

Bearings for Railway Vehicles



Bearings for Railway Vehicles

KINEX-KLF bearings are used in railway vehicles for axleboxes, in traction motors and generators, in drives of blowers, in exciters and axle-driven generators, in compressors' motors and in gear-boxes.

For railway vehicle axleboxes the bearings with machined brass or plastic cages are manufactured. For higher speeds the internal design is specifically adapted.

The roller bearings with machined brass cages, in various design versions, are used mostly for traction motors and drives arrangements.

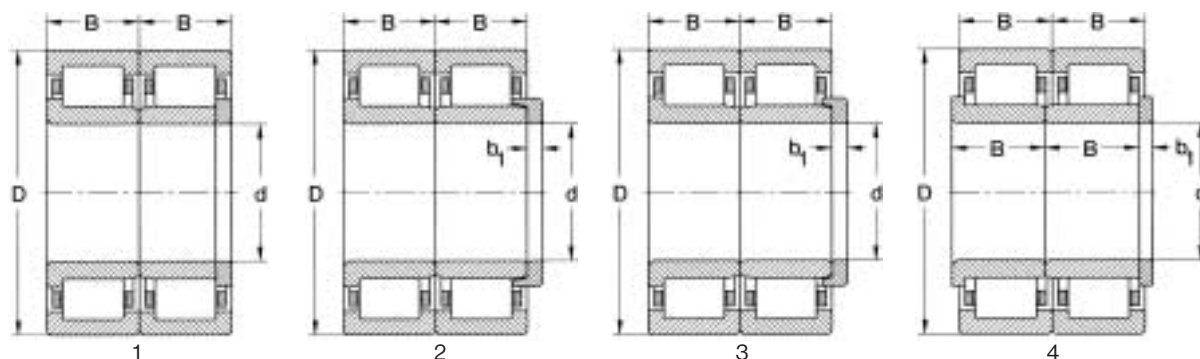
Under the term "railway vehicle" we understand:

- diesel and electric locomotives
- diesel and electric motor train sets
- motor coaches
- passenger coaches
- good wagons
- special railway vehicles.

The bearing production for railway vehicles in KINEX-KLF is assured in compliance with the European standard EN 12080. The axle bearings correspond to the requirements of the European standard EN 12082, UIC 515-5.

Detailed information on bearings for railway vehicles (calculations, mounting, dismounting, maintenance...) are given in a special publication "Bearings for Railway Vehicles".

Single Row Cylindrical Roller Bearings for Railway Vehicle Axleboxes



Dimensions				Basic load rating		Maximum speed of rail vehicle	Mass of a pair of bearings	Bearing designation	Fig.	Cage	Radial clearance		Tolerance class
d	D	B	b ₁	C _r	C _{0r}						min.	max.	
mm				kN		km.hod ⁻¹	kg						
100	180	60,3	-	333	444	160	12,0	PLC 49-200-2 PLC 49-201-2 1) 2) 3)	1	TNG	105 140	P6	
110	215	73,0	-	494	668	160	24,9	PLC 410-207 PLC 410-208 1) 2)	1	M	105 140	P6	
118	240	80,0	-	553	742	160	34,2	PLC 410-23 PLC 410-24 1)	1	M	120 160	P0	
120	240	80,0	-	553	742	160	33,7	PLC 410-13 PLC 410-14 1) 2)	1	M	120 160	P0	
	240	80,0	-	553	742	160	31,7	PLC 410-13-1 PLC 410-14-1 1) 2)	1	M	120 160	P6	
	240	80,0	-	553	742	160	30,1	PLC 410-13-2 PLC 410-14-2 1) 2) 3)	1	TNG	120 160	P6	
130	240	80,0	-	516	752	160	32,7	PLC 410-15 PLC 410-16 1) 2)	1	M	135 180	P0	
	240	80,0	-	539	775	160	32,7	PLC 410-33-1 PLC 410-34-1 1) 2)	1	M	135 180	P6	
	240	80,0	-	539	775	160	30,2	PLC 410-33-2 PLC 410-34-2 1) 2) 3)	1	TNG	135 180	P6	
	250	80,0	-	580	800	160	36,6	PLC 410-17 PLC 410-18 1)	1	M	135 180	P0	
159	300	84,0	15	869	1214	160	58,2	PLC 411-20 PLC 411-21 1)	2	M	130 195	P0	
160	300	84,0	15	869	1214	160	57,5	PLC 411-10 PLC 411-12 1)	2	M	130 195	P0	
180	320	86,0	12	713	1082	160	64,4	NJ2236M C4A450-900 NUC2236M C4 + HJ2236X16,33	3	M	150 215	P0	
	320	86,0	15	713	1082	160	64,5	NJ2236XM C4 NUC2236M C4 + PLC810-1	3	M	150 215	P0	
	320	86,0	15	713	1082	160	64,5	NJ2236XMAS C4 NUC2236MAS C4 + PLC810-1	3	MAS	150 215	P0	
	320	86,0	17	713	1082	160	64,6	NJ2236XM C4 NUC2236M C4 + NUP2236 4)	4	M	150 215	P0	

- 1) Pair of bearings is designated shortly e. g. PLC 410-13/14
- 2) Bearings correspond to International Railway Standards UIC 510 - 1 and KN 024617
- 3) Solid cage made of polyamide
- 4) Loose inner rib

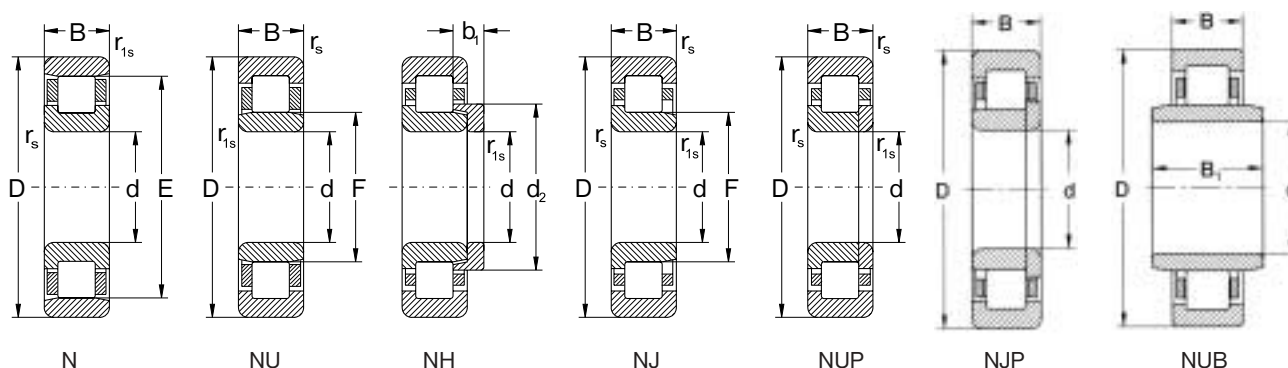
Radial equivalent dynamic load

$$P_r = F_r$$

Radial equivalent static load

$$P_{or} = F_r$$

Single Row Cylindrical Roller Bearings for Railway Vehicles



Dimensions					Basic load rating dynamic static		Limiting speed for lubrication with grease oil		Bearing designation						Mass of Bearing Angle ring	
d	D	B	B ₁	b ₁	C _r	C _{or}			N/NJP	NUP	NU	NJ	NH	NUB		
mm					kN		min ⁻¹								kg	
90	190	43	-	12,0	233	258	3 200	3 800	N318M	NUP318	NU318M	NJ318M	NH318M		5,4	0,65
95	240	55	-		415	465	2 500	3 000		NUP419M	NU419M	NJ419M			13,5	
105	260	60	-	16,0	515	585	2 200	2 700		NUP421M	NU421M	NJ421M	NH421M		19,0	1,65
110	240	50	-		379	433	2 500	3 000	N322M	NUP322M	NU322M	NJ322MA			10,5	
	240	50	80		439	507	2 400	2 800			NU322EM	NJ322EMA		NUB322EM	11,0	
	280	65	-		569	654	2 100	2 500			NU422	NJ422M			20,0	
120	260	55	-	14,0	465	534	2 400	2 800			NU324M	NJ324M	NH324M		13,0	1,40
	310	72	-	17,0	714	834	1 900	2 200		NUP424M	NU424M	NJ424M	NH424M		28,0	2,60
130	280	58	-	14,0	603	715	2 000	2 400		NUP326EM	NU326EM	NJ326EM	NH326EM		17,0	1,65
140	250	42	-		385	502	2 500	3 000	NJP228EMA						9,7	
	300	102	-		1 018	1 384	1 900	2 200			NU2328EM	NJ2328EM			37,5	
150	270	45	73		440	581	2 200	2 700	NJP230EMA	NUP230EM	NU230EM	NJ230EM		NUB230EM	11,0	
	320	65	-	26,5	663	807	1 900	2 200		NUP330M	NU330M	NJ330M			27,0	2,37
160	290	48	-		498	666	2 000	2 400		NUP232EM	NU232EM	NJ232EM			14,7	
170	310	52	-		589	777	1 900	2 200			NU234EM	NJ234EM			18,6	
	260	42	-		276	399	2 200	2 700			NU1034M				7,9	
180	320	52	-	20,0	611	826	2 100	2 500			NU236EM	NJ236EM	NH236EM		31,2	1,8
	280	46	-		334	474	2 100	2 500			NU1036M				10,5	
190	290	46	-		411	612	1 900	2 200	NJP1038EMA						12,1	
198	310	51	66		335	290	1 900	2 200						PLC411-19 ¹⁾	15,3	
200	310	51	66		383	567	1 900	2 200			NU1040M			NUB1040M	14,0	
	360	58	-	14,0	749	1033	1 500	1 800					NH240EM		28,4	2,70

1) Figure NUB

Bold typed designation means that the bearings are manufactured currently.
Deliveries of bearings with normal typed designations should be consulted with manufacturer.

Radial equivalent dynamic load

$$P_r = F_r$$

Radial equivalent static load

$$P_{or} = F_r$$