

FULL-COMPLEMENT CYLINDRICAL ROLLER BEARINGS SINGLE-ROW(NCF), DOUBLE-ROW(NNCF)

Design, Types, and Features

Cageless, full-complement cylindrical roller bearings have the maximum possible number of rollers and can sustain much heavier loads than cylindrical roller bearings of the same size with cages. On the other hand, high-speed capability is inferior to the bearings with cages. The open-type single- and double-row bearings are mostly used in general industrial applications at low speed and under heavy load, and the shielded-type double-row bearings are often used in crane sheaves.

Table 1 Features of Various Types

Figure	Type	Design and Features
	NCF	The outer and inner rings and rollers are non-separable since a retaining snap ring is installed at the side opposite the outer ring rib. They can sustain axial loads in only one direction.
	NNCF	NNCF is a double-row version of NCF. They can sustain heavy radial loads.

Tolerances and Running Accuracy Table 7.2 (Pages A128 to A131)

Single-Row
Double-Row

Recommended Fits

Single-Row
Double-Row

Inner Ring Rotation Table 8.3 (Page A164)

Outer Ring Rotation Table 8.5 (Page A165)

..... Table 2 below

Table 2 Fits and Internal Clearances for Full-Complement Cylindrical Roller Bearings

Operating Conditions	Fitting between Inner Ring and Shaft		Fitting between Outer Ring and Housing Bore		Recommended Internal Clearance
	min.	max.	min.	max.	
Outer Ring Rotation	The walled housings and heavy loads	g6 or M6	P7		C3
	Normal to heavy loads	g6 or M6	N7		C3
	Light or fluctuating loads	g6 or M6	M7		CN

Permissible Misalignment

The permissible misalignment of full-complement single-row cylindrical roller bearings is generally 0.0006 radian (2') under normal load. For double-row bearings, nearly no misalignment is allowed.

FULL-COMPLEMENT CYLINDRICAL ROLLER BEARINGS FOR SHEAVES

DESIGN, TYPES, AND FEATURES

Cylindrical Roller Bearings for sheaves are specially designed thin-walled, broad-width, full-complement type double-row cylindrical roller bearings, but they are widely used also for general industrial machines running at low speed and under heavy loads. There are several series as shown in Table 1.

Table 1 Series of Cylindrical Roller Bearings for Sheaves

Bearing Type	Fixed End	Free End
Open Type	Without Snap Ring	With Snap Ring
Shielded Type	Without Snap Ring	With Snap Ring
	RS-4BE4 RS-4BE4 RS-50 RS-50NR	RSF-4BE4 RSF-4BE4 RSF-4BE4 RSF-4BE4

Since all are non-separable type bearings, the inner and outer rings cannot be separated, but the RSF type can be used as a free-end bearing. In this case, the permissible axial displacement is listed in the bearing tables. Since cylindrical roller bearings for sheaves are a double-row, full-complement type, they can withstand heavy shock loads and moments and have sufficient axial load capacity for use in sheaves. Since the shielded type is a kind of bearing unit, the number of parts surrounding the bearing can be reduced, so it allows for a simple compact design. The surface of these bearings is treated for rust prevention.

Table 2 Features of Various Types

Figure	Type	Design and Features
	RS-4BE4 RS-4FE4	Double-row outer ring with center rib, two single-row inner rings with ribs. The outer and inner rings and rollers are non-separable since there are two retaining snap rings at the sides of the outer ring. They can sustain an axial load in either direction so they can be used as free-end bearings. An oil groove and holes are provided at the center of the outer ring.
	RSF-4BE4 RSF-4FE4	Double-row outer ring without ribs, double-row inner ring with three ribs. The outer and inner rings and rollers are non-separable since there is a retaining snap ring at the middle of the outer ring. They can be used as free-end bearings. The permissible axial movement is listed in the dimensional tables. An oil groove and holes are provided at the center of the outer ring.
	RS-50	Both sides shielded, double-row outer ring with center rib, two inner rings with ribs. They can sustain an axial load in either direction. They are pre-lubricated, but it is possible to replenish the grease through an oil groove and holes in parts mating with the inner rings.
	RS-50NR	If there are snap rings at the outside of the outer ring, the type becomes RS-50NR. They are surface-treated for rust prevention.

TOLERANCES AND RUNNING ACCURACY Table 7.2 (Pages A128 to A131)

RECOMMENDED FITS AND INTERNAL CLEARANCES

When used with outer ring rotation for sheaves or wheels, the fit and radial internal clearance should conform to Table 3.

Table 3 Fits and Internal Clearances for Cylindrical Roller Bearings for Sheaves

Operating Conditions	Fitting between Inner Ring and Shaft		Fitting between Outer Ring and Housing Bore		Recommended Internal Clearance
	min.	max.	min.	max.	
Outer Ring Rotation	The walled housings and heavy loads	g6 or h6	P7		C3
	Normal to heavy loads	g6 or h6	N7		C3
	Light or fluctuating loads	g6 or h6	M7		CN

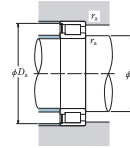
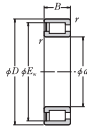
The fits listed in Tables 8.3 (Page A164) and 8.5 (Page A165) apply when they are used with inner ring rotation in general applications, and the internal clearance should conform to Table 4.

Table 4 Units: μm

Nominal Size of Inner Ring	Clearances		
	CN	min.	max.
over 30			
30	15	50	35
40	20	60	40
50	25	70	45
65	30	80	50
80	35	90	55
100	40	100	60
120	45	110	65
140	50	120	70
160	55	130	75
180	60	140	80
200	65	150	85
225	70	160	90
250	75	170	95
280	80	180	100
315	85	190	105
355	90	200	110
400	95	210	115
450	100	220	120
500	105	230	125
560	110	240	130
630	115	250	135
710	120	260	140
800	125	270	145
900	130	280	150
1000	135	290	155
1120	140	300	160
1250	145	310	165
1400	150	320	170
1600	155	330	175
1800	160	340	180
2000	165	350	185
2250	170	360	190
2500	175	370	195
2800	180	380	200
3150	185	390	205
3550	190	400	210
4000	195	410	215
4500	200	420	220

■ FULL-COMPLEMENT CYLINDRICAL ROLLER BEARINGS

NCF Type, Single-Row
Bore Diameter 100 – 260 mm



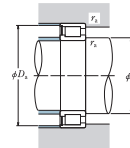
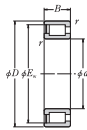
d	Boundary Dimensions (mm)					Basic Load Ratings (kN)		Bearing Numbers
	D	B	r min.	E _w	C _r	C _{0r}		
100	140	24	1.1	130.5	132	209	NCF2920V	
	150	37	1.5	139.7	209	310	NCF3920V	
110	150	24	1.1	141	138	239	NCF2922V	
	170	45	2	156.3	278	405	NCF3922V	
120	165	27	1.1	156	177	305	NCF2924V	
	180	46	2	167.58	253	440	NCF3924V	
130	180	30	1.5	166.5	210	370	NCF2926V	
	200	52	2	193.81	415	616	NCF3926V	
140	190	30	1.5	179.4	227	395	NCF2928V	
	210	53	2	197.22	435	680	NCF3928V	
150	220	36	2	206.82	299	595	NCF2930V	
	240	60	2.1	224.8	460	710	NCF3930V	
160	210	22	1.5	203.5	149	272	NCF1834V	
	230	36	2	218	220	370	NCF2834V	
	260	67	2.1	242.87	675	1 070	NCF3834V	
180	225	22	1.5	215	154	296	NCF1836V	
	250	42	2	231.5	330	496	NCF2836V	
	280	74	2.1	260.3	785	1 260	NCF3836V	
190	240	24	1.5	226.7	178	305	NCF1838V	
	260	42	2	243.6	435	785	NCF2838V	
	290	75	2.1	269.9	805	1 320	NCF3838V	
200	250	24	1.5	237	162	350	NCF1840V	
	280	48	2.1	261	350	685	NCF2840V	
	310	82	2.1	287.8	910	1 510	NCF3840V	
220	270	24	2	257.7	191	385	NCF1844V	
	300	48	2.1	282	355	800	NCF2844V	
	340	90	3	312.3	1 100	1 820	NCF3844V	
240	300	28	2	283	236	470	NCF1848V	
	330	48	2.1	303	380	820	NCF2848V	
	360	92	3	335.25	1 160	1 990	NCF3848V	
260	320	28	2	307	247	510	NCF1852V	
	360	60	2.1	333.2	750	1 460	NCF2852V	
	400	104	4	376.1	1 570	2 600	NCF3852V	

d _s	Abutment and Fillet Dimensions (mm)			Mass (kg)
	D _s	r _s max.	approx.	
109	131	1	1.0	1.0
	111	1.5	2.1	1.1
	119	1.5	1.1	1.1
	122	1.5	2	3.3
	130	1.5	1	1.7
	132	1.8	2	3.6
	141	1.8	1.5	2.2
	142	1.8	2	5.6
	151	1.8	1.5	2.3
	152	1.8	2	5.9
	163	1.9	2	3.7
	165	2.0	2	7.1
	173	2.0	2	3.8
	175	2.3	2	8.8
	182	2.04	1.5	1.8
	183	2.1	2	4.1
	185	2.44	2	11.9
	192	2.18	1.5	1.8
	193	2.28	2	6.0
	195	2.63	2	15.8
	202	2.19	1.5	2.4
	203	2.45	2	6.5
	206	2.72	2	16.7
	213	2.38	1.5	2.5
	216	2.63	2	8.9
	216	2.83	2	21.4
	224	2.58	2	7.7
	228	2.86	2	20.4
	238	3.0	2.5	28.2
	254	2.85	2	4.2
	257	3.05	2	10.4
	269	3.40	2.5	31.2
	275	3.08	2	4.5
	277	3.42	2	18.1
	282	3.77	3	45.3

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■ FULL-COMPLEMENT CYLINDRICAL ROLLER BEARINGS

NCF Type, Single-Row
Bore Diameter 300 – 800 mm



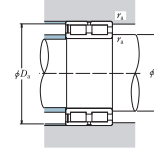
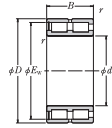
d	Boundary Dimensions (mm)					Basic Load Ratings (kN)		Bearing Numbers
	D	B	r min.	E _w	C _r	C _{0r}		
300	380	38	2.5	356	445	870	NCF1860V	
	420	72	3	389.6	1 120	2 200	NCF2860V	
	460	115	4	431.7	1 380	3 900	NCF3860V	
320	400	38	2.1	380	460	925	NCF1864V	
	440	72	3	410	1 150	2 340	NCF2864V	
	480	121	4	449.5	2 170	3 900	NCF3864V	
340	420	38	2.1	401	475	985	NCF1868V	
	460	72	3	430.3	1 130	2 370	NCF2868V	
	520	133	5	485.8	2 480	4 350	NCF3868V	
360	440	38	2.5	422	460	1 040	NCF1872V	
	480	72	3	450.7	1 220	2 610	NCF2872V	
	540	134	5	503.6	2 550	4 600	NCF3872V	
380	480	46	2.5	452.8	575	1 230	NCF1876V	
	500	82	4	496.7	1 020	1 900	NCF2876V	
	560	135	5	521.4	2 810	4 800	NCF3876V	
400	500	46	2.5	475.7	580	1 300	NCF1880V	
	540	82	4	511	1 650	3 850	NCF2880V	
	600	148	5	568.7	3 050	5 750	NCF3880V	
420	520	46	2.1	481	600	1 340	NCF1884V	
	560	82	4	523.2	1 650	3 650	NCF2884V	
	620	150	5	573.7	3 000	5 600	NCF3884V	
440	540	46	2.1	514	615	1 410	NCF1888V	
	600	85	4	560	1 070	1 940	NCF2888V	
	660	152	5	615.2	2 070	3 600	NCF3888V	
460	580	56	3	552.7	820	1 950	NCF1892V	
	620	95	4	576.5	1 100	2 450	NCF2892V	
	680	160	5	631.5	2 100	3 900	NCF3892V	
480	600	56	3	573	840	2 040	NCF1896V	
	640	105	5	615	1 380	2 900	NCF2896V	
	700	165	5	668.5	2 380	4 200	NCF3896V	
500	620	56	3	583.5	860	2 120	NCF181000V	
	670	100	5	630.2	1 420	2 520	NCF281000V	
	730	165	5	684	2 600	4 240	NCF381000V	
520	680	56	3	654.7	1 020	2 380	NCF181050V	
	720	100	5	700	1 600	3 000	NCF281050V	
	780	165	5	755	2 700	4 600	NCF381050V	
540	720	60	3	695.5	1 140	2 680	NCF181100V	
	760	118	5	740	1 950	3 500	NCF281100V	
	820	170	5	795	3 050	5 000	NCF381100V	
560	740	69	4	742	1 470	3 400	NCF181150V	
	780	118	5	780	2 500	4 500	NCF281150V	
	840	174	4	832.5	3 600	6 000	NCF381150V	
580	800	69	4	780	1 520	3 560	NCF181200V	
	840	118	5	820	2 600	4 600	NCF281200V	
	900	182	5	882	3 700	6 100	NCF381200V	

d _s	Abutment and Fillet Dimensions (mm)			Mass (kg)
	D _s	r _s max.	approx.	
319	360	2	8.7	8.7
	320	2.6	20.7	20.7
	333	4.5	67.6	67.6
	338	3.8	10.3	10.3
	340	4.2	36	36
	343	4.5	73	73
	359	4.02	10.7	10.7
	361	4.28	25.1	25.1
	368	4.90	4	97
	380	4.23	2	11.5
	381	4.57	2.5	38
	388	5.0	4	100
	400	4.58	2	18.6
	404	4.8	2	15.5
	408	5.29	4	108
	421	4.78	2	16.5
	425	5.13	3	53.4
	428	5.68	2	138
	440	4.8	2	20.5
	445	5.33	3	55.7
	448	5.69	4	147
	461	5.18	2	21.3
	466	5.62	3	78.2
	483	5.55	2.5	32.5
	486	5.91	4	101
	503	5.75	2.5	33.8
	510	6.1	3	95.1
	524	5.94	2.5	35
	531	6.37	4	96.4
	554	6.25	2.5	39.9
	585	6.55	2.5	39.3
	598	7.15	5	98.5
	626	7.02	2.5	48.9
	633	7.64	4	121.7
	658	7.48	3	68.8
	700	7.9	3	72.7
	741	8.36	3	67.6
	786	8.63	4	103.3
	832	9.5	4	123.1

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■ FULL-COMPLEMENT CYLINDRICAL ROLLER BEARINGS

NCF Type, Double-Row
Bore Diameter 100 – 260 mm



d	Boundary Dimensions (mm)				Basic Load Ratings (kN)		Bearing Numbers
	D	B	r	E _w	C _r	C _{0r}	
100	140	40	1.1	129.8	194	400	NNCF4920V
110	150	40	1.5	139.7	260	615	NNCF5020V
110	150	40	1.1	136.4	202	430	NNCF5022V
170	170	80	2	156.3	430	840	NNCF5022V
120	165	45	1.1	153.9	226	480	NNCF4924V
180	180	80	2	167.86	520	895	NNCF5024V
130	180	50	1.5	165.7	262	555	NNCF4926V
200	200	95	2	183.81	710	1 230	NNCF5026V
140	190	50	1.5	176.2	272	595	NNCF4928V
210	210	95	2	197.82	750	1 380	NNCF5028V
150	210	60	2	191.0	330	985	NNCF4930V
225	225	100	2.1	206.82	785	1 420	NNCF5030V
160	220	60	2	204.1	410	930	NNCF4932V
240	240	109	2.1	224.8	895	1 620	NNCF5032V
170	230	60	2	212.4	415	975	NNCF4934V
260	260	122	2.1	242.87	1 160	2 140	NNCF5034V
180	250	68	2	230.5	550	1 230	NNCF4936V
280	280	136	2.1	265.3	1 340	2 510	NNCF5036V
190	260	68	2	240.7	565	1 290	NNCF4938V
290	290	136	2.1	269.9	1 380	2 630	NNCF5038V
200	250	50	1.5	235.9	320	825	NNCF4840V
290	290	90	2.1	295.5	865	1 500	NNCF4940V
310	310	150	2.1	287.75	1 560	3 000	NNCF5040V
220	270	50	1.5	256.9	340	895	NNCF4844V
300	300	90	2.1	277	895	1 620	NNCF4944V
340	340	160	3	312.3	1 890	3 650	NNCF5044V
240	300	60	2	282.6	495	1 340	NNCF4848V
320	320	90	2.1	300	725	1 370	NNCF4948V
360	360	160	3	335.25	1 990	4 000	NNCF5048V
260	320	60	2	303.6	515	1 450	NNCF4852V
380	380	100	2.1	331.5	1 050	2 530	NNCF4852V
400	400	190	4	376.1	2 690	5 200	NNCF5052V

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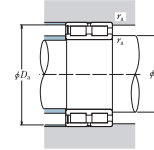
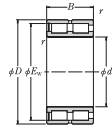
d _a	Abutment and Fillet Dimensions (mm)			Mass (kg)
	D _a	r _a	r _a max.	
109	130	1	2.0	2.0
111	140	1.5	3.8	3.8
119	140	1	2.1	2.1
122	157	2	6.1	6.1
130	155	1	2.9	2.9
132	168	2	6.6	6.6
141	168	1.5	3.9	3.9
142	187	2	10.3	10.3
151	178	1.5	4.5	4.5
152	188	2	10.8	10.8
163	196	2	6.6	6.6
165	208	2	12	12
173	206	2	7.0	7.0
175	225	2	15.8	15.8
183	216	2	7.3	7.3
189	244	2	22.1	22.1
183	236	2	10.7	10.7
195	263	2	28.4	28.4
200	245	2	11.1	11.1
206	273	2	30.8	30.8
213	237	1.5	5.9	5.9
216	263	2	15.7	15.7
216	293	2	39.7	39.7
233	267	1.5	6.4	6.4
236	293	2	17.7	17.7
238	320	2.5	50.7	50.7
254	285	2	10.3	10.3
257	300	2	18.4	18.4
259	340	2.5	54.3	54.3
275	302	2	11.1	11.1
277	342	2	32	32
282	377	3	82.7	82.7

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■ FULL-COMPLEMENT CYLINDRICAL ROLLER BEARINGS

NCF Type, Double-Row
Bore Diameter 280 – 500 mm



d	Boundary Dimensions (mm)				Basic Load Ratings (kN)		Bearing Numbers
	D	B	r	E _w	C _r	C _{0r}	
280	350	60	2	323.5	695	1 880	NNCF4956V
380	100	2.1	352.5	1 030	2 720	NNCF4956V	
420	190	4	390.5	2 770	5 450	NNCF5056V	
300	380	90	2.1	357.2	895	2 160	NNCF4860V
420	410	3	386.5	1 580	3 800	NNCF4960V	
450	450	4	431.7	3 400	7 000	NNCF5060V	
320	400	90	2.1	380.2	935	2 310	NNCF4964V
440	410	3	404.5	1 820	4 000	NNCF4964V	
480	480	4	446.9	3 500	7 200	NNCF5064V	
340	420	90	2.1	397.4	965	2 420	NNCF4968V
460	410	3	431	1 890	4 300	NNCF4968V	
500	500	5	485.8	4 250	8 750	NNCF5068V	
360	440	90	2.1	420.4	895	2 580	NNCF4872V
480	410	3	443	1 730	4 500	NNCF4872V	
540	540	5	503.6	4 350	9 100	NNCF5072V	
380	480	100	2.1	450.6	1 260	3 600	NNCF4876V
520	440	4	482.0	2 180	6 600	NNCF4876V	
560	560	5	521.4	4 600	9 600	NNCF5076V	
400	500	100	2.1	471.7	1 290	3 750	NNCF4880V
540	440	4	503	2 240	6 900	NNCF4880V	
600	600	7	558.7	5 050	10 500	NNCF5080V	
420	520	100	2.1	492	1 320	3 960	NNCF4884V
560	440	4	523	2 290	6 900	NNCF4884V	
620	620	7	577.7	5 150	11 300	NNCF5084V	
440	540	100	2.1	513	1 350	4 150	NNCF4888V
600	460	4	560.5	3 000	7 850	NNCF4888V	
460	580	118	3	543.2	1 730	5 150	NNCF4892V
600	460	4	573	3 050	8 650	NNCF5092V	
480	600	118	3	565.8	1 760	5 300	NNCF4896V
650	460	5	603	3 350	8 900	NNCF4996V	
500	620	118	3	590.7	1 810	5 600	NNCF48900V
670	460	5	629	3 400	9 950	NNCF5096V	

Remark Full-complement cylindrical roller bearings are designed for specific applications, when using them, please contact NSK.

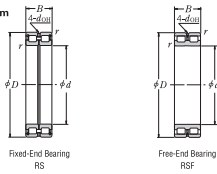
d _a	Abutment and Fillet Dimensions (mm)			Mass (kg)
	D _a	r _a	r _a max.	
295	324	2	1.6	1.6
307	361	2	3.4	3.4
382	395	3	8.7	8.7
318	381	3	2.3	2.3
320	398	2.5	5.2	5.2
323	425	3	12.5	12.5
338	381	2	24.3	24.3
340	419	2.5	5.5	5.5
343	524	3	15.1	15.1
359	400	2	25.6	25.6
361	438	2.5	5.8	5.8
368	490	4	17.7	17.7
379	421	2	2.7	2.7
381	457	2.5	6.1	6.1
388	568	4	16.8	16.8
399	459	2	45.5	45.5
404	453	3	90.5	90.5
408	529	4	134	134
420	478	2	47.5	47.5
425	513	3	94.5	94.5
429	568	4	25.6	25.6
440	498	2	48.5	48.5
445	533	3	98.5	98.5
449	568	4	26.7	26.7
461	518	2	51.5	51.5
466	572	3	136	136
483	555	2.5	77.5	77.5
486	591	3	142	142
503	575	2.5	80.5	80.5
510	617	4	167	167
524	594	2.5	83.5	83.5
621	637	4	173	173

C 172

C 173

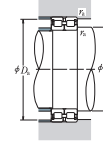
■ FULL-COMPLEMENT CYLINDRICAL ROLLER BEARINGS FOR SHEAVES

RS-48 - RS-49 Types
RSF-48 - RSF-49 Types
Bore Diameter 50 - 220 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Limiting Speeds (min ⁻¹)	
d	D	B	r	C _r	C _{0e}	Grease	Oil
50	72	22	0.6	48 000	75 500	2 000	4 000
60	85	25	1	58 000	118 000	1 800	3 200
65	90	25	1	70 500	125 000	1 600	3 200
70	100	30	1	102 000	168 000	1 400	2 800
80	110	30	1	108 000	191 000	1 300	2 600
90	125	35	1.1	147 000	268 000	1 100	2 200
100	125	25	1	87 500	180 000	1 100	2 200
140	140	40	1.1	194 000	400 000	1 000	2 000
105	130	25	1	89 000	196 000	1 000	2 000
145	145	40	1.1	199 000	420 000	950	1 900
110	140	30	1	114 000	260 000	950	1 900
150	150	40	1.1	202 000	450 000	900	1 800
120	150	30	1	119 000	283 000	900	1 800
165	165	45	1.1	226 000	480 000	800	1 600
130	165	35	1.1	162 000	300 000	800	1 600
180	180	50	1.5	262 000	555 000	750	1 500
140	175	35	1.1	167 000	415 000	750	1 500
190	190	50	1.5	272 000	585 000	710	1 400
150	190	40	1.1	235 000	578 000	670	1 400
210	210	60	2	390 000	865 000	670	1 300
160	200	40	1.1	243 000	615 000	630	1 300
220	220	60	2	410 000	930 000	600	1 200
170	215	45	1.1	265 000	650 000	600	1 200
230	230	60	2	415 000	975 000	600	1 200
180	225	45	1.1	272 000	688 000	560	1 100
250	250	65	2	495 000	1 130 000	530	1 100
190	240	60	1.5	315 000	785 000	530	1 100
260	260	69	2	510 000	1 180 000	500	1 000
200	250	50	1.5	320 000	825 000	500	1 000
280	280	80	2.1	685 000	1 500 000	460	900
220	270	50	1.5	340 000	905 000	450	900
300	300	80	2.1	695 000	1 620 000	430	850

Remark Cylindrical roller bearings for sheaves are designed for specific applications, when using them, please contact NSK.

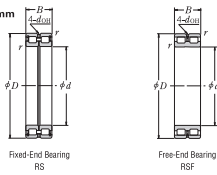


Bearing Numbers ⁽¹⁾		Dimensions (mm)		Abutment and Fillet Dimensions (mm)			Mass (kg)
Fixed-End Bearing	Free-End Bearing	d _{oil} ⁽²⁾	axial Disp. ⁽³⁾	d ₁ min.	D ₁ max.	r _a max.	approx.
RS-4910E4	RSF-4910E4	2.5	1.5	54	68	0.6	0.30
RS-4912E4	RSF-4912E4	2.5	1.5	65	80	1	0.46
RS-4913E4	RSF-4913E4	2.5	1.5	70	95	1	0.50
RS-4914E4	RSF-4914E4	3	2	75	95	1	0.79
RS-4918E4	RSF-4918E4	3	2	85	105	1	0.89
RS-4918E4	RSF-4918E4	3	2	96.5	118.5	1	1.35
RS-4920E4	RSF-4920E4	2.5	1.5	105	120	1	0.74
RS-4920E4	RSF-4920E4	3	2	108.5	133.5	1	1.97
RS-4921E4	RSF-4921E4	2.5	1.5	110	125	1	0.77
RS-4921E4	RSF-4921E4	3	2	111.5	138.5	1	2.05
RS-4922E4	RSF-4922E4	4	3	115	135	1	1.09
RS-4922E4	RSF-4922E4	3	2	116.5	143.5	1	2.15
RS-4924E4	RSF-4924E4	3	2	125	145	1	1.28
RS-4924E4	RSF-4924E4	4	3	128.5	158.5	1	2.95
RS-4926E4	RSF-4926E4	3	2	136.5	158.5	1	1.9
RS-4926E4	RSF-4926E4	5	3.5	138	172	1.5	3.95
RS-4928E4	RSF-4928E4	3	2	148.5	168.5	1	2.03
RS-4928E4	RSF-4928E4	5	3.5	149	182	1.5	4.25
RS-4930E4	RSF-4930E4	3	2	156.5	183.5	1	2.85
RS-4930E4	RSF-4930E4	5	3.5	159	201	2	6.65
RS-4932E4	RSF-4932E4	3	2	168.5	193.5	1	3.05
RS-4932E4	RSF-4932E4	5	3.5	169	211	2	7.0
RS-4934E4	RSF-4934E4	4	3	176.5	208.5	1	4.1
RS-4934E4	RSF-4934E4	4	3.5	179	221	2	7.35
RS-4936E4	RSF-4936E4	4	3	186.5	218.5	1	4.3
RS-4936E4	RSF-4936E4	6	4.5	189	241	2	10.7
RS-4938E4	RSF-4938E4	5	3.5	198	232	1.5	6.65
RS-4938E4	RSF-4938E4	6	4.5	199	251	2	11.1
RS-4940E4	RSF-4940E4	5	3.5	208	242	1.5	5.95
RS-4940E4	RSF-4940E4	6	4.5	211	269	2	16.7
RS-4944E4	RSF-4944E4	5	3.5	228	262	1.5	6.45
RS-4944E4	RSF-4944E4	7	5	231	289	2	17

Notes ⁽¹⁾ The suffix E4 indicates that the outer ring is provided with oil holes and oil groove.
⁽²⁾ d_{oil} represents the oil hole diameter in the outer ring.
⁽³⁾ Permissible axial displacement for free-end bearings.

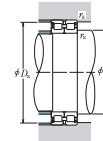
■ FULL-COMPLEMENT CYLINDRICAL ROLLER BEARINGS FOR SHEAVES

RS-48 - RS-49 Types
RSF-48 - RSF-49 Types
Bore Diameter 240 - 560 mm



Boundary Dimensions (mm)				Basic Load Ratings (N)		Limiting Speeds (min ⁻¹)	
d	D	B	r	C _r	C _{0e}	Grease	Oil
240	300	60	2	495 000	1 340 000	430	850
320	320	80	2.1	725 000	1 770 000	400	800
260	320	60	2	515 000	1 450 000	380	750
360	360	100	2.1	1 050 000	2 930 000	360	710
280	350	69	2	610 000	1 690 000	340	710
380	380	100	2.1	1 090 000	2 720 000	340	670
300	380	80	2.1	805 000	2 160 000	320	630
420	420	115	3	1 465 000	3 400 000	300	600
320	400	80	2.1	835 000	2 310 000	300	600
440	440	118	3	1 500 000	3 600 000	280	560
340	420	80	2.1	855 000	2 430 000	280	560
460	460	118	3	1 560 000	3 900 000	260	530
360	440	80	2.1	885 000	2 580 000	260	530
480	480	118	3	1 600 000	4 050 000	260	500
380	460	100	2.1	920 000	2 600 000	240	500
500	520	140	4	2 040 000	5 200 000	240	450
400	500	100	2.1	1 290 000	3 750 000	240	480
540	540	140	4	2 100 000	5 490 000	220	450
420	520	100	2.1	1 320 000	3 850 000	220	450
560	560	140	4	2 150 000	5 700 000	200	430
440	540	100	2.1	1 350 000	4 150 000	200	430
600	600	160	4	2 840 000	7 350 000	190	380
460	580	118	3	1 730 000	5 150 000	190	380
620	620	160	4	2 870 000	7 500 000	190	380
480	600	118	3	1 760 000	5 300 000	180	360
650	650	170	5	3 200 000	8 500 000	160	360
500	620	118	3	1 810 000	5 600 000	180	360
670	670	170	5	3 300 000	8 900 000	170	340
530	710	180	5	3 400 000	9 200 000	160	320
690	760	190	5	3 800 000	10 100 000	150	300

Remark Cylindrical roller bearings for sheaves are designed for specific applications, when using them, please contact NSK.

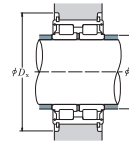
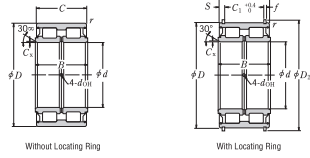


Bearing Numbers ⁽¹⁾		Dimensions (mm)		Abutment and Fillet Dimensions (mm)			Mass (kg)
Fixed-End Bearing	Free-End Bearing	d _{oil} ⁽²⁾	axial Disp. ⁽³⁾	d ₁ min.	D ₁ max.	r _a max.	approx.
RS-4848E4	RSF-4848E4	5	3.5	249	291	2	10.3
RS-4948E4	RSF-4948E4	7	5	251	309	2	18.4
RS-4852E4	RSF-4852E4	5	3.5	269	311	2	11
RS-4952E4	RSF-4952E4	8	6	271	349	2	32
RS-4856E4	RSF-4856E4	6	4.5	289	341	2	16
RS-4956E4	RSF-4956E4	8	6	291	369	2	34
RS-4860E4	RSF-4860E4	6	5	311	369	2	23
RS-4960E4	RSF-4960E4	9	7	313	407	2.5	52
RS-4864E4	RSF-4864E4	6	5	331	389	2	24.3
RS-4964E4	RSF-4964E4	9	7	333	427	2.5	55
RS-4868E4	RSF-4868E4	6	5	351	409	2	25.6
RS-4968E4	RSF-4968E4	9	7	353	447	2.5	58
RS-4872E4	RSF-4872E4	6	5	371	429	2	27
RS-4972E4	RSF-4972E4	9	7	373	467	2.5	61
RS-4876E4	RSF-4876E4	8	6	391	469	2	45.5
RS-4976E4	RSF-4976E4	11	8	396	504	3	90.5
RS-4880E4	RSF-4880E4	8	6	411	489	2	47.5
RS-4980E4	RSF-4980E4	11	8	416	524	3	94.5
RS-4884E4	RSF-4884E4	8	6	431	509	2	49.5
RS-4984E4	RSF-4984E4	11	8	436	544	3	98.5
RS-4888E4	RSF-4888E4	8	6	451	529	2	51.5
RS-4988E4	RSF-4988E4	11	8	456	584	3	136
RS-4892E4	RSF-4892E4	9	7	473	567	2.5	77.5
RS-4992E4	RSF-4992E4	11	8	476	604	3	142
RS-4896E4	RSF-4896E4	9	7	493	587	2.5	80.5
RS-4996E4	RSF-4996E4	12	9	500	630	4	162
RS-48/500E4	RSF-48/500E4	9	7	513	607	2.5	83.5
RS-49/500E4	RSF-49/500E4	12	9	520	650	4	173
RS-48/530E4	RSF-48/530E4	12	11	550	690	4	206
RS-49/530E4	RSF-49/530E4	12	11	560	730	4	231

Notes ⁽¹⁾ The suffix E4 indicates that the outer ring is provided with oil holes and oil groove.
⁽²⁾ d_{oil} represents the oil hole diameter in the outer ring.
⁽³⁾ Permissible axial displacement for free-end bearings.

■ FULL-COMPLEMENT CYLINDRICAL ROLLER BEARINGS FOR SHEAVES

RS-50 Type (Prelubricated)
Bore Diameter 40 - 400 mm



d	D	Boundary Dimensions (mm)			C ₁ ⁽¹⁾ mm	r mm	Basic Load Ratings (N)		Limiting Speed (min ⁻¹) Grease
		B	C	C ₁			C ₂	C ₁₀	
40	68	38	37	0.4	0.6	79 500	116 000	2 400	
45	75	40	39	0.4	0.6	86 500	144 000	2 200	
50	80	40	39	0.4	0.6	100 000	158 000	2 000	
55	90	46	45	0.6	0.6	118 000	193 000	1 800	
60	95	46	45	0.6	0.6	123 000	208 000	1 700	
65	100	46	45	0.6	0.6	128 000	224 000	1 600	
70	110	54	53	0.6	0.6	171 000	285 000	1 400	
75	115	54	53	0.6	0.6	179 000	305 000	1 400	
80	125	60	59	0.6	0.6	251 000	430 000	1 200	
85	130	60	59	0.6	0.6	256 000	445 000	1 200	
90	140	67	66	1	0.6	305 000	540 000	1 100	
95	145	67	66	1	0.6	310 000	565 000	1 100	
100	150	67	66	1	0.6	320 000	585 000	1 000	
110	170	80	79	1.1	1	386 000	695 000	900	
120	180	80	79	1.1	1	400 000	750 000	850	
130	200	95	94	1.1	1	535 000	1 000 000	750	
140	210	95	94	1.1	1	550 000	1 040 000	710	
150	225	100	99	1.3	1	620 000	1 210 000	670	
160	240	109	108	1.3	1.1	695 000	1 370 000	630	
170	260	122	121	1.3	1.1	860 000	1 680 000	600	
180	280	136	135	1.3	1.1	980 000	1 910 000	530	
190	290	136	135	1.3	1.1	1 120 000	2 230 000	500	
200	310	150	149	1.3	1.1	1 310 000	2 650 000	480	
220	340	160	159	1.5	1.1	1 510 000	3 100 000	430	
240	360	160	159	1.5	1.1	1 570 000	3 350 000	400	
260	400	190	189	2	1.5	2 130 000	4 500 000	360	
280	420	190	189	2	1.5	2 170 000	4 700 000	340	
300	460	218	216	2	1.5	2 670 000	5 850 000	300	
320	480	218	216	2	1.5	2 730 000	6 100 000	300	
340	520	243	241	2.1	2	3 350 000	7 550 000	260	
360	540	243	241	2.1	2	3 450 000	7 850 000	260	
380	560	243	241	2.1	2	3 650 000	8 400 000	240	
400	600	272	270	2.1	2	4 250 000	9 950 000	220	

Note ⁽¹⁾ Chamfer dimension of inner ring in radial direction.

Remarks 1. Good quality grease is prepacked in bearings.
2. Grease can be supplied through oil holes in the inner rings.

Bearing Numbers		Locating Ring Dimensions (mm)				Oil Hole (mm)	Adjustment and Filler Dimensions (mm)		Mass (kg)
Without Locating Ring	With Locating Ring	C ₁	S	D ₂	f		d _{mit}	D _{mit}	
RS-5008	RS-5008NR	28	4.5	71.8	2	2.5	43.5	77.5	0.56
RS-5009	RS-5009NR	30	4.5	78.8	2	2.5	48.5	84.5	0.70
RS-5010	RS-5010NR	30	4.5	83.8	2	2.5	53.5	89.5	0.76
RS-5011	RS-5011NR	34	5.5	84.8	2.5	3	60	101	1.17
RS-5012	RS-5012NR	34	5.5	89.8	2.5	3	65	106	1.25
RS-5013	RS-5013NR	34	5.5	104.8	2.5	3	70	111	1.32
RS-5014	RS-5014NR	42	5.5	114.5	2.5	3	75	121	1.87
RS-5015	RS-5015NR	42	5.5	119.5	2.5	3	80	126	2.0
RS-5016	RS-5016NR	48	5.5	129.5	2.5	3	85	136	2.65
RS-5017	RS-5017NR	48	5.5	134.5	2.5	3	90	141	2.75
RS-5018	RS-5018NR	54	6	145.4	2.5	4	96	153.5	3.75
RS-5019	RS-5019NR	54	6	150.4	2.5	4	101	158.5	3.95
RS-5020	RS-5020NR	54	6	155.4	2.5	4	106	163.5	4.05
RS-5022	RS-5022NR	65	7	175.4	2.5	5	118.5	183.5	6.1
RS-5024	RS-5024NR	65	7	188	3	5	126.5	197	7.0
RS-5026	RS-5026NR	77	8.5	207	3	5	136.5	217	10.6
RS-5028	RS-5028NR	77	8.5	217	3	5	146.5	227	11.3
RS-5030	RS-5030NR	81	9	232	3	6	157	242	13.7
RS-5032	RS-5032NR	89	9.5	247	3	6	167	257	16.8
RS-5034	RS-5034NR	89	11	270	4	6	177	285	22.2
RS-5036	RS-5036NR	110	12.5	294	5	6	187	318	30
RS-5038	RS-5038NR	110	12.5	304	5	6	197	328	32
RS-5040	RS-5040NR	120	14.5	324	5	6	207	352	41
RS-5044	RS-5044NR	130	14.5	356	6	7	228.5	382	53
RS-5048	RS-5048NR	130	14.5	376	6	7	248.5	402	57
RS-5052	RS-5052NR	154	17.5	419	7	8	270	444	86
RS-5056	RS-5056NR	154	17.5	436	7	8	290	472	92
RS-5060	RS-5060NR	178	19	476	7	8	310	512	130
RS-5068	—	—	—	—	—	10	362	—	185
RS-5072	—	—	—	—	—	10	372	—	192
RS-5076	—	—	—	—	—	10	382	—	196
RS-5080	—	—	—	—	—	10	412	—	280

Remarks 3. Cylindrical roller bearings for sheaves are designed for specific applications, when using them, please contact NSK.
4. For shield with outside diameter larger than 180mm, the above figure is different actual shape. For detail drawing, please contact NSK.