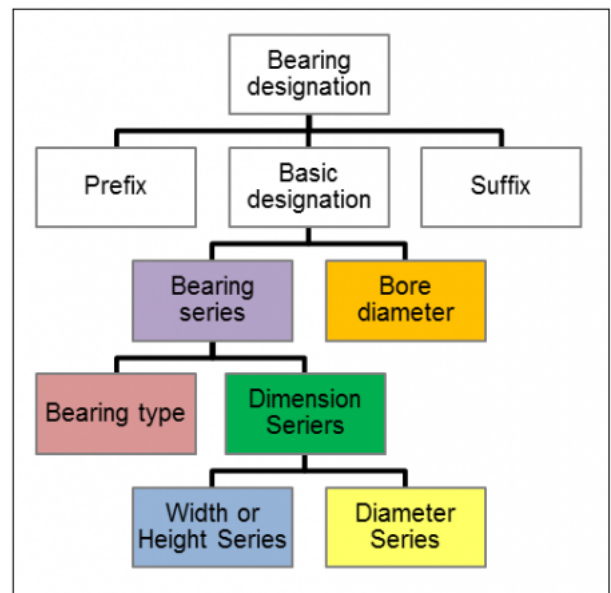


Bearing designation

To identify a bearing, it's assigned a standardized code referred to as a designation. The designation is made up of one to three parts;

- Prefix
- Basic designation
- Suffix

Prefixes and suffixes, which provide additional information to the designation, are not always included.



Contents

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Basic designation

A basic designation contains three to five digits that always represent these three pieces of information:

- Bearing type,
- Dimension series, and
- Bore size (inner diameter).

Note: the Bearing type and Dimension series put together is called Bearing series.

Let's take the following three designations as examples

- 626 (3 digit designation)

- 6305 (4 digit designation)
- 62103 (5 digit designation)

626

- The first digit always tells us the Bearing type (6 = Single row deep ball groove bearing.)
- The second digit (2) tells us the Dimension series (2 = Light).
- In a three digit designation, the third digit (6) tells us the Bore size in mm. So in this case, the Bore diameter is 6 mm.

626

Bearing series		
Bearing type	Dimension series	Bore diameter in mm
6	2	6

6305

- Again, the first digit tells us the Bearing Type (6 = Single row deep ball groove bearing.)
- The second digit (3) tells us the Bearing series (3 = Medium.)
- The third and fourth digit (05) tells us the Bore size (05 = 25 mm.)

6305

Bearing series		
Bearing type	Dimension series	Bore diameter number
6	3	05

62103

- The first digit is for Bearing type.
- The second and third digit tells us the Dimension series where
 - the second digit (2) is the width code and
 - the third digit (1) is the diameter series
- The fourth and fifth digits (03) tells us the bearing Bore size (03 = 17 mm.)

62103

Bearing series			
Bearing type	Dimension series		Bore diameter number
	Width (for radial bearings) or Height (for thrust bearings)	Diameter series	
6	2	1	03

Prefixes and suffixes

A bearing code can also be made longer to include additional information such as;

- Shield code
- Contact angle code
- Matched pair or stack code
- Internal design code
- External configuration code
- Bearing ring shape code
- Internal clearance code
- Tolerance class code

Codes and their meanings are listed in the section Code tables.

Additional designation examples

Here are some examples what bearing designations can look like. The meaning of the codes is found in section Code tables.

Designation

	Bearing type	Dimension series	Bore diameter number	Contact angle code	Bearing arrangement	Tolerance class code
7220ADBP5	7	2	20	A	DB	P 5

	Bearing type	Width (for radial bearings) or Height (for thrust bearings)	Diameter series	Bore diameter number	External configuration code	Internal clearance code	ISO class accuracy
NN3017KCC1P4	NN	3	0	17	K	CC1	P4

	Bearing type	Dimension series	Bore diameter number	Contact angle code	Bearing arrangement	Tolerance class code
7210CDTP5	7	2	10	C	DT	P 5

	Bearing series code	Dimension series	Bore diameter number	Internal clearance code	Tolerance class code
NU318C3P6	NU	3	18	C 3	P 6

	Bearing type	Dimension series	Bore diameter number	Indicating boundary and sub unit dimensions are based on ISO standards	Bearing arrangement	Tolerance class code
32005JRP6X	3	20	05	J	R	P 6 X

	Bearing type	Bore diameter number	Internal design code	Bearing ring shape code	Internal clearance code
232/500RZKC4	232/500	RZ	K	C 4	

	Bearing type	Dimension series	Bore diameter number
51215	5	12	15

Code tables

The tables below provide the symbols that can make up a bearing designation along with their respective meanings.

Prefix codes

Prefix Code	Meaning
K	Cage with roller elements
L	Removable bearing ring
R	Ring with roller set
S	Roll body of stainless steel
W	Stainless steel deep groove ball bearing
H, LM	Tapered Roller Bearings-Inch
HJ, IR	Needle Roller Bearings-Inchstyle
K	Needle Roller Bearings-Metric
N, NJ, NU, NUP	Cylindrical Roller Bearings-Metric
NA, NAO	Needle Roller Bearings with Inner Rings-Metric
NK, RNA	Needle Roller Bearings without Inner Rings-Metric
NN	Super Precision Cylindrical Roller Bearings

Bearing type codes

Bearing type code	Meaning
1	Self aligning Ball Bearing
2	Spherical Roller Bearing
3	Double row Angular contact Ball bearing
4	Double row Ball Bearing
5	Thrust Ball bearing
6	Single row deep groove ball bearing
7	Single row angular contact bearing
8	Felt sealbearing
32 / T	Tapered Roller Bearing
R	Inch Bearing
N	Cylindrical roller bearing
NN	Double row roller bearing
NA	Needle roller bearing
BK	Needle roller bearing with closed end (Drawncup)
HK	Needle roller bearing with openends (Drawncup)
C	GARB roller bearings
K	Needle roller and cage thrust assembly
QJ	Four-point contact ball bearings
BH	Angular cont-act (15°)
BIH	Angular contact (15°)inch series
BA	Angular contact (25° or 29°)
BT	Angular contact (35"-40")
BY	Angular contact (35°-40")
BO	Angular contact, double row, radial, non- filling slot
BZ	Angular contact,split inner ring
BE	Bell bearin& double row,angular contact,filling slot (maximum capacity)
BG	Ball bearing, double row, angular contact,non-filling slot
BF	Ball bearing,double row, radial,fill ng slot (maximum capacity)
BK	Ball bearing, double row, radial,non-filling slot
BM	Ball bearing, single row separable
8L	Ball bearing, single row, radial,filling slot (maximum capacity)
BC	Ball bearing, single row, radial,non-filling slot (Conrad)
BIC	Bell bearing, single row, radial,non-filling slot,inch series (Conrad)
BS	Self-aligning ball bearing
R	Cylindrical roller
S	Self-aligning spherical roller

T	Thrust ball or roller
---	-----------------------

Dimension series codes

Dimension series code	Meaning
0	Extra light
1	Extra light thrust
2	Light
3	Medium
4	Heavy
8	Extra thin section
9	Very thin section

Bore size codes

From code 04 and onward, the code multiplied by 5 equals the bore size in millimeters;

04x5 = 20 mm,

05x5 = 25 mm,

06x5 = 30 mm and so on.

Bore size code	Bore size in millimeters
00	10
01	12
02	15
03	17
04	20
05	25
06	30
07	35
08	40
09	45

Shielding or sealing code

Shielding or sealing code	Meaning
Code	Description
z	One side shielded
zz	Both sides shielded
RS	One side sealed
2RS	Both sides sealed
v	One side non contact seal
vv	Both sides non contact seal
DDU	Both sides contact seals
NR	Snap ring and groove
M	Brass cage

Angular contact codes

Angular contact code for ball bearings	Meaning
A	30°
AC	25°
B	40°
C	15°
CA	20°
E	35°

Angular contact code for Tapered roller bearings	Meaning
B	Less than 17°
C	20°
D	28° 30'
DJ	28° 48' 39"

Internal clearance codes

Internal Clearance code	Meaning
C2	: Tight
C0 or CN	: Normal
C3	: Loose
C4	: Extra Loose
CM	: Radial internal clearance for electric motor use
/GL	: Light preload
/GN	: Normal preload
/GM	: Medium preload
/GH	: Heavy preload

Conditions when the machine is in operation	Examples	Optimal internal bearing clearance in C code
Significant shaft deflection	Semi-floating wheel bearings in cars	C5 or equivalent
Steam flow through hollow shaft or pressure rods exposed to high temperatures	The drying part of paper machines;	C3, C4;
	Transport rollers in rolling mills	C3
High impact loads and vibrations or both the inner and outer ring have a press fit	Traction engines for trains	C4;
	Vibrating sieves	C3, C4;
	Hydraulic connector	C4;
	Gearboxes for tractors	C4;
Loose fitting inner and outer rings	Rolling pins for rolling mills	C2 or similar
Low noise and no vibrations	Small motors with special features	C1, C2, CM
Setting to prevent significant shaft deflection	Main spindle of lathes	CC9, CC1

Cage type codes

Cage type code	Meaning
x	Manufacturer standard bearing cage
A	Steel pressed (land guided)
J	Steel pressed (ball guided)
F	Steel or iron, machined
y	Brass or bronze, pressed
B	Brass or bronze, pressed (land guided)
K	Brass or bronze, machined (land guided)
M	Brass or bronze, machined (ball guided)
H	Light alloy, machined
0	Non-metallic (land guided)
T	Non-metallic (ball guided)
v	Full complement bearing without cage

External configuration codes

External configuration code	Meaning
No code	Cylindrical inner ring bore
K	Tapered inner ring bore, taper ratio 1:12
K30	Tapered inner ring bore, taper ratio 1:30
N	With snap ring groove
NR	With snap ring
D	With oil hole
D1	Lubrication hole/lubrication groove
T	Non-metallic (ball guided)
v	Full complement bearing without cage

Internal design codes

Internal design codes	Meaning
U	Internationally interchangeable tapered roller bearings
R	Noninternationally interchangeable tapered roller bearings
ST	Low torque tapered roller bearings
HT	High axial load use cylindrical roller bearings

Bearing arrangement codes

Bearing arrangement refers to how several bearings are arranged together to achieve characteristics in a product that are appropriate for the intended use or load condition. Details about bearing arrangement are

found on this page: Bearing selection

Bearing arrangement code	Meaning
DB	Back-to-back arrangement
DF	Face-to-face arrangement
DT	Tandem arrangement
D2	Two matched, paired bearings
G	Flush ground

Tolerance class codes

Tolerance class code	Meaning
P6	JIS Class 6
P5	JIS Class 5
P4	JIS Class 4
P2	JIS Class 2
2	ABMA Class 2
3	ABMA Class 3
0	ABMA Class 0

Internal links

Bearing selection

OSE Bearing dimensioning calculator

Bearings 101

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