



Specifying Radial Internal Clearance

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Typically radial internal clearance is designated by a clearance range. Organizations such as the ABMA (American Bearing Manufacturers Association) and ISO (International Standards Organization) have established standards for five radial clearance ranges. The five ranges are designated with the following codes:

Clearance Code or Suffix	Radial internal clearance
C2	Smaller than Normal
(no code) or CN	Normal or Standard
C3	Larger than Normal
C4	Larger than C3
C5	Larger than C4

Within each of the five clearance ranges (C2 to C5) above, additional ranges are further defined based on the bore size of the bearing. In other words, to determine the clearance range for a bearing you need to know the clearance code and the bore size.

The table below illustrates for a given bore size, what the clearance range would be for each Clearance Code.

Unit: μm

Nominal bore diameter, mm		C2		Normal		C3		C4		C5	
OVER	INCL	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
30	40	1	11	6	20	15	33	28	46	40	64
40	50	1	11	6	23	18	36	30	51	45	73
50	65	1	15	8	28	23	43	38	61	55	90

The Normal or Standard range of radial internal clearance was established to provide a proper operating clearance once the bearing is mounted when using “normal” mounting fits and operating conditions.

Most bearing manufacturers use the clearance codes as a suffix to a bearing part number. The two most common clearance ranges used are Normal or C3 clearance.

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