INTERNATIONAL STANDARD

ISO 21107

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Rolling bearings and spherical plain bearings — Search structure for electronic media — Characteristics and performance criteria identified by attribute vocabulary

Roulements et rotules lisses — Structure de recherche pour supports électroniques — Caractéristiques et critères de performance identifiés par un vocabulaire particulier

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Foreword

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

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

The main task of technical committees is to prepare International Standards. 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 21107 was prepared by Technical Committee ISO/TC 4, *Rolling bearings*.

Introduction

Electronic media are used more and more when purchasing and selling products. This also applies to the rolling bearing industry, where it can be expected that a large proportion of sales will be processed via electronic media.

One potential problem when ordering bearings is that designations, especially designations for special executions and variants, differ from one bearing supplier to another. For the electronic media business there is, therefore, a need for customers and distributors to have available a system that makes it possible to identify a bearing quickly and easily when the bearing designation is not known.

This can be achieved using a computerized search structure. The user responds to specified simple questions on a computer screen about visual bearing components (dimensions, number of rolling element rows, cage, etc.) and, if needed, about performance criteria and other characteristics. Based on these input values, the computer provides possible bearing designations and other information.

In order to facilitate programming and provide the user with the same and consistent input vocabulary, independent of supplier, this International Standard provides a standardized search structure for electronic media with a vocabulary for identifying bearings, bearing components and accessories based on ISO 5593 and other ISO/TC 4 International Standards.

When creating their own search structures, some bearing manufacturers and/or distributors may decide they have a need to customize certain attributes or attribute options in order to refine the selection of the possible bearing designation(s) that will meet the purchaser's requirements. If this is done, then, where possible, it is recommended that the terminology of ISO 5593 and other appropriate ISO documents for rolling bearings be used.

SI units are used in ISO International Standards, but it is recognized that the attributes in this document can also be used for inch dimension products.

Rolling bearings and spherical plain bearings — Search structure for electronic media — Characteristics and performance criteria identified by attribute vocabulary

1 Scope

This International Standard establishes a search structure and an attribute vocabulary for identifying rolling bearings, spherical plain bearings, bearing housings and accessories, primarily with the aid of electronic media, such as the Internet.

The methodology for using this International Standard in search programs is not included.

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 reference document (including any amendments) applies.

ISO 199, *Rolling bearings — Thrust bearings — Tolerances*

ISO 492, *Rolling bearings — Radial bearings — Tolerances*

ISO 3290, *Rolling bearings — Balls — Dimensions and tolerances*

ISO 5593, *Rolling bearings — Vocabulary*

ISO 5753, *Rolling bearings — Radial internal clearance*

3 Terms and definitions

For the purposes of this document, the terms and definitions in ISO 199, ISO 492, ISO 3290, ISO 5593, ISO 5753 and the following apply.

3.1
noun
highest level of classification

3.2
modifier
sub-classification of a noun

3.3
attribute
characteristic or feature used to identify a product in detail

NOTE Product and component designations used in ISO/TC 4 International Standards have been used throughout this International Standard as the preferred choice.

4 Description and use of the search structure for electronic media

4.1 General

When Internet and other electronic media are used for ordering products, a system is needed to define a product easily and correctly, even when a product specification is not complete or is missing. This International Standard is built up to meet this requirement and makes it possible to identify dimensions, characteristics and demands on performance of rolling bearings, spherical plain bearings, bearing housings and accessories with a standardized vocabulary.

Using the Internet, for instance, a purchaser can go to the “Home page” of a bearing manufacturer or a distributor and select a search program (individually established by each bearing manufacturer or distributor, but based on this International Standard). Then, by answering given questions (with specified alternative options), obtain a list of one or more product options with designations, availability, prices, etc.

The advantage of using a standardized search structure is that the purchaser always works with the same vocabulary, independent of manufacturer, and the risk of misunderstanding and confusion is reduced. As most attributes of interest are included in the search structure, this makes programming considerably easier.

4.2 Layout of the search structure

The layout of the search criteria follows the general structure as used in the Internet environment, i.e. an XML (extensible mark-up language) specification for defining the data structure.

The data structure is built up in the way shown below and illustrated in Figure 1 and Table 1.

There are three levels of classification – noun, modifier and attribute as defined in Clause 3.

Attributes and **Attribute options** to each attribute cover the information needed to define a product and are specified in 5.1 to 5.10. These attributes and attribute options are based on typical product ranges which can be found in manufacturers' catalogues and brochures.

NOTE In the Tables 2 to 94 the **Attributes** are shown in the row below the heading “Attributes and Attribute options”, and the **Attribute options** are shown in the rows with option numbers.

Each user of this International Standard can select the applicable attributes and attribute options from this International Standard, and add further attributes and attribute options if needed. Additional attribute options, either individually or as a group, can also be included under the attribute option **Other**. In general, the attribute option “Other” is not shown in the tables, except for the attributes “Tolerance” and “Clearance” with the only attribute option “Normal”.

It is possible to identify a product on the basis of noun, modifier, attributes and attribute options.

It is important to realise that the attribute options shown in 5.1 to 5.10 illustrate possible options of each attribute. All attribute options are, however, not always needed to cover the product range of a supplier. Besides, all attribute options of one attribute can sometimes not logically be used. Taking an example from 5.2.1 Cylindrical roller bearings, a one row bearing with two outer ring ribs is selected. Then the attribute option for selecting “Inner ring with two ribs” is to be excluded, as such a bearing is not a bearing type in regular production.

For the user this is, however, not a problem when selection is made from the attribute options presented in a search program. The supplier determines the product range attribute options, and the programmer has to consider the logic in the attribute options presented, so that combinations that are not possible are excluded during the selection process.

An example of how to use the search structure is shown in Annex A.

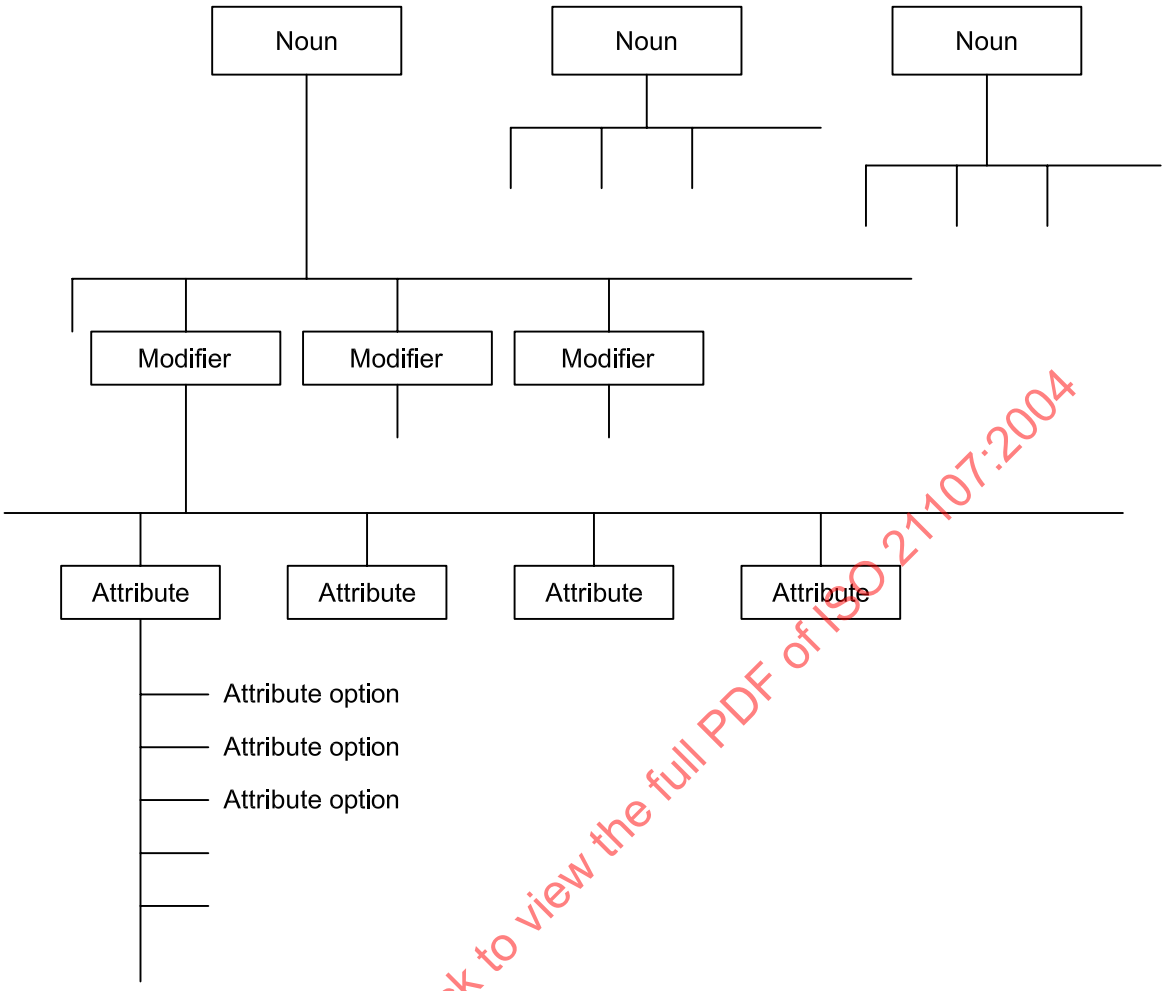

Figure 1 — Search structure

Table 1

Noun	Modifier
Ball bearing	Deep groove radial Angular contact radial Angular contact thrust Thrust Self-aligning
Roller bearing	Cylindrical radial Cylindrical thrust Needle radial Needle thrust Spherical radial Spherical thrust Tapered radial Tapered thrust
Insert bearing	Bearing only Bearing unit Housing Accessory
Combined bearing	Radial needle roller/thrust ball or Radial needle roller/thrust roller
Rolling bearing component	Ball Cylindrical roller Needle roller Thrust collar (L-shaped) Aligning seat washer (thrust ball bearing) Inner ring (special execution for needle roller bearing)
Linear bearing	[a]
Bearing housing and housing accessory	Housing Accessory Housing unit
Bearing accessory	Tapered sleeve Locknut and locking device
Track roller	Yoke-type Stud-type Accessory
Plain bearing	Spherical radial Spherical thrust Rod end

[a] International Standard in preparation.

5 Search structure for electronic media

5.1 Ball bearings

5.1.1 Deep groove ball bearings

Noun: Ball bearing

Modifier: Deep groove radial

Attributes and attribute options: See Tables 2 to 5

Table 2

Options	Attributes and attribute options				
	Number of rows	Bore type	Cage	Filling slot	Relubrication feature
1	One	Cylindrical	Sheet metal	No	Without
2	Two	Tapered	Non-metallic	Yes	With
3			Machined metal		
4			Without		

Table 3

Options	Attributes and attribute options				
	Sealing	Seal type	Lubricant (in bearing)	Locating feature, bearing outside	Bore diameter
1	None	Contact	None	None	Value/Range
2	Seal on one side	Non-contact	Grease	Snap ring groove	
3	Shield on one side		Solid oil	Snap ring (fitted)	
4	Seal on both sides			Retaining notch	
5	Shield on both sides			Flange	
6	Seal on one side, shield on the other				

Table 4

Options	Attributes and attribute options				
	Outside diameter	Width	Matched arrangement	Radial internal clearance	Material/Treatment
1	Value/Range	Value/Range	No	Group N	Bearing steel
2			Face-to-face (X)	Group 2 (C2)	Stainless steel
3			Back-to-back (O)	Group 3 (C3)	Ceramic
4			Tandem	Group 4 (C4)	Hybrid
5				Group 5 (C5)	High temperature steel
6					Dimensionally stabilized
7					Coated
8					Insulated

Table 5

Options	Attributes and attribute options	
	Tolerance	Outer ring with only one raceway shoulder
1	Normal (PN)	Removable outer ring
2	Class 6 (P6)	Non-removable outer ring
3	Class 5 (P5)	
4	Class 4 (P4)	
5	Class 2 (P2)	

5.1.2 Angular contact ball bearings

Noun: Ball bearing

Modifier: Angular contact radial

Attributes and attribute options: See Tables 6 to 10.

Table 6

Options	Attributes and attribute options				
	Type	Number of rows	Arrangement of contact angle	Ring type	Cage
1	Normal contact (two-point contact)	One	Back-to-back (O)	One-piece inner and outer rings	Non-metallic
2	Four-point contact	Two	Face-to-face (X)	Two-piece inner ring	Sheet metal
3	Three-point contact			Two-piece outer ring	Machined metal
4					Without

Table 7

Options	Attributes and attribute options				
	Sealing	Seal type	Relubrication feature	Lubricant (in bearing)	Locating feature, bearing outside
1	None	Contact	Without	None	None
2	Seal on one side	Non-contact	With	Grease	Snap ring groove
3	Shield on one side			Solid oil	Snap ring (fitted)
4	Seal on both sides				Retaining notch
5	Shield on both sides				Flange
6	Seal on one side, shield on the other				

Table 8

Options	Attributes and attribute options				
	Bore diameter	Outside diameter	Width	Contact angle	Axial internal clearance, single bearing
1	Value/Range	Value/Range	Value/Range	Value/Range	Group N
2					Group 2 (C2)
3					Group 3 (C3)
4					Group 4 (C4)
5					Group 5 (C5)

Table 9

Options	Attributes and attribute options				
	Single bearing, universally matchable (delivered individually)	Matched arrangement	Number of matched bearings	Matched condition, axial internal clearance/preload	Tolerance
1	No	No	Two	Small clearance	Normal (PN)
2	Yes	Face-to-face (X)	Three	Medium clearance	Class 6 (P6)
3		Back-to-back (O)	Four	Large clearance	Class 5 (P5)
4		Tandem	Five	Light preload	Class 4 (P4)
5		Combination of back-to-back (O) and tandem		Medium preload	Class 2 (P2)
6		Combination of face-to-face (X) and tandem		Heavy preload	
7				Special clearance	
8				Special preload	

Table 10

Options	Attributes and attribute options
	Material/Treatment
1	Bearing steel
2	Stainless steel
3	Ceramic
4	Hybrid
5	High temperature steel
6	Dimensionally stabilized
7	Coated
8	Insulated

5.1.3 Thrust angular contact ball bearings

Noun: Ball bearing

Modifier: Angular contact thrust

Attributes and attribute options: See Tables 11 to 14.

Table 11

Options	Attributes and attribute options				
	Number of rows	**Housing washer type**	**Cage**	**Sealing**	**Seal type**
1	One	One-piece	Non-metallic	None	Contact
2	Two	Two-piece	Sheet metal	Seal on one side	Non-contact
3			Machined metal	Shield on one side	
4			Without	Seal on both sides	
5				Shield on both sides	
6				Seal on one side, shield on the other	

Table 12

Options	Attributes and attribute options				
	Axial loading	**Relubrication feature**	**Lubricant (in bearing)**	**Locating feature, bearing outside**	**Bore diameter**
1	Single-direction	Without	None	None	Value/Range
2	Double-direction	With	Grease	Snap ring groove	
3			Solid oil	Snap ring (fitted)	
4				Retaining notch	
5				Flange	

Table 13

Options	Attributes and attribute options				
	Outside diameter	**Height**	**Preload, single bearing**	**Single bearing, universally matchable (delivered individually)**	**Matched arrangement**
1	Value/Range	Value/Range	Light	No	No
2			Medium	Yes	Face-to-face (X)
3			Heavy		Back-to-back (O)
4					Tandem
5					Combination of back-to-back (O) and tandem
6					Combination of face-to-face (X) and tandem

Table 14

Options	Attributes and attribute options				
	Number of matched bearings	Matched condition, axial internal clearance/preload	Tolerance	Contact angle	Material/Treatment
1	Two	Small clearance	Normal (PN)	Value/Range	Bearing steel
2	Three	Medium clearance	Class 6 (P6)		Stainless steel
3	Four	Large clearance	Class 5 (P5)		Ceramic
4	Five	Light preload	Class 4 (P4)		Hybrid
5		Medium preload	Class 2 (P2)		High temperature steel
6		Heavy preload			Dimensionally stabilized
7		Special clearance			Coated
8		Special preload			Insulated

5.1.4 Thrust ball bearings

Noun: Ball bearing

Modifier: Thrust

Attributes and attribute options: See Tables 15 and 16.

Table 15

Options	Attributes and attribute options				
	Housing washer type	Number of rows	Axial loading	Cage	Bore diameter
1	Flat back face	One	Single-direction	Sheet metal	Value/Range
2	Spherical back face	Two	Double-direction	Machined metal	
3				Non-metallic	

Table 16

Options	Attributes and attribute options			
	Outside diameter	Height	Tolerance	Material/Treatment
1	Value/Range	Value/Range	Normal (PN)	Bearing steel
2			Class 6 (P6)	Stainless steel
3			Class 5 (P5)	Ceramic
4			Class 4 (P4)	Hybrid
5				High temperature steel
6				Dimensionally stabilized
7				Coated
8				Insulated

5.1.5 Self-aligning ball bearings

Noun: Ball bearing

Modifier: Self-aligning

Attributes and attribute options: See Tables 17 to 19.

Table 17

Options	Attributes and attribute options				
	Bore type	**Cage**	**Sealing**	**Seal type**	**Relubrication feature**
1	Cylindrical	Sheet metal	None	Contact	Without
2	Tapered	Machined metal	Seal on one side	Non-contact	With
3		Non-metallic	Shield on one side		
4			Seal on both sides		
5			Shield on both sides		

Table 18

Options	Attributes and attribute options				
	Lubricant (in bearing)	**Locating feature, bearing outside**	**Bore diameter**	**Outside diameter**	**Width**
1	None	None	Value/Range	Value/Range	Value/Range
2	Grease	Snap ring groove			
3	Solid oil	Snap ring (fitted)			
4		Retaining notch			

Table 19

Options	Attributes and attribute options		
	Radial internal clearance	**Tolerance**	**Material/Treatment**
1	Group N	Normal (PN)	Bearing steel
2	Group 2 (C2)	Class 6 (P6)	Stainless steel
3	Group 3 (C3)	Class 5 (P5)	Ceramic
4	Group 4 (C4)	Class 4 (P4)	Hybrid
5	Group 5 (C5)	Class 2 (P2)	High temperature steel
6			Dimensionally stabilized
7			Coated
8			Insulated

5.2 Roller bearings

5.2.1 Cylindrical roller bearings

Noun: Roller bearing

Modifier: Cylindrical radial

Attributes and attribute options: See Tables 20 to 23.

Table 20

Options	Attributes and attribute options				
	Number of rows	Bearing part	Number of ribs, outer ring	Number of ribs, inner ring	Loose side ring
1	One	Complete bearing	Two	None	None
2	Two	Bearing without inner ring	None	Two	Loose rib (flat washer)
3	Three	Bearing without outer ring	One	One	Thrust collar (L-shaped)
4	Four	Outer ring	Three	Three	
5		Inner ring			
6		Roller and cage assembly			

Table 21

Options	Attributes and attribute options				
	Bore type	Cage	Locating feature, bearing outside	Relubrication feature	Bore diameter
1	Cylindrical	Non-metallic	None	Without	Value/Range
2	Tapered	Sheet metal	Snap ring groove	With	
3		Machined metal	Snap ring (fitted)		
4		Without	Retaining notch		
5			Flange		

Table 22

Options	Attributes and attribute options				
	Outside diameter	Width	Radial internal clearance	Tolerance	Lubricant (in bearing)
1	Value/Range	Value/Range	Group N	Normal (PN)	None
2			Group 2 (C2)	Class 6 (P6)	Grease
3			Group 3 (C3)	Class 5 (P5)	Solid oil
4			Group 4 (C4)	Class 4 (P4)	
5			Group 5 (C5)	Class 2 (P2)	

Table 23

Options	Attributes and attribute options		
	Sealing	Seal type	Material/Treatment
1	None	Contact	Bearing steel
2	Seal on one side	Non-contact	Stainless steel
3	Shield on one side		Ceramic
4	Seal on both sides		Hybrid
5	Shield on both sides		High temperature steel
6	Seal on one side, shield on the other		Dimensionally stabilized
7			Coated
8			Insulated

5.2.2 Thrust cylindrical roller bearings

Noun: Roller bearing

Modifier: Cylindrical thrust

Attributes and attribute options: See Tables 24 and 25.

Table 24

Options	Attributes and attribute options				
	Bearing part	Cage	Bore diameter	Outside diameter	Height
1	Complete bearing	Non-metallic	Value/Range	Value/Range	Value/Range
2	Roller and cage assembly	Machined metal			
3	Shaft washer				
4	Housing washer				
5	Central washer				

Table 25

Options	Attributes and attribute options		
	Tolerance	Axial loading	Number of rows
1	Normal (PN)	Single-direction	One
2	Class 6 (P6)	Double-direction	Two
3	Class 5 (P5)		
4	Class 4 (P4)		

5.2.3 Needle roller bearings

Noun: Roller bearing

Modifier: Needle radial

Attributes and attribute options: See Tables 26 to 29.

Table 26

Options	Attributes and attribute options				
	Outer ring type	Bearing part	Cage	Sealing	Seal type
1	Machined (solid)	Complete bearing	With	None	Contact
2	Drawn cup with open ends	Bearing without inner ring	Without	Seal on one side	Non-contact
3	Drawn cup with one closed end	Roller and cage assembly		Seal on both sides	
4		Inner ring			

Table 27

Options	Attributes and attribute options				
	Radial internal clearance	Bore diameter	Outside diameter	Width	Tolerance
1	Group N	Value/Range	Value/Range	Value/Range	Normal (PN)
2	Group 2 (C2)				Class 6 (P6)
3	Group 3 (C3)				Class 5 (P5)
4	Group 4 (C4)				

Table 28

Options	Attributes and attribute options				
	Relubrication feature	Lubricant (in bearing)	Number of ribs, outer ring	Number of rows	Aligning feature
1	With	None	Two	One	Without
2	Without	Grease	Three	Two	With
3			None		

Table 29

Options	Attributes and attribute options
	Material/Treatment
1	Bearing steel
2	Stainless steel
3	Coated

5.2.4 Thrust needle roller bearings

Noun: Roller bearing

Modifier: Needle thrust

Attributes and attribute options: See Tables 30 and 31.

Table 30

Options	Attributes and attribute options				
	Bearing part	**Cage**	**Bore diameter**	**Outside diameter**	**Height**
1	Roller and cage assembly	Sheet metal	Value/Range	Value/Range	Value/Range
2	Thrust washer	Non-metallic			
3	Shaft washer				
4	Housing washer				
5	Roller and cage assembly with washer having centring feature				
6	Complete bearing				

Table 31

Options	Attribute and attribute options
	Roller grade
1	G2
2	G3
3	G5

5.2.5 Spherical roller bearings

Noun: Roller bearing

Modifier: Spherical radial

Attributes and attribute options: See Tables 32 to 34.

Table 32

Options	Attributes and attribute options				
	Number of rows	**Bore type**	**Cage**	**Relubrication feature**	**Locating feature, bearing outside**
1	Two	Cylindrical	Sheet metal	With	None
2	One	Tapered	Machined metal	Without	Snap ring groove
3			Non-metallic		Snap ring (fitted)
4					Retaining notch

Table 33

Options	Attributes and attribute options				
	Sealing	**Seal type**	**Bore diameter**	**Outside diameter**	**Width**
1	None	Contact	Value/Range	Value/Range	Value/Range
2	Seal on one side	Non-contact			
3	Shield on one side				
4	Seal on both sides				
5	Shield on both sides				
6	Seal on one side, shield on the other				

Table 34

Options	Attributes and attribute options			
	Lubricant (in bearing)	**Radial internal clearance**	**Tolerance**	**Material/Treatment**
1	None	Group N	Normal (PN)	Bearing steel
2	Grease	Group 2 (C2)	Class 6 (P6)	Stainless steel
3	Solid oil	Group 3 (C3)	Class 5 (P5)	Ceramic
4		Group 4 (C4)	Class 4 (P4)	Hybrid
5		Group 5 (C5)		High temperature steel
6				Dimensionally stabilized
7				Coated
8				Insulated

5.2.6 Thrust spherical roller bearings

Noun: Roller bearing

Modifier: Spherical thrust

Attributes and attribute options: See Tables 35 and 36.

Table 35

Options	Attributes and attribute options				
	Cage	Locating feature, bearing outside	Bore diameter	Outside diameter	Height
1	Machined metal	None	Value/Range	Value/Range	Value/Range
2	Sheet metal	Retaining notch			
3	Non-metallic				

Table 36

Options	Attributes and attribute options	
	Tolerance	Material/Treatment
1	Normal (PN)	Bearing steel
2	Class 6 (P6)	Stainless steel
3	Class 5 (P5)	Ceramic
4		Hybrid
5		High temperature steel
6		Dimensionally stabilized
7		Coated
8		Insulated

5.2.7 Tapered roller bearings

Noun: Roller bearing

Modifier: Tapered radial

Attributes and attribute options: See Tables 37 to 41.

Table 37

Options	Attributes and attribute options				
	Number of rows	Arrangement of contact angle	Bearing part	Bore type	Single-row bearing for special pre-set adjustment arrangements
1	One	Face-to-face (X)	Complete bearing	Cylindrical	Yes
2	Two	Back-to-back (O)	Inner ring, cage and roller assembly (cone assembly)	Tapered	No
3	Four		Outer ring (cup)		

Table 38

Options	Attributes and attribute options				
	Contact angle	Locating feature, bearing outside	Relubrication feature	Bore diameter	Outside diameter
1	Value/Range	None	With	Value/Range	Value/Range
2		Flange	Without		
3		Snap ring (fitted)			
4		Retaining notch			

Table 39

Options	Attributes and attribute options				
	Width, total	Width, inner ring	Width, outer ring	Tolerance	Lubricant (in bearing)
1	Value/Range	Value/Range	Value/Range	Normal (PN)	None
2				Class 6X (P6X)	Grease
3				Class 5 (P5)	Solid oil
4				Class 4 (P4)	
5				Class 2 (P2)	

Table 40

Options	Attributes and attribute options				
	Sealing	**Seal type**	**Material/Treatment**	**Matched arrangement of single-row bearings**	**Number of matched bearings**
1	None	Contact	Bearing steel	Face-to-face (X)	Two
2	Seal on one side	Non-contact	Stainless steel	Back-to-back (O)	Three
3	Shield on one side		Ceramic	Tandem	Four
4	Seal on both sides		Hybrid		
5	Shield on both sides		High temperature steel		
6	Seal on one side, shield on the other		Dimensionally stabilized		
7			Coated		
8			Insulated		

Table 41

Options	Attribute and attribute options
	Single-row bearing for matching, pre-adjusted
1	Yes
2	No

5.2.8 Thrust tapered roller bearings

Noun: Roller bearing

Modifier: Tapered thrust

Attributes and attribute options: See Tables 42 and 43.

Table 42

Options	Attributes and attribute options				
	Bearing part	**Axial loading**	**Cage**	**Sealing**	**Lubricant (in bearing)**
1	Complete bearing	Single-direction	With	None	None
2	Housing washer	Double-direction	Without	With cap	Grease
3	Shaft washer			With contact seal	
4	Roller and cage assembly			With cap and contact seal	

Table 43

Options	Attributes and attribute options			
	Bore diameter	Outside diameter	Height	Tolerance
1	Value/Range	Value/Range	Value/Range	Normal (PN)
2				Class 6 (P6)
3				Class 5 (P5)

5.3 Insert bearings

5.3.1 Insert bearings (bearing only)

Noun: Insert bearing

Modifier: Bearing only

Attributes and attribute options: See Tables 44 to 46.

Table 44

Options	Attributes and attribute options				
	Bore type	Outside diameter type	Rubber collar (fitted on outer ring)	Cage	Retaining feature, inner ring
1	Cylindrical	Spherical	No	Non-metallic	Eccentric locking collar
2	Tapered	Cylindrical	Yes	Sheet metal	Grub screw locking
3	Square			Machined metal	Concentric locking collar
4	Hexagonal				Adapter sleeve
5					Slot in inner ring
6					None

Table 45

Options	Attributes and attribute options				
	Relubrication feature	Lubricant (in bearing)	Sealing	Seal type	Material/Treatment
1	With	Grease	Seal on both sides	Contact	Bearing steel
2	Without	Solid oil	Shield on both sides	Non-contact	Stainless steel
3			Seal and flinger on both sides		High temperature steel
4			Seal on one side, shield on the other		Dimensionally stabilized
5					Coated

Table 46

Options	Attributes and attribute options				
	Bore diameter	Outside diameter	Width, inner ring	Width, outer ring	Rolling elements
1	Value/Range	Value/Range	Value/Range	Value/Range	Balls
2					Spherical rollers

5.3.2 Insert bearing units

Noun: Insert bearing

Modifier: Bearing unit

Attributes and attribute options: See Tables 47 to 50.

Table 47

Options	Attributes and attribute options				
	Housing type	Housing material	Flange shape, housing	Bearing bore type	Retaining feature, inner ring
1	Plummer block (pillow block)	Cast iron	Square	Cylindrical	Eccentric locking collar
2	Flanged	Composite	Oval	Tapered	Grub screw locking
3	Take-up housing	Sheet metal	Round	Square	Concentric locking collar
4			Triangular	Hexagonal	Adapter sleeve
5					Slot in inner ring
6					None

Table 48

Options	Attributes and attribute options				
	Bearing sealing	Seal type (bearing)	Lubricant (in bearing)	Relubrication hole (in housing and bearing)	Relubrication nipple
1	Seal on both sides	Contact	Grease	Yes	With
2	Shield on both sides	Non-contact	Solid oil	No	Without
3	Seal and flinger on both sides				
4	Seal on one side, shield on the other				

Table 49

Options	Attributes and attribute options				
	Material/Treatment (bearing)	**Shaft diameter**	**Fastening bolt hole type (housing)**	**Number of bolt holes (housing)**	**Pitch diameter of bolt holes (housing)**
1	Bearing steel	Value/Range	Plain holes	Value	Value/Range
2	Stainless steel		Threaded holes		
3	High temperature steel				
4	Dimensionally stabilized				
5	Coated				

Table 50

Options	Attributes and attribute options				
	Centre distance between bolt holes (housing)	**Centre height (plummer block)**	**Housing width, total**	**Bearing width, total**	**Unit sealing**
1	Value/Range	Value/Range	Value/Range	Value/Range	Without
2					End cap
3					Rubber flingers
4					Plain flingers

5.3.3 Insert bearing housings

Noun: Insert bearing

Modifier: Housing

Attributes and attribute options: See Tables 51 to 53.

Table 51

Options	Attributes and attribute options				
	Type	**Material**	**Flange shape**	**Relubrication hole**	**Relubrication nipple**
1	Plummer block (pillow block)	Cast iron	Square	Yes	With
2	Flanged	Composite	Oval	No	Without
3	Take-up housing	Sheet metal	Round		
4			Triangular		

Table 52

Options	Attributes and attribute options				
	Fastening bolt hole type	Spherical seating diameter	Number of bolt holes	Pitch diameter of bolt holes	Centre distance between bolt holes
1	Plain	Value/Range	Value	Value/Range	Value/Range
2	Threaded				

Table 53

Options	Attributes and attribute options	
	Centre height (plummer block)	Housing width, total
1	Value/Range	Value/Range

5.3.4 Insert bearing accessories

Noun: Insert bearing

Modifier: Accessory

Attributes and attribute options: See Tables 54 and 55.

Table 54

Options	Attributes and attribute options				
	Type	Material	Bore diameter	Outside locating diameter	Width
1	End cap	Composite	Value/Range	Value/Range	Value/Range
2	Rubber collar	Sheet metal			
3		Cast iron			

Table 55

Options	Attributes and attribute options	
	Pitch diameter of bolt holes (cast iron end cap)	Number of bolt holes (cast iron end cap)
1	Value/Range	Value

5.4 Combined bearings

5.4.1 Combined bearings of radial needle roller/thrust ball type or radial needle roller/thrust roller type

Noun: Combined bearing

Modifier: Radial needle roller/thrust ball or Radial needle roller/thrust roller

Attributes and attribute options: See Tables 56 to 58.

Table 56

Options	Attributes and attribute options				
	Rolling element type (thrust part)	Axial loading	Bearing type	Thrust part	Radial internal clearance
1	Balls	Single-direction	Complete bearing	With cage	Normal
2	Rollers	Double-direction	Radial part without inner ring	Without cage	Other

Table 57

Options	Attributes and attribute options			
	Bore diameter	Outside diameter	Width	Tolerance
1	Value/Range	Value/Range	Value/Range	Normal
2				Other

Table 58

Options	Attributes and attribute options		
	Material/Treatment	Lubricant in bearing (thrust part)	Special
1	Bearing steel	None	Thrust part with retaining cap
2	Coated	Grease	Flanged outer ring with holes
3	Dimensionally stabilized		Flanged outer ring without holes
4	Stainless steel		

5.5 Rolling bearing components

5.5.1 Balls

Noun: Rolling bearing component

Modifier: Ball

Attributes and attribute options: See Table 59.

Table 59

Options	Attributes and attribute options		
	Material	Diameter	Grade
1	Bearing steel	Value/Range	G3
2	Stainless steel		G5
3	Ceramic		G10
4			G16
5			G20
6			G24
7			G28
8			G40
9			G60
10			G100
11			G200

5.5.2 Cylindrical rollers

Noun: Rolling bearing component

Modifier: Cylindrical roller

Attributes and attribute options: See Table 60

Table 60

Options	Attributes and Attribute options			
	Material	Diameter	Length	Tolerance
1	Bearing steel	Value/Range	Value/Range	Normal
2	Stainless steel			Other
3	Ceramic			

5.5.3 Needle rollers

Noun: Rolling bearing component

Modifier: Needle roller

Attributes and attribute options: See Table 61.

Table 61

Options	Attributes and attribute options				
	Material	Type	Diameter	Length	Grade
1	Bearing steel	Flat ends	Value/Range	Value/Range	G2
2	Stainless steel	Rounded ends			G3
3	Ceramic				G5

5.5.4 Thrust collars (L-shaped)

Noun: Rolling bearing component

Modifier: Thrust collar (L-shaped)

Attributes and attribute options: See Table 62.

Table 62

Options	Attributes and attribute options				
	For use with bearing	Bore diameter	Width in bore	Width on outside diameter	Material/Treatment
1	"Bearing designation"	Value/Range	Value/Range	Value/Range	Bearing steel
2					Stainless steel
3					Coated

5.5.5 Aligning seat washers for thrust ball bearings

Noun: Rolling bearing component

Modifier: Aligning seat washer (thrust ball bearing)

Attributes and attribute options: See Table 63.

Table 63

Options	Attributes and attribute options			
	For use with bearing	Outside diameter	Height	Material/Treatment
1	"Bearing designation"	Value/Range	Value/Range	Bearing steel
2				Stainless steel
3				Coated

5.5.6 Inner rings for needle roller bearings (special execution)

Noun: Rolling bearing component

Modifier: Inner ring (special execution for needle roller bearing)

Attributes and attribute options: See Tables 64 and 65.

Table 64

Options	Attributes and attribute options				
	Tolerance	Radial internal clearance (in assembled bearing)	Relubrication feature	Bore diameter	Outside diameter
1	Normal (PN)	Group N	Without	Value/Range	Value/Range
2	Class 6 (P6)	Group 2 (C2)	With		
3	Class 5 (P5)	Group 3 (C3)			
4		Group 4 (C4)			

Table 65

Options	Attributes and attribute options		
	Width	Material/Treatment	Special raceway feature
1	Value/Range	Bearing steel	None
2		Stainless steel	Without lead chamfer
3		Coated	For use with rotary shaft seals
4			With allowance for finish grinding

5.6 Linear bearings

(ISO International Standard in preparation)

5.7 Bearing housings and housing accessories

5.7.1 Bearing housings

Noun: Bearing housing and housing accessory

Modifier: Housing

Attributes and attribute options: See Tables 66 to 68.

Table 66

Options	Attributes and attribute options				
	Housing type	Housing configuration	Mounting arrangement	Bearing configuration	Seating diameter
1	Plummer block (pillow block)	One-piece	Through shaft	Adapter sleeve	Value/Range
2	Take-up housing	Two-piece	Shaft end	Cylindrical bore	
3	Flanged				
4	Two bearing housing				

Table 67

Options	Attributes and attribute options				
	Centre height (plummer block)	Bolt hole type	Number of bolt holes	Pitch diameter of bolt holes	Centre distance between bolt holes
1	Value/Range	Cast holes	Value	Value/Range	Value/Range
2		Drilled holes			
3		Without holes			

Table 68

Options	Attributes and attribute options	
	Seal type	Material
1	Felt seal	Cast iron
2	Lip seal	Spheroidal graphite cast iron
3	V-ring seal	Cast steel
4	Labyrinth seal	

5.7.2 Accessories for bearing housings

Noun: Bearing housing and housing accessory

Modifier: Accessory

Attributes and attribute options: See Table 69.

Table 69

Options	Attributes and attribute options			
	For use with housing	Type	Outside diameter	Width
1	"Housing designation"	End cover	Value/Range	Value/Range
2		Locating ring		

5.7.3 Bearing housing units

Noun: Bearing housing and housing accessory

Modifier: Housing unit

Attributes and attribute options: See Tables 70 to 72.

Table 70

Options	Attributes and attribute options				
	Housing type	Housing configuration	Bearing insert	Mounting arrangement	Bearing configuration
1	Plummer block (pillow block)	One-piece	Spherical roller bearing	Through shaft	Bearing mounted on adapter sleeve
2	Take-up housing	Two-piece	Self-aligning ball bearing	Shaft end	Bearing mounted directly on shaft
3	Flanged		Cylindrical roller bearing		
4	Two bearing housing		Angular contact ball bearing		
5			Deep groove ball bearing		

Table 71

Options	Attributes and attribute options				
	Bore diameter (bearing)	Centre height (plummer block)	Bolt hole type	Number of bolt holes	Pitch diameter of bolt holes
1	Value/Range	Value/Range	Cast holes	Value	Value/Range
2			Drilled holes		
3			Without holes		

Table 72

Options	Attributes and attribute options		
	Centre distance between bolt holes	Seal type (housing)	Housing material
1	Value/Range	Felt seal	Cast iron
2		Lip seal	Spheroidal graphite cast iron
3		V-ring seal	Cast steel
4		Labyrinth seal	

5.8 Bearing accessories

5.8.1 Tapered sleeves

Noun: Bearing accessory

Modifier: Tapered sleeve

Attributes and attribute options: See Tables 73 and 74.

Table 73

Options	Attributes and attribute options				
	For use with bearing	Type	Holes for oil injection	Bore diameter	Thread diameter
1	"Bearing designation"	Adapter sleeve (threads on thinner end)	Without	Value/Range	Value/Range
2		Withdrawal sleeve (threads on thicker end)	With		

Table 74

Options	Attribute and attribute options
	Width
1	Value/Range