

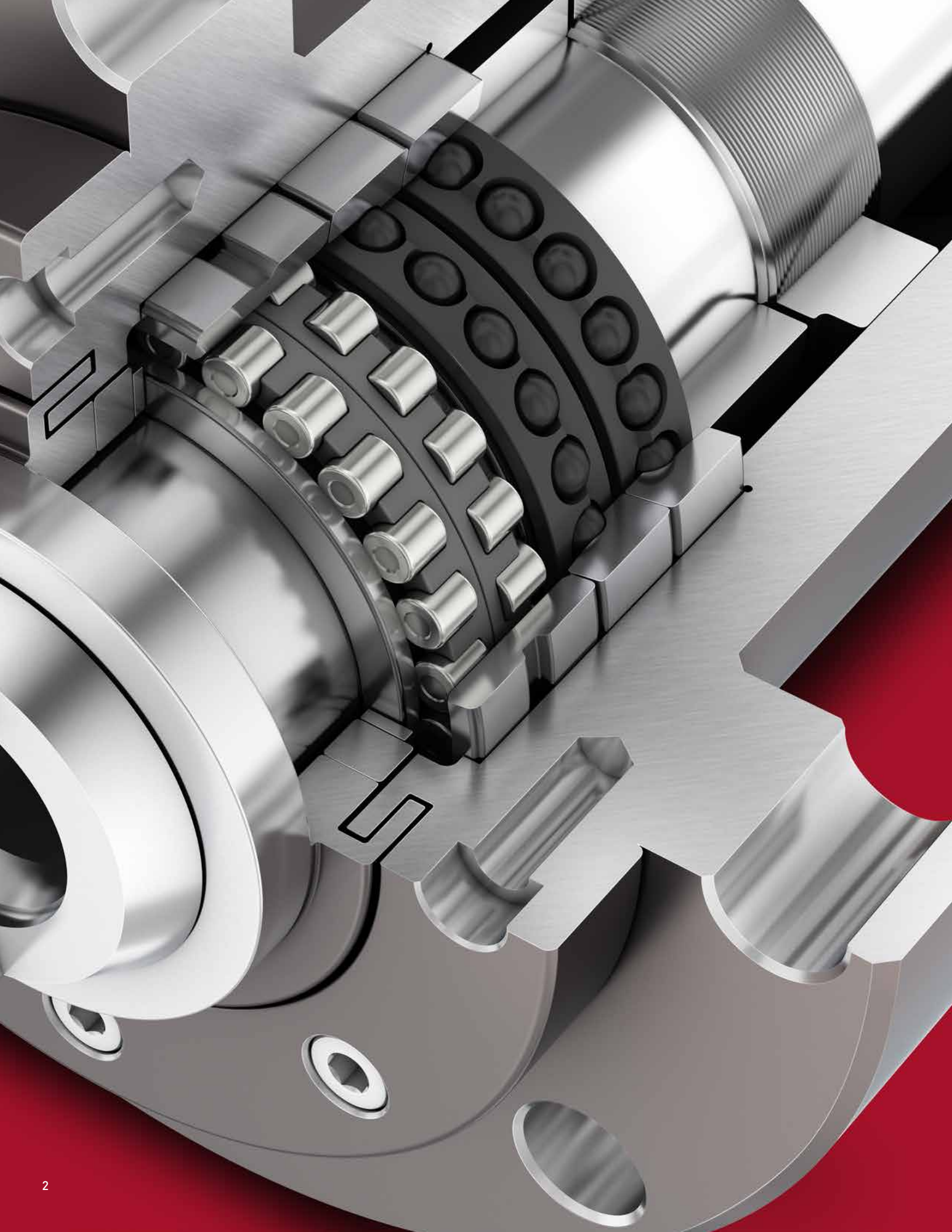
NSK

APTSURF™ CYLINDRICAL ROLLER BEARINGS

LOWER VIBRATION AND LONGER BEARING LIFE IN MAIN SPINDLES



STAY IN MOTION. STAY IN CONTROL.



DELIVERING UNRIVALED MACHINING AND PART QUALITY

High rigidity, high capacity and precise running accuracy are essential characteristics for bearings that support the main spindles of CNC machines. Particularly in lathes and turning centers, where precise control of a workpiece or tool path is critical to finished part quality.

NSK APTSURF™ double row cylindrical roller bearings are optimized to deliver higher machining quality and stable operation over a longer operating life with:

- ➔ **Low rotational vibration** with 55% reduction in RMS (root mean square) vibration values
- ➔ **Higher load capacity** with an optimized internal design yielding 15% higher dynamic capacity compared to conventional designs
- ➔ **Longer operating life** - as much as 60% - derived from higher load ratings



HIGH CAPACITY. HIGH ACCURACY. LONG LIFE.

NSK APTSURF double row cylindrical roller bearings deliver superlative machining performance in the main spindles of lathes and turning centers. They are built with high rigidity and high capacity, bolstered by an optimized internal design that also extends bearing life.

Stringent control of higher accuracy bearing components has dramatically reduced rotational vibration, directly reflected in the surface finish quality of machined parts.



APTSURF

reduces RMS vibration
as much as 55%



NSKHPS

extends bearing life
as much as 60%

DESIGN FEATURES

- › **Low vibration APTSURF specification** achieves higher accuracy of roller, raceway and dimensional surface geometries
- › **NSKHPS optimized internal design** delivers higher dynamic capacity and longer bearing life
- › Equipped with machined brass cage as standard
- › **Advanced PPS engineered resin cage** supports higher limiting speeds with high rigidity, low heat generation and reduced wear
- › **Low heat generation NN-Z types** for high speeds also available, specifically for free-end bearing applications
- › **For series NN30, NN39, NN49, NNU49** for bore diameters ranging from 40 to 260 mm
- › Cylindrical or tapered bore types
- › Outer ring lubrication groove / holes option (for NN type)
- › With P2, P4 and P4Y dimensional accuracy

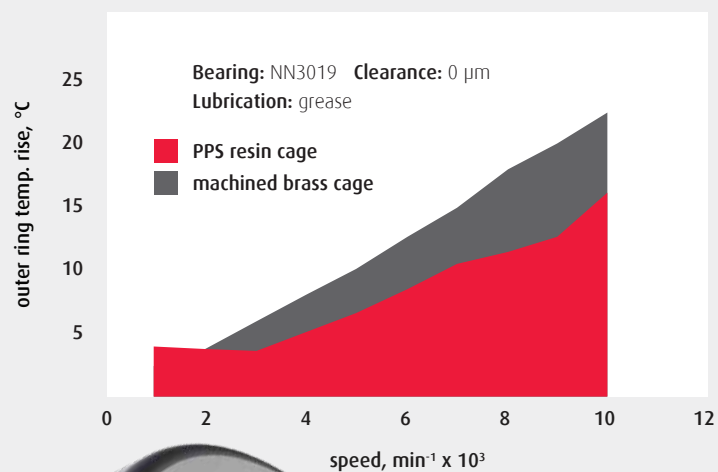
Lower wear, longer grease life - PPS resin cage

NSK engineered polymer cages are optimized to support the ultra-high speeds of next-generation machining requirements. They are lighter (1/6 the weight of brass cages), self-lubricating and have a low coefficient of friction.

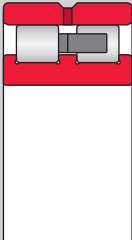

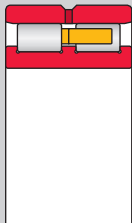
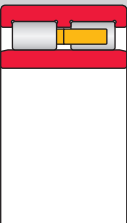
NSK APTSURF cylindrical roller bearings equipped with high-strength / highly rigid PPS resin cages generate less heat in operation, resulting in low wear and longer grease life.

Available for APTSURF double row cylindrical roller bearing series NN30 and NN30(Z) in bore diameters ranging from 40 to 160 mm.

Comparison of temperature rise



APTSURF range of availability - types, dimension series and features

				PPS resin cage	NN30(Z)	bore diameters 40 to 160 mm
				Machined brass cage	NN30	bore diameters 40 to 240 mm
					NN39	bore diameters 100 to 260 mm
					NN49	bore diameters 100 to 260 mm
					NNU49	bore diameters 100 to 260 mm
Bore specifications					cylindrical and/or 1:12 tapered bore	
Lubrication feature option					outer ring lubrication groove, holes	
NN30	NN39	NN49	NNU49			

DESIGNATION SYSTEM

APTSURF DOUBLE ROW CYLINDRICAL ROLLER BEARINGS

Bearing Type		Bore Reference No.		Cage	Bore Type		Radial Internal Clearance	
NN	30	17		TB	KR	E44	CC0	P4
Dimension Series		Internal Design			Lubrication Features		Accuracy	

DESIGNATION		ATTRIBUTE
Bearing type	NN	double row with inner ring ribs
	NNU	double row with outer ring ribs
Dimension series	30	30 series
	39	39 series
	49	49 series
Bore reference no.		multiply x 5 for bore diameter in mm
Internal design	blank	standard type
	Z	low heat generation type
Cage	TB	roller guided PPS resin cage
	MB	roller guided brass cage
Bore type	blank	cylindrical bore
	KR/K	tapered bore, 1:12

DESIGNATION		ATTRIBUTE
Lubrication features	blank	no lubrication features
	E44	outer ring lubrication groove and holes
Radial internal clearance	CC0	standard for tapered bore
	CC1	standard for cylindrical bore
	CCG	special radial clearance
Accuracy	P2	ISO class 2
	P4	ISO class 4
	P4Y	special dimensional accuracy with ISO class 4 running accuracy



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