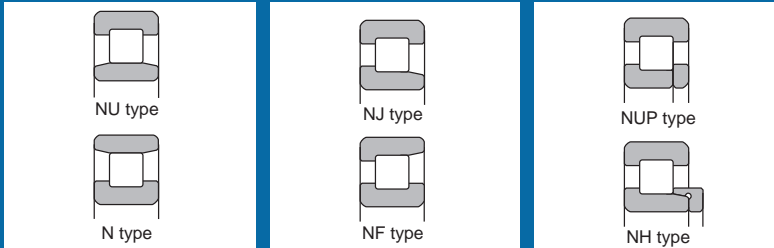


ISO Cylindrical Bearings

S-Type Cylindrical Roller Bearings

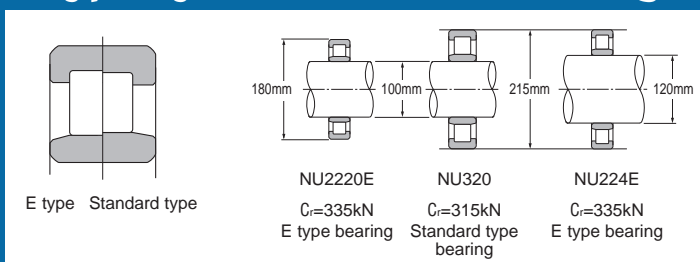


The S-Type cylindrical roller bearing is a metric series bearing made from through hardened steel. Prior to the 1980's this type of cylindrical was the standard in the international community. This design has evolved over time to include super-finished raceways and rollers as well as tighter internal tolerances compared to other types of cylindrical roller bearing designs. These improvements allow for super high operating speeds and quieter performance, which are especially critical for electric and transit motors as well as double row designs for the machine tool industry. Pressed and machined cages are commonly used in these types of bearings. The various available configurations of this design are shown in the diagram above.

Examples of S-Type Cylindrical Roller Bearings

- NU1005 • N1005 • NJ1005 • NF1005
- NUP1005 • NH1005

E-Type Cylindrical Roller Bearings



The E-Type, or extra capacity type, was developed as the new international standard by the bearing industry. This design is available in the same configurations as the S-Type discussed above. The E-Type has larger diameter and longer rollers than the S-Type within the same overall envelope dimensions, allowing for increased load capacity. Thus, this new design offers increased life or the ability to design a more compact design. The diagram above illustrates this feature. NTN identifies this type of design by adding the E suffix to the end of basic part number.

Examples of the E-Type Cylindrical Roller Bearings

- E-NJ207E • NJ207E • E-NU207E • NU207E
- E-NUP207E • NUP207E

FEATURES & BENEFITS

super-finished raceway and rollers

tighter internal tolerances

super high operating speeds

quieter performance

pressed and machine cages available

E-type provides improved load benefits



ISO Cylindrical Bearings

Bearing series	Molded resin cage	Pressed cage	Machined cage
NU10	-	-	1005~10/500
NU 2 NU2E	- 204E~218E	204~230 -	232~264 219E~240E
NU22 NU22E	- 2204E~2218E	2204~2230 -	2232~2264 2219E~2240E
NU3 NU3E	- 304E~314E	304~324 -	326~356 315E~332E
NU23 NU23E	- 2304E~2311E	2304~2320 -	2322~2356 2312E~2332E
NU4	-	405~416	-

Cage Chart Remarks:

- 1) Within the same bearing series, cage type is identical even if the type code (NJ, NUP, N, NF) differs.
- 2) For high speed and other special applications, machined cages can be manufactured when necessary. Consult NTN.
- 3) Among E type bearings (those using molded resin cages), certain varieties may also use pressed cages. Consult **NTN**.
- 4) Although machined cages are standard for two row and four row cylindrical roller bearings, molded resin cages may also be used in some of these bearings for machine tool applications.
- 5) **Due to their material properties, molded resin cages cannot be used in applications where temperatures exceed 120°.**



cylindrical roller bearing



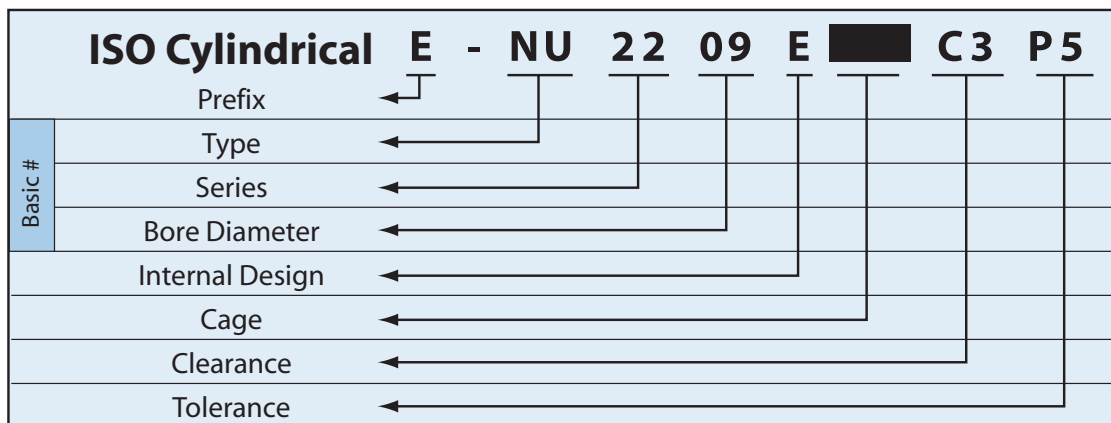
E-type cylindrical roller bearing



Double row cylindrical roller bearing



Four row cylindrical roller bearing



Prefix

E—Case-carburized rings and rollers

Type

- NU— Straight inner ring with two ribbed outer ring and roller assemblies
- NJ— One rib inner ring with two ribbed outer ring and roller assemblies
- NUP— One rib inner ring, loose side plate, with outer ring and roller assembly
- NH—NJ series bearing with HJ thrust collar (NJ+HJ=NH)
- NUJ—NU series bearing with HJ thrust collar (NU+NJ=NUJ)

Series

- 2—Standard series cylindrical roller bearings
- 22—Standard series cylindrical roller bearings
- 23—Standard series cylindrical roller bearings
- 3—Standard series cylindrical roller bearings
- E—High capacity cylindrical roller bearings

Cage

- G1—Machined brass cage
- T2—Nylon cage

Internal Clearance

- C2—Radial clearance less than normal
- No Suffix—Normal radial clearance

C3—Radial clearance greater than normal

C4—Radial clearance greater than C3

NA— Radial clearance of cylindrical roller bearings with non-interchangeable components (shown after clearance codes)

Tolerance

- No Suffix—ISO class 0 (equivalent to RBEC 1)
- P6—ISO class 6 (equivalent to RBEC 3)
- P5—ISO class 5 (equivalent to RBEC 5)
- P4—ISO class 4 (equivalent to RBEC 7)

