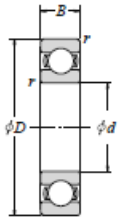
TEK SIRALI SABİT BİLYALI RULMANLAR

Delik Çapı 10 – 22 mm

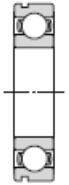


Açık Tip

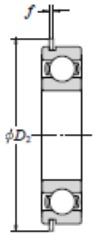
Kapaklı Tip ZZ

Temassız Keçeli Tip VV

Temaslı Keçeli Tip DD · DDU



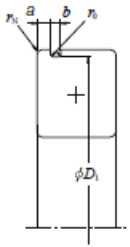
Emniyet Segman Yuvalı N

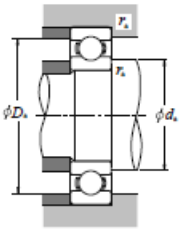


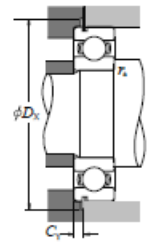
Emniyet Segmanlı NR

Temel Ölçüler (mm)				Temel Yük Değerleri (N)		(kgf)		Faktör	Limit Hızları (dak⁻¹) Gres		Yağ	Rulman Numaraları			
d	D	B	r min.	C_r	C_{0r}	C_r	C_{0r}	f_0	Açık Z · ZZ V · VV	DU DDU	Açık Z	Açık	Kapaklı		Keçeli
10	19	5	0.3	1 720	840	175	86	14.8	34 000	24 000	40 000	6800	ZZ	VV	DD
	22	6	0.3	2 700	1 270	275	129	14.0	32 000	22 000	38 000	6900	ZZ	VV	DD
	26	8	0.3	4 550	1 970	465	201	12.4	30 000	22 000	36 000	6000	ZZ	VV	DDU
	30	9	0.6	5 100	2 390	520	244	13.2	24 000	18 000	30 000	6200	ZZ	VV	DDU
	35	11	0.6	8 100	3 450	825	350	11.2	22 000	17 000	26 000	6300	ZZ	VV	DDU
12	21	5	0.3	1 920	1 040	195	106	15.3	32 000	20 000	38 000	6801	ZZ	VV	DD
	24	6	0.3	2 890	1 460	295	149	14.5	30 000	20 000	36 000	6901	ZZ	VV	DD
	28	7	0.3	5 100	2 370	520	241	13.0	28 000	—	32 000	16001	—	—	—
	28	8	0.3	5 100	2 370	520	241	13.0	28 000	18 000	32 000	6001	ZZ	VV	DDU
	32	10	0.6	6 800	3 050	695	310	12.3	22 000	17 000	28 000	6201	ZZ	VV	DDU
	37	12	1	9 700	4 200	990	425	11.1	20 000	16 000	24 000	6301	ZZ	VV	DDU
15	24	5	0.3	2 070	1 260	212	128	15.8	28 000	17 000	34 000	6802	ZZ	VV	DD
	28	7	0.3	4 350	2 260	440	230	14.3	26 000	17 000	30 000	6902	ZZ	VV	DD
	32	8	0.3	5 600	2 830	570	289	13.9	24 000	—	28 000	16002	—	—	—
	32	9	0.3	5 600	2 830	570	289	13.9	24 000	15 000	28 000	6002	ZZ	VV	DDU
	35	11	0.6	7 650	3 750	780	380	13.2	20 000	14 000	24 000	6202	ZZ	VV	DDU
	42	13	1	11 400	5 450	1 170	555	12.3	17 000	13 000	20 000	6302	ZZ	VV	DDU
17	26	5	0.3	2 630	1 570	268	160	15.7	26 000	15 000	30 000	6803	ZZ	VV	DD
	30	7	0.3	4 600	2 550	470	260	14.7	24 000	15 000	28 000	6903	ZZ	VV	DDU
	35	8	0.3	6 000	3 250	610	330	14.4	22 000	—	26 000	16003	—	—	—
	35	10	0.3	6 000	3 250	610	330	14.4	22 000	13 000	26 000	6003	ZZ	VV	DDU
	40	12	0.6	9 550	4 800	975	490	13.2	17 000	12 000	20 000	6203	ZZ	VV	DDU
	47	14	1	13 600	6 650	1 390	675	12.4	15 000	11 000	18 000	6303	ZZ	VV	DDU
20	32	7	0.3	4 000	2 470	410	252	15.5	22 000	13 000	26 000	6804	ZZ	VV	DD
	37	9	0.3	6 400	3 700	650	375	14.7	19 000	12 000	22 000	6904	ZZ	VV	DDU
	42	8	0.3	7 900	4 450	810	455	14.5	18 000	—	20 000	16004	—	—	—
	42	12	0.6	9 400	5 000	955	510	13.8	18 000	11 000	20 000	6004	ZZ	VV	DDU
	47	14	1	12 800	6 600	1 300	670	13.1	15 000	11 000	18 000	6204	ZZ	VV	DDU
	52	15	1.1	15 900	7 900	1 620	805	12.4	14 000	10 000	17 000	6304	ZZ	VV	DDU
22	44	12	0.6	9 400	5 050	960	515	14.0	17 000	11 000	20 000	60/22	ZZ	VV	DDU
	50	14	1	12 900	6 800	1 320	695	13.5	14 000	9 500	16 000	62/22	ZZ	VV	DDU
	56	16	1.1	18 400	9 250	1 870	940	12.4	13 000	9 500	16 000	63/22	ZZ	VV	DDU

Notlar (¹) Emniyet segmanı yuvalarının toleransları ve emniyet segmanı ölçüleri için, **A50** ile **A53** aracındaki sayfalara bakınız.
(²) Ağır eksenel yükler uygulandığında, yukarıdaki değerlerden d_a 'yı arttırın ve D_a 'yı azaltınız.
(³) N ve NR bilezik tipleri sadece açık tip rulmanlar için geçerlidir.







Dinamik Eşdeğer Yük

$P = XF_r + YF_a$

$\frac{f_0 F_a}{C_{0r}}$	e	$\frac{F_a}{F_r} \le e$ X	Y	$\frac{F_a}{F_r} > e$ X	Y
0.172	0.19	1	0	0.56	2.30
0.345	0.22	1	0	0.56	1.99
0.689	0.26	1	0	0.56	1.71
1.03	0.28	1	0	0.56	1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34	1	0	0.56	1.31
3.45	0.38	1	0	0.56	1.15
5.17	0.42	1	0	0.56	1.04
6.89	0.44	1	0	0.56	1.00

Statik Eşdeğer Yük

$\frac{F_a}{F_r} > 0.8,\ P_0 = 0.6F_r + 0.5F_a$

$\frac{F_a}{F_r} \le 0.8,\ P_0 = F_r$

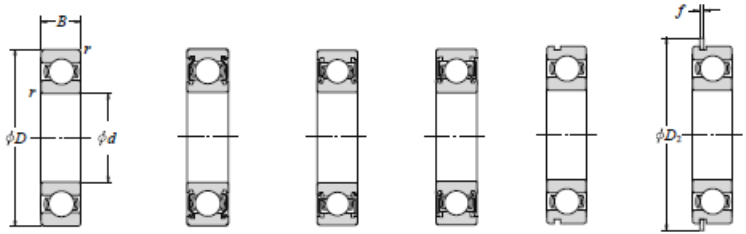
Emniyet Segman Yuvalı	Emniyet Segmanlı	Emniyet Segmanı Yuvası Ölçüleri (¹) (mm) a maks.	b min.	D_1 maks.	r_b maks.	r_N min.	Emniyet Segmanı (¹) Ölçüleri (mm) D_2 maks.	f maks.	Dayanak ve Dolgu Ölçüleri (mm) d_a(²) min.	d_a(²) maks.	D_a(²) maks.	r_a maks.	D_a min.	C_Y maks.	Kütle (kg) yaklaşık
—	—	—	—	—	—	—	—	—	12	12	17	0.3	—	—	0.005
N(³)	NR(³)	1.05	0.8	20.8	0.2	0.2	24.8	0.7	12	12.5	20	0.3	25.5	1.5	0.009
N(⁴)	NR(⁴)	1.35	0.87	24.5	0.2	0.3	28.7	0.84	12	13	24	0.3	29.4	1.9	0.018
N	NR	2.06	1.35	28.17	0.4	0.5	34.7	1.12	14	16	26	0.6	35.5	2.9	0.032
N	NR	2.06	1.35	33.17	0.4	0.5	39.7	1.12	14	16.5	31	0.6	40.5	2.9	0.052
—	—	—	—	—	—	—	—	—	14	14	19	0.3	—	—	0.006
N	NR	1.05	0.8	22.8	0.2	0.2	26.8	0.7	14	14.5	22	0.3	27.5	1.5	0.010
—	—	—	—	—	—	—	—	—	14	—	26	0.3	—	—	0.019
N(⁴)	NR(⁴)	1.35	0.87	26.5	0.2	0.3	30.7	0.84	14	15.5	26	0.3	31.4	1.9	0.022
N	NR	2.06	1.35	30.15	0.4	0.5	36.7	1.12	16	17	28	0.6	37.5	2.9	0.037
N	NR	2.06	1.35	34.77	0.4	0.5	41.3	1.12	17	18	32	1	42	2.9	0.060
—	—	—	—	—	—	—	—	—	17	17	22	0.3	—	—	0.007
N	NR	1.3	0.95	26.7	0.25	0.3	30.8	0.85	17	17	26	0.3	31.5	1.8	0.015
—	—	—	—	—	—	—	—	—	17	—	30	0.3	—	—	0.027
N	NR	2.06	1.35	30.15	0.4	0.3	36.7	1.12	17	19	30	0.3	37.5	2.9	0.031
N	NR	2.06	1.35	33.17	0.4	0.5	39.7	1.12	19	20.5	31	0.6	40.5	2.9	0.045
N	NR	2.06	1.35	39.75	0.4	0.5	46.3	1.12	20	22.5	37	1	47	2.9	0.083
—	—	—	—	—	—	—	—	—	19	19	24	0.3	—	—	0.007
N	NR	1.3	0.95	28.7	0.25	0.3	32.8	0.85	19	19.5	28	0.3	33.5	1.8	0.017
—	—	—	—	—	—	—	—	—	19	—	33	0.3	—	—	0.033
N	NR	2.06	1.35	33.17	0.4	0.3	39.7	1.12	19	21.5	33	0.3	40.5	2.9	0.041
N	NR	2.06	1.35	38.1	0.4	0.5	44.6	1.12	21	23.5	36	0.6	45.5	2.9	0.067
N	NR	2.46	1.35	44.6	0.4	0.5	52.7	1.12	22	25.5	42	1	53.5	3.3	0.113
N	NR	1.3	0.95	30.7	0.25	0.3	34.8	0.85	22	22	30	0.3	35.5	1.8	0.017
N	NR	1.7	0.95	35.7	0.25	0.3	39.8	0.85	22	24	35	0.3	40.5	2.3	0.037
—	—	—	—	—	—	—	—	—	22	—	40	0.3	—	—	0.048
N	NR	2.06	1.35	39.75	0.4	0.5	46.3	1.12	24	25.5	38	0.6	47	2.9	0.068
N	NR	2.46	1.35	44.6	0.4	0.5	52.7	1.12	25	26.5	42	1	53.5	3.3	0.107
N	NR	2.46	1.35	49.73	0.4	0.5	57.9	1.12	26.5	28	45.5	1	58.5	3.3	0.145
N	NR	2.06	1.35	41.75	0.4	0.5	48.3	1.12	26	26.5	40	0.6	49	2.9	0.074
N	NR	2.46	1.35	47.6	0.4	0.5	55.7	1.12	27	29.5	45	1	56.5	3.3	0.119
N	NR	2.46	1.35	53.6	0.4	0.5	61.7	1.12	28.5	30.5	49.5	1	62.5	3.3	0.179

Notlar (⁴) Emniyet segmanı yuvası ölçüleri ve emniyet segmanı ölçüleri ISO15'e uygun değildir.

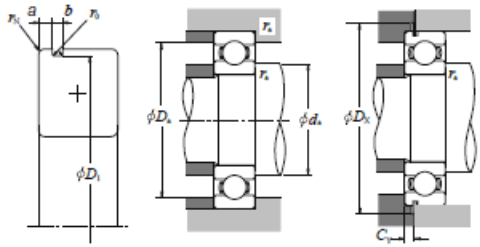
Notlar
1. Çap Serisi 7 (çok ince kesitli rulmanlar) de mevcuttur, lütfen NSK'ya başvurunuz.
2. Döner dış bilezikli rulmanları kullanırken, rulmanlar keçeli, kapaklı ise veya emniyet segmanları varsa NSK'ya başvurunuz.

TEK SIRALI SABİT BİLYALI RULMANLAR

Delik Çapı 25 – 45 mm



Açık Tip | Kapaklı Tip ZZ | Temassız Keçeli Tip VV | Temaslı Keçeli Tip DD · DDU | Emniyet Segman Yuvalı N | Emniyet Segmanlı NR



Dinamik Eşdeğer Yük

$P = XF_r + YF_a$

$\frac{f_0 F_a}{C_{0r}}$	e	$\frac{F_a}{F_r} \le e$		$\frac{F_a}{F_r} > e$	
		X	Y	X	Y
0.172	0.19	1	0	0.56	2.30
0.345	0.22	1	0	0.56	1.99
0.689	0.26	1	0	0.56	1.71
1.03	0.28	1	0	0.56	1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34	1	0	0.56	1.31
3.45	0.38	1	0	0.56	1.15
5.17	0.42	1	0	0.56	1.04
6.89	0.44	1	0	0.56	1.00

Statik Eşdeğer Yük

$\frac{F_a}{F_r} > 0.8,\ P_0 = 0.6F_r + 0.5F_a$

$\frac{F_a}{F_r} \le 0.8,\ P_0 = F_r$

Temel Ölçüler (mm)				Temel Yük Değerleri (N)		{kgf}		Faktör	Limit Hızları (dak⁻¹) Gres: Açık Z · ZZ V · VV	Gres: DU DDU	Yağ: Açık Z	Rulman Numaraları			
d	D	B	r min.	C_r	C_{0r}	C_r	C_{0r}	f_0				Açık	Kapaklı	Keçeli	
25	37	7	0.3	4 500	3 150	455	320	16.1	18 000	10 000	22 000	**6805**	ZZ	VV	DD
	42	9	0.3	7 050	4 550	715	460	15.4	16 000	10 000	19 000	**6905**	ZZ	VV	DDU
	47	8	0.3	8 850	5 600	905	570	15.1	15 000	—	18 000	**16005**	—	—	—
	47	12	0.6	10 100	5 850	1 030	595	14.5	15 000	9 500	18 000	**6005**	ZZ	VV	DDU
	52	15	1	14 000	7 850	1 430	800	13.9	13 000	9 000	15 000	**6205**	ZZ	VV	DDU
	62	17	1.1	20 600	11 200	2 100	1 150	13.2	11 000	8 000	13 000	**6305**	ZZ	VV	DDU
28	52	12	0.6	12 500	7 400	1 270	755	14.5	14 000	8 500	16 000	**60/28**	ZZ	VV	DDU
	58	16	1	16 600	9 500	1 700	970	13.9	12 000	8 000	14 000	**62/28**	ZZ	VV	DDU
	68	18	1.1	26 700	14 000	2 730	1 430	12.4	10 000	7 500	13 000	**63/28**	ZZ	VV	DDU
30	42	7	0.3	4 700	3 650	480	370	16.4	15 000	9 000	18 000	**6806**	ZZ	VV	DD
	47	9	0.3	7 250	5 000	740	510	15.8	14 000	8 500	17 000	**6906**	ZZ	VV	DDU
	55	9	0.3	11 200	7 350	1 150	750	15.2	13 000	—	15 000	**16006**	—	—	—
	55	13	1	13 200	8 300	1 350	845	14.7	13 000	8 000	15 000	**6006**	ZZ	VV	DDU
	62	16	1	19 500	11 300	1 980	1 150	13.8	11 000	7 500	13 000	**6206**	ZZ	VV	DDU
	72	19	1.1	26 700	15 000	2 720	1 530	13.3	9 500	6 700	12 000	**6306**	ZZ	VV	DDU
32	58	13	1	15 100	9 150	1 530	935	14.5	12 000	7 500	14 000	**60/32**	ZZ	VV	DDU
	65	17	1	20 700	11 600	2 120	1 190	13.6	10 000	7 100	12 000	**62/32**	ZZ	VV	DDU
	75	20	1.1	29 900	17 000	3 050	1 730	13.2	9 000	6 300	11 000	**63/32**	ZZ	VV	DDU
35	47	7	0.3	4 900	4 100	500	420	16.7	14 000	7 500	16 000	**6807**	ZZ	VV	DD
	55	10	0.6	10 600	7 250	1 080	740	15.5	12 000	7 500	15 000	**6907**	ZZ	VV	DDU
	62	9	0.3	11 700	8 200	1 190	835	15.6	11 000	—	13 000	**16007**	—	—	—
	62	14	1	16 000	10 300	1 630	1 050	14.8	11 000	6 700	13 000	**6007**	ZZ	VV	DDU
	72	17	1.1	25 700	15 300	2 620	1 560	13.8	9 500	6 300	11 000	**6207**	ZZ	VV	DDU
	80	21	1.5	33 500	19 200	3 400	1 960	13.2	8 500	6 000	10 000	**6307**	ZZ	VV	DDU
40	52	7	0.3	6 350	5 550	650	565	17.0	12 000	6 700	14 000	**6808**	ZZ	VV	DD
	62	12	0.6	13 700	10 000	1 390	1 020	15.7	11 000	6 300	13 000	**6908**	ZZ	VV	DDU
	68	9	0.3	12 600	9 650	1 290	985	16.0	10 000	—	12 000	**16008**	—	—	—
	68	15	1	16 800	11 500	1 710	1 180	15.3	10 000	6 000	12 000	**6008**	ZZ	VV	DDU
	80	18	1.1	29 100	17 900	2 970	1 820	14.0	8 500	5 600	10 000	**6208**	ZZ	VV	DDU
	90	23	1.5	40 500	24 000	4 150	2 450	13.2	7 500	5 300	9 000	**6308**	ZZ	VV	DDU
45	58	7	0.3	6 600	6 150	670	625	17.2	11 000	6 000	13 000	**6809**	ZZ	VV	DD
	68	12	0.6	14 100	10 900	1 440	1 110	15.9	9 500	5 600	12 000	**6909**	ZZ	VV	DDU
	75	10	0.6	14 900	11 400	1 520	1 160	15.9	9 000	—	11 000	**16009**	—	—	—
	75	16	1	20 900	15 200	2 140	1 550	15.3	9 000	5 300	11 000	**6009**	ZZ	VV	DDU
	85	19	1.1	31 500	20 400	3 200	2 080	14.4	7 500	5 300	9 000	**6209**	ZZ	VV	DDU
	100	25	1.5	53 000	32 000	5 400	3 250	13.1	6 700	4 800	8 000	**6309**	ZZ	VV	DDU

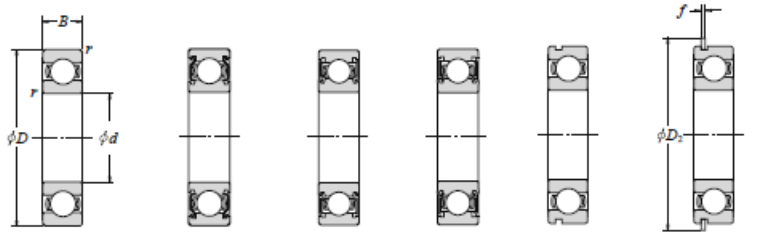
Emniyet Segmanı Yuvalı	Emniyet Segmanlı	Emniyet Segmanı Yuvası Ölçüleri (¹) (mm)					Emniyet Segmanı (¹) Ölçüleri (mm)		Dayanak ve Dolgu Ölçüleri (mm)							Kütle (kg)
		a maks.	b min.	D_1 maks.	r_0 maks.	r_N min.	D_2 maks.	f maks.	min.	d_a(²) maks.	D_a(²) maks.	r_a maks.	D_b min.	C_Y maks.	yaklaşık
N	NR	1.3	0.95	35.7	0.25	0.3	39.8	0.85	27	27	35	0.3	40.5	1.8	0.021
N	NR	1.7	0.95	40.7	0.25	0.3	44.8	0.85	27	28.5	40	0.3	45.5	2.3	0.042
—	—	—	—	—	—	—	—	—	27	—	45	0.3	—	—	0.059
N	NR	2.06	1.35	44.6	0.4	0.5	52.7	1.12	29	30	43	0.6	53.5	2.9	0.079
N	NR	2.46	1.35	49.73	0.4	0.5	57.9	1.12	30	32	47	1	58.5	3.3	0.129
N	NR	3.28	1.9	59.61	0.6	0.5	67.7	1.7	31.5	36	55.5	1	68.5	4.6	0.235
N	NR	2.06	1.35	49.73	0.4	0.5	57.9	1.12	32	34	48	0.6	58.5	2.9	0.096
N	NR	2.46	1.35	55.6	0.4	0.5	63.7	1.12	33	35.5	53	1	64.5	3.3	0.175
N	NR	3.28	1.9	64.82	0.6	0.5	74.6	1.7	34.5	38	61.5	1	76	4.6	0.287
N	NR	1.3	0.95	40.7	0.25	0.3	44.8	0.85	32	32	40	0.3	45.5	1.8	0.024
N	NR	1.7	0.95	45.7	0.25	0.3	49.8	0.85	32	34	45	0.3	50.5	2.3	0.052
—	—	—	—	—	—	—	—	—	32	—	53	0.3	—	—	0.087
N	NR	2.08	1.35	52.6	0.4	0.5	60.7	1.12	35	36.5	50	1	61.5	2.9	0.116
N	NR	3.28	1.9	59.61	0.6	0.5	67.7	1.7	35	38.5	57	1	68.5	4.6	0.199
N	NR	3.28	1.9	68.81	0.6	0.5	78.6	1.7	36.5	42.5	65.5	1	80	4.6	0.345
N	NR	2.08	1.35	55.6	0.4	0.5	63.7	1.12	37	38.5	53	1	64.5	2.9	0.122
N	NR	3.28	1.9	62.6	0.6	0.5	70.7	1.7	37	40	60	1	71.5	4.6	0.225
N	NR	3.28	1.9	71.83	0.6	0.5	81.6	1.7	38.5	44.5	68.5	1	83	4.6	0.389
N	NR	1.3	0.95	45.7	0.25	0.3	49.8	0.85	37	37	45	0.3	50.5	1.8	0.027
N	NR	1.7	0.95	53.7	0.25	0.5	57.8	0.85	39	39	51	0.6	58.5	2.3	0.075
—	—	—	—	—	—	—	—	—	37	—	60	0.3	—	—	0.107
N	NR	2.08	1.9	59.61	0.6	0.5	67.7	1.7	40	41.5	57	1	68.5	3.4	0.151
N	NR	3.28	1.9	68.81	0.6	0.5	78.6	1.7	41.5	44.5	65.5	1	80	4.6	0.284
N	NR	3.28	1.9	76.81	0.6	0.5	86.6	1.7	43	47	72	1.5	88	4.6	0.464
N	NR	1.3	0.95	50.7	0.25	0.3	54.8	0.85	42	42	50	0.3	55.5	1.8	0.031
N	NR	1.7	0.95	60.7	0.25	0.5	64.8	0.85	44	46	58	0.6	65.5	2.3	0.112
—	—	—	—	—	—	—	—	—	42	—	66	0.3	—	—	0.13
N	NR	2.49	1.9	64.82	0.6	0.5	74.6	1.7	45	47.5	63	1	76	3.8	0.19
N	NR	3.28	1.9	76.81	0.6	0.5	86.6	1.7	46.5	50.5	73.5	1	88	4.6	0.366
N	NR	3.28	2.7	86.79	0.6	0.5	96.5	2.46	48	53	82	1.5	98	5.4	0.636
N	NR	1.3	0.95	56.7	0.25	0.3	60.8	0.85	47	47.5	56	0.3	61.5	1.8	0.038
N	NR	1.7	0.95	66.7	0.25	0.5	70.8	0.85	49	50	64	0.6	72	2.3	0.126
—	—	—	—	—	—	—	—	—	49	—	71	0.6	—	—	0.167
N	NR	2.49	1.9	71.83	0.6	0.5	81.6	1.7	50	53.5	70	1	83	3.8	0.241
N	NR	3.28	1.9	81.81	0.6	0.5	91.6	1.7	51.5	55.5	78.5	1	93	4.6	0.42
N	NR	3.28	2.7	96.8	0.6	0.5	106.5	2.46	53	61.5	92	1.5	108	5.4	0.829

Notlar (¹) Emniyet segmanı yuvalarının toleransları ve emniyet segmanı ölçüleri için, **A50** ile **A53** arasındaki sayfalara bakınız.
(²) Ağır eksenel yükler uygulandığında, yukarıdaki değerlerden d_a'yı arttırınız ve D_a'yı azaltınız.

Notlar
1. Çap Serisi 7 (çok ince kesitli rulmanlar) de mevcuttur, lütfen NSK'ya başvurunuz.
2. Döner dış bilezikli rulmanları kullanırken, rulmanlar keçeli, kapaklı ise veya emniyet segmanları varsa NSK'ya başvurunuz.

TEK SIRALI SABİT BİLYALI RULMANLAR

Delik Çapı 50 – 75 mm

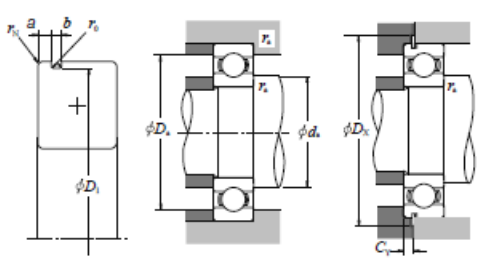


Açık Tip | Kapaklı Tip ZZ | Temassız Keçeli Tip VV | Temaslı Keçeli Tip DD · DDU | Emniyet Segman Yuvalı N | Emniyet Segmanlı NR

Temel Ölçüler (mm)				Temel Yük Değerleri (N)		(kgf)		Faktör	Limit Hızları (dak⁻¹) Gres		Yağ	Rulman Numaraları			
d	D	B	r min.	C_r	C_{0r}	C_r	C_{0r}	f_0	Açık Z · ZZ V · VV	DU DDU	Açık Σ	Açık	Kapaklı		Keçeli
50	65	7	0.3	6 400	6 200	655	635	17.2	9 500	5 300	11 000	6810	ZZ	VV	DDU
	72	12	0.6	14 500	11 700	1 480	1 200	16.1	9 000	5 300	11 000	6910	ZZ	VV	DDU
	80	10	0.6	15 400	12 400	1 570	1 260	16.1	8 500	—	10 000	16010	—	—	—
	80	16	1	21 800	16 600	2 220	1 700	15.6	8 500	4 800	10 000	6010	ZZ	VV	DDU
	90	20	1.1	35 000	23 200	3 600	2 370	14.4	7 100	4 800	8 500	6210	ZZ	VV	DDU
	110	27	2	62 000	38 500	6 300	3 900	13.2	6 000	4 300	7 500	6310	ZZ	VV	DDU
55	72	9	0.3	8 800	8 500	900	865	17.0	8 500	4 800	10 000	6811	ZZ	VV	DDU
	80	13	1	16 000	13 300	1 630	1 350	16.2	8 000	4 500	9 500	6911	ZZ	VV	DDU
	90	11	0.6	19 400	16 300	1 980	1 660	16.2	7 500	—	9 000	16011	—	—	—
	90	18	1.1	28 300	21 200	2 880	2 170	15.3	7 500	4 500	9 000	6011	ZZ	VV	DDU
	100	21	1.5	43 500	29 300	4 450	2 980	14.3	6 300	4 300	7 500	6211	ZZ	VV	DDU
	120	29	2	71 500	44 500	7 300	4 550	13.1	5 600	4 000	6 700	6311	ZZ	VV	DDU
60	78	10	0.3	11 500	10 900	1 170	1 120	16.9	8 000	4 500	9 500	6812	ZZ	VV	DD
	85	13	1	19 400	16 300	1 980	1 660	16.2	7 500	4 300	9 000	6912	ZZ	VV	DDU
	95	11	0.6	20 000	17 500	2 040	1 780	16.3	7 100	—	8 500	16012	—	—	—
	95	18	1.1	29 500	23 200	3 000	2 370	15.6	7 100	4 000	8 500	6012	ZZ	VV	DDU
	110	22	1.5	52 500	36 000	5 350	3 700	14.3	5 600	3 800	7 100	6212	ZZ	VV	DDU
	130	31	2.1	82 000	52 000	8 350	5 300	13.1	5 300	3 600	6 300	6312	ZZ	VV	DDU
65	85	10	0.6	11 900	12 100	1 220	1 230	17.0	7 500	4 000	8 500	6813	ZZ	VV	DD
	90	13	1	17 400	16 100	1 770	1 640	16.6	7 100	4 000	8 500	6913	ZZ	VV	DDU
	100	11	0.6	20 500	18 700	2 090	1 910	16.5	6 700	—	8 000	16013	—	—	—
	100	18	1.1	30 500	25 200	3 100	2 570	15.8	6 700	4 000	8 000	6013	ZZ	VV	DDU
	120	23	1.5	57 500	40 000	5 850	4 100	14.4	5 300	3 600	6 300	6213	ZZ	VV	DDU
	140	33	2.1	92 500	60 000	9 450	6 100	13.2	4 800	3 400	6 000	6313	ZZ	VV	DDU
70	90	10	0.6	12 100	12 700	1 230	1 300	17.2	6 700	3 800	8 000	6814	ZZ	VV	DD
	100	16	1	23 700	21 200	2 420	2 160	16.3	6 300	3 600	7 500	6914	ZZ	VV	DDU
	110	13	0.6	26 800	23 600	2 730	2 410	16.3	6 000	—	7 100	16014	—	—	—
	110	20	1.1	38 000	31 000	3 900	3 150	15.6	6 000	3 600	7 100	6014	ZZ	VV	DDU
	125	24	1.5	62 000	44 000	6 350	4 500	14.5	5 000	3 400	6 300	6214	ZZ	VV	DDU
	150	35	2.1	104 000	68 000	10 600	6 950	13.2	4 500	3 200	5 300	6314	ZZ	VV	DDU
75	95	10	0.6	12 500	13 900	1 280	1 410	17.3	6 300	3 600	7 500	6815	ZZ	VV	DDU
	105	16	1	24 400	22 600	2 480	2 300	16.5	6 000	3 400	7 100	6915	ZZ	VV	DDU
	115	13	0.6	27 600	25 300	2 820	2 580	16.4	5 600	—	6 700	16015	—	—	—
	115	20	1.1	39 500	33 500	4 050	3 400	15.8	5 600	3 400	6 700	6015	ZZ	VV	DDU
	130	25	1.5	66 000	49 500	6 750	5 050	14.7	4 800	3 200	5 600	6215	ZZ	VV	DDU
	160	37	2.1	113 000	77 000	11 600	7 850	13.2	4 300	2 800	5 000	6315	ZZ	VV	DDU

Notlar (¹) Emniyet segmanı yuvalarının toleransları ve emniyet segmanı ölçüleri için, **A50** ile **A53** arasındaki sayfalara bakınız.
(²) Ağır eksenel yükler uygulandığında, yukarıdaki değerlerden d_a 'yı arttırınız ve D_a 'yı azaltınız.

NSK



Dinamik Eşdeğer Yük

$P = XF_r + YF_a$

$\frac{f_0 F_a}{C_{0r}}$	e	$\frac{F_a}{F_r} \le e$		$\frac{F_a}{F_r} > e$	
		X	Y	X	Y
0.172	0.19	1	0	0.56	2.30
0.345	0.22	1	0	0.56	1.99
0.689	0.26	1	0	0.56	1.71
1.03	0.28	1	0	0.56	1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34	1	0	0.56	1.31
3.45	0.38	1	0	0.56	1.15
5.17	0.42	1	0	0.56	1.04
6.89	0.44	1	0	0.56	1.00

Statik Eşdeğer Yük

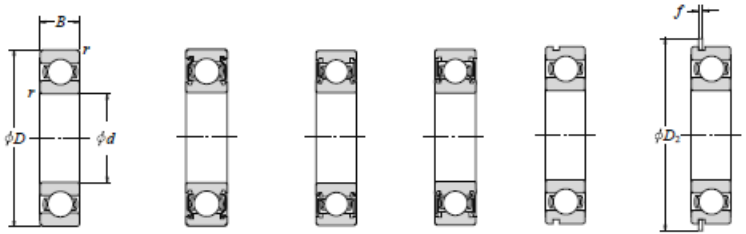
$\frac{F_a}{F_r} > 0.8,\ P_0 = 0.6F_r + 0.5F_a$

$\frac{F_a}{F_r} \le 0.8,\ P_0 = F_r$

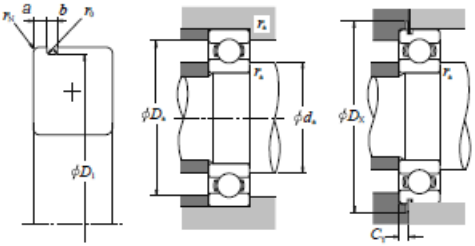
Emniyet Segman Yuvalı	Emniyet Segmanlı Versiyon	Emniyet Segmanı Yuvası Ölçüleri (¹) (mm)					Emniyet Segmanı (¹) Ölçüleri (mm)		Dayanak ve Dolgu Ölçüleri (mm)							Kütle (kg)
		a maks.	b min.	D_1 maks.	r_0 maks.	r_N min.	D_2 maks.	f maks.	d_a (²) min.	d_a (²) maks.	D_a (²) maks.	r_a maks.	D_x min.	C_Y maks.	yaklaşık
N	NR	1.3	0.95	63.7	0.25	0.3	67.8	0.85	52	52.5	63	0.3	68.5	1.8	0.050
N	NR	1.7	0.95	70.7	0.25	0.5	74.8	0.85	54	55	68	0.6	76	2.3	0.135
—	—	—	—	—	—	—	—	—	54	—	76	0.6	—	—	0.175
N	NR	2.49	1.9	76.81	0.6	0.5	86.6	1.7	55	58.5	75	1	88	3.8	0.261
N	NR	3.28	2.7	86.79	0.6	0.5	96.5	2.46	56.5	60	83.5	1	98	5.4	0.459
N	NR	3.28	2.7	106.81	0.6	0.5	116.6	2.46	59	68	101	2	118	5.4	1.06
N	NR	1.7	0.95	70.7	0.25	0.3	74.8	0.85	57	59	70	0.3	76	2.3	0.081
N	NR	2.1	1.3	77.9	0.4	0.5	84.4	1.12	60	61.5	75	1	86	2.9	0.189
—	—	—	—	—	—	—	—	—	59	—	86	0.6	—	—	0.257
N	NR	2.87	2.7	86.79	0.6	0.5	96.5	2.46	61.5	64	83.5	1	98	5	0.381
N	NR	3.28	2.7	96.8	0.6	0.5	106.5	2.46	63	66.5	92	1.5	108	5.4	0.619
N	NR	4.06	3.1	115.21	0.6	0.5	129.7	2.82	64	72.5	111	2	131.5	6.5	1.37
N	NR	1.7	1.3	76.2	0.4	0.3	82.7	1.12	62	64	76	0.3	84	2.5	0.103
N	NR	2.1	1.3	82.9	0.4	0.5	89.4	1.12	65	66	80	1	91	2.9	0.192
—	—	—	—	—	—	—	—	—	64	—	91	0.6	—	—	0.281
N	NR	2.87	2.7	91.82	0.6	0.5	101.6	2.46	66.5	69	88.5	1	103	5	0.412
N	NR	3.28	2.7	106.81	0.6	0.5	116.6	2.46	68	74.5	102	1.5	118	5.4	0.783
N	NR	4.06	3.1	125.22	0.6	0.5	139.7	2.82	71	79	119	2	141.5	6.5	1.72
N	NR	1.7	1.3	82.9	0.4	0.5	89.4	1.12	69	69	81	0.6	91	2.5	0.128
N	NR	2.1	1.3	87.9	0.4	0.5	94.4	1.12	70	71.5	85	1	96	2.9	0.218
—	—	—	—	—	—	—	—	—	69	—	96	0.6	—	—	0.30
N	NR	2.87	2.7	96.8	0.6	0.5	106.5	2.46	71.5	73	93.5	1	108	5	0.439
N	NR	4.06	3.1	115.21	0.6	0.5	129.7	2.82	73	80	112	1.5	131.5	6.5	1.0
N	NR	4.9	3.1	135.23	0.6	0.5	149.7	2.82	76	85.5	129	2	152	7.3	2.11
N	NR	1.7	1.3	87.9	0.4	0.5	94.4	1.12	74	74.5	86	0.6	96	2.5	0.134
N	NR	2.5	1.3	97.9	0.4	0.5	104.4	1.12	75	77.5	95	1	106	3.3	0.349
—	—	—	—	—	—	—	—	—	74	—	106	0.6	—	—	0.441
N	NR	2.87	2.7	106.81	0.6	0.5	116.6	2.46	76.5	80.5	103.5	1	118	5	0.608
N	NR	4.06	3.1	120.22	0.6	0.5	134.7	2.82	78	84	117	1.5	136.5	6.5	1.09
N	NR	4.9	3.1	145.24	0.6	0.5	159.7	2.82	81	92	139	2	162	7.3	2.57
N	NR	1.7	1.3	92.9	0.4	0.5	99.4	1.12	79	79.5	91	0.6	101	2.5	0.149
N	NR	2.5	1.3	102.6	0.4	0.5	110.7	1.12	80	82	100	1	112	3.3	0.364
—	—	—	—	—	—	—	—	—	79	—	111	0.6	—	—	0.463
N	NR	2.87	2.7	111.81	0.6	0.5	121.6	2.46	81.5	85.5	108.5	1	123	5	0.649
N	NR	4.06	3.1	125.22	0.6	0.5	139.7	2.82	83	90	122	1.5	141.5	6.5	1.19
N	NR	4.9	3.1	155.22	0.6	0.5	169.7	2.82	86	98.5	149	2	172	7.3	3.08

Notlar
1. Çap Serisi 7 (çok ince kesitli rulmanlar) de mevcuttur, lütfen NSK'ya başvurunuz.
2. Döner dış bilezikli rulmanları kullanırken, rulmanlar keçeli, kapaklı ise veya emniyet segmanları varsa NSK'ya başvurunuz.

Delik Çapı 80 – 105 mm



Açık Tip | Kapaklı Tip ZZ | Temassız Keçeli Tip VV | Temaslı Keçeli Tip DD · DDU | Emniyet Segman Yuvalı N | Emniyet Segmanlı NR



Dinamik Eşdeğer Yük

$P = XF_r + YF_a$

$\frac{f_0 F_a}{C_{0r}}$	e	$\frac{F_a}{F_r} \le e$		$\frac{F_a}{F_r} > e$	
		X	Y	X	Y
0.172	0.19	1	0	0.56	2.30
0.345	0.22	1	0	0.56	1.99
0.689	0.26	1	0	0.56	1.71
1.03	0.28	1	0	0.56	1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34	1	0	0.56	1.31
3.45	0.38	1	0	0.56	1.15
5.17	0.42	1	0	0.56	1.04
6.89	0.44	1	0	0.56	1.00

Statik Eşdeğer Yük

$\frac{F_a}{F_r} > 0.8,\ P_0 = 0.6F_r + 0.5F_a$

$\frac{F_a}{F_r} \le 0.8,\ P_0 = F_r$

Temel Ölçüler (mm)				Temel Yük Değerleri (N)		(kgf)		Faktör	Limit Hızları (dak⁻¹) Gres		Yağ	Rulman Numaraları			
d	D	B	r min.	C_r	C_{0r}	C_r	C_{0r}	f_0	Açık Z · ZZ V · VV	DU DDU	Açık Z	Açık	Kapaklı	Keçeli	
80	100	10	0.6	12 700	14 500	1 290	1 470	17.4	6 000	3 400	7 100	**6816**	ZZ	VV	DDU
	110	16	1	25 000	24 000	2 540	2 450	16.6	5 600	3 200	6 700	**6916**	ZZ	VV	DDU
	125	14	0.6	32 000	29 600	3 250	3 000	16.4	5 300	—	6 300	**16016**	—	—	—
	125	22	1.1	47 500	40 000	4 850	4 050	15.6	5 300	3 200	6 300	**6016**	ZZ	VV	DDU
	140	26	2	72 500	53 000	7 400	5 400	14.6	4 500	3 000	5 300	**6216**	ZZ	VV	DDU
	170	39	2.1	123 000	86 500	12 500	8 850	13.3	4 000	2 800	4 800	**6316**	ZZ	VV	DDU
85	110	13	1	18 700	20 000	1 910	2 040	17.1	5 600	3 200	6 700	**6817**	ZZ	VV	DDU
	120	18	1.1	32 000	29 600	3 250	3 000	16.4	5 300	3 000	6 300	**6917**	ZZ	VV	DDU
	130	14	0.6	33 000	31 500	3 350	3 200	16.5	5 000	—	6 000	**16017**	—	—	—
	130	22	1.1	49 500	43 000	5 050	4 400	15.8	5 000	3 000	6 000	**6017**	ZZ	VV	DDU
	150	28	2	84 000	62 000	8 550	6 300	14.5	4 300	2 800	5 000	**6217**	ZZ	VV	DDU
	180	41	3	133 000	97 000	13 500	9 850	13.3	3 800	2 600	4 500	**6317**	ZZ	VV	DDU
90	115	13	1	19 000	21 000	1 940	2 140	17.2	5 300	3 000	6 300	**6818**	ZZ	VV	DDU
	125	18	1.1	33 000	31 500	3 350	3 200	16.5	5 000	2 800	6 000	**6918**	ZZ	VV	DDU
	140	16	1	41 500	39 500	4 250	4 000	16.3	4 800	—	5 600	**16018**	—	—	—
	140	24	1.5	58 000	50 000	5 950	5 050	15.6	4 800	2 800	5 600	**6018**	ZZ	VV	DDU
	160	30	2	96 000	71 500	9 800	7 300	14.5	4 000	2 600	4 800	**6218**	ZZ	VV	DDU
	190	43	3	143 000	107 000	14 500	11 000	13.3	3 600	2 400	4 300	**6318**	ZZ	VV	DDU
95	120	13	1	19 300	22 000	1 970	2 240	17.2	5 000	2 800	6 000	**6819**	ZZ	VV	DD
	130	18	1.1	33 500	33 500	3 450	3 400	16.6	4 800	2 800	5 600	**6919**	ZZ	VV	DDU
	145	16	1	43 000	42 000	4 350	4 250	16.4	4 500	—	5 300	**16019**	—	—	—
	145	24	1.5	60 500	54 000	6 150	5 500	15.8	4 500	2 600	5 300	**6019**	ZZ	VV	DDU
	170	32	2.1	109 000	82 000	11 100	8 350	14.4	3 800	2 600	4 500	**6219**	ZZ	VV	DDU
	200	45	3	153 000	119 000	15 600	12 100	13.3	3 000	2 400	3 600	**6319**	ZZ	VV	DDU
100	125	13	1	19 600	23 000	2 000	2 340	17.3	4 800	2 800	5 600	**6820**	ZZ	VV	DD
	140	20	1.1	43 000	42 000	4 350	4 250	16.4	4 500	2 600	5 300	**6920**	ZZ	VV	DDU
	150	16	1	42 500	42 000	4 300	4 300	16.5	4 300	—	5 300	**16020**	—	—	—
	150	24	1.5	60 000	54 000	6 150	5 550	15.9	4 300	2 600	5 300	**6020**	ZZ	VV	DDU
	180	34	2.1	122 000	93 000	12 500	9 500	14.4	3 600	2 400	4 300	**6220**	ZZ	VV	DDU
	215	47	3	173 000	141 000	17 700	14 400	13.2	2 800	2 200	3 400	**6320**	ZZ	VV	DDU
105	130	13	1	19 800	23 900	2 020	2 440	17.4	4 800	2 600	5 600	**6821**	ZZ	VV	DDU
	145	20	1.1	42 500	42 000	4 300	4 300	16.5	4 300	—	5 300	**6921**	ZZ	VV	—
	160	18	1	52 000	50 500	5 300	5 150	16.3	4 000	—	4 800	**16021**	—	—	—
	160	26	2	72 500	66 000	7 400	6 700	15.8	4 000	2 400	4 800	**6021**	ZZ	VV	DDU
	190	36	2.1	133 000	105 000	13 600	10 700	14.4	3 400	2 200	4 000	**6221**	ZZ	VV	DDU
	225	49	3	184 000	154 000	18 700	15 700	13.2	2 600	2 000	3 200	**6321**	ZZ	—	DDU

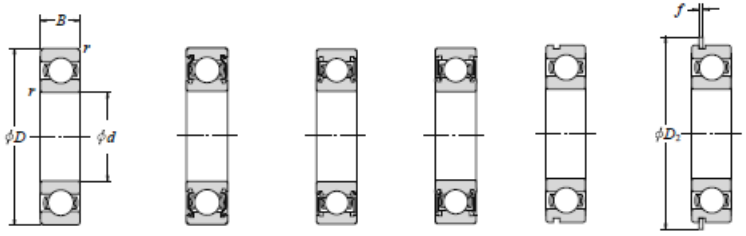
Notlar (¹) Emniyet segmanı yuvalarının toleransları ve emniyet segmanı ölçüleri için, **A50** ile **A53** arasındaki sayfalara bakınız.
(²) Ağır eksenel yükler uygulandığında, yukarıdaki değerlerden d_a 'yı arttırınız ve D_a 'yı azaltınız.

Emniyet Segmanı Yuvalı	Emniyet Segmanlı	Emniyet Segmanı Yuvası Ölçüleri (¹) (mm)					Emniyet Segmanı (¹) Ölçüleri (mm)		Dayanak ve Dolgu Ölçüleri (mm)						Kütle (kg)
		a maks.	b min.	D_1 maks.	r_0 maks.	r_N min.	D_2 maks.	f maks.	min.	d_a(²) maks.	D_a(²) maks.	r_a maks.	D_b min.	C_a maks.	yaklaşık
N	NR	1.7	1.3	97.9	0.4	0.5	104.4	1.12	84	84.5	96	0.6	106	2.5	0.151
N	NR	2.5	1.3	107.6	0.4	0.5	115.7	1.12	85	87.5	105	1	117	3.3	0.391
—	—	—	—	—	—	—	—	—	84	—	121	0.6	—	—	0.621
N	NR	2.87	3.1	120.22	0.6	0.5	134.7	2.82	86.5	91	118.5	1	136.5	5.3	0.872
N	NR	4.9	3.1	135.23	0.6	0.5	149.7	2.82	89	95.5	131	2	152	7.3	1.42
N	NR	5.69	3.5	163.65	0.6	0.5	182.9	3.1	91	104.5	159	2	185	8.4	3.67
N	NR	2.1	1.3	107.6	0.4	0.5	115.7	1.12	90	90.5	105	1	117	2.9	0.263
N	NR	3.3	1.3	117.6	0.4	0.5	125.7	1.12	91.5	94.5	113.5	1	127	4.1	0.55
—	—	—	—	—	—	—	—	—	89	—	126	0.6	—	—	0.652
N	NR	2.87	3.1	125.22	0.6	0.5	139.7	2.82	91.5	96	123.5	1	141.5	5.3	0.918
N	NR	4.9	3.1	145.24	0.6	0.5	159.7	2.82	94	102	141	2	162	7.3	1.76
N	NR	5.69	3.5	173.66	0.6	0.5	192.9	3.1	98	110.5	167	2.5	195	8.4	4.28
N	NR	2.1	1.3	112.6	0.4	0.5	120.7	1.12	95	95.5	110	1	122	2.9	0.276
N	NR	3.3	1.3	122.6	0.4	0.5	130.7	1.12	96.5	98.5	118.5	1	132	4.1	0.585
—	—	—	—	—	—	—	—	—	95	—	135	1	—	—	0.873
N	NR	3.71	3.1	135.23	0.6	0.5	149.7	2.82	98	103	132	1.5	152	6.1	1.19
N	NR	4.9	3.1	155.22	0.6	0.5	169.7	2.82	99	107.5	151	2	172	7.3	2.18
N	NR	5.69	3.5	183.64	0.6	0.5	202.9	3.1	103	117	177	2.5	205	8.4	4.98
N	NR	2.1	1.3	117.6	0.4	0.5	125.7	1.12	100	101.5	115	1	127	2.9	0.297
N	NR	3.3	1.3	127.6	0.4	0.5	135.7	1.12	101.5	103.5	123.5	1	137	4.1	0.601
—	—	—	—	—	—	—	—	—	100	—	140	1	—	—	0.904
N	NR	3.71	3.1	140.23	0.6	0.5	154.7	2.82	103	108.5	137	1.5	157	6.1	1.23
N	NR	5.69	3.5	163.65	0.6	0.5	182.9	3.1	106	114	159	2	185	8.4	2.64
N	NR	5.69	3.5	193.65	0.6	0.5	212.9	3.1	108	123.5	187	2.5	215	8.4	5.76
N	NR	2.1	1.3	122.6	0.4	0.5	130.7	1.12	105	105.5	120	1	132	2.9	0.31
N	NR	3.3	1.9	137.6	0.6	0.5	145.7	1.7	106.5	111	133.5	1	147	4.7	0.828
—	—	—	—	—	—	—	—	—	105	—	145	1	—	—	0.945
N	NR	3.71	3.1	145.24	0.6	0.5	159.7	2.82	108	112.5	142	1.5	162	6.1	1.29
N	NR	5.69	3.5	173.66	0.6	0.5	192.9	3.1	111	121.5	169	2	195	8.4	3.17
—	—	—	—	—	—	—	—	—	113	133	202	2.5	—	—	7.04
N	NR	2.1	1.3	127.6	0.4	0.5	135.7	1.12	110	110.5	125	1	137	2.9	0.324
N	NR	3.3	1.9	142.6	0.6	0.5	150.7	1.7	111.5	116	138.5	1	152	4.7	0.856
—	—	—	—	—	—	—	—	—	110	—	155	1	—	—	1.24
N	NR	3.71	3.1	155.22	0.6	0.5	169.7	2.82	114	120	151	2	172	6.1	1.58
N	NR	5.69	3.5	183.64	0.6	0.5	202.9	3.1	116	127.5	179	2	205	8.4	3.79
—	—	—	—	—	—	—	—	—	118	138	212	2.5	—	—	8.09

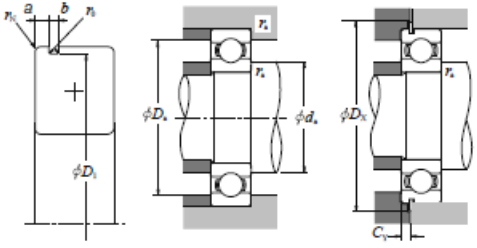
Notlar
1. Çap Serisi 7 (çok ince kesitli rulmanlar) de mevcuttur, lütfen NSK'ya başvurunuz.
2. Döner dış bilezikli rulmanları kullanırken, rulmanlar keçeli, kapaklı ise veya emniyet segmanları varsa NSK'ya başvurunuz.

TEK SIRALI SABİT BİLYALI RULMANLAR

Delik Çapı 110 – 160 mm



Açık Tip | Kapaklı Tip ZZ · ZZS | Temassız Keçeli Tip VV | Temaslı Keçeli Tip DD · DDU | Emniyet Segman Yuvalı N | Emniyet Segmanlı NR



Dinamik Eşdeğer Yük

$P = XF_r + YF_a$

$\frac{f_0 F_a}{C_{0r}}$	e	$\frac{F_a}{F_r} \le e$		$\frac{F_a}{F_r} > e$	
		X	Y	X	Y
0.172	0.19	1	0	0.56	2.30
0.345	0.22	1	0	0.56	1.99
0.689	0.26	1	0	0.56	1.71
1.03	0.28	1	0	0.56	1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34	1	0	0.56	1.31
3.45	0.38	1	0	0.56	1.15
5.17	0.42	1	0	0.56	1.04
6.89	0.44	1	0	0.56	1.00

Statik Eşdeğer Yük

$\frac{F_a}{F_r} > 0.8,\ P_0 = 0.6F_r + 0.5F_a$

$\frac{F_a}{F_r} \le 0.8,\ P_0 = F_r$

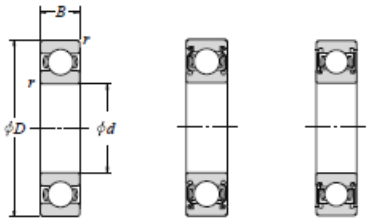
Temel Ölçüler (mm)				Temel Yük Değerleri (N)		{kgf}		Faktör	Limit Hızları (dak⁻¹) Gres			Yağ	Rulman Numaraları			
d	D	B	r min.	C_r	C_{0r}	C_r	C_{0r}	f_0	Açık Z · ZZ V · VV	DU DDU		Açık Z	Açık	Kapaklı	Keçeli	
110	140	16	1	28 100	32 500	2 860	3 350	17.1	4 300	2 400		5 300	**6822**	ZZ	VV	DDU
	150	20	1.1	43 500	44 500	4 450	4 550	16.6	4 300	2 400		5 000	**6922**	ZZ	VV	DDU
	170	19	1	57 500	56 500	5 850	5 800	16.3	3 800	—		4 500	**16022**	—	—	—
	170	28	2	85 000	73 000	8 650	7 450	15.5	3 800	2 200		4 500	**6022**	ZZ	VV	DDU
	200	38	2.1	144 000	117 000	14 700	11 900	14.3	2 800	2 200		3 400	**6222**	ZZ	VV	DDU
	240	50	3	205 000	179 000	20 900	18 300	13.2	2 400	—		3 000	**6322**	ZZ	—	—
120	150	16	1	28 900	35 500	2 950	3 650	17.3	4 000	2 200		4 800	**6824**	ZZ	VV	DD
	165	22	1.1	53 000	54 000	5 400	5 500	16.5	3 800	—		4 500	**6924**	ZZ	—	—
	180	19	1	56 500	57 500	5 800	5 850	16.5	3 600	—		4 300	**16024**	—	—	—
	180	28	2	88 000	80 000	9 000	8 150	15.7	3 600	2 200		4 300	**6024**	ZZ	VV	DDU
	215	40	2.1	155 000	131 000	15 800	13 400	14.4	2 600	2 000		3 200	**6224**	ZZ	VV	DDU
	260	55	3	207 000	185 000	21 100	18 800	13.5	2 200	1 800		2 800	**6324**	ZZ$	—	DDU
130	165	18	1.1	37 000	44 000	3 750	4 450	17.1	3 600	2 000		4 300	**6826**	ZZ$	VV	DD
	180	24	1.5	65 000	67 500	6 650	6 850	16.5	3 400	—		4 000	**6926**	ZZ	—	—
	200	22	1.1	75 500	77 500	7 700	7 900	16.4	3 000	—		3 600	**16026**	—	—	—
	200	33	2	106 000	101 000	10 800	10 300	15.8	3 000	1 900		3 600	**6026**	ZZ	—	DDU
	230	40	3	167 000	146 000	17 000	14 900	14.5	2 400	—		3 000	**6226**	ZZ	—	—
	280	58	4	229 000	214 000	23 400	21 800	13.6	2 200	—		2 600	**6326**	ZZ$	—	—
140	175	18	1.1	38 500	48 000	3 900	4 850	17.3	3 400	1 900		4 000	**6828**	ZZ	VV	DDU
	190	24	1.5	66 500	72 000	6 800	7 300	16.6	3 200	—		3 800	**6928**	ZZ$	VV	—
	210	22	1.1	77 500	82 500	7 900	8 400	16.5	2 800	—		3 400	**16028**	—	—	—
	210	33	2	110 000	109 000	11 200	11 100	16.0	2 800	1 800		3 400	**6028**	ZZ	—	DDU
	250	42	3	166 000	150 000	17 000	15 300	14.9	2 200	1 700		2 800	**6228**	ZZ$	—	DDU
	300	62	4	253 000	246 000	25 800	25 100	13.6	2 000	—		2 400	**6328**	ZZ$	—	—
150	190	20	1.1	47 500	58 500	4 850	5 950	17.1	3 200	1 800		3 800	**6830**	ZZ	VV	DDU
	210	28	2	85 000	90 500	8 650	9 200	16.5	2 600	1 700		3 200	**6930**	ZZ$	—	DDU
	225	24	1.1	84 000	91 000	8 550	9 250	16.6	2 600	—		3 000	**16030**	—	—	—
	225	35	2.1	126 000	126 000	12 800	12 800	15.9	2 600	1 700		3 000	**6030**	ZZ	VV	DDU
	270	45	3	176 000	168 000	18 000	17 100	15.1	2 000	—		2 600	**6230**	ZZ$	—	—
	320	65	4	274 000	284 000	28 000	28 900	13.9	1 800	—		2 200	**6330**	ZZ$	—	—
160	200	20	1.1	48 500	61 000	4 950	6 250	17.2	2 600	1 700		3 200	**6832**	ZZ$	VV	DDU
	220	28	2	87 000	96 000	8 850	9 800	16.6	2 600	1 600		3 000	**6932**	ZZ$	—	DDU
	240	25	1.5	99 000	108 000	10 100	11 000	16.5	2 400	—		2 800	**16032**	—	—	—
	240	38	2.1	137 000	135 000	13 900	13 800	15.9	2 400	1 600		2 800	**6032**	ZZ	—	DDU
	290	48	3	185 000	186 000	18 900	19 000	15.4	1 900	—		2 400	**6232**	ZZ$	—	—
	340	68	4	278 000	287 000	28 300	29 200	13.9	1 700	—		2 000	**6332**	ZZ$	—	—

Emniyet Segman Yuvalı	Emniyet Segmanlı	Emniyet Segmanı Yuvası Ölçüleri (¹) (mm)					Emniyet Segmanı (¹) Ölçüleri (mm)		Dayanak ve Dolgu Ölçüleri (mm)						Kütle (kg)
		a maks.	b min.	D_1 maks.	r_0 maks.	r_N min.	D_2 maks.	f maks.	min.	d_a(²) maks.	D_a(²) maks.	r_a maks.	D_x min.	C_Y maks.	yaklaşık
N	NR	2.5	1.9	137.6	0.6	0.5	145.7	1.7	115	117	135	1	147	3.9	0.497
N	NR	3.3	1.9	147.6	0.6	0.5	155.7	1.7	116.5	121	143.5	1	157	4.7	0.893
—	—	—	—	—	—	—	—	—	115	—	165	1	—	—	1.51
N	NR	3.71	3.5	163.65	0.6	0.5	182.9	3.1	119	124.5	161	2	185	6.4	1.94
N	NR	5.69	3.5	193.65	0.6	0.5	212.9	3.1	121	134	189	2	215	8.4	4.45
—	—	—	—	—	—	—	—	—	123	147	227	2.5	—	—	9.51
N	NR	2.5	1.9	147.6	0.6	0.5	155.7	1.7	125	127	145	1	157	3.9	0.537
N	NR	3.7	1.9	161.8	0.6	0.5	171.5	1.7	126.5	132	158.5	1	173	5.1	1.21
—	—	—	—	—	—	—	—	—	125	—	175	1	—	—	1.6
N	NR	3.71	3.5	173.66	0.6	0.5	192.9	3.1	129	134.5	171	2	195	6.4	2.08
—	—	—	—	—	—	—	—	—	131	146	204	2	—	—	5.29
—	—	—	—	—	—	—	—	—	133	161	247	2.5	—	—	12.5
N	NR	3.3	1.9	161.8	0.6	0.5	171.5	1.7	136.5	138	158.5	1	173	4.7	0.758
N	NR	3.7	1.9	176.8	0.6	0.5	186.5	1.7	138	144	172	1.5	188	5.1	1.57
—	—	—	—	—	—	—	—	—	136.5	—	193.5	1	—	—	2.4
N	NR	5.69	3.5	193.65	0.6	0.5	212.9	3.1	139	148.5	191	2	215	8.4	3.26
—	—	—	—	—	—	—	—	—	143	157	217	2.5	—	—	5.96
—	—	—	—	—	—	—	—	—	146	175	264	3	—	—	15.2
N	NR	3.3	1.9	171.8	0.6	0.5	181.5	1.7	146.5	148.5	168.5	1	183	4.7	0.832
N	NR	3.7	1.9	186.8	0.6	0.5	196.5	1.7	148	153.5	182	1.5	198	5.1	1.67
—	—	—	—	—	—	—	—	—	146.5	—	203.5	1	—	—	2.84
—	—	—	—	—	—	—	—	—	149	158.5	201	2	—	—	3.48
—	—	—	—	—	—	—	—	—	153	171.5	237	2.5	—	—	7.68
—	—	—	—	—	—	—	—	—	156	187	284	3	—	—	18.5
N	NR	3.3	1.9	186.8	0.6	0.5	196.5	1.7	156.5	160	183.5	1	198	4.7	1.15
—	—	—	—	—	—	—	—	—	159	166	201	2	—	—	3.01
—	—	—	—	—	—	—	—	—	156.5	—	218.5	1	—	—	3.62
—	—	—	—	—	—	—	—	—	161	170	214	2	—	—	4.24
—	—	—	—	—	—	—	—	—	163	186	257	2.5	—	—	10
—	—	—	—	—	—	—	—	—	166	203	304	3	—	—	22.7
N	NR	3.3	1.9	196.8	0.6	0.5	206.5	1.7	166.5	170.5	193.5	1	208	4.7	1.23
—	—	—	—	—	—	—	—	—	169	176	211	2	—	—	2.71
—	—	—	—	—	—	—	—	—	168	—	232	1.5	—	—	4.2
—	—	—	—	—	—	—	—	—	171	181.5	229	2	—	—	5.15
—	—	—	—	—	—	—	—	—	173	202	277	2.5	—	—	12.8
—	—	—	—	—	—	—	—	—	176	215.5	324	3	—	—	26.2

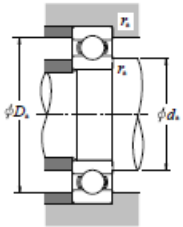
Notlar (¹) Emniyet segmanı yuvalarının toleransları ve emniyet segmanı ölçüleri için, **A50** ile **A53** arasındaki sayfalara bakınız.
(²) Ağır eksenel yükler uygulandığında, yukarıdaki değerlerden d_a 'yı arttırınız ve D_a 'yı azaltınız.

Notlar Döner dış bilezikli rulmanları kullanırken, rulmanlar keçeli, kapaklı ise veya emniyet segmanları varsa NSK'ya başvurunuz.

Delik Çapı 170 – 240 mm



Açık Tip — Kapaklı Tip ZZS — Temassız Keçeli Tip VV



Dinamik Eşdeğer Yük

$P = XF_r + YF_a$

$\frac{f_0 F_a}{C_{0r}}$	e	$\frac{F_a}{F_r} \le e$		$\frac{F_a}{F_r} > e$	
		X	Y	X	Y
0.172	0.19	1	0	0.56	2.30
0.345	0.22	1	0	0.56	1.99
0.689	0.26	1	0	0.56	1.71
1.03	0.28	1	0	0.56	1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34	1	0	0.56	1.31
3.45	0.38	1	0	0.56	1.15
5.17	0.42	1	0	0.56	1.04
6.89	0.44	1	0	0.56	1.00

Statik Eşdeğer Yük

$\frac{F_a}{F_r} > 0.8,\ P_0 = 0.6F_r + 0.5F_a$

$\frac{F_a}{F_r} \le 0.8,\ P_0 = F_r$

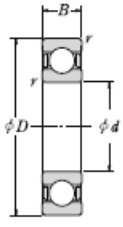
Temel Ölçüler (mm)				Temel Yük Değerleri (N)		{kgf}		Faktör	Limit Hızları (dak⁻¹) Gres		Yağ	Rulman Numaraları			
d	D	B	r min.	C_r	C_{0r}	C_r	C_{0r}	f_0	Açık Z · ZZ V · VV	DU DDU	Açık Z	Açık	Kapaklı	Keçeli	
170	215	22	1.1	60 000	75 000	6 100	7 650	17.1	2 600	1 600	3 000	**6834**	**ZZS**	**VV**	**DDU**
	230	28	2	86 000	97 000	8 750	9 850	16.7	2 400	—	2 800	**6934**	**ZZS**	—	—
	260	28	1.5	114 000	126 000	11 700	12 900	16.5	2 200	—	2 600	**16034**	—	—	—
	260	42	2.1	161 000	161 000	16 400	16 400	15.8	2 200	—	2 600	**6034**	**ZZS**	**VV**	—
	310	52	4	212 000	224 000	21 700	22 800	15.3	1 800	—	2 200	**6234**	**ZZS**	—	—
	360	72	4	325 000	355 000	33 500	36 000	13.6	1 600	—	2 000	**6334**	—	—	—
180	225	22	1.1	60 500	78 500	6 200	8 000	17.2	2 400	—	2 800	**6836**	—	**VV**	—
	250	33	2	119 000	128 000	12 100	13 100	16.4	2 200	—	2 600	**6936**	**ZZS**	—	—
	280	31	2	145 000	157 000	14 700	16 000	16.3	2 000	—	2 400	**16036**	—	—	—
	280	46	2.1	180 000	185 000	18 400	18 800	15.6	2 000	—	2 400	**6036**	**ZZS**	**VV**	—
	320	52	4	227 000	241 000	23 200	24 600	15.1	1 700	—	2 000	**6236**	**ZZS**	—	—
	380	75	4	355 000	405 000	36 000	41 500	13.9	1 500	—	1 800	**6336**	—	—	—
190	240	24	1.5	73 000	93 500	7 450	9 550	17.1	2 200	—	2 600	**6838**	—	**VV**	—
	260	33	2	113 000	127 000	11 500	13 000	16.6	2 200	—	2 600	**6938**	—	—	—
	290	31	2	149 000	168 000	15 200	17 100	16.4	2 000	—	2 400	**16038**	—	—	—
	290	46	2.1	188 000	201 000	19 200	20 500	15.8	2 000	—	2 400	**6038**	**ZZS**	—	—
	340	55	4	255 000	282 000	26 000	28 700	15.0	1 600	—	2 000	**6238**	**ZZS**	—	—
	400	78	5	355 000	415 000	36 000	42 500	14.1	1 400	—	1 700	**6338**	—	—	—
200	250	24	1.5	74 000	98 000	7 550	10 000	17.2	2 200	—	2 600	**6840**	—	—	—
	280	38	2.1	143 000	158 000	14 600	16 100	16.4	2 000	—	2 400	**6940**	**ZZS**	—	—
	310	34	2	161 000	180 000	16 400	18 300	16.4	1 900	—	2 200	**16040**	—	—	—
	310	51	2.1	207 000	226 000	21 100	23 000	15.6	1 900	—	2 200	**6040**	**ZZS**	—	—
	360	58	4	269 000	310 000	27 400	31 500	15.2	1 500	—	1 800	**6240**	**ZZS**	—	—
	420	80	5	380 000	445 000	38 500	45 500	13.8	1 300	—	1 600	**6340**	—	—	—
220	270	24	1.5	76 500	107 000	7 800	10 900	17.4	1 900	—	2 400	**6844**	**ZZS**	—	—
	300	38	2.1	146 000	169 000	14 900	17 300	16.6	1 800	—	2 200	**6944**	**ZZS**	—	—
	340	37	2.1	180 000	217 000	18 400	22 100	16.5	1 600	—	2 000	**16044**	—	—	—
	340	56	3	235 000	271 000	24 000	27 600	15.6	1 700	—	2 000	**6044**	**ZZS**	—	—
	400	65	4	310 000	375 000	31 500	38 500	15.1	1 300	—	1 600	**6244**	—	—	—
	460	88	5	410 000	520 000	42 000	53 000	14.3	1 200	—	1 500	**6344**	—	—	—
240	300	28	2	98 500	137 000	10 000	14 000	17.3	1 700	—	2 000	**6848**	—	—	—
	320	38	2.1	154 000	190 000	15 700	19 400	16.8	1 700	—	2 000	**6948**	**ZZS**	—	—
	360	37	2.1	196 000	243 000	19 900	24 700	16.5	1 500	—	1 900	**16048**	—	—	—
	360	56	3	244 000	296 000	24 900	30 000	15.9	1 500	—	1 900	**6048**	—	—	—
	440	72	4	340 000	430 000	34 500	44 000	15.2	1 200	—	1 500	**6248**	—	—	—
	500	95	5	470 000	625 000	48 000	63 500	14.2	1 100	—	1 300	**6348**	—	—	—

Dayanak ve Dolgu Ölçüleri (mm)				Kütle (kg)
d_a(1) min.	d_a(1) maks.	D_a(1) maks.	r_a maks.	yaklaşık
176.5	182	208.5	1	1.86
179	186	221	2	3.34
178	—	252	1.5	5.71
181	194.5	249	2	6.89
186	215	294	3	15.8
186	—	344	3	36.6
186.5	192	218.5	1	1.98
189	198.5	241	2	4.16
189	—	271	2	7.5
191	208	269	2	8.88
196	223	304	3	15.9
196	—	364	3	43.1
198	202.5	232	1.5	2.53
199	—	251	2	5.18
199	—	281	2	7.78
201	218	279	2	9.39
206	236	324	3	22.3
210	—	380	4	49.7
208	—	242	1.5	2.67
211	222	269	2	7.28
209	—	301	2	10
211	231.5	299	2	12
216	252	344	3	26.7
220	—	400	4	55.3
228	233.5	262	1.5	2.9
231	242	289	2	7.88
231	—	329	2	13.1
233	254.5	327	2.5	18.6
236	—	384	3	37.4
240	—	440	4	73.9
249	—	291	2	4.48
251	262	309	2	8.49
251	—	349	2	13.9
253	—	347	2.5	19.9
256	—	424	3	50.5
260	—	480	4	94.4

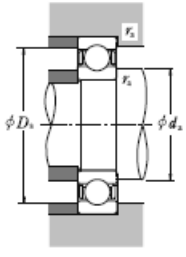
Not (1) Ağır eksenel yükler uygulandığında, yukarıdaki değerlerden d_a 'yı arttırınız ve D_a 'yı azaltınız.

Notlar Döner dış bilezikli rulmanları kullanırken, rulmanlar keçeli veya kapaklı ise NSK'ya başvurunuz.

Delik Çapı 260 – 360 mm



Açık Tip



Dinamik Eşdeğer Yük

$P = XF_r + YF_a$

$\frac{f_0 F_a}{C_{0r}}$	e	$\frac{F_a}{F_r} \le e$		$\frac{F_a}{F_r} > e$	
		X	Y	X	Y
0.172	0.19	1	0	0.56	2.30
0.345	0.22	1	0	0.56	1.99
0.689	0.26	1	0	0.56	1.71
1.03	0.28	1	0	0.56	1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34	1	0	0.56	1.31
3.45	0.38	1	0	0.56	1.15
5.17	0.42	1	0	0.56	1.04
6.89	0.44	1	0	0.56	1.00

Statik Eşdeğer Yük

$\frac{F_a}{F_r} > 0.8,\ P_0 = 0.6F_r + 0.5F_a$

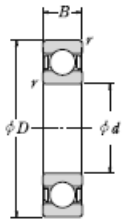
$\frac{F_a}{F_r} \le 0.8,\ P_0 = F_r$

Temel Ölçüler (mm)				Temel Yük Değerleri (N)		(kgf)		Faktör	Limit Hızları (dak⁻¹)		Rulman Numaraları	Dayanak ve Dolgu Ölçüleri (mm)			Kütle (kg)
d	D	B	r min.	C_r	C_{0r}	C_r	C_{0r}	f_0	Gres	Yağ	Açık	d_a(1) min.	D_a(1) maks.	r_a maks.	yaklaşık
260	320	28	2	101 000	148 000	10 300	15 100	17.4	1 600	1 900	**6852**	269	311	2	4.84
	360	46	2.1	204 000	255 000	20 800	26 000	16.5	1 500	1 800	**6952**	271	349	2	14
	400	44	3	237 000	310 000	24 100	31 500	16.4	1 400	1 700	**16052**	273	387	2.5	21.1
	400	65	4	291 000	375 000	29 700	38 500	15.8	1 400	1 700	**6052**	276	384	3	29.4
	480	80	5	400 000	540 000	41 000	55 000	15.1	1 100	1 300	**6252**	280	460	4	67
	540	102	6	505 000	710 000	51 500	72 500	14.6	1 000	1 200	**6352**	286	514	5	118
280	350	33	2	133 000	191 000	13 600	19 500	17.3	1 500	1 700	**6856**	289	341	2	7.2
	380	46	2.1	209 000	272 000	21 300	27 700	16.6	1 400	1 700	**6956**	291	369	2	15.1
	420	44	3	243 000	330 000	24 700	33 500	16.5	1 300	1 600	**16056**	293	407	2.5	22.7
	420	65	4	300 000	410 000	31 000	41 500	16.0	1 300	1 600	**6056**	296	404	3	31.2
	500	80	5	400 000	550 000	41 000	56 000	15.2	1 000	1 300	**6256**	300	480	4	70.4
	580	108	6	570 000	840 000	58 000	86 000	14.5	900	1 100	**6356**	306	554	5	144
300	380	38	2.1	166 000	233 000	17 000	23 800	17.1	1 300	1 600	**6860**	311	369	2	10.3
	420	56	3	269 000	370 000	27 400	38 000	16.4	1 300	1 500	**6960**	313	407	2.5	23.9
	460	50	4	285 000	405 000	29 000	41 000	16.4	1 200	1 400	**16060**	316	444	3	31.5
	460	74	4	355 000	500 000	36 500	51 000	15.8	1 200	1 400	**6060**	316	444	3	44.2
	540	85	5	465 000	670 000	47 500	68 500	15.1	950	1 200	**6260**	320	520	4	87.8
320	400	38	2.1	168 000	244 000	17 200	24 900	17.2	1 300	1 500	**6864**	331	389	2	10.8
	440	56	3	266 000	375 000	27 100	38 000	16.5	1 200	1 400	**6964**	333	427	2.5	25.3
	480	50	4	293 000	430 000	29 800	44 000	16.5	1 100	1 300	**16064**	336	464	3	33.2
	480	74	4	390 000	570 000	40 000	58 000	15.7	1 100	1 300	**6064**	336	464	3	46.5
	580	92	5	530 000	805 000	54 500	82 500	15.0	850	1 100	**6264**	340	560	4	111
340	420	38	2.1	175 000	265 000	17 800	27 100	17.3	1 200	1 400	**6868**	351	409	2	11.5
	460	56	3	273 000	400 000	27 800	40 500	16.6	1 100	1 300	**6968**	353	447	2.5	26.6
	520	82	5	440 000	660 000	45 000	67 500	15.6	1 000	1 200	**6068**	360	500	4	62.3
	620	92	6	530 000	820 000	54 000	83 500	15.3	800	1 000	**6268**	366	594	5	129
360	440	38	2.1	192 000	290 000	19 600	29 600	17.3	1 100	1 300	**6872**	371	429	2	11.8
	480	56	3	280 000	425 000	28 500	43 000	16.7	1 100	1 300	**6972**	373	467	2.5	27.9
	540	82	5	460 000	720 000	47 000	73 500	15.7	950	1 200	**6072**	380	520	4	65.3
	650	95	6	555 000	905 000	57 000	92 000	15.4	750	950	**6272**	386	624	5	145

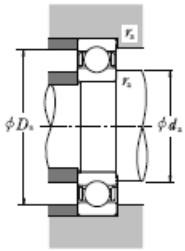
Not (1) Ağır eksenel yükler uygulandığında, yukarıdaki değerlerden d_a 'yı arttırınız ve D_a 'yı azaltınız.

TEK SIRALI SABİT BİLYALI RULMANLAR

Delik Çapı 380 – 600 mm



Açık Tip



Dinamik Eşdeğer Yük

$P = XF_r + YF_a$

$\frac{f_0 F_a}{C_{0r}}$	e	$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
		X	Y	X	Y
0.172	0.19	1	0	0.56	2.30
0.345	0.22	1	0	0.56	1.99
0.689	0.26	1	0	0.56	1.71
1.03	0.28	1	0	0.56	1.55
1.38	0.30	1	0	0.56	1.45
2.07	0.34	1	0	0.56	1.31
3.45	0.38	1	0	0.56	1.15
5.17	0.42	1	0	0.56	1.04
6.89	0.44	1	0	0.56	1.00

Statik Eşdeğer Yük

$\frac{F_a}{F_r} > 0.8,\ P_0 = 0.6F_r + 0.5F_a$

$\frac{F_a}{F_r} \leq 0.8,\ P_0 = F_r$

Temel Ölçüler (mm)				Temel Yük Değerleri (N)		(kgf)		Faktör	Limit Hızları (dak⁻¹)		Rulman Numaraları	Dayanak ve Dolgu Ölçüleri (mm)			Kütle (kg)
d	D	B	r min.	C_r	C_{0r}	C_r	C_{0r}	f_0	Gres	Yağ	Açık	d_a(1) min.	D_a(1) maks.	r_a maks.	yaklaşık
380	480	46	2.1	238 000	375 000	24 200	38 000	17.1	1 000	1 200	**6876**	391	469	2	19.5
	520	65	4	325 000	510 000	33 000	52 000	16.6	950	1 200	**6976**	396	504	3	40
	560	82	5	455 000	725 000	46 500	74 000	15.9	900	1 100	**6076**	400	540	4	68
400	500	46	2.1	241 000	390 000	24 600	40 000	17.2	950	1 200	**6880**	411	489	2	20.5
	540	65	4	335 000	540 000	34 000	55 000	16.7	900	1 100	**6980**	416	524	3	42
	600	90	5	510 000	825 000	52 000	84 000	15.7	850	1 000	**6080**	420	580	4	88.4
420	520	46	2.1	245 000	410 000	25 000	41 500	17.3	900	1 100	**6884**	431	509	2	21.4
	560	65	4	340 000	570 000	35 000	58 500	16.8	900	1 100	**6984**	436	544	3	43.6
	620	90	5	530 000	895 000	54 000	91 000	15.8	800	1 000	**6084**	440	600	4	92.2
440	540	46	2.1	248 000	425 000	25 300	43 500	17.4	900	1 100	**6888**	451	529	2	22.3
	600	74	4	395 000	680 000	40 500	69 000	16.6	800	1 000	**6988**	456	584	3	60.2
	650	94	6	550 000	965 000	56 000	98 500	16.0	750	900	**6088**	466	624	5	106
460	580	56	3	310 000	550 000	31 500	56 000	17.1	800	1 000	**6892**	473	567	2.5	34.3
	620	74	4	405 000	720 000	41 500	73 500	16.7	800	950	**6992**	476	604	3	62.6
	680	100	6	605 000	1 080 000	62 000	110 000	15.8	710	850	**6092**	486	654	5	123
480	600	56	3	315 000	575 000	32 000	58 500	17.2	800	950	**6896**	493	587	2.5	35.4
	650	78	5	450 000	815 000	45 500	83 000	16.6	750	900	**6996**	500	630	4	73.5
	700	100	6	605 000	1 090 000	61 500	111 000	15.9	710	850	**6096**	506	674	5	127
500	620	56	3	320 000	600 000	33 000	61 000	17.3	750	900	**68/500**	513	607	2.5	37.2
	670	78	5	460 000	865 000	47 000	88 000	16.7	710	850	**69/500**	520	650	4	82
	720	100	6	630 000	1 170 000	64 000	120 000	16.0	670	800	**60/500**	526	694	5	131
530	650	56	3	325 000	625 000	33 000	63 500	17.4	710	850	**68/530**	543	637	2.5	39.8
	710	82	5	455 000	870 000	46 500	88 500	16.8	670	800	**69/530**	550	690	4	89.8
	780	112	6	680 000	1 300 000	69 500	133 000	16.0	600	750	**60/530**	556	754	5	184
560	680	56	3	330 000	650 000	33 500	66 500	17.4	670	800	**68/560**	573	667	2.5	41.5
	750	85	5	525 000	1 040 000	53 500	106 000	16.7	600	750	**69/560**	580	730	4	105
	820	115	6	735 000	1 500 000	75 000	153 000	16.2	560	670	**60/560**	586	793.5	5	203
600	730	60	3	355 000	735 000	36 000	75 000	17.5	600	710	**68/600**	613	717	2.5	50.9
	800	90	5	550 000	1 160 000	56 500	118 000	16.9	560	670	**69/600**	620	780	4	120
	870	118	6	790 000	1 640 000	80 500	168 000	16.1	530	630	**60/600**	626	844	5	236

Not (1) Ağır eksenel yükler uygulandığında, yukarıdaki değerlerden d_a 'yı arttırınız ve D_a 'yı azaltınız.