

USA ROLLING BEARINGS PARTS: STANDARD NEEDLE ROLLERS SIZES(GPS), LOOSE ROLLER PINS TYPES (NRA,NRB)! PRECISION BEARING NEEDLES G2G3G5, NEEDLE PINS CHROME STEEL 52100, ROLLER PINS STAINLESS STEEL 440C.



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NEEDLE ROLLERS TYPES (FLAT,ROUND) ENDS,HARDENED BEARING STEEL ELEMENTS HRC58~62! PRECISION CYLINDRICAL ROLLERS G0G2G3, STAINLESS STEEL 440C ROLLING ELEMENTS MANUFACTURERS!



generally the length of needle rollers between 3-10 times the diameter, but the diameter is usually not more than 6mm.



usually, the material of needle rollers(cylindrical rollers) is chrome steel 52100, then stainless steel: such as 302,304,316,306AL,420,420C,440C etc. then tungsten steel, the newest ceramic material is silicon nitride (si3n4), or zirconium oxide(ZrO2) etc.

the ends of needle rollers had different types: such as:NRA (round ends), NRB (flat ends), crowned ends, pointed ends, or one end is round(pointed), the other end is flat etc.



needle rollers main use is as rolling elements in bearings where they are particularly useful when space is limited and a high radial load is required. They are also useful as locating pins and mini shafts.



MANUFACTURER AND SUPPLIER OF NEEDLE ROLLERS

we are professional manufacture of bearing rollers and cylindrical needle rollers. we produce rollers of diameter 0.5 mm to 60 mm. the rollers could satisfy the request of DIN 5402 G2 rollers.

STANDARD SIZES OF NEEDLE ROLLERS AND CYLINDRICAL ROLLERS

φ1x5.8	φ1x6.8	φ1x7.8	φ1x9.8				
φ1.5x5.8	φ1.5x6.8	φ1.5x7.8	φ1.5x9.8	φ1.5x11.8	φ1.5x13.8		
φ2x6.8	φ2x7.8	φ2x9.8	φ2x11.8	φ2x13.8	φ2x15.8	φ2x17.8	φ2x19.8
φ2.5x7.8	φ2.5x9.8	φ2.5x11.8	φ2.5x13.8	φ2.5x15.8	φ2.5x17.8	φ2.5x19.8	φ2.2x21.8
φ2.5x23.8							
φ3x9.8	φ3x11.8	φ3x13.8	φ3x15.8	φ3x17.8	φ3x19.8	φ3x21.8	φ3x23.8
φ3x25.8	φ3x27.8	φ3x29.8					
φ3.5x11.8	φ3.5x13.8	φ3.5x15.8	φ3.5x17.8	φ3.5x19.8	φ3.2x21.8	φ3.5x23.8	φ3.5x25.8
φ3.5x27.8	φ3.5x29.8	φ3.5x34.8					
φ4x11.8	φ4x13.8	φ4x15.8	φ4x17.8	φ4x19.8	φ4x21.8	φ4x23.8	φ4x25.8
φ4x27.8	φ4x29.8	φ4x34.8	φ4x39.8				
φ5x15.8	φ5x17.8	φ5x19.8	φ5x21.8	φ5x23.8	φ5x25.8	φ5x27.8	φ5x29.8
φ5x34.8	φ5x39.8	φ5x49.8					
φ6x17.8	φ6x19.8	φ6x21.8	φ6x23.8	φ6x25.8	φ6x27.8	φ6x29.8	φ6x34.8
φ6x39.8	φ6x49.8	φ6x59.8					

loose needle rollers,cylindrical rollers, needle rolling elements, bearing,precision needle rollers

FLAT ENDED NEEDLE ROLLERS, NRB

flat ended needle rollers are a specific type of needle roller used in needle roller bearings. unlike conventional needle rollers, which have rounded ends, flat-ended needle rollers have flat or slightly concave ends.

- home
- products
- contact
- equipments
- needle rollers
- standard sizes or stocks
- NRB flat ended
- NRA round ended
- V chamfering
- logarithmic profile
- special shape
- crowned ended
- ultrafine needles
- short rollers
- manufacturing process
- G2G3G5
- different ends
- hardened chrome steel
- hardened stainless steel
- precision accuracy
- FAQ
- drive pins
- steel balls
- cylindrical roller
- dowel pins

flat ended needle rollers are often used in applications where axial guidance is required, as the flat ends allow for better contact with the mating surfaces within the bearing assembly. This configuration helps to prevent the rollers from skewing or tilting under axial loads, ensuring more stable and efficient operation of the bearing.

flat ended needle rollers are commonly found in needle thrust bearings, where they transmit axial loads in one direction while accommodating radial loads. They are also used in other types of needle roller bearings where axial guidance is necessary.

HARDNESS OF MARTENSITIC BEARING PARTS, (NEEDLE ROLLERS, CYLINDRICAL ROLLERS) QUENCHING, TEMPERING

parts	>	<	quenching hardness	tempering hardness	200°C	250°C	300°C
roller diameter,	...	20,	64HRC,	61~66HRC,	60~65HRC,	58~63HRC,	56~60HRC
roller diameter,	20,	40,	63HRC,	59~65HRC,	58~63HRC,	57~61HRC,	55~59HRC
roller diameter,	40,	...	61HRC,	58~64HRC,	57~62HRC,	57~60HRC,	54~58HRC

needle rollers,cylindrical rollers, needle rolling elements, bearing,precision needle rollers

ROUNDED END NEEDLE ROLLERS, NRA

rounded end needle rollers are a type of needle roller commonly used in needle roller bearings. As the name suggests, these rollers have rounded ends, which differentiate them from flat-ended needle rollers.

the rounded shape helps distribute stress more evenly along the contact surface between the rollers and the bearing races, reducing the risk of stress concentration and potential damage.

rounded end needle rollers facilitate better distribution of lubricant within the bearing assembly, promoting smoother operation and reducing friction and wear.

the curvature of the rounded ends increases the contact area between the rollers and the mating surfaces, enhancing load distribution and bearing capacity.

rounded end needle rollers are commonly used in a wide range of applications where needle roller bearings are employed, including automotive transmissions, industrial machinery, and aerospace systems. they are chosen based on factors such as load capacity, rotational speed, operating conditions, and required bearing performance.

DIAMETER TOLERANCES, GRADES,TOLERANCE, ROUGHNESS OF PRECISION NEEDLE ROLLERS

PRECISION NEEDLE ROLLERS,BEARING ROLLER NEEDLES, NEEDLE ROLLER BEARING PINS

tolerance grade(μm)	roughness(μm) t _{Ra,max}	t _{Rw}	upper limit	lower limit	regulation value	t _{WDwl}
G2	0.2,	1,	0	-2	0/-2	2
G2	0.2,	1,	-1	-3	-1/-3	2
G2	0.2,	1,	-2	-4	-2/-4	2
G2	0.2,	1,	-3	-5	-3/-5	2
G2	0.2,	1,	-4	-6	-4/-6	2
G2	0.2,	1,	-5	-7	-5/-7	2
G2	0.2,	1,	-6	-8	-6/-8	2
G2	0.2,	1,	-7	-9	-7/-9	2
G2	0.2,	1,	-8	-10	-8/-10	2
G3	0.2,	1.5,	0	-3	0/-3	3
G3	0.2,	1.5,	-1.5	-4.5	-1.5/-4.5	3
G3	0.2,	1.5,	-3	-6	-3/-6	3
G3	0.2,	1.5,	-4.5	-7.5	-4.5/-7.5	3
G3	0.2,	1.5,	-6	-9	-6/-9	3

precision needle rollers,needles, rollers, pins, bearing roller needles, needle roller bearing pins

tolerance grade(μm)	roughness(μm) t _{Ra,max}	t _{Rw}	upper limit	lower limit	regulation value	t _{WDwl}
G3	0.2,	1.5,	-7	-10	-7/-10	3
G5	0.2,	2.5,	0	-5	0/-5	5
G5	0.2,	2.5,	-3	-8	-3/-8	5
G5	0.2,	2.5,	-5	-10	-5/-10	5

precision needle rollers,needles, rollers, pins, bearing roller needles, needle roller bearing pins

PRECISION NEEDLE ROLLERS GRADES G2G3G5

G2, G3, and G5 refer to different levels of dimensional tolerances for needle rollers. these tolerances indicate the allowable deviation from the specified dimensions of the needle roller, such as its diameter or length.

G2 needle roller is the tightest tolerance level, indicating a very precise and consistent size and shape of the needle roller. G3 and G5 indicate slightly looser tolerances, with G5 being the least precise of the three.

the choice of G2, G3, or G5 needle rollers depends on the specific application and the required level of precision. In applications where very precise motion or positioning is required, G2 needle rollers may be preferred. In applications where looser tolerances are acceptable, G3 or G5 may be sufficient.

LENGTH TOLERANCES OF GRADES NEEDLE ROLLERS

PRECISION NEEDLE ROLLERS, BEARING ROLLER NEEDLES, NEEDLE ROLLER BEARING PINS

>	<	upper limit t _{Lw} (h13)	lower limit t _{Lw} (h13)
3	6	0	-0.18
6	10	0	-0.22
10	18	0	-0.27
18	30	0	-0.33
30	50	0	-0.39
50	80	0	-0.46

precision needle rollers,needles, rollers, pins, bearing roller needles, needle roller bearing pins

NEEDLE ROLLER DIAMETER GAUGES

needle roller diameter gauge is a precision tool used for accurately measuring the diameter of needle rollers. Needle rollers are cylindrical rolling elements commonly used in needle roller bearings, which are designed to accommodate high radial loads in constrained spaces.

the gauge typically consists of a calibrated measuring instrument, such as a micrometer or caliper, specifically designed to measure the diameter of needle rollers with high accuracy. These gauges are calibrated to ensure precision in measurement, often with tolerances specified according to industry standards or specific application requirements.

by using a needle roller diameter gauge, we can verify that needle rollers meet dimensional tolerances and quality standards required for proper functioning within a bearing assembly. this ensures that the rollers are within the specified size range and can provide reliable performance in various applications.

CHAMFER LIMITS OF FLAT ENDS NEEDLE ROLLERS

PRECISION NEEDLE ROLLERS, NEEDLE ROLLER BEARING PINS

D _w exceed	D _w to	T _{Smin}	diameter direction T _{Smin}	axis direction T _{Smin}
-	1	0.1	0.3	0.5
1	1.5	0.1	0.4	0.6
1.5	3	0.1	0.6	0.8
3	6	0.1	0.9	1

needle rollers, needle roller bearings, miniature pins, needle rollers suppliers, precision shafts

NEEDLE ROLLER DIAMETER GAUGE LOT

needle roller diameter gauge lot likely refers to a set of tools or instruments used for measuring the diameter of needle rollers. Needle rollers are cylindrical rolling elements used in needle roller bearings, which

are bearings designed to accommodate high radial loads in constrained spaces.

the gauge lot would consist of tools specifically designed to measure the diameter of needle rollers accurately. These tools may include micrometers, calipers, or specialized gauges tailored to the size and shape of needle rollers. by accurately measuring the diameter of needle rollers, we can ensure the proper fit and function of needle roller bearings in various applications, contributing to the overall performance and longevity of machinery.

V-BLOCK MEASUREMENT FOR ROUNDNESS OF NEEDLE ROLLERS

PRECISION NEEDLE ROLLERS OF LOOSE ROLLER BEARING PINS

angle	wave numbers									
	3	5	7	9	11	13	15	17	19	21
90°C	2	2	-	-	2	2	-	-	2	2
120°C	1	2	2	1	-	-	1	2	2	

needle rollers, needle roller bearings, miniature pins, needle rollers suppliers, precision shafts

NOMINAL DIMENSIONS OF NEEDLE ROLLERS, CHARACTERISTIC SYMBOLS, SPECIFICATIONS FOR NEEDLE ROLLERS,

CYLINDRICAL ROLLERS,COLUMNAR ROLLERS, BEARINGS PARTS

D_w	nominal diameter of needle rollers.
D_{ws}	needle roller single diameter.
D_{wmp}	cross section at the middle of the needle roller length, average size of the needle roller diameter.
VD_{wL}	the difference between the D_{wmpx} of the largest roller and the D_{wmpx} of the smallest roller in the roller batch.
L_w	nominal length of ceramic rollers.
R_w	roller roundness.
D_{wmpx}	the maximum average size of the ceramic roller diameter in any cross-section (only used for calculation of VD_{wL}).
VD_{wmp}	the range of the average size of the roller diameter (from the two-point size) obtained from any cross-section of the cylindrical part of the roller.
VD_{wsr}	the range of the two point dimensions of the roller diameter obtained at two specific cross-sections at equal distances from both ends of the ceramic roller.
R_{amax}	ceramic roller roughness profile parameters.
r_{smax}	maximum radial or axial single chamfer size allowed for ceramic rollers.
r_{smin}	minimum radial or axial single chamfer size allowed for rollers.
SD_w	the axial circular runout of the roller end face against the reference (that is, the axis determined by the outer surface of the roller).

needle rollers, cylindrical rollers, precision rollers, bearing needles, bearings parts, cylindrical rolling elements

needle rollers Vs mini shafts needle rollers Vs grooved pins needle rollers Vs dowel pins needle rollers Vs cylindrical rollers needle rollers Vs locating pins needle rollers Vs locating pins rollers Vs needle bearings different types manufacturing process stainless steel bearing steel robot joint bearings linear actuators roller sensors cross guide rails cross bearings drive pins needle roller bearing copyright©2017 YDTech®