UDC 621.822.6/.8:001.4:003.62 May 1993

Designation system for rolling bearings

DIN 623 Part 1

Wälzlager; Grundlagen; Bezeichnung, Kennzeichnung

Supersedes March 1984 edition.

Contents

1 Scope and field of application

This standard specifies a designation system for rolling bearings which facilitates their identification ensuring the appropriate exchange of bearing parts (sub-units).

2 Designation structure

The designation system is based on the specifications of DIN 820 Part 27, table 1 providing all the details required for the complete designation of bearings.

Basic symbols shall always be given in full. Prefixes, suffixes and supplementary symbols (as specified in subclauses 3.1, 3.3 and 3.4) may be omitted:

a) in cases where materials as specified in subclause 3.1.2 are used (standard cases);

b) where the bearing does not have the particular feature;

c) in the cases dealt with in subclause 3.3 (PN, CN, SN), where no suffix is given for the cage;

d) where no specifications have been made for the particular feature. In this case, the bearing design shall be at the manufacturer's discretion, with due consideration being given to the relevant standards.

Prefixes and suffixes may be invariably long, as long as their meaning is not changed.

EXAMPLES:

TN9: Plastic cage, design variant 9;

JP3: Sheet steel window type cage, design variant 3.

2.1 Nomenclature

When combining symbols to form a designation in accordance with standards, the established nomenclature of rolling bearing types indicating the type of rolling bearing and its raceway geometry shall be used (e.g. 'deep groove ball bearing', 'self-aligning roller bearing').

Given the restrictions on the number of characters in the designation block, the term 'radial' widely used in commercial designations should be omitted.

See table 3 for established nomenclature of rolling bearings.

2.2 DIN number

See table 3 for the relevant DIN standards.

Continued on pages 2 to 15.

Table 1: Designation structure, number of symbols and reference to the relevant clause

<table>
<tr><td rowspan="2">Term</td><td colspan="7">Identification</td></tr>
<tr><td>DIN number</td><td colspan="6">System of symbol groups (18 characters max.) [1]</td></tr>
<tr><td rowspan="3">2.1 (18 characters max.)</td><td rowspan="3">2.2 (10 characters max.)</td><td>3.1 Prefixes</td><td colspan="3">3.2 Basic symbols</td><td>3.3 Suffixes</td><td>3.4 Supplementary symbols</td></tr>
<tr><td rowspan="2">3.1.1 Sub-units
3.1.2 Material</td><td colspan="2">3.2.1 Bearing series</td><td rowspan="2">3.2.2 Bore</td><td rowspan="2">3.3.1 Internal design
3.3.2 External shape
3.3.3 Cage details
3.3.4 Tolerances
3.3.5 Internal clearance
3.3.6 Heat treatment condition
3.3.7 Lubrication</td><td rowspan="2">At manufacturer's discretion.</td></tr>
<tr><td rowspan="3">Bearing type</td><td>Dimension series to DIN 616</td></tr>
<tr><td>E.g. Deep groove ball bearing</td><td>DIN 625</td><td>–</td><td>Width or height series</td><td>Diameter series</td></tr>
<tr><td>self-aligning roller bearing</td><td>DIN 636</td><td>–</td></tr>
</table>

[1] The designation may include up to 56 symbols.

2.3 System of symbol groups

As shown in table 1, there are four groups of symbols (sections), namely prefixes, basic symbols, suffixes, and supplementary symbols.

2.4 Sequence of sections and supplementary symbols

The (four) sections listed in subclause 2.3 shall be used in the order shown in that subclause.

The sequence of symbols in the basic designation shall be as specified in subclause 3.2. For prefixes, suffixes and supplementary symbols, the order of numerals or letters shall be as specified in subclauses 3.1, 3.3, and 3.4.

2.5 Structuring of designation

A blank, a dash (–), slash (/), cross (×) or full stop (•) may be used to separate designation blocks from one another.

3 Symbols

3.1 Prefixes

3.1.1 Sub-units

Prefixes shall be used to designate bearing parts (sub-units), e.g.:

K cage with rolling elements

Sub-units of separable rolling bearings (e.g. cylindrical roller bearings or tapered roller bearings), such as separable rings or roller sets with non-separable rings, shall be designated by a prefix:

L separable ring (e.g. LNU 419, designating the inner ring of a bearing of series NU 419);

R ring (inner or outer ring) with rolling element set (e.g. RNU 419, designating the roller set, with the outer ring belonging to bearing series NU 419).

Sub-units designated by letters L and R represent a complete bearing of a particular type. However, full serviceability of the bearing is only ensured if these units originate from the same manufacturer.

Where a separable ring consists of several elements, such as an inner ring and an extended ring (e.g. for an NUP type cylindrical roller bearing), letter L shall be used.

3.1.2 Material

As a rule, rings (e.g. outer and inner rings) and rolling elements shall be made of steel as specified in DIN 17230; rolling bearings made of stainless steel shall be designated by prefix S.

3.2 Basic symbols

The basic symbol designates the bearing type and size. It, normally, is to consist of one symbol or one symbol group each for bearing series (cf. subclause 3.2.1) and bore (cf. subclause 3.2.2). See table 1 for the structure of basic symbols. The above specifications do not apply to needle cylindrical roller thrust bearings, needle roller thrust bearings, open end drawn cups, closed end drawn cups, radial needle roller and cage assemblies, thrust needle roller and cage assemblies and thrust washers. In these cases, the basic symbol is composed of symbol/group(s) of symbols for bearing type and characteristic dimension(s), as shown in table 5.

The designation system for metric tapered roller bearings specified in ISO 355 applies by analogy and should be given preference for new designs.

3.2.1 Bearing series

A bearing series is characterized by the bearing type and dimension series, each bearing series being identified by a group of numerals or letters or by a combination of numerals and letters (cf. table 3).

3.2.2 Bore

The symbol used to denote the bearing bore is to consist of numerals and is either appended to the symbol denoting the bearing series or, in some cases, preceded by a slash (see table 4).

3.3 Suffixes

Suffixes are used to designate the following characteristics:

internal design (cf. subclause 3.3.1);
external shape (cf. subclause 3.3.2);
shield and seal (cf. subclause 3.3.2);
cage details (cf. subclause 3.3.3);
tolerances (cf. subclause 3.3.4);
internal clearance (cf. subclause 3.3.5);
heat treatment condition (cf. subclause 3.3.6);
lubrication (cf. subclause 3.3.7).

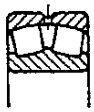
3.3.1 Internal design

Letters A, B, C, D, and E may be used to identify features of the bearing internal design. Their meaning is not specified. They should be consistent with the prefixes and suffixes specified in this standard or with the specifications of other relevant standards. They may be used to identify bearings of the same type and external dimensions, but of different internal design.

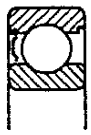
3.3.2 External shape

K — Type K: Bearing with tapered bore, taper 1:12
EXAMPLE:
1207 K = Self-aligning ball bearing as for type 1207, but with tapered bore

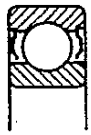
K30 — Type K30: Bearing with tapered bore, taper 1:30
EXAMPLE:
24138 K30 = Self-aligning ball bearing as for type 24138, but with tapered bore



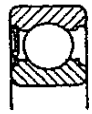
S — Type S: Double row bearing with lubrication groove and at least three lubrication holes in the outer ring
EXAMPLE:
22328 S



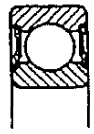
Z — Type Z: Bearing with shield on one side
EXAMPLE:
6207-Z



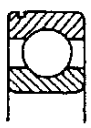
2Z — Type 2Z: Bearing with shields on both sides
EXAMPLE:
6207-2Z



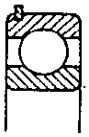
RS — Type RS: Bearing with seal on one side (with rubber seal, e.g. NBR (cf. ISO 1629))
EXAMPLE:
6207-RS



2RS — Type 2RS: Bearing with seals on both sides (with rubber seal, e.g. NBR (cf. ISO 1629))
6207-2RS



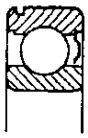
N — Type N: Bearing with snap ring groove on surface of outer ring and with dimensions as in DIN 616
EXAMPLE:
6207 N



NR

Type NR: Bearing with snap ring groove on surface of outer ring as in DIN 616 and associated snap ring as in DIN 5417

EXAMPLE:
6008 NR

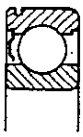


ZN
or
RSN

Type ZN: Bearing with shield on one side and snap ring groove on surface of outer ring (as in DIN 616), on the opposite side. The designation for type RSN bearings with seal shall be as follows:

EXAMPLE:
6206-ZN

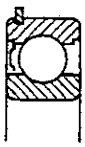
For bearings with two shields or seals, the example would be changed to read: 6206-2ZN or 6206-2RSN.



ZNB
or
RSNB

Type ZNB: Bearing with shield or seal and snap ring groove in outer ring (as in DIN 616), on the same side

EXAMPLE:
6207-ZNB
For bearings with shield, the example would be changed to read:
6207-RSNB

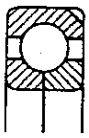


ZNBR
or
RSNBR

Type ZNBR: Bearing with shield or seal, snap ring groove as in DIN 616, in outer ring on the same side, with associated DIN 5417 snap ring

EXAMPLE:
6207-ZNBR

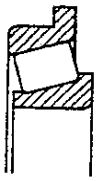
For bearings with two shields or seals, the example would be changed to read: 6207-2ZNR or 6207-2RSNR



N2

Type N2: Two keeper slots on one side of the outer ring or in the housing washer

EXAMPLE:
QJ 228 N2



R

Type R: Bearing with flanged outer ring

EXAMPLE:
33217 R

3.3.3 Cage details

A suffix for the cage may be omitted if the requirements specified in the relevant basic or product standards are met, i.e. the cage design is at the manufacturer's discretion unless a specific cage design is required, where this is to be indicated in compliance with the designation system given below.

3.3.3.1 Cage material

Cage material shall be designated by the following symbols:

- J sheet steel cage
- Y copper-zinc sheet cage
- M solid copper-zinc alloy cage
- F solid steel or special cast iron cage
- L solid light metal cage
- T fibre reinforced plastic cage
- TN plastic cage (details subject to agreement)

3.3.3.2 Cage design

Symbols to designate the cage design shall be used together with symbols as specified in subclause 3.3.3.1.

- P window type cage
- H snap cage
- A cage guided on outer ring
- B cage guided on inner ring
- S Cage with lubrication grooves in the locating surfaces

EXAMPLES:

Suffix to designate a solid copper-zinc alloy cage guided on outer ring: MA

Suffix to designate a window type cage guided on inner ring: MPB

3.3.3.3 Bearings without cage

Bearings without cage shall be designated as follows:

- V full type or full complement rolling bearing
- VH full type rolling bearing without cage

3.3.4 Tolerances

Unless the tolerances specified in DIN 620 Parts 2 and 3 for radial and thrust bearings are applicable, other relevant

standards (e.g. DIN 618 Part 1 and DIN 5405) may be applied.

Tolerances shall be identified by the following suffixes:

- P2 bearings produced to ISO tolerance class 2;
- P4 bearings produced to ISO tolerance class 4;
- P5 bearings produced to ISO tolerance class 5;
- P6 bearings produced to ISO tolerance class 6;
- PN bearings produced to a normal tolerance class (for standard applications). Symbol need not be given in the designation.

3.3.5 Internal clearance

Unless the radial clearances specified in DIN 620 Parts 4 and 3 are applicable, other relevant standards may be applied.

The internal clearance shall be identified by the following suffixes:

- C2 internal clearance smaller than CN;
- CN internal clearance greater than C2 but smaller than C3 (for standard applications) (symbol need not be given in the designation;
- C3 internal clearance greater than CN;
- C4 internal clearance greater than C3;
- C5 internal clearance greater than C4.

Where the designation is to specify both internal clearance and tolerances, the symbols may be combined, omitting letter C (internal clearance).

EXAMPLE:

A bearing produced to tolerance class P5 and with internal clearance C3 shall be designated P53.

3.3.6 Heat treatment condition

The required heat treatment of rolling bearings is a function of the maximum service temperature. Without any heat treatment, bearings are suitable for operation at service temperatures up to 120 °C. If bearings are designed for exposure to higher service temperatures, they are to be subjected to heat treatment.

In the absence of any suffix for heat treatment, the service temperature under steady-state conditions in the raceway of the outer ring shall not exceed 120 °C. The heat treatment condition is to be indicated using the following suffixes:

- SN rings or washers suitable for operation at service temperatures up to 120 °C (symbol need not be given in the designation);
- S0 rings or washers suitable for operation at service temperatures up to 150 °C;
- S1 rings or washers suitable for operation at service temperatures up to 200 °C;
- S2 rings or washers suitable for operation at service temperatures up to 250 °C;
- S3 rings or washers suitable for operation at service temperatures up to 300 °C;
- S4 rings or washers suitable for operation at service temperatures up to 350 °C;
- S0B internal rings or shaft washers suitable for operation at service temperatures up to 150 °C.

3.3.7 Lubrication

Lubrication of bearings by the manufacturer is mandatory for types -2Z and -2RS. See DIN 51 825 and DIN 51 502 for requirements to be met by lubricants or greases and their designation.

Where no suffix is given in the designation of rolling bearings that are sealed on both sides, the bearing may be assumed to be lubricated with a type K2K-30 or K3K-30 lubricant as specified in DIN 51 825.

The use of other lubricants in compliance with DIN 51 825 is subject to agreement. Such lubricants are to be designated using the symbols specified in table 2.

Further lubricants, not covered by the groups listed in table 2, shall be subject to an agreement based on DIN 51 825 and DIN 51 502. Non-standardized lubricants shall be given the manufacturer's symbol.

The suffixes specified apply to sealed and unsealed bearings (normally, unsealed bearings need not be lubricated).

Lubricants required for mounting or for greasing bearings that have not been not lubricated by the manufacturer may be selected from table 2.

3.4 Supplementary symbols

Where features are not covered by the symbols specified in subclauses 3.1 to 3.3, the manufacturer may use additional symbols ('supplementary symbols', for short).

Table 2: Suffixes for greases for rolling bearings

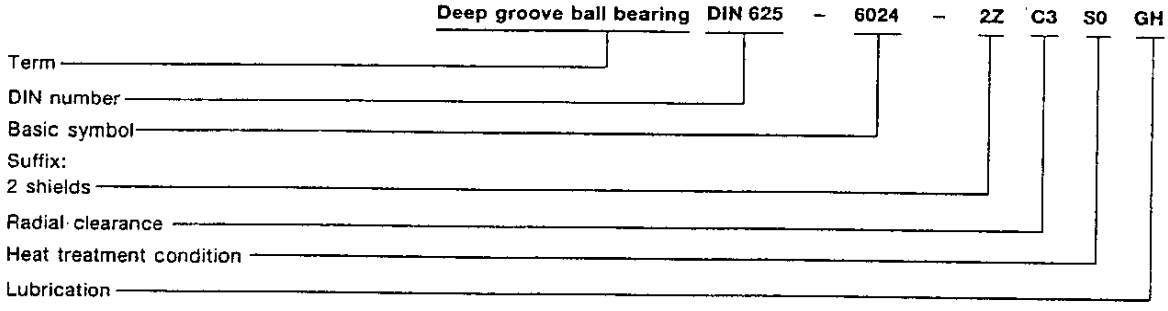
Suffixes as in this standard	Symbols as in DIN 51 825	Service temperature range, in °C
GL	K2E-50	− 50 to + 80
GN[1])	K2K-30 or K3K-30	− 30 to + 120
GH	K2N-30	− 30 to + 140
[1]) GN identifies normal lubrication; symbol needs not be given in the designation.		

4 Examples of designation

Tables 1 and 4 show how the symbols identifying bearing type, width or height series, and bore diameter series, are combined to form a basic symbol. (See tables 3 and 5 for exceptions.)

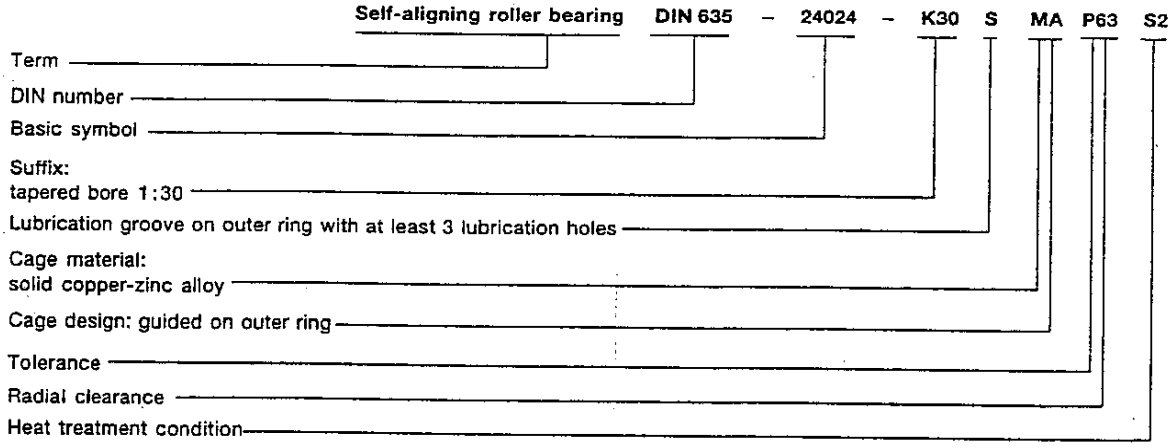
EXAMPLES:

A deep groove ball bearing may be designated as follows:

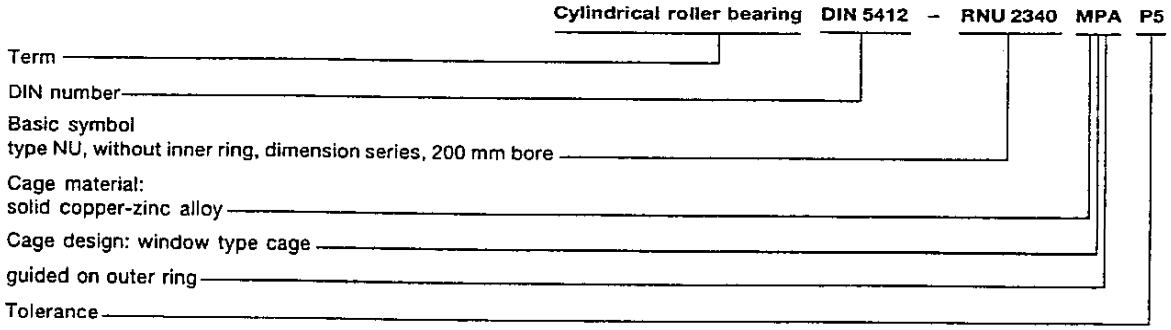


Cage details at the manufacturer's discretion (cf. subclause 3.3.3)

A self-aligning roller bearing may be designated as follows:



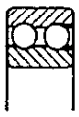
A cylindrical roller bearing may be designated as follows:



5 Survey

Table 3 lists standardized bearings, indicating their name, DIN number and the order in which basic symbols are formed. The bearings are listed according to their type (except item no. 41).

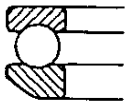
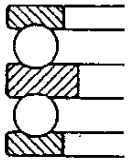
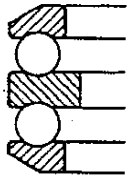
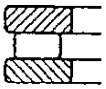
Table 3

Cf. subclause			2.1	2.2	3.2.1		
Item no.	Designation	Illustration	Name of basic type	DIN Standard	Bearing type	Dimension series	Bearing series
1	Double row angular contact radial ball bearing, with or without filling slot		Angular contact ball bearing	DIN 628 Part 3	0[1] 0[1]	32 33	32 33
2	Double row self-aligning radial ball bearing		Self-aligning ball bearing	DIN 630	1 1 1 1	02 22 03 23	12[2] 22[3] 13[2] 23[3]
3	Single row self-aligning radial roller bearing		Self-aligning roller bearing	DIN 635 Part 1	2 2 2	02 03 04	202 203 204
4	Double row self-aligning radial roller bearing		Self-aligning roller bearing	DIN 635 Part 2	2 2 2 2 2 2 2 2 2	39 30 40 31 41 22 32 03 23	239 230 240 231 241 222 232 213[5] 223
5	Self-aligning thrust roller bearing, with asymmetrical rollers		Self-aligning thrust roller bearing	DIN 728	2 2 2	92 93 94	292 293 294
6	Single row tapered roller bearing		Tapered roller bearing	DIN 720 ISO 355[6]	3 3 3 3 3 3 3 3 3 3	29 20 30 31 02 22 32 03 13 23	329 320 330 331 302 322 332 303 313 323
7	Double row deep groove radial ball bearing, with or without filling slot		Deep groove ball bearing	DIN 625 Part 3	4	22	42[2]

For [1] to [6], see page 12.

(continued)

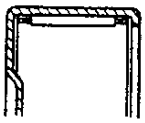
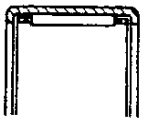
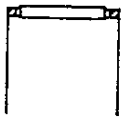
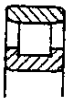
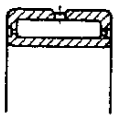
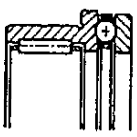
Table 3 (continued)

Cf. subclause			2.1	2.2	3.2.1		
Item no.	Designation	Illustration	Name of basic type	DIN Standard	Bearing type	Dimension series	Bearing series
8	Single-direction deep groove thrust ball bearing, with plain housing washer		Deep groove thrust ball bearing	DIN 711	5 5 5 5	11 12 13 14	511 512 513 514
9	Single-direction deep groove thrust ball bearing, with spherical housing washer		Deep groove thrust ball bearing	DIN 711	5 5 5	2[4]) 3[4]) 4[4])	532 533 534
10	Double-direction deep groove thrust ball bearing, with plain housing washer		Deep groove thrust ball bearing	DIN 715	5 5 5	22 23 24	522 523 524
11	Double-direction deep groove thrust ball bearing, with spherical housing washer[7])		Deep groove thrust ball bearing	DIN 715	5 5 5	2[4]) 3[4]) 4[4])	542 543 544
12	Single row deep groove radial ball bearing, without filling slot		Deep groove ball bearing	DIN 625 Part 1	6 6 6 6 6 6 6 6 6 6	18 28 38 19 39 00 10 02 03 04	618 628 638 619 639 160[2]),[12]) 60[2]) 62[2]) 63[2]) 64[2])
13	Non-separable single row angular contact radial ball bearing, without filling slot		Angular contact ball bearing	DIN 628 Part 1	7 7	02 03	72[2]) 73[2])
14	Single-direction cylindrical roller thrust bearing		Cylindrical roller thrust bearing	DIN 722	8 8	11 12	811 812
15	Thrust washer		Thrust washer	DIN 5405 Part 3	AS	[11])	—

For [2]), [4]), [7]), [11]) and [12]), see page 12.

(continued)

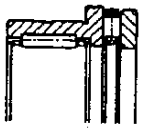
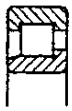
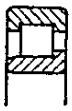
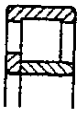
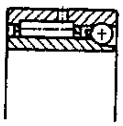
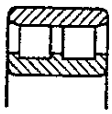
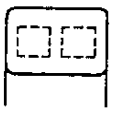
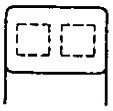
Table 3 (continued)

Cf. subclause			2.1	2.2	3.2.1		
Item no.	Designation	Illustration	Name of basic type	DIN Standard	Bearing type	Dimension series	Bearing series
16	Single row thrust needle roller and cage assembly		Thrust needle roller and cage assembly	DIN 5405 Part 2	AXK	[11])	—
17	Single row closed end drawn cup		Closed end drawn cup	DIN 618 Part 1	BK	[11])	—
18	Thrust collar for cylindrical roller bearing		Thrust collar	DIN 5412 Part 1	HJ suitable 02 HJ for 22 HJ dimension 03 HJ series 23 HJ 04		HJ2[2]) HJ22 HJ3[2]) HJ23 HJ4[2])
19	Thrust collar for cylindrical roller bearing, reinforced type (E)		Thrust collar	DIN 5412 Part 1	HJ suitable 20 HJ for 02 HJ dimension 22 HJ series 03 HJ 23		HJ20..E[8]) HJ2..E[8]) HJ22..E[8]) HJ3..E[8]) HJ23..E[8])
20	Single row open end drawn cup		Open end drawn cup	DIN 618 Part 1	HK	[11])	—
21	Single row radial needle roller and cage assembly		Needle roller and cage assembly	DIN 5405 Part 1	K	[11])	—
22	Single row cylindrical roller radial bearing, inner ring extended on both sides, unflanged outer ring		Cylindrical roller bearing	DIN 5412 Part 1	N N N	02 03 04	N 2[2]) N 3[2]) N 4[2])
23	Single row needle roller radial bearing, outer ring extended on both sides, unflanged inner ring		Needle roller bearing	DIN 617	NA	48 49	NA 48 NA 49
24	Combined needle roller radial bearing/needle roller thrust bearing		Combined needle roller bearing	DIN 5429 Part 1	NAXK	[11])	—

For [2]), [8]) and [11]), see page 12.

(continued)

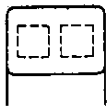
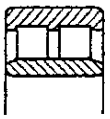
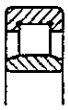
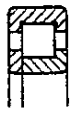
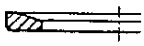
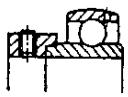
Table 3 (continued)

Cf. subclause			2.1	2.2	3.2.1		
Item no.	Designation	Illustration	Name of basic type	DIN Standard	Bearing type	Dimension series	Bearing series
25	Combined radial needle roller bearing/cylindrical roller thrust bearing		Combined needle roller bearing	DIN 5429 Part 1	NAXR	[11])	—
26	Single row cylindrical roller radial bearing, outer ring extended on both sides, flanged inner ring		Cylindrical roller bearing	DIN 5412 Part 1	NJ NJ NJ NJ NJ	02 22 03 23 04	NJ2[2]) NJ22 NJ3[2]) NJ23 NJ4[2])
27	Single row cylindrical roller radial bearing, outer ring extended on both sides, flanged inner ring, reinforced type (E)		Cylindrical roller bearing	DIN 5412 Part 1	NJ NJ NJ NJ NJ	02 03 20 22 23	NJ2..E[2]), [8]) NJ3..E[2]), [8]) NJ20..E[8]) NJ22..E[8]) NJ23..E[8])
28	Single row cylindrical roller radial bearing, outer ring extended on both sides, inner ring rib		Cylindrical roller bearing	DIN 5412 Part 1	NJP NJP	10 02	NJP 10 NJP 2[2])
29	Combined needle roller radial bearing/angular contact ball bearing		Combined roller bearing	DIN 5429 Part 2	NKIA	59	—
30	Double row cylindrical roller radial bearing, three fixed flanges on the inner ring, unflanged outer ring		Cylindrical roller bearing	DIN 5412 Part 4	NN	30	NN 30
31	Non-separable double row cylindrical roller radial bearing, full type, flanges permitted, designed to accommodate thrust in both directions		Cylindrical roller bearing	DIN 5412 Part 9	NNC NNC	48 49	NNC 48..V NNC 49..V
32	Non-separable double row cylindrical roller radial bearing, full type, flanges permitted, designed to accommodate thrust in one direction (support bearing)		Cylindrical roller bearing	DIN 5412 Part 9	NNCF NNCF	48 49	NNCF 48..V NNCF 49..V

For [2]), [8]) and [11]), see page 12.

(continued)

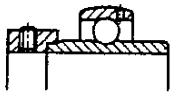
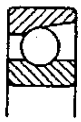
Table 3 (continued)

Cf. subclause			2.1	2.2	3.2.1		
Item no.	Designation	Illustration	Name of basic type	DIN Standard	Bearing type	Dimension series	Bearing series
33	Non-separable double row cylindrical roller radial bearing, full type, permits displacement of bearing		Cylindrical roller bearing	DIN 5412 Part 9	NNCL NNCL	48 49	NNCL 48..V NNCL 49..V
34	Double row cylindrical roller radial bearing, three fixed flanges on outer ring, unflanged inner ring		Cylindrical roller bearing	DIN 5412 Part 4	NNU	49	NNU 49
35	Single row cylindrical roller radial bearing, outer ring extended on both sides, unflanged inner ring		Cylindrical roller bearing	DIN 5412 Part 1	NU NU NU NU NU NU NU	10 20 02 22 03 23 04	NU10 NU20 NU2[2]) NU22 NU3[2]) NU23 NU4[2])
	Single row cylindrical roller radial bearing, outer ring extended on both sides, unflanged inner ring, reinforced type (E)		Cylindrical roller bearing	DIN 5412 Part 1	NU NU NU NU NU	20 02 22 03 23	NU20..E[8]) NU2..E[2]), [8]) NU22..E[8]) NU3..E[2]), [8]) NU23..E[8])
36	Single row cylindrical roller radial bearing, outer ring extended on both sides, one fixed and one loose rib on inner ring		Cylindrical roller bearing	DIN 5412 Part 1	NUP NUP NUP NUP NUP	02 22 03 23 04	NUP2[2]) NUP22 NUP3[2]) NUP23 NUP4[2])
37	Angular contact ball bearing, four-point contact bearing with split inner ring		Angular contact ball bearing	DIN 628 Part 4	QJ QJ	02 03	QJ 2[2]) QJ 3[2])
38	Plain washer for axial deep groove ball bearing		Plain washer	DIN 711	U suitable for U dimension series	2[4]) 3[4]) 4[4])	U 2 U 3 U 4
39	Insert bearing with inner ring extended on one side, spherical outside surface of outer ring and eccentrical snap ring		Insert bearing	DIN 626 Part 1	YEN	2	YEN 2[4])

For [2]), [4]) and [6]), see page 12.

(continued)

Table 3 (concluded)

Cf. subclause			2.1	2.2	3.2.1		
Item no.	Designation	Illustration	Name of basic type	DIN Standard	Bearing type	Dimension series	Bearing series
40	Insert bearing with inner ring extended on both sides, spherical outside surface of outer ring and eccentric snap ring		Insert bearing	DIN 626 Part 1	YEL	2	YEL 2[4])
41	Magneto ball bearing		Magneto ball bearing	DIN 615		Not as in ISO 15.	E[10]) L M B0

[1]) The symbol for bearing type '0' is dropped when forming the symbol group for the bearing series.
[2]) The symbol for the width series is dropped when forming the symbol group for the bearing series.
[3]) The symbol for bearing series '1' is dropped when forming the symbol group for the bearing series.
[4]) Only diameter series complying with general plan.
[5]) Theoretically, the bearing series designation would be 203; it has been changed to 213 in order to distinguish this bearing from self-aligning roller bearings of the same dimension series.
[6]) The designation system specified in ISO 355 applies by analogy and should be given preference for new designs.
[7]) In order to designate bearings of this type including the associated plain washers, a 'U' is to be appended to the basic symbol.
EXAMPLE: 533 20 U.
[8]) 'E' is used to denote a reinforced type which may have a different complement bore diameter, the dots (..) standing for the bore identification number.
[9]) The symbols for the dimension series are dropped when putting the symbol group for the bearing series together.
[10]) The origin of basic symbols is historical, i.e. they do not follow a set pattern. The prefixes and suffixes as specified in this standard may be applied by analogy (cf. table 4).
[11]) Dimensions shall be indicated as specified in table 5. The dimension series is not specified.
[12]) '1' preceding common symbol for bearing type.

Table 4: Basic symbols for ball bearings, cylindrical roller bearings, tapered roller bearings, self-aligning roller bearings, needle roller bearings, angular contact ball bearings and other relevant axial type bearings

Bore size, in mm Over	Up to	Symbols for bore	Examples (for system, cf. subclause 3.2)	
–	10	The bore size, in mm, even expressed as a decimal, is appended to the numerals denoting the bearing series preceded by a slash.	Deep groove ball bearing from bearing series 618, with inner ring bore diameter of 3 mm	618/ 3 Bore diameter Bearing series
		In the following cases, the slash has been omitted: deep groove ball bearings (604)[1]), 607, 608, 609, 623, 624, 625, 626, 627, 628, 629, 634, and 635; self-aligning ball bearings (108)[1]), 126, 127, 129, and 135; angular contact ball bearings (705, 706, 707, 708, and 709)[1])	Deep groove ball bearing of bearing series 62, with inner ring bore diameter of 5 mm	62 5 Bore diameter Bearing series
			Self-aligning ball bearing from bearing series 12, with inner ring bore diameter of 6 mm	12 6 Bore diameter Bearing series
			Angular contact ball bearing from bearing series 70, with inner ring bore diameter of 6 mm	70 6 Bore diameter Bearing series
10	17	Bore identification number 00 ≙ 10 mm bore 01 ≙ 12 mm bore 02 ≙ 15 mm bore 03 ≙ 17 mm bore following the bearing series symbol. Applies to all bearing series, except for series E, B0, L, M, (UK, UL and UM)[1])	Deep groove ball bearing of bearing series 62, with inner ring bore diameter of 12 mm	62 01 Bore identification number Bearing series
			Needle roller bearing of bearing series NA 49, with inner ring bore diameter of 15 mm	NA 4902 Bore identification number Bearing series
17	480	Bore identification number = 1/5 of bore diameter, in mm, following the bearing series symbol For all bearing series, except for series E, B0, L, M, (UK, UL, and UM)[1]) and 22, 28 and 32 mm bores. For diameters up to 45 mm, the bore identification number is preceded by a zero.	Self-aligning roller bearing of bearing series 232, with inner ring bore diameter of 120 mm	232 24 Bore identification number Bearing series
			Angular contact ball bearing of bearing series 73, with inner ring bore diameter of 30 mm	73 06 Bore identification number Bearing series
Intermediate sizes		Bore size in mm for intermediate sizes with 22, 28 and 32 mm bore; bore size appended to bearing series symbol preceded by a slash	Deep groove ball bearing of bearing series 62, with inner ring bore diameter of 22 mm	62 / 22 Bore diameter Bearing series
480	All sizes	Bore size in mm, following bearing series symbol, preceded by a slash (for new types, refer to DIN 616)	Self-aligning roller bearing of bearing series 230, with inner ring bore diameter of 500 mm	230 / 500 Bore diameter Bearing series
All sizes		Bore size in mm, appended to bearing series symbols E, B0, L, M, (UK, UL and UM)[1])	Magneto ball bearing of bearing series B0, with inner ring bore diameter of 17 mm:	B0 17 Bore diameter Bearing series

[1]) Not covered in product standards; formerly, in common use.

Table 5: Basic symbols for needle cylindrical roller thrust bearings, needle thrust ball bearings, open end drawn cups, closed end drawn cups, radial needle roller and cage assemblies, thrust needle roller and cage assemblies and thrust washers

Designation system	Examples	
Type NAXR needle cylindrical roller thrust bearing and type NAXK needle thrust ball bearing: complement bore diameter, in mm, without slash	Type NAXR needle cylindrical roller thrust bearing with 35 mm complement bore diameter Type NAXR needle cylindrical roller thrust bearing with 50 mm complement bore diameter	NAXR 35 Complement bore diameter Type NAXK 50 Complement bore diameter Type
Type HK open end drawn cups and BK closed end drawn cups: complement bore diameter, in mm, following the type symbol without slash, followed by the width, in mm	Type HK open end drawn cup, with 4 mm complement bore diameter and 8 mm in width Type BK closed end drawn cup, with 22 mm complement bore diameter and 16 mm in width	HK 04 08 Width Complement bore diameter Type BK 22 16 Width Complement bore diameter Type
Type K radial needle roller and cage assemblies: complement bore diameter x nominal diameter of a circle circumscribed round the roller set x width, each in mm, following the type symbol	Type K radial needle roller and cage assembly, of 10 mm complement bore diameter, 13 mm diameter of circle circumscribed round the roller set and 14 mm in width	K 10 x 13 x 14 Width Nominal diameter of circle circumscribed round the roller set Complement bore diameter Type
Type AXK thrust needle roller and cage assemblies; symbols given consecutively in mm, with cage inside and outside diameter not separated	Type AXK thrust needle roller and cage assembly, with a cage inside diameter of 100 mm and a cage outside diameter of 135 mm	AXK 100 135 Cage outside diameter Cage inside diameter Type
Thrust washer: bore diameter and outside diameter (both in mm), following type symbol	Type AS thrust washer, with a bore diameter of 25 mm and an outside diameter of 42 mm	AS 25 42 Cage outside diameter Cage inside diameter Type

6 Marking

Rolling bearings as specified in the relevant standards shall be legibly and durably marked with the following information:

a) manufacturer's symbol;

b) appropriate symbols specified in DIN 623 (groups of symbols as in subclauses 3.1 to 3.4; for optional prefixes and suffixes, see clause 3).

Where marking is not possible (e.g. for lack of space), the above mentioned information shall be provided on the packaging.

Standards referred to

DIN 615	Magneto ball bearings
DIN 616	Rolling bearings; general plan
DIN 617	Needle roller bearings with cage; dimension series 48 and 49
DIN 618 Part 1	Needle roller bearings; open end and closed end drawn cups with cage
DIN 620 Part 2	Tolerances for radial ball bearings
DIN 620 Part 3	Rolling bearings; tolerances for thrust bearings
DIN 620 Part 4	Tolerances on radial internal clearance of rolling bearings
DIN 625 Part 1	Single row radial contact ball bearings
DIN 625 Part 3	Double row radial contact ball bearings
DIN 626 Part 1	Rolling bearings with spherical outside surface and extended inner ring width; insert bearings
DIN 628 Part 1	Single row angular contact radial ball bearings
DIN 628 Part 3	Double row angular contact radial ball bearings with cage
DIN 628 Part 4	Single row angular four-point contact radial ball bearings with two-piece inner ring
DIN 630	Double row self-aligning ball bearings with cylindrical and tapered bore
DIN 635 Part 1	Single row self-aligning bearings
DIN 635 Part 2	Double row self-aligning bearings
DIN 711	Single direction thrust ball bearings
DIN 715	Double direction thrust ball bearings
DIN 720	Tapered roller bearings
DIN 722	Single direction thrust cylindrical roller bearings
DIN 728	Single direction self-aligning thrust bearings with asymmetric rollers
DIN 820 Part 27	Standards work; presentation of standards; designation of standardized items
DIN 5401 Part 1	Finished steel balls for rolling bearings
DIN 5401 Part 2	Balls of materials other than steel to DIN 17230, for rolling bearings
DIN 5405 Part 1	Needle roller bearings; radial needle roller and cage assemblies
DIN 5405 Part 2	Needle roller bearings; thrust needle roller and cage assemblies
DIN 5405 Part 3	Needle roller bearings; thrust washers
DIN 5412 Part 1	Single row cylindrical roller bearings with cage and separate thrust collars
DIN 5412 Part 4	Double row cylindrical roller bearings with cage
DIN 5412 Part 9	Non-separable double row full type cylindrical roller bearings; dimension series 48 and 49
DIN 5417	Snap rings for rolling bearings with snap ring groove
DIN 5429 Part 1	Needle bearing combinations; needle roller thrust bearings and needle ball thrust bearings
DIN 5429 Part 2	Needle bearing combinations; needle angular contact ball bearings
DIN 17230	Steel for rolling bearings; technical delivery conditions
DIN 51502	Designation of lubricants and marking of lubricant containers, lubricating equipment and lubrication points
DIN 51825	Type K lubricating greases; classification and requirements
ISO 15:1981	Rolling bearings; radial bearings; boundary dimensions; general plan
ISO 355:1977	Rolling bearings; metric tapered roller bearings; boundary dimensions and series designations
ISO 1629:1987	Rubber and latices; nomenclature

Previous editions

DIN 623 Part 1: 08.42, 03.84; DIN 623: 06.62, 03.73.

Amendments

The following amendments have been made to the March 1984 edition.

a) The references to other standards have been updated.

b) Suffixes to designate

- bearings with lubrication groove,
- bearings with keeper slot on outer ring or housing washer,
- tolerances, internal clearance and heat treatment condition for normal conditions,
- lubrication of bearings with shields or seals on both sides

have been included.

c) Marking details have been specified.

d) The standard has been editorially revised.

International Patent Classification

F 16 C 019/00