the widths of the ridge and the groove of the thread(s) are equal
DC: P511AAA344 metric internal thread
PLS: D2
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 68-1:1998
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA359-1 001
minor diameter of internal thread
Definition: diameter of an imaginary cylindrical surface tangent to the crests of an internal thread
DC: P511AAA344 metric internal thread
PLS: D1
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 68-1:1998
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA360-1 001
major diameter of internal thread
Definition: diameter of an imaginary cylindrical surface tangent to the roots of an internal thread
DC: P511AAA344 metric internal thread
PLS: D

Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 68-1:1998
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA362-1 001
chamfer angle on the end of pin
Definition: angle of chamfer on the end of pin
DC: P511AAA098 pin
PLS: alpha
Unit: Degree
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8746:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA363-1 001
length of cone of pilot point with truncated cone
Definition: length of truncated cone of the pilot point with truncated cone
DC: P511AAA350 truncated pilot point
PLS: z5
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4753:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA364-1 001
diameter of the pilot point
Definition: diameter of the cylindrical portion of the pilot point
DC: P511AAA028 end
PLS: dx
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4753:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA365-1 001
transition diameter of shoulder
Definition: diameter of shoulder face at the transition to undercut radius
DC: P511AAA129 shoulder
PLS: da2
Unit: mm

VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 7379:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA367-1 001
length of split pin
Definition: distance between the head and the end of the shorter leg
DC: P511AAA248 split pin
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 1234:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA368-1 001
head angle (countersunk angle)
Definition: angle of conical bearing face
DC: P511AAA008 head
PLS: alpha
Unit: Degree
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA369-1 001
length of bolt/screw (flat seating head)
Definition: distance between the bearing surface and the end of the bolt/screw
DC: P511AAA004 externally threaded fastener component
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA370-1 001
length of countersunk bolt/screw
Definition: distance from the top of the head to the end of the bolt/screw
DC: P511AAA004 externally threaded fastener component
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA371-1 001
stud length
Definition: distance from the thread run-out of the metal end to the end of the nut end
DC: P511AAA049 stud
PLS: l
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA376-1 001
height of the raised portion of raised countersunk head
Definition: height of the raised portion of raised countersunk head
DC: P511AAA020 raised countersunk head
PLS: f
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 15483:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA377-1 001
radius of curvature at the hexagon / washer junction
Definition: radius of curvature at the hexagon / washer (collar) junction
DC: P511AAA217 hexagon head with collar
PLS: r2
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 15480:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA378-1 001
diameter of face
Definition: diameter of face of set screws at the end with internal drive
DC: P511AAA186 set screw
PLS: df

Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 225:1983
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA380-1 001
countersink angle
Definition: countersink angle
DC: P511AAA052 nut
PLS: theta
Unit: Degree
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 7042:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA381-1 001
angle of the nut chamfer
Definition: angle of chamfer of nut face
DC: P511AAA052 nut
PLS: beta
Unit: Degree
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 7042:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA382-1 001
depth of axial undercut
Definition: distance between the bearing face and the bottom of the undercut in the axial direction that may exist in an externally threaded fastener
DC: P511AAA081 hexagon head bolt with flange with fine pitch thread, full shank
PLS: v
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 10644:1998
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA383-1 001
transition diameter of axial undercut
Definition: inner diameter of the bearing face resulting from an axial undercut that may exist in externally threaded fastener
DC: P511AAA005 metric threaded bolt/screw
PLS: da2/da
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 10644:1998, ISO 15072:1999
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA386-1 001
thread length of nut end
Definition: length of the thread of the nut end of a stud
DC: P511AAA049 stud
PLS: b
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 4759:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA387-1 001
nut name
Definition: name of nut, especially for non-standardized nut
DC: P511AAA052 nut
Unit:
VF: M..128
DT: STRING_TYPE
PTC: A51
Remark: this property is intended to be used for non-standard nut
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA388-1 001
nut picture
Definition: identification of nut picture, especially for non-standardized nut
DC: P511AAA052 nut
Unit:
VF: ISO13584_25_IEC61360_5_LIBRARY_IMPLICIT_SCHEMA.PROPERTY_VALUE_EXTERNAL_ITEM
DT: ENTITY_INSTANCE_TYPE
PTC: A58
Remark: this property is intended to be used for non-standard nut
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA389-1 001
pin head name
Definition: name of head shape for non-

standardized pin
DC: P511AAA098 pin
Unit:
VF: M..128
DT: STRING_TYPE
PTC: A51
Remark: this property is intended to be used for non-standard pin
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA390-1 001
pin head picture
Definition: head shape picture for non-standardized pin
DC: P511AAA098 pin
Unit:
VF:
ISO13584_25_IEC61360_5_LIBRARY_IMPLICIT_SCHEMA.PROPERTY_VALUE_EXTERNAL_ITEM
DT: ENTITY_INSTANCE_TYPE
PTC: A58
Remark: this property is intended to be used for non-standard pin
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA391-1 001
pin shank name
Definition: name of shank for non-standardized pin
DC: P511AAA098 pin
Unit:
VF: M..128
DT: STRING_TYPE
PTC: A51
Remark: this property is intended to be used for non-standard pin
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA392-1 001
pin shank picture
Definition: shank shape picture for non-standardized pin
DC: P511AAA098 pin
Unit:
VF:
ISO13584_25_IEC61360_5_LIBRARY_IMPLICIT_SCHEMA.PROPERTY_VALUE_EXTERNAL_ITEM
DT: ENTITY_INSTANCE_TYPE
PTC: A58
Remark: this property is intended to be used for non-standard pin
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA393-1 001
pin end name
Definition: name of shape for non-standardized pin
DC: P511AAA098 pin
Unit:
VF: M..128
DT: STRING_TYPE
PTC: A51
Remark: this property is intended to be used for non-standard pin
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA394-1 001
pin end picture
Definition: end shape picture for non-standardized pin
DC: P511AAA098 pin
Unit:
VF:
ISO13584_25_IEC61360_5_LIBRARY_IMPLICIT_SCHEMA.PROPERTY_VALUE_EXTERNAL_ITEM
DT: ENTITY_INSTANCE_TYPE
PTC: A58
Remark: this property is intended to be used for non-standard pin
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA395-1 001
incomplete thread length of pin with external thread
Definition: length of incomplete thread over the end of pin with external thread
DC: P511AAA251 taper pin with external thread
PLS: u
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 8737:1986, ISO 8749:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA396-1 001
chamfer height on the head of pin
Definition: height of the chamfer on the head of pin
DC: P511AAA255 clevis pin with head
PLS: e
Unit: mm
VF: NR2..3.3

DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 2341:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA397-1 001
chamfer angle on the head of pin
Definition: angle of chamfer on the head of pin
DC: P511AAA255 clevis pin with head
PLS: beta
Unit: Degree
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 2341:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA398-1 001
grooving angle of grooved pin
Definition: angle of the groove on the grooved pin
DC: P511AAA356 grooved pin
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 2341:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA399-1 001
head angle of grooved pin with countersunk head
Definition: angle of conical bearing face of grooved pin with countersunk head
DC: P511AAA260 grooved pin with countersunk head
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 8747:1997, ISO 8749:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA400-1 001
length of set screw
Definition: length of set screw is the overall length (including end)
DC: P511AAA186 set screw
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 4027:2003
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA401-1 001
length of stud bolt
Definition: the length of stud bolt is overall length
DC: P511AAA099 stud bolt
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 1891:1979 clause 21.6
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA402-1 001
length of headless screw with shank
Definition: overall length of headless screw with shank
DC: P511AAA354 headless screw with shank
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 2342:1972
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA403-1 001
length of clevis pin with head
Definition: distance between bearing face and the end of clevis pin
DC: P511AAA355 clevis pin
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 2341:1986, ISO 8749:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA404-1 001
length of clevis pin without head
Definition: overall length of clevis pin
DC: P511AAA355 clevis pin
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 2340:1997, ISO 8749:1986
DOD: 2006-02-22 **DCV:** 2006-02-22

DCR: 2006-02-22

P511BAA405-1 001
length of grooved pin without head
Definition: overall length of grooved pin
DC: P511AAA356 grooved pin
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 8744:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA406-1 001
length of grooved pin with flat seating head
Definition: distance between bearing face and the end of grooved pin
DC: P511AAA356 grooved pin
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 8746:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA407-1 001
length of grooved pin with countersunk head
Definition: distance from the top of the head and the end of grooved pin
DC: P511AAA356 grooved pin
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 8747:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA408-1 001
length of parallel pin
Definition: overall length of parallel pin
DC: P511AAA252 parallel pin
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 2338:1997, ISO 8749:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA409-1 001
length of spring pin
Definition: overall length of spring pin
DC: P511AAA357 spring pin
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 8748:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA410-1 001
length of taper pin
Definition: overall length of taper pin
DC: P511AAA358 taper pin
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 2339:1986
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA411-1 001
length of rivet with flat seating head (protruding head)
Definition: distance from head bearing face to the end of rivet shank
DC: P511AAA345 rivet
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 15973:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA412-1 001
length of the rivet with countersunk head
Definition: distance from top of countersunk head to the end of rivet shank
DC: P511AAA345 rivet
PLS: l
Unit: mm
VF: NR2..3.3
DT: LEVEL_TYPE
PTC: T03
SDD: ISO 15974:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA414-1 001
pin diameter
Definition: diameter of pin shank

DC: P511AAA098 pin
PLS: d/d1
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 2340:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA415-1 001
rivet diameter
Definition: diameter of rivet shank
DC: P511AAA345 rivet
PLS: d
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
SDD: ISO 15973:2000
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA416-1 001
thread length of nut
Definition: the length of thread
DC: P511AAA052 nut
PLS: m
Unit: mm
VF: NR2..3.3
DT: REAL_MEASURE_TYPE
PTC: T03
Note: in most cases the thread length (m) , which is essential for nut stripping strength, is equal to the nut height (m), however for prevailing torque type nuts where the thread length (m) is less than the nut height(h)
SDD: ISO 12126:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

P511BAA417-1 001
stainless steel fastener hardness class
Definition: identification code representing a hardness range for stainless steel fasteners
DC: P511AAA002 fastener
Unit:
VF: M..30
DT: NON_QUANTITATIVE_CODE_TYPE
12H=stainless steel fastener hardness class 12H
21H=stainless steel fastener hardness class 21H
PTC: A57
SDD: ISO 3506-3:1997
DOD: 2006-02-22 **DCV:** 2006-02-22
DCR: 2006-02-22

Annex E
(normative)

Classification mechanism

E.1 Classification property DETs and values

Table E.1 specifies classification properties and their values used in this part of ISO 13584.

Table E.1 — Classification property DETs and values

Code	Preferred name	Values	Indicated subclasses
P511BAA303	type of head	12PFL	12 point flange head
		BUT	button head
		CHD	cup head
		CHS	cheese head
		CLD	cylindrical head
		COT	countersunk head
		CRAI	cheese raised head
		ELS	eyelet shape head
		EYS	eye shape head
		HEWF	hexagon head with flange
		HEX	hexagon head
		HEXO	hexagon head with collar
		HEXW	hexagon head with washer face
		HWK	head with knurl
		HWW	head with wings
		OTN	octagonal head
		PAN	pan head

Code	Preferred name	Values	Indicated subclasses
		RADC	raised countersunk head
		ROH	round head
		SQEC	square head with collar
		SQR	square head
		THD	t-head
		TOM	head with tommy
		TRIC	triangle head with collar
P511BAA305	type of shank	FIT	fit shank
		FLS	full shank
		RDD	Reduced shank
		SHD	shoulder shank
		SQN	shank with square neck
		WID	waisted shank
P511BAA306	type of end	ARE	as-rolled end
		CET	flat end, type F of tapping screw
		CFE	chamfered end
		CON	cone end, type C of tapping screw
		CPP	cup point
		CPT	cone point
		DGP	dog point
		DRD	drilling point of drilling screw
		EOT	end of thread forming screw
		FLA	flat point
		PIP	pilot point
		RDE	rounded end
		ROU	rounded end, type R of tapping screw
		SCP	scrape point
		TCP	truncated cone point

Code	Preferred name	Values	Indicated subclasses
		TPP	truncated pilot point
P511BAA307	type of thread	MEP	thread forming screw thread
		MET	metric external thread
		MIT	metric internal thread
		TST	tapping screw thread
		WST	wood screw thread
P511BAA308	type of internal drive	12 S	12 point socket
		CRH	cross hole
		CRR	cross recess type H
		CZT	cross recess type Z
		HXLS	hexalobular socket
		HXS	hexagon socket
		SLO	slot
		SQS	square socket
		SSS	six-spline socket
		TRS	triangle socket

E.2 Classification methodology and property reference mechanism

Table E.2 specifies the classification methodology by using the reference mechanism provided in ISO 13584-42.

Table E.2 — Classification methodology and property reference mechanism

mechanical component for general use

- fastener
  - externally threaded fastener
    - externally threaded fastener component
      - drilling screw

        P511BAA243 head properties(class_instance_type): P511AAA008

        P511BAA245 end properties(class_instance_type): P511AAA028

        P511BAA246 thread properties(class_instance_type): P511AAA037

P511BAA247 internal drive properties(class_instance_type): P511AAA042

cross recessed (type H) countersunk head drilling screw

P511BAA303 type of head=COT

P511BAA306 type of end=DRD

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CRR

cross recessed (type H) pan head drilling screw

P511BAA303 type of head=PAN

P511BAA306 type of end=DRD

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CRR

cross recessed (type H) raised countersunk drilling screw

P511BAA303 type of head=RADC

P511BAA306 type of end=DRD

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CRR

cross recessed (type Z) countersunk head drilling screw

P511BAA303 type of head=COT

P511BAA306 type of end=DRD

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CZT

cross recessed (type Z) pan head drilling screw with tapping screw thread

P511BAA303 type of head=PAN

P511BAA306 type of end=DRD

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CZT

cross recessed (type Z) raised countersunk head drilling screw

P511BAA303 type of head=RADC

P511BAA306 type of end=DRD

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CZT

hexagon washer head drilling screw

P511BAA303 type of head=HEXO

P511BAA306 type of end=DRD

P511BAA307 type of thread=TST

headless screw with shank

P511BAA244 shank properties(class_instance_type): P511AAA024

P511BAA245 end properties(class_instance_type): P511AAA028

P511BAA246 thread properties(class_instance_type): P511AAA037

P511BAA247 internal drive properties(class_instance_type): P511AAA042

slotted headless screw with shank

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=SLO

metric threaded bolt/screw

P511BAA243 head properties(class_instance_type): P511AAA008

P511BAA244 shank properties(class_instance_type): P511AAA024

P511BAA245 end properties(class_instance_type): P511AAA028

P511BAA246 thread properties(class_instance_type): P511AAA037

P511BAA247 internal drive properties(class_instance_type): P511AAA042

countersunk flat head screw with cross recess (type H)

P511BAA303 type of head=COT

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=CRR

countersunk flat head screw with cross recess (type Z)

P511BAA303 type of head=COT

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=CZT

cross recessed (type H) cheese head screw

P511BAA303 type of head=CHS

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=CRR

cross recessed (type H) pan head screw

P511BAA303 type of head=PAN

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=CRR

cross recessed (type Z) cheese head screw

P511BAA303 type of head=CHS

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=CZT

cross recessed (type Z) pan head screw

P511BAA303 type of head=PAN

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=CZT

cup head square neck bolt

P511BAA303 type of head=CHD

P511BAA305 type of shank=SQN

P511BAA307 type of thread=MET

cup head square neck bolt with large head

P511BAA303 type of head=CHD

P511BAA305 type of shank=SQN

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

hexagon head bolt

P511BAA303 type of head=HEXW

P511BAA305 type of shank=FLS

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

hexagon head bolt with flange with fine pitch thread, full shank

P511BAA303 type of head=HEWF

P511BAA305 type of shank=FLS

P511BAA306 type of end=CFE

P511BAA307 type of thread=MET

hexagon head bolt with flange with fine pitch thread, reduced shank

P511BAA303 type of head=HEWF

P511BAA305 type of shank=RDD

P511BAA306 type of end=CFE

P511BAA307 type of thread=MET

hexagon head bolt with flange, full shank

P511BAA303 type of head=HEWF

P511BAA305 type of shank=FLS

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

hexagon head bolt with flange, reduced shank

P511BAA303 type of head=HEWF

P511BAA305 type of shank=RDD

P511BAA306 type of end=CFE

P511BAA307 type of thread=MET

hexagon head bolt with metric fine pitch thread

P511BAA303 type of head=HEXW

P511BAA305 type of shank=FLS

P511BAA306 type of end=CFE

P511BAA307 type of thread=MET

hexagon head screw

P511BAA303 type of head=HEXW

P511BAA305 type of shank=FLS

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

hexagon head screw with metric fine pitch thread

P511BAA303 type of head=HEXW

P511BAA305 type of shank=FLS

P511BAA306 type of end=CFE

P511BAA307 type of thread=MET

hexagon socket button head screw

P511BAA303 type of head=BUT

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=HXS

hexagon socket countersunk head screw

P511BAA303 type of head=COT

P511BAA305 type of shank=FLS

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=HXS

hexagon socket head cap screw

P511BAA303 type of head=CLD

P511BAA305 type of shank=FLS

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=HXS

hexagon socket head cap screw with metric fine pitch thread

P511BAA303 type of head=CLD

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=HXS

hexagon socket head shoulder screw

P511BAA303 type of head=BUT

P511BAA305 type of shank=SHD

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=HXS

hexalobular socket cheese head screw

P511BAA303 type of head=CHS

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=HXLS

hexalobular socket head cap screw

P511BAA303 type of head=CLD

P511BAA305 type of shank=FLS

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=HXLS

hexalobular socket pan head screw

P511BAA303 type of head=PAN

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=HXLS

hexalobular socket raised countersunk head screw

P511BAA303 type of head=RADC

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=HXLS

octagon head bolt

P511BAA303 type of head=OTN

P511BAA305 type of shank=FLS

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

raised countersunk head screw with cross recess (type H)

P511BAA303 type of head=RADC

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=CRR

raised countersunk head screw with cross recess (type Z)

P511BAA303 type of head=RADC

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=CZT

slotted cheese head screw

P511BAA303 type of head=CHS

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=SLO

slotted countersunk flat head screw

P511BAA303 type of head=COT

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=SLO

slotted pan head screw

P511BAA303 type of head=PAN

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=SLO

slotted raised countersunk head screw

P511BAA303 type of head=RADC

P511BAA306 type of end=ARE

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=SLO

square head bolt

P511BAA303 type of head=SQR

P511BAA305 type of shank=FLS

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

square head bolt with collar

P511BAA303 type of head=SQEC

P511BAA305 type of shank=FLS

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

T-head bolt

P511BAA303 type of head=THD

P511BAA305 type of shank=FLS

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

triangle head bolt

P511BAA303 type of head=TRIC

P511BAA305 type of shank=FLS

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

set screw

P511BAA245 end properties(class_instance_type): P511AAA028

P511BAA246 thread properties(class_instance_type): P511AAA037

P511BAA247 internal drive properties(class_instance_type): P511AAA042

hexagon socket set screw with cone point

P511BAA306 type of end=TCP

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=HXS

hexagon socket set screw with cup point

P511BAA306 type of end=CPP

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=HXS

hexagon socket set screw with dog point

P511BAA306 type of end=DGP

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=HXS

hexagon socket set screw with flat point

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=HXS

slotted set screw with cone point

P511BAA306 type of end=TCP

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=SLO

slotted set screw with cup point

P511BAA306 type of end=CPP

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=SLO

slotted set screw with flat point

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=SLO

slotted set screw with long dog point

P511BAA306 type of end=DGP

P511BAA307 type of thread=MET

P511BAA308 type of internal drive=SLO

stud

P511BAA244 shank properties(class_instance_type): P511AAA024

P511BAA245 end properties(class_instance_type): P511AAA028

P511BAA246 thread properties(class_instance_type): P511AAA037

stud with full shank

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

waisted stud

P511BAA306 type of end=FLA

P511BAA307 type of thread=MET

stud bolt

P511BAA246 thread properties(class_instance_type): P511AAA037

tapping screw

P511BAA243 head properties(class_instance_type): P511AAA008

P511BAA245 end properties(class_instance_type): P511AAA028

P511BAA246 thread properties(class_instance_type): P511AAA037

P511BAA247 internal drive properties(class_instance_type): P511AAA042

cross recessed (type H) countersunk head tapping screw with a cone end

P511BAA303 type of head=COT

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CRR

cross recessed (type H) countersunk head tapping screw with a flat end

P511BAA303 type of head=COT

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CRR

cross recessed (type H) pan head tapping screw with a cone end

P511BAA303 type of head=PAN

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CRR

cross recessed (type H) pan head tapping screw with a flat end

P511BAA303 type of head=PAN

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CRR

cross recessed (type H) raised countersunk head tapping screw with a cone end

P511BAA303 type of head=RADC

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CRR

cross recessed (type H) raised countersunk head tapping screw,flat end

P511BAA303 type of head=RADC

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CRR

cross recessed (type Z) countersunk head tapping screw with a cone end

P511BAA303 type of head=COT

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CZT

cross recessed (type Z) countersunk head tapping screw with a flat end

P511BAA303 type of head=COT

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CZT

cross recessed (type Z) pan head tapping screw with a cone end

P511BAA303 type of head=PAN

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CZT

cross recessed (type Z) pan head tapping screw with a flat end

P511BAA303 type of head=PAN

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CZT

cross recessed (type Z) raised countersunk head tapping screw with a cone end

P511BAA303 type of head=RADC

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CZT

cross recessed (type Z) raised countersunk head tapping screw with a flat end

P511BAA303 type of head=RADC

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=CZT

hexagon flange head tapping screw with a cone end

P511BAA303 type of head=HEWF

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

hexagon flange head tapping screw with a flat end

P511BAA303 type of head=HEWF

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

hexagon head tapping screw with a cone end

P511BAA303 type of head=HEX

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

hexagon head tapping screw with a flat end

P511BAA303 type of head=HEX

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

hexagon washer head tapping screw with a cone end

P511BAA303 type of head=HEXO

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

hexagon washer head tapping screw with a flat end

P511BAA303 type of head=HEXO

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

hexalobular socket countersunk head tapping screw with a cone end

P511BAA303 type of head=COT

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=HXLS

hexalobular socket countersunk head tapping screw with a flat end

P511BAA303 type of head=COT

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=HXLS

hexalobular socket countersunk head tapping screw with a rounded end

P511BAA303 type of head=COT

P511BAA306 type of end=ROU

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=HXLS

hexalobular socket pan head tapping screw with a cone end

P511BAA303 type of head=PAN

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=HXLS

hexalobular socket pan head tapping screw with a flat end

P511BAA303 type of head=PAN

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=HXLS

hexalobular socket pan head tapping screw with a rounded end

P511BAA303 type of head=PAN

P511BAA306 type of end=ROU

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=HXLS

hexalobular socket raised countersunk head tapping screw with a cone end

P511BAA303 type of head=RADC

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=HXLS

hexalobular socket raised countersunk head tapping screw with a flat end

P511BAA303 type of head=RADC

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=HXLS

hexalobular socket raised countersunk head tapping screw with a rounded end

P511BAA303 type of head=RADC

P511BAA306 type of end=ROU

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=HXLS

slotted countersunk (flat) head tapping screw with a cone end

P511BAA303 type of head=COT

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=SLO

slotted countersunk(flat) head tapping screw with a flat end

P511BAA303 type of head=COT

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=SLO

slotted pan head tapping screw with a cone end

P511BAA303 type of head=PAN

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=SLO

slotted pan head tapping screw with a flat end

P511BAA303 type of head=PAN

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=SLO

slotted raised countersunk (oval) head tapping screw with a cone end

P511BAA303 type of head=RADC

P511BAA306 type of end=CON

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=SLO

slotted raised countersunk(oval) head tapping screw with a flat end

P511BAA303 type of head=RADC

P511BAA306 type of end=CET

P511BAA307 type of thread=TST

P511BAA308 type of internal drive=SLO

thread forming screw

P511BAA243 head properties(class_instance_type): P511AAA008

P511BAA244 shank properties(class_instance_type): P511AAA024

P511BAA245 end properties(class_instance_type): P511AAA028

P511BAA246 thread properties(class_instance_type): P511AAA037

P511BAA247 internal drive properties(class_instance_type): P511AAA042

wood screw

P511BAA243 head properties(class_instance_type): P511AAA008

P511BAA244 shank properties(class_instance_type): P511AAA024

P511BAA245 end properties(class_instance_type): P511AAA028

P511BAA246 thread properties(class_instance_type): P511AAA037

P511BAA247 internal drive properties(class_instance_type): P511AAA042

externally threaded fastener feature

end

Classification property: P511BAA306 type of end

as-rolled end

P511BAA306 type of end=ARE

chamfered end

P511BAA306 type of end=CFE

cone end (type C) of tapping screw

P511BAA306 type of end=CON

cone point

P511BAA306 type of end=CPT

cup point

P511BAA306 type of end=CPP

dog point

P511BAA306 type of end=DGP

drilling point of drilling screw

P511BAA306 type of end=DRD

end of thread forming screw

P511BAA306 type of end=EOT

flat end (type F) of tapping screw

P511BAA306 type of end=CET

flat point

P511BAA306 type of end=FLA

pilot point

P511BAA306 type of end=PIP

rounded end

P511BAA306 type of end=RDE

rounded end (type R) of tapping screw

P511BAA306 type of end=ROU

scrape point

P511BAA306 type of end=SCP

truncated cone point

P511BAA306 type of end=TCP

truncated pilot point

P511BAA306 type of end=TPP

head

Classification property: P511BAA303 type of head

12 point flange head

P511BAA303 type of head=12PFL

button head

P511BAA303 type of head=BUT

cheese head

P511BAA303 type of head=CHS

countersunk head

P511BAA303 type of head=COT

cup head

P511BAA303 type of head=CHD

cylindrical head

P511BAA303 type of head=CLD

eye shape head

P511BAA303 type of head=EYS

eyelet shape head

P511BAA303 type of head=ELS

head with knurl

P511BAA303 type of head=HWK

head with tommy

P511BAA303 type of head=TOM

head with wings

P511BAA303 type of head=HWW

hexagon head

P511BAA303 type of head=HEX

hexagon head with collar

P511BAA303 type of head=HEXO

hexagon head with flange

P511BAA303 type of head=HEWF

hexagon head with washer face

P511BAA303 type of head=HEXW

octagonal head

P511BAA303 type of head=OTN

pan head

P511BAA303 type of head=PAN

raised cheese head

P511BAA303 type of head=CRAI

raised countersunk head

P511BAA303 type of head=RADC

round head

P511BAA303 type of head=ROH

square head

P511BAA303 type of head=SQR

square head with collar

P511BAA303 type of head=SQEC

T-head

P511BAA303 type of head=THD

triangle head with collar

P511BAA303 type of head=TRIC

internal drive

Classification property: P511BAA308 type of internal drive

12 point socket

P511BAA308 type of internal drive=12 S

cross hole

P511BAA308 type of internal drive=CRH

cross recess (type H)

P511BAA308 type of internal drive=CRR

cross recess (type Z)

P511BAA308 type of internal drive=CZT

hexagon socket

P511BAA308 type of internal drive=HXS

hexalobular socket

P511BAA308 type of internal drive=HXLS

six-spline socket

P511BAA308 type of internal drive=SSS

slot

P511BAA308 type of internal drive=SLO

square socket

P511BAA308 type of internal drive=SQS

triangle socket

P511BAA308 type of internal drive=TRS

shank

Classification property: P511BAA305 type of shank

fit shank

P511BAA305 type of shank=FIT

full shank

P511BAA305 type of shank=FLS

reduced shank

P511BAA305 type of shank=RDD

shank with square neck

P511BAA305 type of shank=SQN

shoulder

P511BAA305 type of shank=SHD

waisted shank

P511BAA305 type of shank=WID

nut

P511BAA246 thread properties(class_instance_type): P511AAA037

cap nut

P511BAA307 type of thread=MIT

domed cap(acorn) nut

P511BAA307 type of thread=MIT

hexagon castle nut

P511BAA307 type of thread=MIT

hexagon nut (style 1)

P511BAA307 type of thread=MIT

hexagon nut with collar

P511BAA307 type of thread=MIT

hexagon nut with flange

P511BAA307 type of thread=MIT

hexagon nut(style 2)

P511BAA307 type of thread=MIT

hexagon thin nut (chamfered)

P511BAA307 type of thread=MIT

hexagon thin nut (unchamfered)

P511BAA307 type of thread=MIT

octagon nut

P511BAA307 type of thread=MIT

pentagon nut

P511BAA307 type of thread=MIT

prevailing torque type all-metal hexagon nut (style 1)

P511BAA307 type of thread=MIT

prevailing torque type all-metal hexagon nut (style 2)

P511BAA307 type of thread=MIT

prevailing torque type all-metal hexagon nut with flange

P511BAA307 type of thread=MIT

prevailing torque type hexagon nut with flange, with non-metallic insert

P511BAA307 type of thread=MIT

prevailing torque type hexagon nut with non-metallic insert (style 1)

P511BAA307 type of thread=MIT

prevailing torque type hexagon nut with non-metallic insert (style 2)

P511BAA307 type of thread=MIT

round nut with holes in face

P511BAA307 type of thread=MIT

round nut with holes in side

P511BAA307 type of thread=MIT

round nut with knurl

P511BAA307 type of thread=MIT

round nut with slot in face

P511BAA307 type of thread=MIT

round nut with slots in side

P511BAA307 type of thread=MIT

slotted hexagon nut

P511BAA307 type of thread=MIT

square nut

P511BAA307 type of thread=MIT

square nut with collar

P511BAA307 type of thread=MIT

triangle nut with collar

P511BAA307 type of thread=MIT

wing nut

P511BAA307 type of thread=MIT

pin

clevis pin

clevis pin with head

clevis pin without head

grooved pin

grooved pin with countersunk head

grooved pin with round head

grooved pin, full-length parallel grooved, with chamfer

- grooved pin, full-length parallel grooved, with pilot
- grooved pin, full-length taper grooved
- grooved pin, half-length centre grooved
- grooved pin, half-length reverse taper grooved
- grooved pin, half-length taper grooved
- grooved pin, one-third-length centre grooved

parallel pin

P511BAA246 thread properties(class_instance_type): P511AAA037

- parallel pin with internal thread
  - P511BAA307 type of thread=MIT

split pin

spring pin

- spring-type straight pin, coiled
- spring-type straight pin, slotted

taper pin

P511BAA246 thread properties(class_instance_type): P511AAA037

- simple taper pin
- taper pin with external thread
  - P511BAA307 type of thread=MET
- taper pin with internal thread
  - P511BAA307 type of thread=MIT

rivet

blind rivet

- closed end blind rivet with break pull mandrel and countersunk head
- closed end blind rivet with break pull mandrel and protruding head
- open end blind rivet with break pull mandrel and countersunk head
- open end blind rivet with break pull mandrel and protruding head

full shank rivet

- semi tubular rivet
- tubular rivet
- washer
  - lock washer
    - countersunk lock washer with external teeth
    - countersunk serrated lock washer with external teeth
    - lock washer with external teeth
    - lock washer with internal teeth
    - serrated lock washer with external teeth
    - serrated lock washer with internal teeth
  - plain washer
    - plain washer with double chamfers
    - plain washer with outside chamfer
    - plain washer with square hole
    - plain washer without chamfer
    - square washer with round hole
  - spring washer
    - conical spring washer
    - curved spring washer
    - spring lock washer
    - wave spring washer
  - square taper washer
  - tab washer
    - external tab washer
    - internal tab washer
    - tab washer with long tab
    - tab washer with long tab and wing
- thread

Classification property: P511BAA307 type of thread

metric external thread

P511BAA307 type of thread=MET

metric internal thread

P511BAA307 type of thread=MIT

tapping screw thread

P511BAA307 type of thread=TST

thread forming screw thread

P511BAA307 type of thread=MEP

wood screw thread

P511BAA307 type of thread=WST

Annex F
(normative)

Computer sensible representation of the fastener dictionary

A computer sensible representation of the reference dictionary defined in this part of ISO 13584 is provided as an electronic file for computer reference.

This electronic file complies with the library integrated information model 25 defined in ISO 13584-25, conformance class 2. This physical file uses the implementation method defined in ISO 10303-21.

This electronic file can be downloaded from the following Internet location.

CNIS: http://www.cnis.gov.cn/dmis/sc4/plib511/iso13584_p511_fasteners.zip

PLIB Website:
http://www.plib.ensma.fr/plib/datas/p511_fasteners/iso13584_part511_fasteners.zip

SC4ONLINE:
http://www.tc184-sc4.org/parts/iso13584_part511_fasteners.zip

From the computer sensible representation of the dictionary, a DHTML version has been generated. It can be found at the following addresses:

CNIS: http://www.cnis.gov.cn/dmis/sc4/plib511/iso13584_p511_html_viewer.html

PLIB Website:
http://www.plib.ensma.fr/plib/datas/p511_fasteners/viewer/iso13584_part511_html_viewer.html

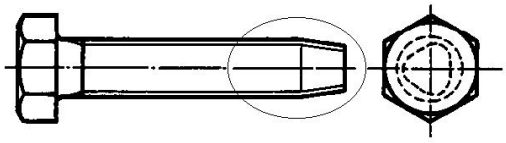
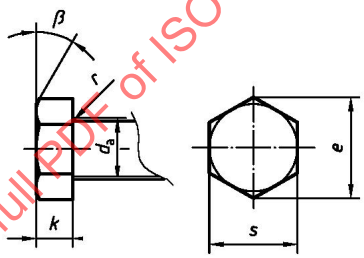
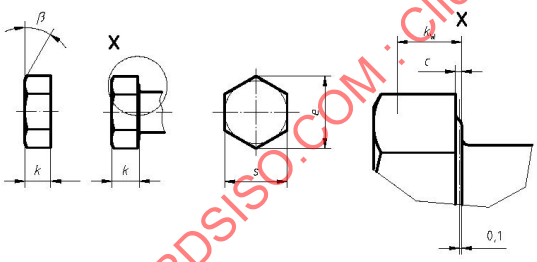
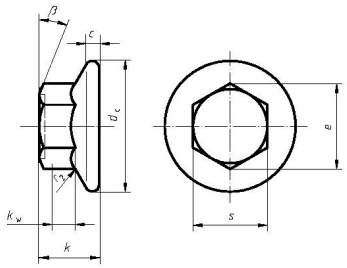
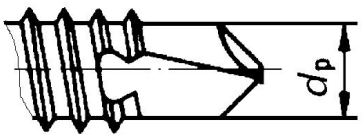
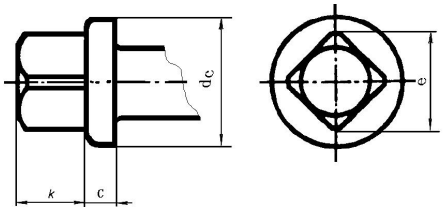
SC4ONLINE:
http://www.tc184-sc4.org/parts/iso13584_part511_html_viewer.html

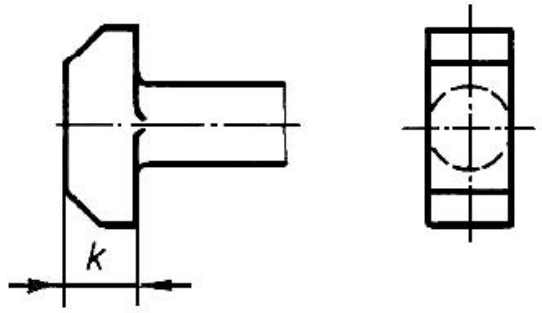
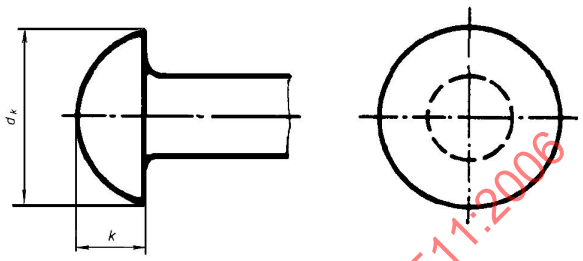
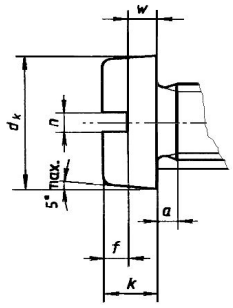
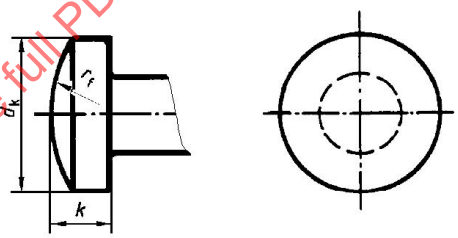
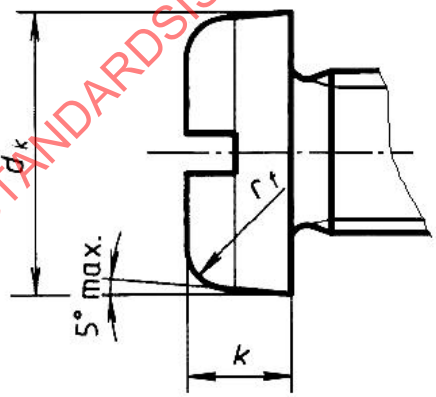
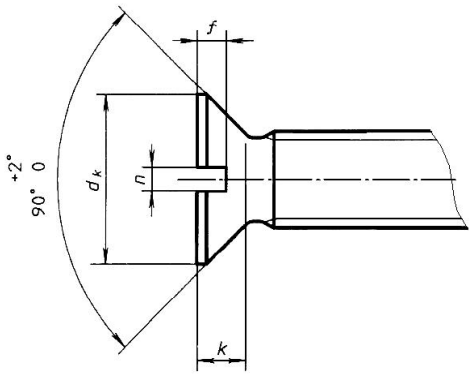
Annex G
(informative)

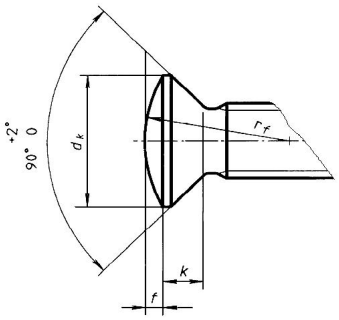
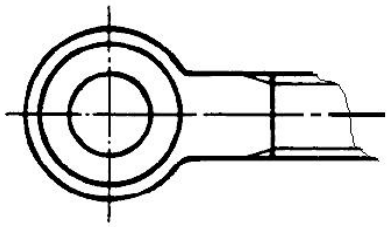
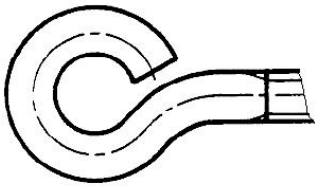
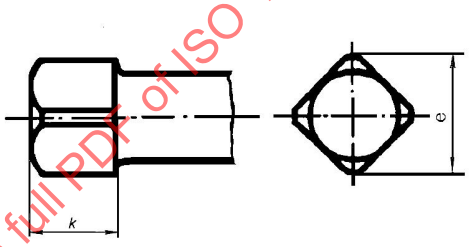
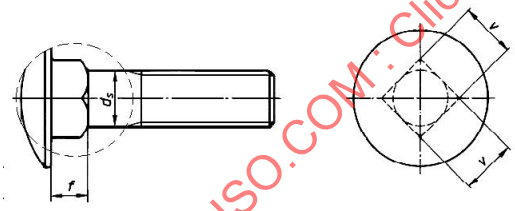
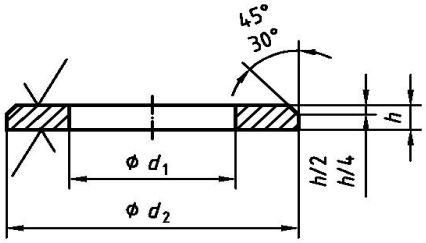
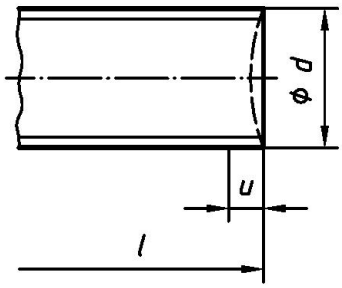
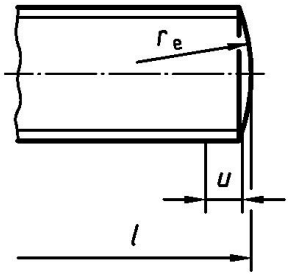
Simplified drawings of feature classes, component classes and some properties

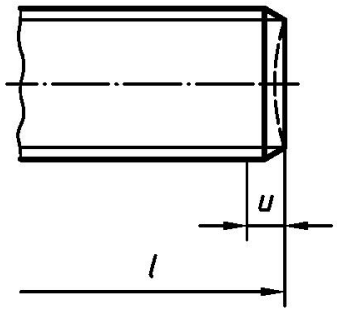
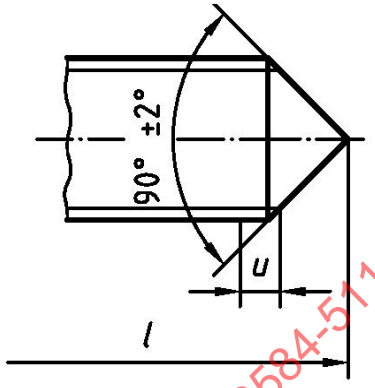
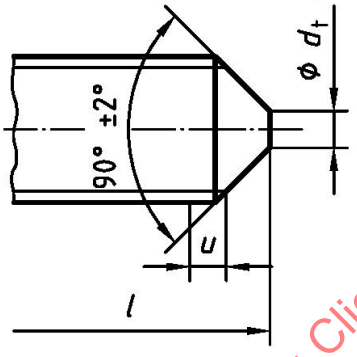
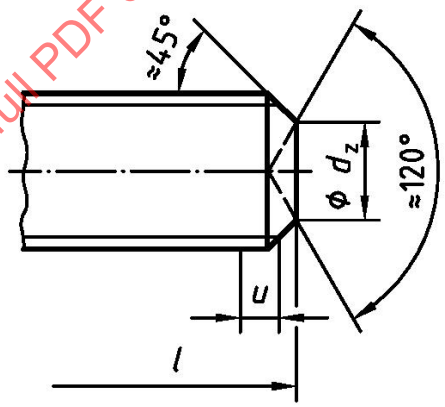
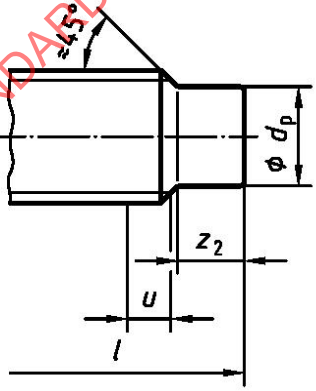
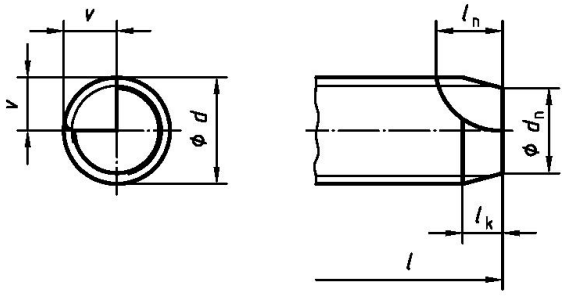
Table G.1 specifies a set of simplified drawings of feature classes, component classes and properties defined in this part of ISO 13584.

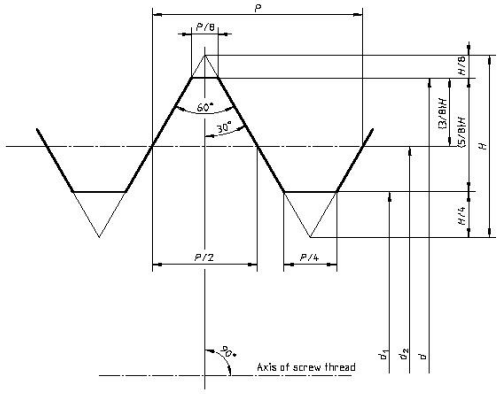
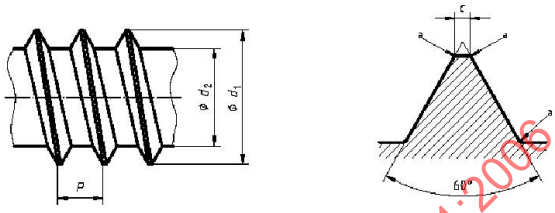
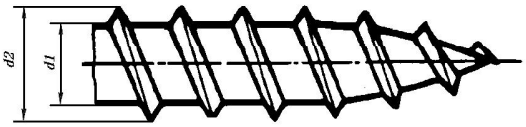
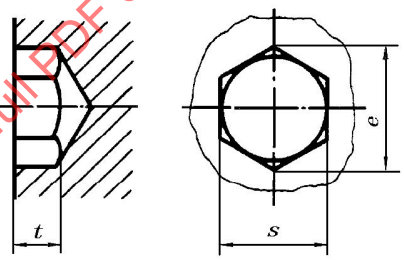
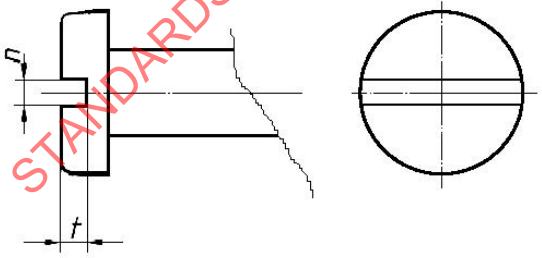
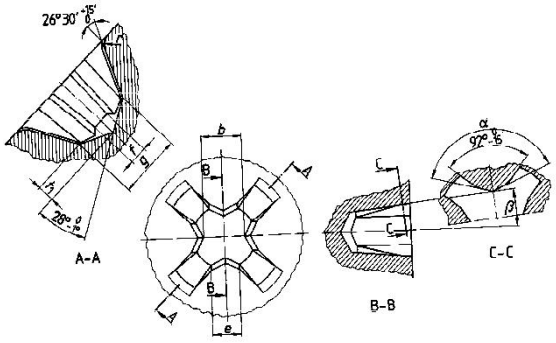
Table G.1 — Simplified drawings of classes

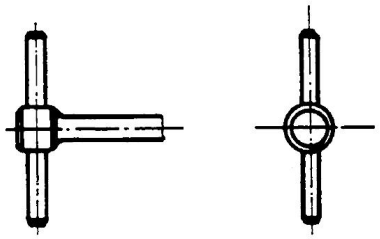
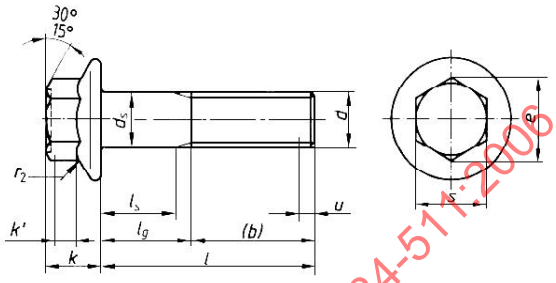
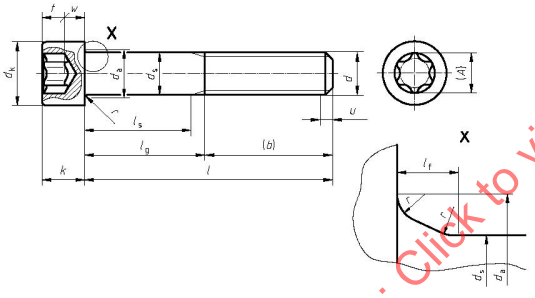
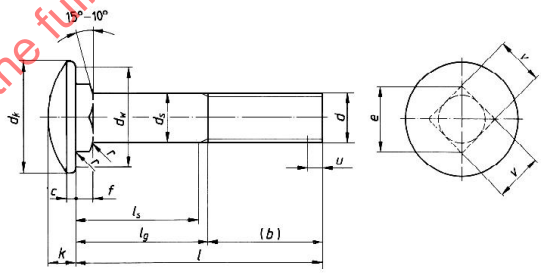
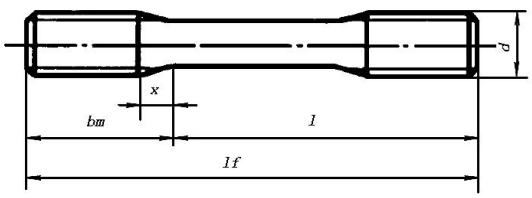
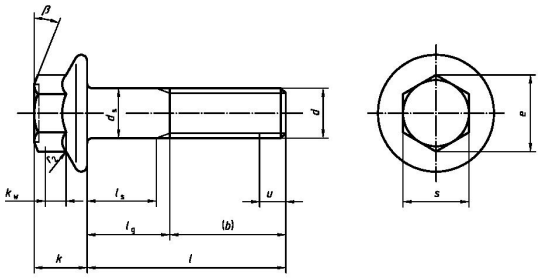
Code	Preferred Name	Code	Preferred Name
P511AAA006	end of thread forming screw	P511AAA009	hexagon head
			
P511AAA010	hexagon head with washer face	P511AAA011	hexagon head with flange
			
P511AAA012	drilling point of drilling screw	P511AAA013	square head with collar
			

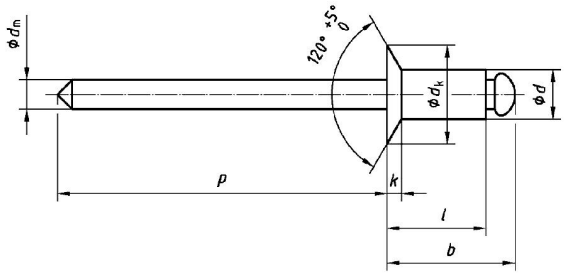
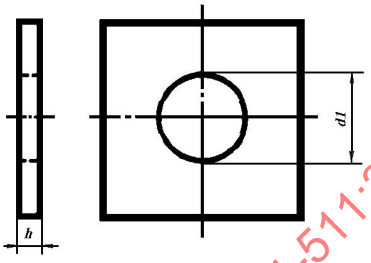
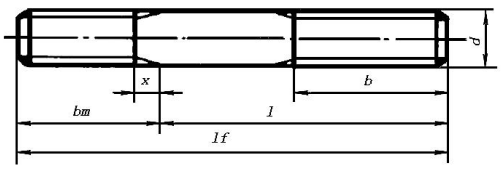
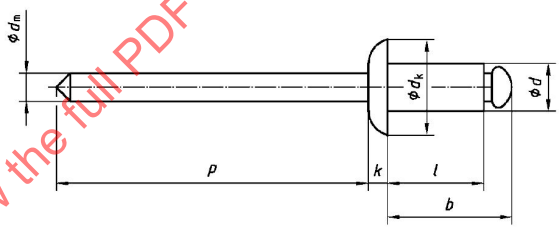
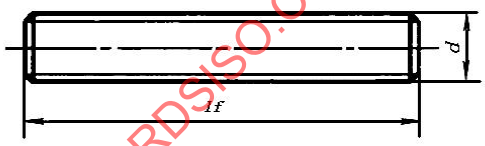
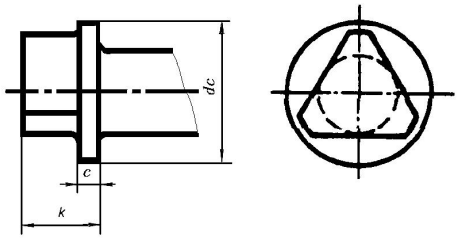
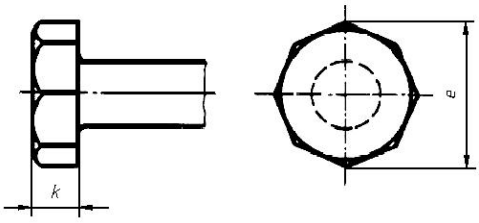
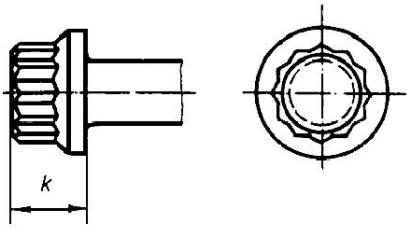
Code	Preferred Name	Code	Preferred Name
P511AAA014	T-head	P511AAA015	round head
			
P511AAA016	cheese head	P511AAA017	cheese raised head
			
P511AAA018	pan head	P511AAA019	countersunk head
			

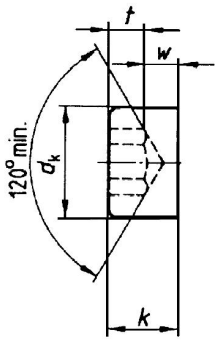
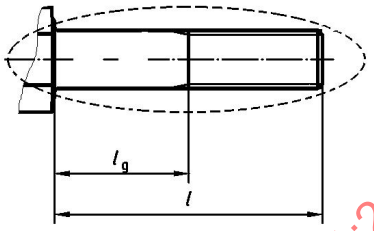
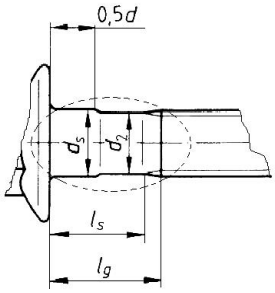
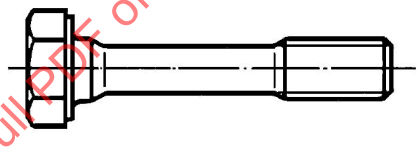
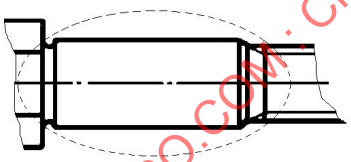
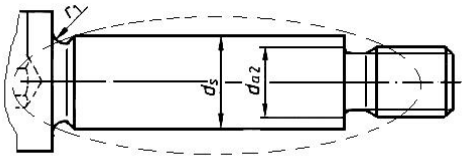
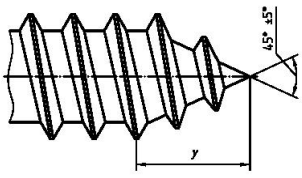
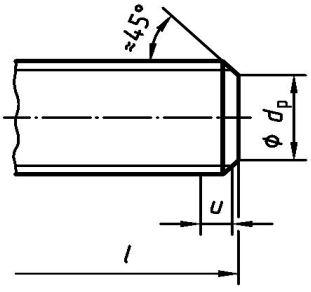
Code	Preferred Name	Code	Preferred Name
P511AAA020	raised countersunk head	P511AAA021	eye shape head
			
P511AAA022	eyelet shape head	P511AAA023	square head
			
P511AAA025	shank with square neck	P511AAA027	plain washer with outside chamfer
			
P511AAA029	as-rolled end	P511AAA030	rounded end
			

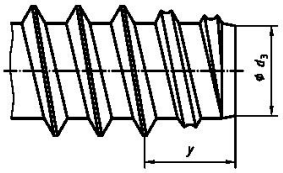
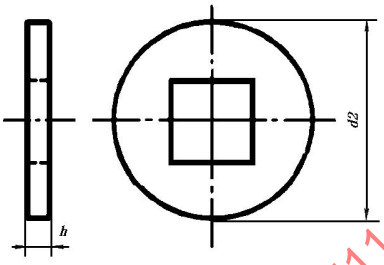
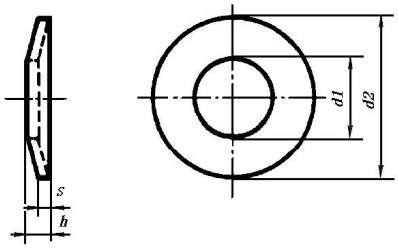
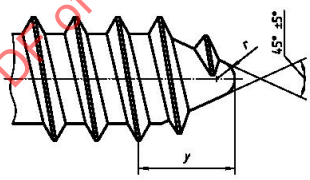
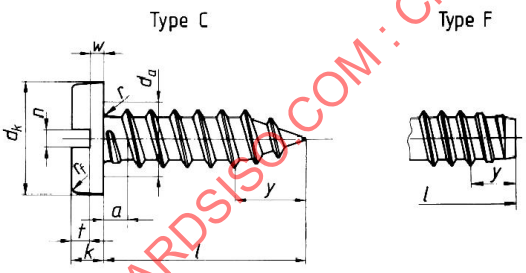
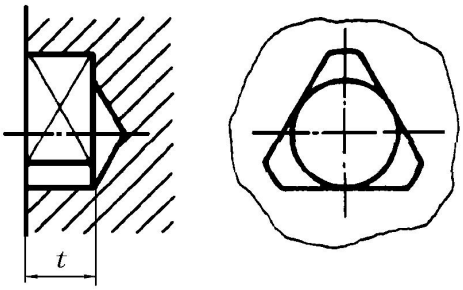
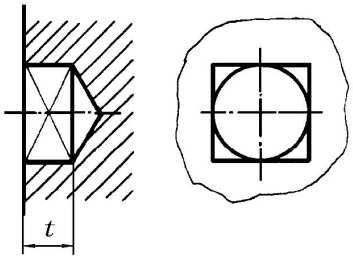
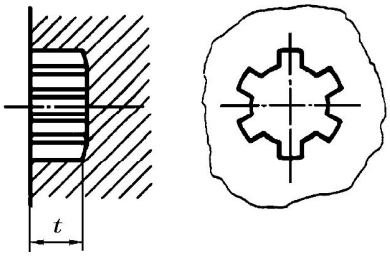
Code	Preferred Name	Code	Preferred Name
P511AAA031	chamfered end	P511AAA032	cone point
			
P511AAA033	truncated cone point	P511AAA034	cup point
			
P511AAA035	dog point	P511AAA036	scrape point
			

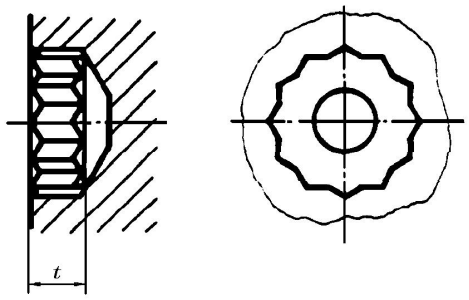
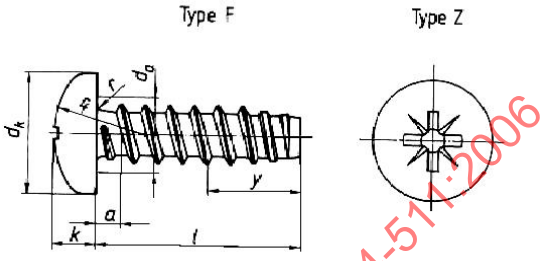
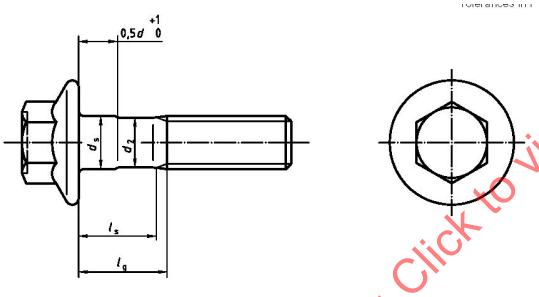
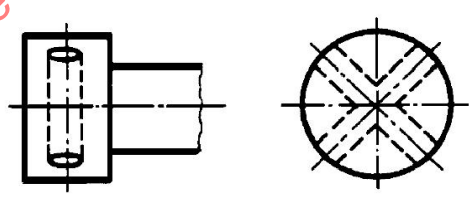
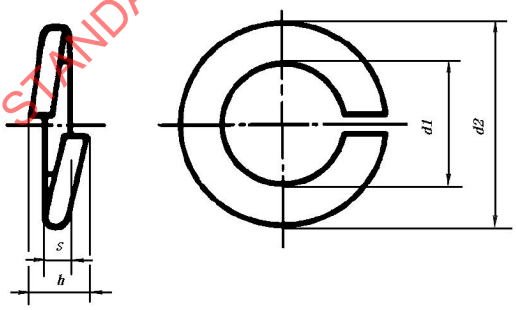
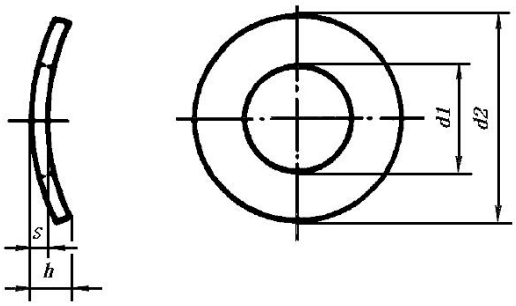
Code	Preferred Name	Code	Preferred Name
P511AAA038	metric external thread	P511AAA039	tapping screw thread
			
P511AAA041	wood screw thread	P511AAA043	hexagon socket
			
P511AAA044	slot	P511AAA045	cross recess (type H)
			

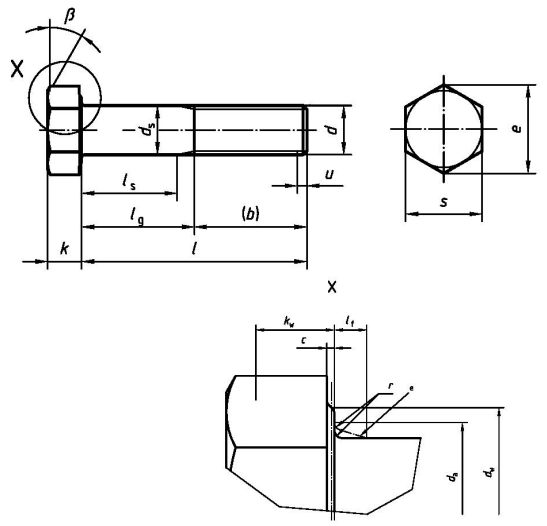
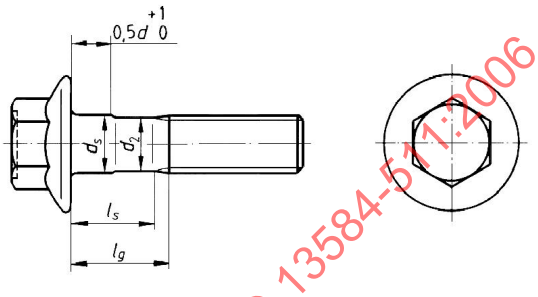
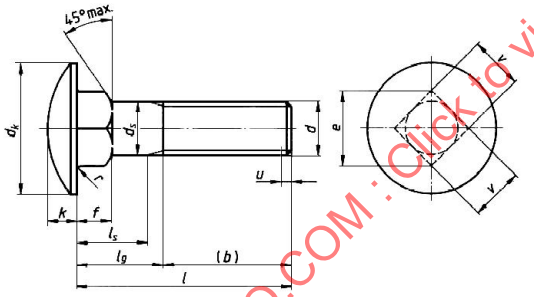
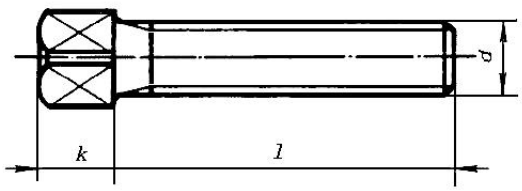
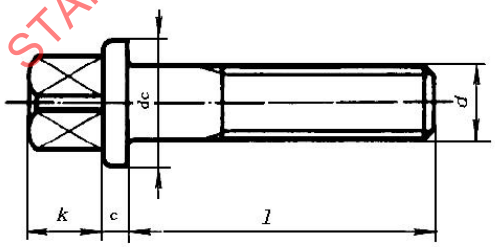
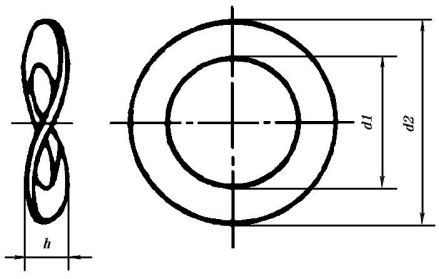
Code	Preferred Name	Code	Preferred Name
P511AAA046	head with tommy	P511AAA047	hexagon head bolt with flange, full shank
			
P511AAA050	hexalobular socket head cap screw	P511AAA051	cup head square neck bolt
			
P511AAA071	waisted stud	P511AAA081	hexagon head bolt with flange with fine pitch thread, full shank
			

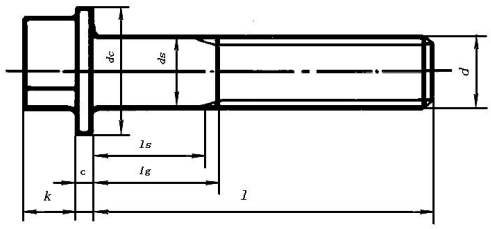
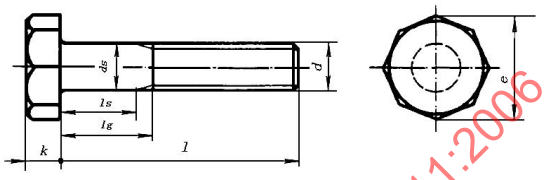
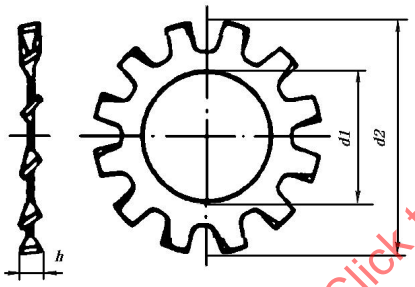
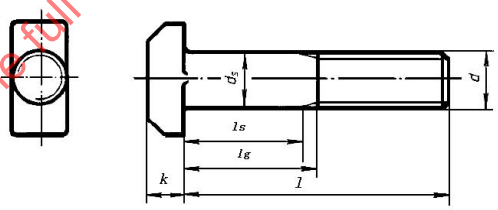
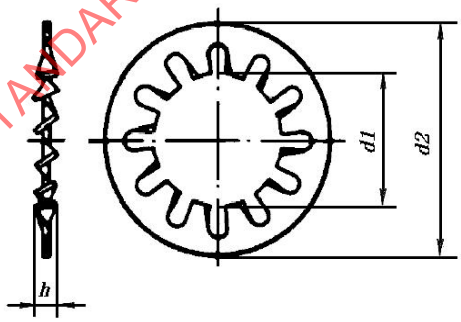
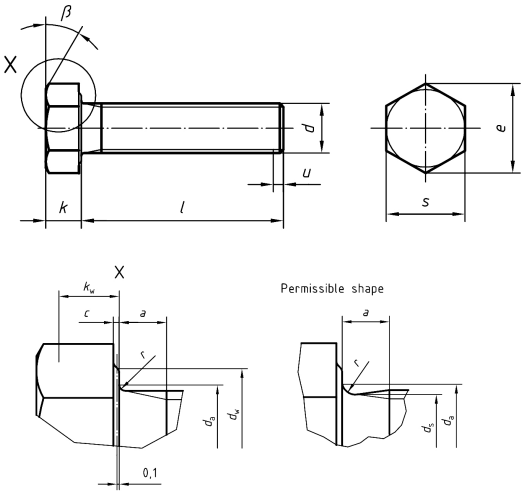
Code	Preferred Name	Code	Preferred Name
P511AAA082	open end blind rivet with break pull mandrel and countersunk head	P511AAA089	square washer with round hole
			
P511AAA091	stud with full shank	P511AAA093	open end blind rivet with break pull mandrel and protruding head
			
P511AAA099	stud bolt	P511AAA119	triangle head with collar
			
P511AAA120	octagonal head	P511AAA121	12 point flange head
			

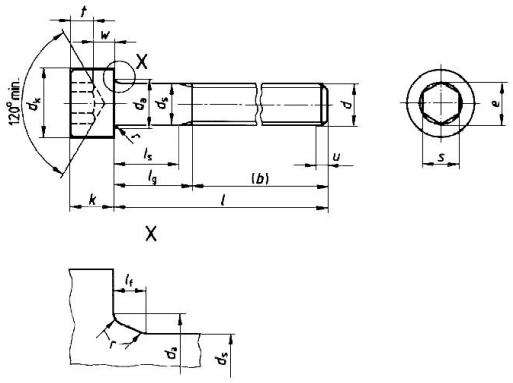
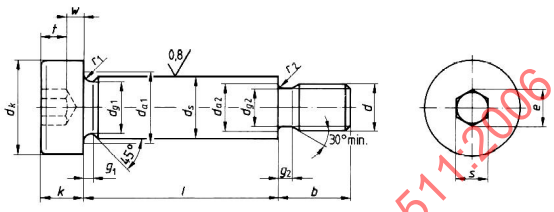
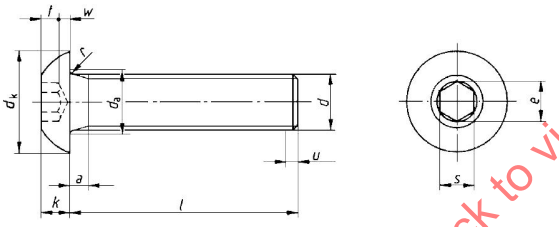
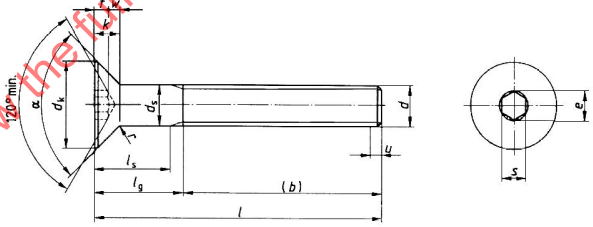
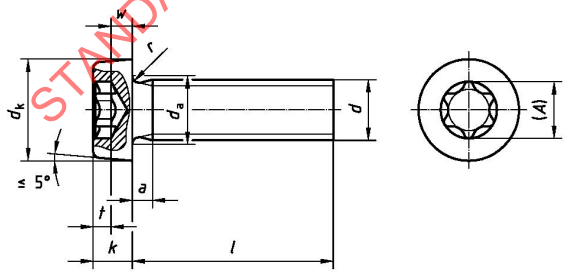
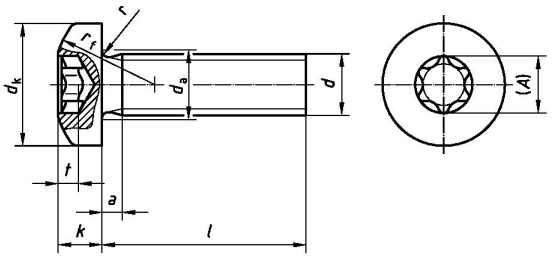
Code	Preferred Name	Code	Preferred Name
P511AAA122	cylindrical head	P511AAA125	full shank
			
P511AAA126	reduced shank	P511AAA127	waisted shank
			
P511AAA128	fit shank	P511AAA129	shoulder
			
P511AAA130	cone end (type C) of tapping screw	P511AAA131	flat point
			

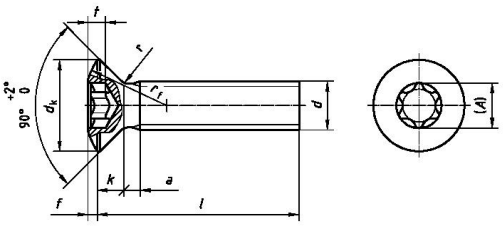
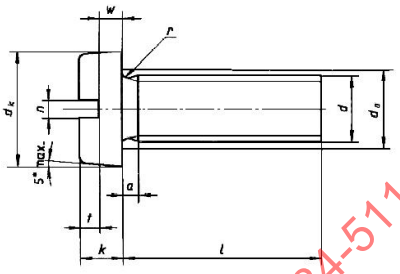
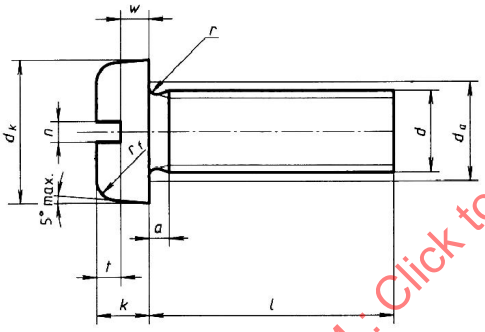
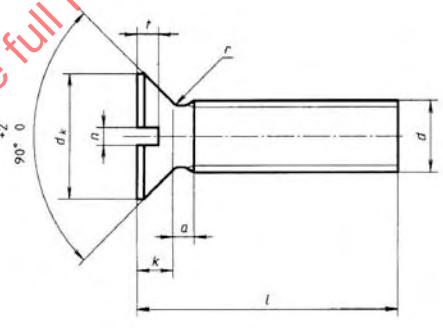
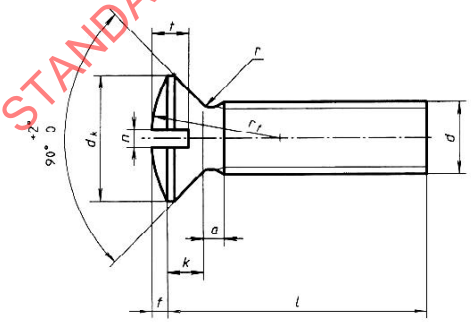
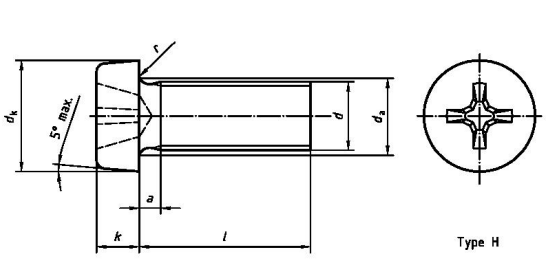
Code	Preferred Name	Code	Preferred Name
P511AAA132	flat end (type F) of tapping screw	P511AAA136	plain washer with square hole
			
P511AAA137	conical spring washer	P511AAA138	rounded end (type R) of tapping screw
			
P511AAA139	slotted pan head tapping screw with a flat end	P511AAA140	triangle socket
			
P511AAA141	square socket	P511AAA142	six-spline socket
			

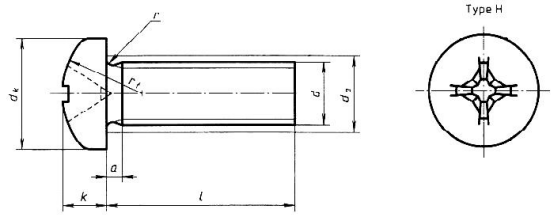
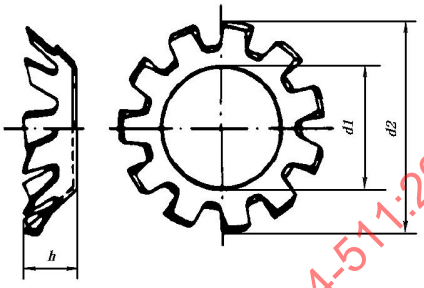
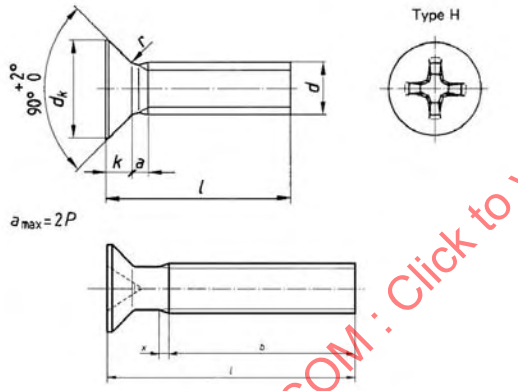
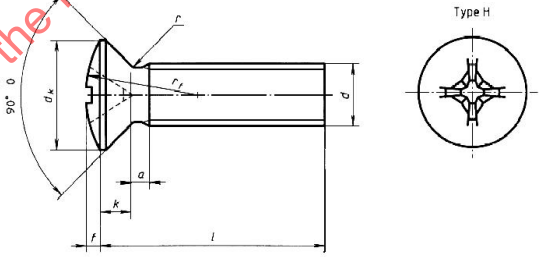
Code	Preferred Name	Code	Preferred Name
P511AAA143	12 point socket	P511AAA144	cross recessed (type Z) pan head tapping screw with a flat end
			
P511AAA146	hexagon head bolt with flange with fine pitch thread, reduced shank	P511AAA147	cross hole
			
P511AAA148	spring lock washer	P511AAA150	curved spring washer
			

Code	Preferred Name	Code	Preferred Name
P511AAA156	hexagon head bolt	P511AAA157	hexagon head bolt with flange, reduced shank
			
P511AAA158	cup head square neck bolt with large head	P511AAA159	square head bolt
			
P511AAA160	square head bolt with collar	P511AAA161	wave spring washer
			

Code	Preferred Name	Code	Preferred Name
P511AAA162	triangle head bolt	P511AAA163	octagon head bolt
			
P511AAA164	lock washer with external teeth	P511AAA166	T-head bolt
			
P511AAA168	lock washer with internal teeth	P511AAA169	hexagon head screw
			

Code	Preferred Name	Code	Preferred Name
P511AAA170	hexagon socket head cap screw	P511AAA171	hexagon socket head shoulder screw
			
P511AAA172	hexagon socket button head screw	P511AAA173	hexagon socket countersunk head screw
			
P511AAA174	hexalobular socket cheese head screw	P511AAA175	hexalobular socket pan head screw
			

Code	Preferred Name	Code	Preferred Name
P511AAA176	hexalobular socket raised countersunk head screw	P511AAA177	slotted cheese head screw
			
P511AAA178	slotted pan head screw	P511AAA179	slotted countersunk flat head screw
			
P511AAA180	slotted raised countersunk head screw	P511AAA181	cross recessed (type H) cheese head screw
			

Code	Preferred Name	Code	Preferred Name
P511AAA182	cross recessed (type H) pan head screw	P511AAA183	countersunk lock washer with external teeth
			
P511AAA184	countersunk flat head screw with cross recess (type H)	P511AAA185	raised countersunk head screw with cross recess (type H)
			
P511AAA187	slotted headless screw with shank	P511AAA188	hexagon socket set screw with flat point