

50 YEARS

NACHI

NACHI EUROPE GmbH

**OUR SYNERGY
YOUR PERFORMANCE**

RULMENTI RADIALI OSCILANTI CU ROLE BUTOI

EXQ-SERIES



CELEBRATE THE POLE POSITION



**No.1
IN THE
WORLD**

Rulmenti radiali
oscilanti cu role
butoi cu cea mai
mare sarcina de
incarcare dinamica
din lume.

EXQ-SERIES



Incarcare axiala ridicata

Designul interior a fost imbunatatit pentru a creste semnificativ capacitatea de incarcare axiala.

Cresterea redusa a temperaturii si viteza periferica ridicata

Caldura produsa de rulment a fost redusa prin stabilizarea miscarii rolei in timpul rotatiei, obtinand viteze de rotatie ridicate.

Durata de viata

Durata de viata ridicata s-a obtinut prin optimizarea design-ului intern si folosirea unui otel cu o inalta puritate.

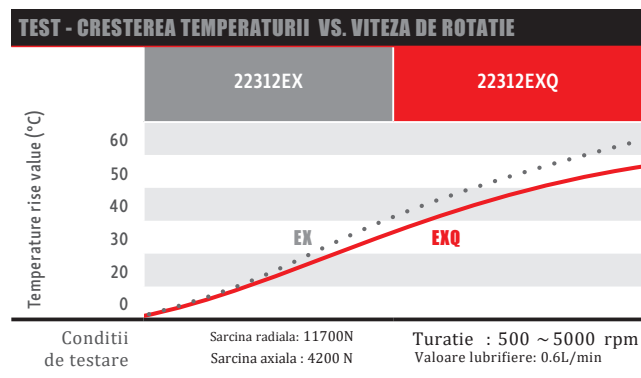
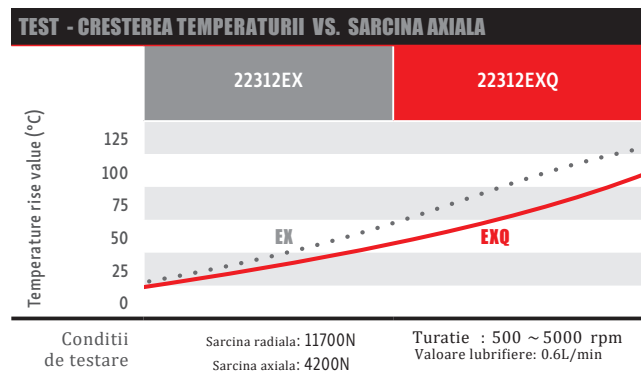
Temperatura de operare pana la 200°C

Tratamentul de stabilizarea termica in varianta standard permite operarea la temperaturi de pana la 200°C.

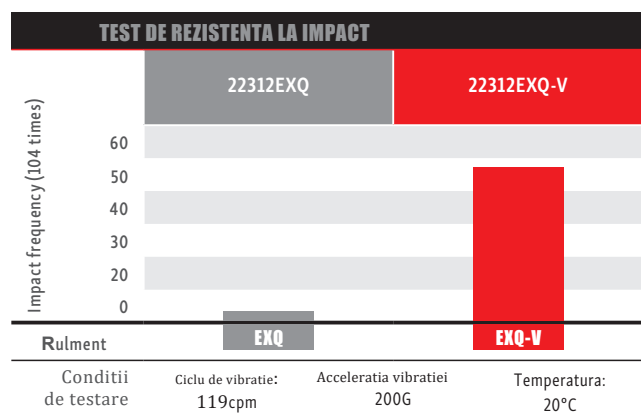
Rezistenta sporita la impact (specificatiile EXQ-V)

Cu specificatiile EXQ-V, am imbunatatit considerabil rezistenta la impact a coliviilor prin ambutisare din otel prin aplicarea unui tratament special de stabilizare la caldura. Precizia dimensionala si jocul radial intern la seria EXQ-V are valori specifice aplicatiilor care implica vibratii.

Seriile conventionale EX versus EXQ



Seria EXQ versus EXQ-V



Inelele Exterioare & Interioare

- ▶ Capabile pentru operare continua la temperaturi de pana la 200°C prin tratament standard de stabilizare la caldura.
- ▶ Incarcarile axiale au fost imbunatatite prin optimizarea profilului curburii caii de rulare.

Rolele

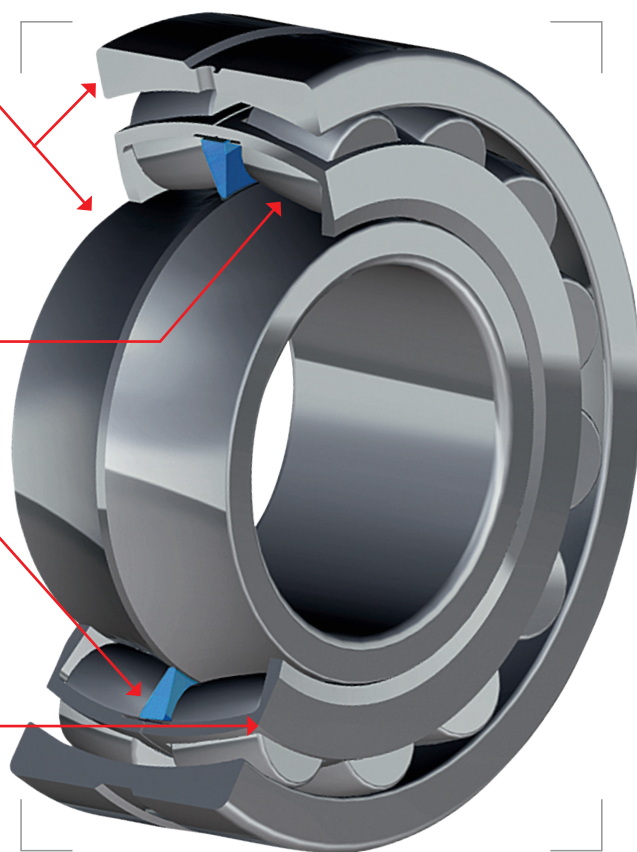
- ▶ Capacitatea incarcarii axiale a fost imbunatatita prin optimizarea curburii suprafetei de contact a rolelor.

Inelul de ghidare

- ▶ Este prevazut un inel de ghidare care sa controleze miscarea rolelor.

Colivii

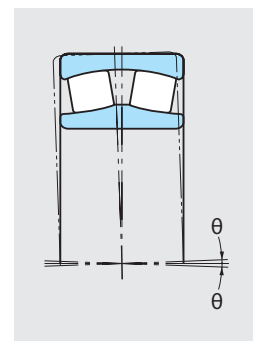
- ▶ Prevazut cu o colivie ambutasata din otel de mare rezistenta si rigiditate
- ▶ rezistenta la impact a fost mult imbunatatita prin aplicarea unui tratament special de stabilizare la caldura (specificatiile EXQ-V).



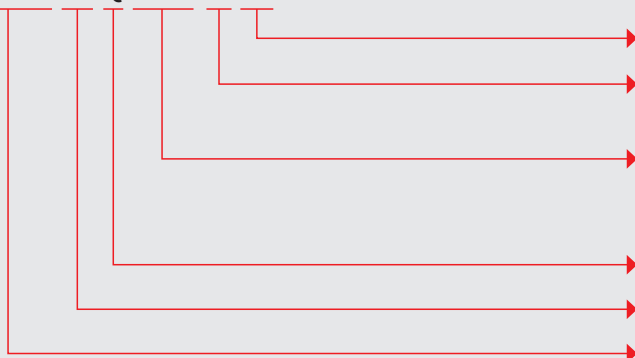
Precautii pentru utilizare

- ▶ Cand conditiile de operare implica o sarcina axiala, este recomandabil sa se asigure $Fa/Fr \leq 0.8$.
- ▶ Cand conditiile de operare determina $Fa/Fr > 0.8$, consultati NACHI.
- ▶ Cand se opereaza in conditii de sarcini fluctuante sau la turatii ridicate, consultati inainte NACHI.
- ▶ Daca rotatia este fara sarcina, pot apare alunecari intre role si calea de rulare, ceea ce poate deteriora rulmentul. Pentru a preveni aceasta situatie, trebuie aplicata o sarcina radiala de 0.015 Cr.

- ▶ In conditii generale de operare, este permisa o abatere de 2° a unghiului θ . Aceasta poate varia usor in functie de dimensiunile gamei de rulmenti si conditiilor de operare. Pentru a verifica conditiile specifice de operare, va rugam sa consultati NACHI.



22312 EX Q W33 -V C3



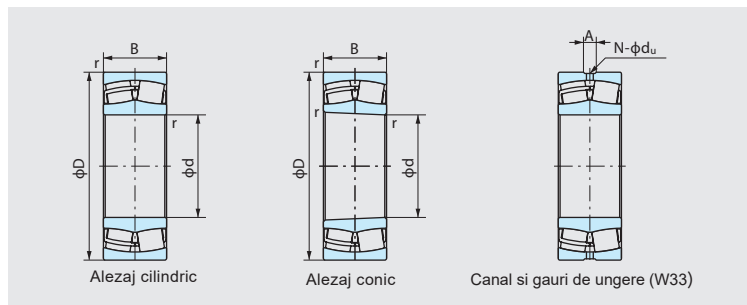
Configurarea simbolului unui rulment:

Simbol joc radial	Fara simbol -	Tipuri Standard
Simbol intern	V	Rezistenta la vibratii conform specificatiilor
Simbol gauri si canal de ungere	Fara simbol	Fara gauri si canal de ungere
	W20*	Cu gauri de ungere
	W33	Cu canal si gauri de ungere

- ▶ Sarcini axiale si turatii mari conform specificatiilor
- ▶ Incarcarile mari conform specificatiilor
- ▶ Numere de baza

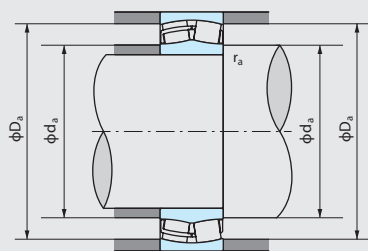
*Se executa la cerere

RULMENTI RADIALI OSCILANTI CU ROLE BUTOI



Dimensiuni principale (mm)				Number rulment		Sarcina dinamica de baza Cr(N)	Sarcina statica de baza Cor(N)	Turatii admise (min-1)		
d	D	B	r (min.)	Alezaaj cilindric (Note)	Alezaaj conic			Unsoare	Ulei	
25	52	18.0	1.0	22205EXQ	22205EXQK	63,000	48,000	11,600	13,700	
30	62	20.0	1.0	22206EXQ	22206EXQK	84,500	65,000	9,400	11,600	
	72	19.0	1.1	21306EXQ	21306EXQK	83,000	62,500	8,800	10,000	
35	72	23.0	1.1	22207EXQ	22207EXQK	112,000	88,500	8,300	10,000	
	40	21.0	1.5	21307EXQ	21307EXQK	96,000	76,000	7,700	8,900	
40	80	23.0	1.1	22208EXQ	22208EXQK	126,000	102,000	7,400	8,900	
	50	23.0	1.5	21308EXQ	21308EXQK	119,000	95,500	6,600	7,900	
	55	33.0	1.5	22308EXQ	22308EXQK	185,000	151,000	5,800	7,000	
45	85	23.0	1.1	22209EXQ	22209EXQK	133,000	110,000	6,600	7,900	
	60	25.0	1.5	21309EXQ	21309EXQK	150,000	124,000	5,500	6,600	
	75	36.0	1.5	22309EXQ	22309EXQK	230,000	182,000	5,000	5,900	
50	90	23.0	1.1	22210EXQ	22210EXQK	142,000	122,000	6,200	7,500	
	65	27.0	2.0	21310EXQ	21310EXQK	178,000	151,000	5,000	5,900	
	70	40.0	2.0	22310EXQ	22310EXQK	280,000	235,000	4,700	5,600	
55	100	25.0	1.5	22211EXQ	22211EXQK	171,000	144,000	5,800	7,000	
	80	29.0	2.0	21311EXQ	21311EXQK	200,000	165,000	5,000	5,900	
	85	43.0	2.0	22311EXQ	22311EXQK	325,000	263,000	4,200	5,000	
60	110	28.0	1.5	22212EXQ	22212EXQK	210,000	179,000	5,300	6,300	
	130	31.0	2.1	21312EXQ	21312EXQK	238,000	193,000	4,200	5,000	
	130	46.0	2.1	22312EXQ	22312EXQK	390,000	330,000	4,000	4,700	
65	120	31.0	1.5	22213EXQ	22213EXQK	246,000	209,000	4,700	5,600	
	140	33.0	2.1	21313EXQ	21313EXQK	270,000	232,000	4,000	4,700	
	140	48.0	2.1	22313EXQ	22313EXQK	415,000	355,000	3,500	4,200	
70	125	31.0	1.5	22214EXQ	22214EXQK	257,000	220,000	4,400	5,600	
	150	35.0	2.1	21314EXQ	21314EXQK	310,000	260,000	3,500	4,200	
	150	51.0	2.1	22314EXQ	22314EXQK	480,000	415,000	3,300	4,000	
75	130	31.0	1.5	22215EXQ	22215EXQK	265,000	234,000	4,400	5,300	
	160	37.0	2.1	21315EXQ	21315EXQK	340,000	298,000	3,500	4,200	
	160	55.0	2.1	22315EXQ	22315EXQK	550,000	475,000	3,100	3,800	
80	140	33.0	2.0	22216EXQ	22216EXQK	299,000	269,000	4,000	4,700	
	140	44.4	2.0	23216EXQ	23216EXQK	335,000	335,000	3,600	4,600	
	170	39.0	2.1	21316EXQ	21316EXQK	380,000	339,000	3,300	4,000	
	170	58.0	2.1	22316EXQ	22316EXQK	595,000	520,000	2,900	3,600	
85	150	36.0	2.0	22217EXQ	22217EXQK	355,000	320,000	3,700	4,500	
	150	49.2	2.0	23217EXQ	23217EXQK	395,000	405,000	3,500	4,300	
	180	41.0	3.0	21317EXQ	21317EXQK	415,000	372,000	3,300	4,200	
	180	60.0	3.0	22317EXQ	22317EXQK	665,000	585,000	2,600	3,400	
90	160	40.0	2.0	22218EXQ	22218EXQK	410,000	375,000	3,500	4,200	
	160	52.4	2.0	23218EXQ	23218EXQK	470,000	482,000	3,400	4,400	
	190	43.0	3.0	21318EXQ	21318EXQK	460,000	410,000	3,100	3,800	
	190	64.0	3.0	22318EXQ	22318EXQK	745,000	660,000	2,600	3,200	
95	170	43.0	2.1	22219EXQ	22219EXQK	465,000	420,000	3,300	4,000	
	170	55.6	2.1	23219EXQ	23219EXQK	500,000	510,000	3,100	3,800	
	200	45.0	3.0	21319EXQ	21319EXQK	500,000	461,000	3,000	3,600	
	200	67.0	3.0	22319EXQ	22319EXQK	815,000	725,000	2,400	3,000	

(Note) Specificatiile EXQ-V sunt de asemenea valabile pentru rulmentii in-rosu.



▪ Sarcina radiala dinamica echivalenta $Pr = XFr + YFa$

$\frac{Fa}{Fr} \leq e$		$\frac{Fa}{Fr} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

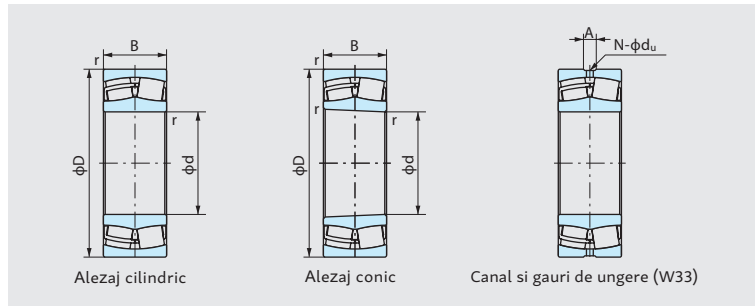
Valorile factorilor e, Y_1 si Y_2 se pot obtine din tabelle cu rulmenti.

▪ Sarcina radiala statica echivalenta $P_{or} = Fr + Y_0Fa$

Valoarea factorului Y_0 se poate obtine din tabellele cu rulmenti.

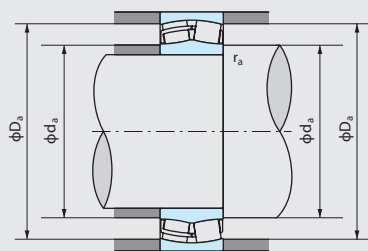
Dimensiunile canalelor si gaurilor de ungere			Dimensiuni relative de montaj (mm)			Factorul de incarcare axial				Masa (kg) Alezaaj cilindric (Reference)	Simbol rulment	
Gaura diametru du	Canal latime A	Gaura numar N	da (min.)	Da (max.)	ra (max.)	Constant e	Y_1	Y_2	Y_0		Alezaaj cilindric (Note)	Alezaaj conic
3	5	4	30.5	46.5	1.0	0.35	1.91	2.85	1.87	0.19	22205EXQ	22205EXQK
3	5	4	35.5	56.5	1.0	0.33	2.04	3.04	2.00	0.30	22206EXQ	22206EXQK
3	5	4	38.0	65.0	1.0	0.27	2.49	3.71	2.43	0.43	21306EXQ	21306EXQK
3	6	4	42.0	65.0	1.0	0.32	2.09	3.11	2.04	0.46	22207EXQ	22207EXQK
3	5	4	44.0	71.0	1.5	0.27	2.49	3.71	2.43	0.57	21307EXQ	21307EXQK
3	6	4	47.0	73.0	1.0	0.28	2.37	3.53	2.32	0.56	22208EXQ	22208EXQK
3	5	4	50.0	81.0	1.5	0.26	2.55	3.80	2.50	0.78	21308EXQ	21308EXQK
4	7	4	48.5	81.5	1.5	0.37	1.83	2.72	1.79	1.07	22308EXQ	22308EXQK
3	6	4	52.0	78.0	1.0	0.26	2.55	3.80	2.50	0.61	22209EXQ	22209EXQK
3	5	4	55.0	92.0	1.5	0.26	2.62	3.90	2.56	1.05	21309EXQ	21309EXQK
4	8	4	53.5	91.5	1.5	0.37	1.83	2.72	1.79	1.41	22309EXQ	22309EXQK
3	6	4	57.0	83.0	1.0	0.24	2.79	4.15	2.73	0.65	22210EXQ	22210EXQK
3	5	4	61.0	101.0	2.0	0.25	2.71	4.04	2.65	1.36	21310EXQ	21310EXQK
4	8	4	60.0	100.0	2.0	0.36	1.85	2.76	1.81	1.92	22310EXQ	22310EXQK
3	6	4	63.5	91.5	1.5	0.24	2.84	4.23	2.78	0.88	22211EXQ	22211EXQK
3	5	4	65.0	110.0	2.0	0.25	2.71	4.03	2.65	1.70	21311EXQ	21311EXQK
4	8	4	65.0	110.0	2.0	0.36	1.85	2.75	1.81	2.40	22311EXQ	22311EXQK
3	6	4	68.5	101.5	1.5	0.25	2.74	4.08	2.68	1.20	22212EXQ	22212EXQK
3	5	4	72.0	118.0	2.0	0.24	2.78	4.14	2.72	2.10	21312EXQ	21312EXQK
4	8	4	72.0	118.0	2.0	0.36	1.86	2.77	1.82	3.05	22312EXQ	22312EXQK
3	6	4	73.5	111.5	1.5	0.25	2.69	4.00	2.63	1.56	22213EXQ	22213EXQK
3	6	4	77.0	128.0	2.0	0.24	2.83	4.21	2.76	2.60	21313EXQ	21313EXQK
4	8	4	77.0	128.0	2.0	0.34	1.98	2.94	1.93	3.67	22313EXQ	22313EXQK
3	6	4	78.5	116.5	1.5	0.24	2.87	4.27	2.80	1.65	22214EXQ	22214EXQK
3	6	4	82.0	138.0	2.0	0.24	2.84	4.23	2.78	3.10	21314EXQ	21314EXQK
5	10	4	82.0	138.0	2.0	0.34	1.98	2.94	1.93	4.45	22314EXQ	22314EXQK
3	6	4	83.5	121.5	1.5	0.22	3.07	4.58	3.00	1.74	22215EXQ	22215EXQK
3	6	4	87.0	148.0	2.0	0.24	2.87	4.27	2.80	3.80	21315EXQ	21315EXQK
5	10	4	87.0	148.0	2.0	0.35	1.95	2.90	1.91	5.44	22315EXQ	22315EXQK
3	6	4	90.0	130.0	2.0	0.22	3.07	4.57	3.00	2.19	22216EXQ	22216EXQK
4	8	4	90.0	130.0	2.0	0.29	2.35	3.50	2.30	2.95	23216EXQ	23216EXQK
4	8	4	92.0	158.0	2.0	0.23	2.88	4.29	2.82	4.50	21316EXQ	21316EXQK
5	10	4	92.0	158.0	2.0	0.35	1.95	2.90	1.91	6.42	22316EXQ	22316EXQK
4	7	4	95.0	140.0	2.0	0.22	3.01	4.48	2.94	2.75	22217EXQ	22217EXQK
4	8	4	95.0	140.0	2.0	0.30	2.25	3.34	2.20	3.78	23217EXQ	23217EXQK
4	8	4	99.0	166.0	2.5	0.23	2.89	4.30	2.83	5.30	21317EXQ	21317EXQK
6	11	4	99.0	166.0	2.5	0.33	2.02	3.00	1.97	7.46	22317EXQ	22317EXQK
4	7	4	100.0	150.0	2.0	0.24	2.79	4.15	2.73	3.50	22218EXQ	22218EXQK
5	10	4	100.0	150.0	2.0	0.32	2.14	3.19	2.09	4.57	23218EXQ	23218EXQK
4	8	6	104.0	176.0	2.5	0.23	2.91	4.33	2.84	6.10	21318EXQ	21318EXQK
6	11	6	104.0	176.0	2.5	0.34	2.00	2.98	1.96	8.82	22318EXQ	22318EXQK
5	8	4	107.0	158.0	2.0	0.24	2.76	4.11	2.70	4.24	22219EXQ	22219EXQK
5	10	4	107.0	158.0	2.0	0.30	2.25	3.34	2.20	5.46	23219EXQ	23219EXQK
4	8	6	109.0	186.0	2.5	0.23	2.92	4.35	2.86	7.10	21319EXQ	21319EXQK
6	12	6	109.0	186.0	2.5	0.33	2.02	3.00	1.97	10.2	22319EXQ	22319EXQK

RULMENTI RADIALI OSCILANTI CU ROLE BUTOI



Dimensiuni principale (mm)				Numar rulment		Sarcina dinamica de baza Cr(N)	Sarcina statica de baza Cor(N)	Turatii admise (min ⁻¹)		
d	D	B	r (min.)	Alezaaj cilindric (Note)	Alezaaj conic			Unsoare	Ulei	
100	150	37.0	1.5	23020EXQ	23020EXQK	286,000	325,000	3,000	3,900	
	165	52.0	2.0	23120EXQ	23120EXQK	450,000	500,000	2,800	3,500	
	180	46.0	2.1	22220EXQ	22220EXQK	520,000	480,000	3,100	3,800	
	180	60.3	2.1	23220EXQ	23220EXQK	595,000	629,000	3,100	3,900	
	215	47.0	3.0	21320EXQ	21320EXQK	580,000	524,000	2,600	3,500	
	215	73.0	3.0	22320EXQ	22320EXQK	975,000	875,000	2,200	2,900	
110	170	45.0	2.0	23022EXQ	23022EXQK	415,000	475,000	3,000	3,800	
	180	56.0	2.0	23122EXQ	23122EXQK	540,000	610,000	3,000	3,800	
	180	69.0	2.0	24122EXQ	24122EXQK30	633,000	743,000	3,000	3,800	
	200	53.0	2.1	22222EXQ	22222EXQK	680,000	640,000	2,900	3,400	
	200	69.8	2.1	23222EXQ	23222EXQK	750,000	793,000	2,800	3,500	
	240	50.0	3.0	21322EXQ	21322EXQK	675,000	635,000	2,300	3,000	
	240	80.0	3.0	22322EXQ	22322EXQK	1,150,000	1,040,000	2,100	2,800	
120	180	46.0	2.0	23024EXQ	23024EXQK	430,000	515,000	2,800	3,500	
	180	60.0	2.0	24024EXQ	24024EXQK30	540,000	683,000	2,800	3,600	
	200	62.0	2.0	23124EXQ	23124EXQK	675,000	720,000	2,600	3,500	
	200	80.0	2.0	24124EXQ	24124EXQK30	815,000	970,000	2,600	3,500	
	215	58.0	2.1	22224EXQ	22224EXQK	785,000	765,000	2,600	3,200	
	215	76.0	2.1	23224EXQ	23224EXQK	860,000	956,000	2,500	3,300	
	260	55.0	3.0	21324EXQ	21324EXQK	790,000	765,000	2,100	2,500	
	260	86.0	3.0	22324EXQ	22324EXQK	1,250,000	1,130,000	2,000	2,700	
130	200	52.0	2.0	23026EXQ	23026EXQK	555,000	660,000	2,600	3,200	
	200	69.0	2.0	24026EXQ	24026EXQK30	710,000	900,000	2,600	3,300	
	210	64.0	2.0	23126EXQ	23126EXQK	690,000	799,000	2,400	3,200	
	210	80.0	2.0	24126EXQ	24126EXQK30	840,000	1,030,000	2,400	3,200	
	230	64.0	3.0	22226EXQ	22226EXQK	910,000	915,000	2,400	2,800	
	230	80.0	3.0	23226EXQ	23226EXQK	980,000	1,090,000	2,300	2,900	
	280	93.0	4.0	22326EXQ	22326EXQK	1,450,000	1,340,000	1,900	2,600	
140	210	53.0	2.0	23028EXQ	23028EXQK	585,000	710,000	2,600	2,900	
	210	69.0	2.0	24028EXQ	24028EXQK30	720,000	920,000	2,400	3,200	
	225	68.0	2.1	23128EXQ	23128EXQK	790,000	940,000	2,300	3,000	
	225	85.0	2.1	24128EXQ	24128EXQK30	950,000	1,180,000	2,300	2,900	
	250	68.0	3.0	22228EXQ	22228EXQK	1,050,000	1,030,000	2,100	2,600	
	250	88.0	3.0	23228EXQ	23228EXQK	1,130,000	1,290,000	2,100	2,600	
150	225	56.0	2.1	23030EXQ	23030EXQK	640,000	790,000	2,100	2,600	
	225	75.0	2.1	24030EXQ	24030EXQK30	815,000	1,060,000	2,300	2,800	
	250	80.0	2.1	23130EXQ	23130EXQK	1,000,000	1,230,000	2,100	2,600	
	250	100.0	2.1	24130EXQ	24130EXQK30	1,230,000	1,520,000	2,100	2,600	
	270	73.0	3.0	22230EXQ	22230EXQK	1,200,000	1,200,000	2,000	2,500	
	270	96.0	3.0	23230EXQ	23230EXQK	1,340,000	1,540,000	2,000	2,500	
160	240	60.0	2.1	23032EXQ	23032EXQK	735,000	915,000	2,000	2,500	
	240	80.0	2.1	24032EXQ	24032EXQK30	950,000	1,280,000	2,100	2,600	
	270	86.0	2.1	23132EXQ	23132EXQK	1,180,000	1,430,000	2,000	2,500	
	270	109.0	2.1	24132EXQ	24132EXQK30	1,450,000	1,810,000	2,000	2,500	
170	260	67.0	2.1	23034EXQ	23034EXQK	880,000	1,080,000	1,800	2,300	
	260	90.0	2.1	24034EXQ	24034EXQK30	1,120,000	1,480,000	2,000	2,500	
	280	88.0	2.1	23134EXQ	23134EXQK	1,260,000	1,530,000	1,800	2,300	
180	280	74.0	2.1	23036EXQ	23036EXQK	1,070,000	1,330,000	1,700	2,300	

(Note) Specificatiile EXQ-V sunt de asemenea valabile pentru rulmentii in rosu. 6



▪ Sarcina radiala dinamica echivalenta $P_r = XFr + YFa$

$\frac{Fa}{Fr} \leq e$		$\frac{Fa}{Fr} > e$	
X	Y	X	Y
1	Y_1	0.67	Y_2

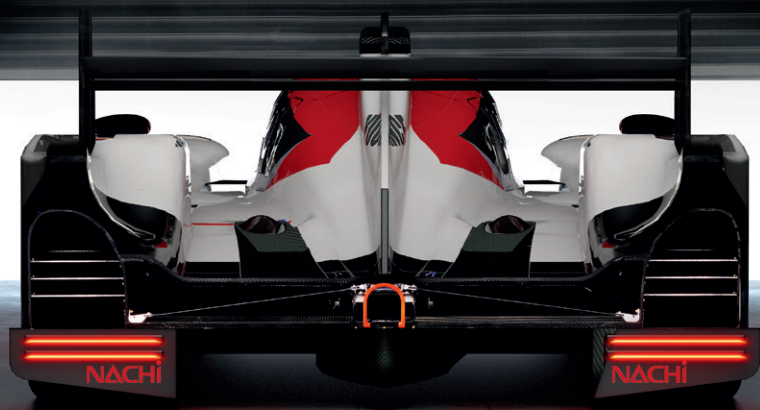
Valorile factorilor e, Y_1 si Y_2 se pot obtine din tabelle cu rulmenti.

▪ Sarcina radiala statica echivalenta $P_{or} = Fr + Y_0Fa$

Valoarea factorului Y_0 se poate obtine din tabellele cu rulmenti

Dimensiunile canalelor si gaurilor de ungere			Dimensiuni relative de montaj (mm)			Factorul de incarcare axial				Masa (kg) Alezaj cilindric (Reference)	Simbol rulment	
Gaura diametru du	Canal latime A	Gaura numar N	da (min.)	Da (max.)	ra (max.)	Constant e	Y_1	Y_2	Y_0		Alezaj cilindric (Note)	Alezaj conic
4	7	4	117.0	141.0	1.5	0.22	3.01	4.48	2.94	2.33	23020EXQ	23020EXQK
5	9	4	110.0	155.0	2.0	0.29	2.33	3.47	2.28	4.49	23120EXQ	23120EXQK
5	8	4	112.0	168.0	2.0	0.25	2.74	4.08	2.68	5.10	22220EXQ	22220EXQK
5	10	4	112.0	168.0	2.0	0.32	2.09	3.11	2.04	6.76	23220EXQ	23220EXQK
4	8	6	114.0	201.0	2.5	0.22	3.02	4.49	2.95	8.70	21320EXQ	21320EXQK
6	12	6	114.0	201.0	2.5	0.35	1.95	2.90	1.91	13.1	22320EXQ	22320EXQK
5	9	4	120.0	160.0	2.0	0.24	2.48	4.23	2.78	3.84	23022EXQ	23022EXQK
5	9	4	120.0	170.0	2.0	0.29	2.36	3.51	2.31	5.70	23122EXQ	23122EXQK
6	11	4	120.0	170.0	2.0	0.37	1.84	2.74	1.80	6.89	24122EXQ	24122EXQK30
5	10	6	122.0	188.0	2.0	0.26	2.64	3.93	2.58	7.36	22222EXQ	22222EXQK
6	11	6	122.0	188.0	2.0	0.34	1.99	2.96	1.94	9.60	23222EXQ	23222EXQK
4	8	6	124.0	226.0	2.5	0.21	3.19	4.75	3.12	11.6	21322EXQ	21322EXQK
6	12	6	124.0	226.0	2.5	0.33	2.03	3.02	1.98	18.1	22322EXQ	22322EXQK
5	9	4	130.0	170.0	2.0	0.23	2.95	4.40	2.89	4.20	23024EXQ	23024EXQK
5	9	4	130.0	170.0	2.0	0.30	2.23	3.32	2.18	5.36	24024EXQ	24024EXQK30
5	9	6	130.0	190.0	2.0	0.29	2.34	3.49	2.29	7.90	23124EXQ	23124EXQK
6	11	6	130.0	190.0	2.0	0.38	1.78	2.65	1.74	10.1	24124EXQ	24124EXQK30
5	10	6	132.0	203.0	2.0	0.26	2.60	3.87	2.54	9.28	22224EXQ	22224EXQK
6	13	6	132.0	203.0	2.0	0.34	1.97	2.94	1.93	12.0	23224EXQ	23224EXQK
5	12	6	134.0	246.0	2.5	0.21	3.17	4.72	3.10	15.3	21324EXQ	21324EXQK
8	15	6	134.0	246.0	2.5	0.33	2.03	3.02	1.98	22.6	22324EXQ	22324EXQK
5	10	6	140.0	190.0	2.0	0.24	2.87	4.27	2.80	6.14	23026EXQ	23026EXQK
6	11	6	140.0	190.0	2.0	0.32	2.14	3.18	2.09	7.93	24026EXQ	24026EXQK30
5	9	6	140.0	200.0	2.0	0.28	2.42	3.61	2.37	8.60	23126EXQ	23126EXQK
6	11	6	140.0	200.0	2.0	0.36	1.90	2.83	1.86	10.7	24126EXQ	24126EXQK30
5	10	6	144.0	216.0	2.5	0.26	2.55	3.80	2.50	11.6	22226EXQ	22226EXQK
6	13	6	144.0	216.0	2.5	0.33	2.05	3.05	2.00	14.2	23226EXQ	23226EXQK
8	17	6	148.0	262.0	3.0	0.33	2.03	3.02	1.98	28.4	22326EXQ	22326EXQK
5	10	6	150.0	200.0	2.0	0.23	2.98	4.44	2.91	6.61	23028EXQ	23028EXQK
6	11	6	150.0	200.0	2.0	0.30	2.28	3.39	2.23	8.40	24028EXQ	24028EXQK30
6	11	6	152.0	213.0	2.0	0.28	2.45	3.65	2.40	10.5	23128EXQ	23128EXQK
8	14	6	152.0	213.0	2.0	0.36	1.87	2.79	1.83	13.0	24128EXQ	24128EXQK30
6	12	6	154.0	236.0	2.5	0.26	2.60	3.87	2.54	13.9	22228EXQ	22228EXQK
8	15	6	154.0	236.0	2.5	0.34	1.99	2.96	1.95	18.8	23228EXQ	23228EXQK
5	11	6	162.0	213.0	2.0	0.22	3.04	4.53	2.97	8.01	23030EXQ	23030EXQK
6	11	6	162.0	213.0	2.0	0.30	2.23	3.32	2.18	10.5	24030EXQ	24030EXQK30
6	13	6	162.0	238.0	2.0	0.30	2.24	3.34	2.19	16.2	23130EXQ	23130EXQK
8	14	6	162.0	238.0	2.0	0.38	1.77	2.64	1.73	19.6	24130EXQ	24130EXQK30
6	14	6	164.0	256.0	2.5	0.25	2.69	4.00	2.63	18.9	22230EXQ	22230EXQK
8	15	6	164.0	256.0	2.5	0.34	1.96	2.93	1.92	24.2	23230EXQ	23230EXQK
5	11	6	172.0	228.0	2.0	0.22	3.01	4.48	2.94	9.74	23032EXQ	23032EXQK
6	11	6	172.0	228.0	2.0	0.30	2.24	3.34	2.19	12.7	24032EXQ	24032EXQK30
8	16	6	172.0	258.0	2.0	0.30	2.22	3.30	2.17	20.5	23132EXQ	23132EXQK
10	17	6	172.0	258.0	2.0	0.39	1.74	2.59	1.70	25.5	24132EXQ	24132EXQK30
6	13	6	182.0	248.0	2.0	0.23	2.90	4.31	2.83	13.1	23034EXQ	23034EXQK
8	14	6	182.0	248.0	2.0	0.32	2.11	3.15	2.07	17.3	24034EXQ	24034EXQK30
8	16	6	182.0	268.0	2.0	0.29	2.30	3.43	2.25	21.6	23134EXQ	23134EXQK
8	15	6	192.0	268.0	2.0	0.24	2.84	4.23	2.78	17.4	23036EXQ	23036EXQK

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