Double-row spherical roller bearings

Double-row spherical roller bearings

Definition and capabilities

Definition

The outer ring of this type of bearing has a spherical raceway that allows angular movement of the rings. This means that the bearing can accept high degrees of misalignment.

Its internal design enables it to withstand very high radial loads and axial loads. Variants with a tapered bore allow fitting using an adapter sleeve.

This type of bearing is particularly suited to heavy mechanical applications where it is difficult to align the seats and radial loads are high. It is well suited to severe operating conditions, involving impact or vibration (crushers, vibrating screens, heavy handling machinery, etc.).

Premier: SNR high performance standard

Started with spherical roller bearings, the « Premier » approach consists of developing standardised bearings with high-level performance, endurance and longevity features as a standard.

Symbol of the quality of our brand as a standard product, « Premier » creates a strong identity and demonstrates the desire of SNR to offer consistent value for the most common applications.

The 4 keys of the Premier approach

To become « Premier », our standard bearings must meet strict requirements in 4 fields which determine their reliability and their life:

- A thorough control of steel: less wear, less damage, more stability at high temperature.
- Design: compactness and load capacity, the result of SNR experience.
- Sealing lubrication: important elements in the design.
- Bearing finish: quality assurance in production and continuous improvement activity on machines and processes.

Spherical roller bearings: first Premier

SNR spherical roller bearings were the first to benefit from the Premier system. The tests carried out on these new products showed very significant gains: +18% for the load capacity, +75% minimum life duration. The « Premier » brand name is clearly visible on the specific packaging created for the launching of the range. The bearing itself bears a specific marking. In addition, to fight against counterfeits, all SNR standard bearings benefit from a new holographic label comprising several safety levels. These multiple identifications express the difference between SNR « standard » and products without any guarantee. Gradually, the Premier specification will be applied to all the brand's bearings.

Capabilities

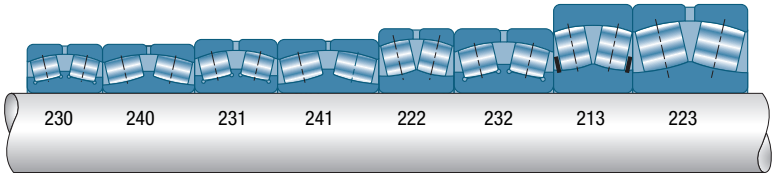
Loads and speeds

The internal design of double-row spherical roller bearings demands good lubrication to achieve the high performance levels specific to this type of bearing.

Misalignment

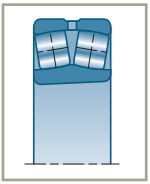
These bearings accept misalignment angles of about 0.5° without reducing their loading capacity. This angle must nevertheless be limited in order to remain within values compatible with the sealing system used.

Series



Variants

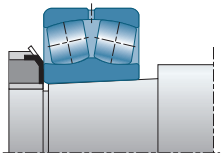
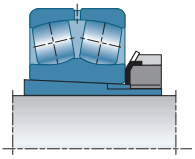
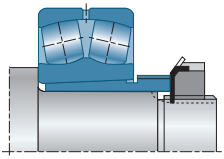
Bearings with tapered bore.



Taper:

- 1:12 for all series (suffix K)
- except series 240 and 241 (taper 1:30, suffix K30)

This bearing can be mounted:

Directly onto a shaft with tapered seat	Onto a cylindrical shaft by means of a tapered adapter sleeve	Onto a cylindrical shaft by means of a tapered withdrawal sleeve
	 Frequently installed in 2-part cast iron pillow blocks.	

Double-row spherical roller bearings *(continued)*

Groove and lubrication holes in the outer ring. Suffix W33

Standard manufacture double-row spherical bearings, with the exception of series 213, have a groove and three lubrication holes on the outer ring to allow lubrication. The dimensions of the groove are indicated in the "List of Standard Bearings".

These bearings can be supplied on request without the groove and lubrication holes.

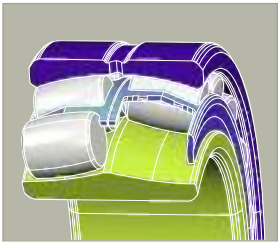
Cages

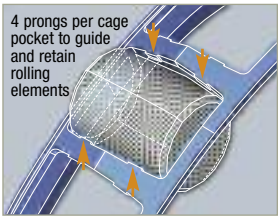
Steel sheet cage: SNR PREMIER EA series

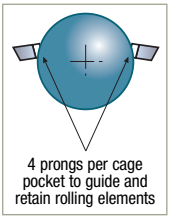
General and extreme temperature applications.

This bearing is designed for all general applications and more particularly when the operating temperature exceeds 150°C (302°F).

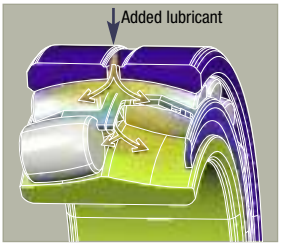
- **Resistance to high and low temperatures:** from -60 to +200°C (140°F to 392° F), thanks to the bearing ring dimensional stabilization heat treatment, complemented by a suitable lubricant.
- **Accurate cage centering**, on the ground surface of the inner ring's bearing race and on the large rolling elements, resulting in more precise roller guidance.
- **Precise guidance of the rollers** retained by the pockets, each comprising 4 retaining tabs with a controlled chamfer, for perfect positioning of the rolling elements without added components. This guarantees minimized friction and overheating, for an increased service life, with reduced maintenance.
- **The surface treatment** (phosphatizing – oiling) reduces the friction coefficient and the wear, for higher resistance at high speed.
- **Excellent lubrication** due to the shape of the cage which increases the lubricant reserves in the bearing and facilitates its flow.







The series 24000 is a very wide series, with extra-long rollers ensuring optimized capacity. Therefore, SNR decided to maintain the lateral shoulders and the central rib.

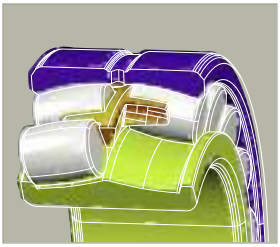


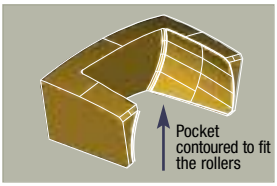
Solid copper alloy cage (brass) : SNR PREMIER EM series

Demanding applications.

This bearing provides a solution for temperatures up to 200°C (392°F), with tough operating conditions (high speeds, shock loads, contamination).

- Minimized resonance due to the one-piece cage.
- Resistance to shocks and highest rigidity due to the plastic deformation capacity of the material (copper alloy-brass).
- Friction reduction:
  - The self-lubricating properties of the cage material, reducing friction at high speed.
  - The cage centered on the rolling elements, with lateral shoulder sections on the inner ring. The absence of a cage / ring contact prevents any component from siezing in case of thermal expansion.
- Perfect roller radial guidance and good roller / cage load distribution, by the pockets surrounding the rolling elements.





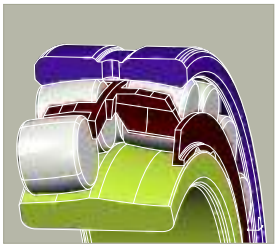
Polyamide 6.6 nylon cage, filled with 25% glass fiber: SNR PREMIER EG15 series

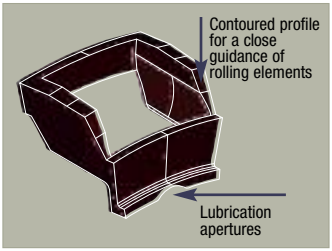
Average temperature applications.

This bearing is designed for all general applications when temperature does not exceed +150°C (302°F).

- Very good strength thanks to the material, providing flexibility and elasticity, as well as dual design: each row of rollers is guided by its own cage.
- Very good roller guidance thanks to its « window style » design, obtained from a specific cast process, guaranteeing high reliability.
- Good lubrication improved by the cage design: apertures in the external shroud, low polyamide / steel friction coefficient. This cage ensures good distribution of the lubrication film.
- Low noise level thanks to the material used.
- Good corrosion resistance: no alteration of the cage in case of accidental presence of water.

Non-conductive and resistant to many chemical or electrochemical agents.





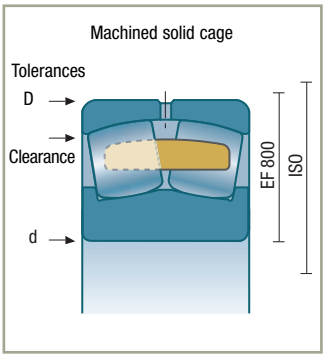
Double-row spherical roller bearings *(continued)*

Solid copper alloy cage (brass), reduced internal tolerance & clearance ranges: SNR PREMIER EF800 series

High vibration applications.

The vibratory mechanisms such as those found in shaker screens, crushers, grinders or construction equipment engines, are the most demanding applications for spherical roller bearings.

- **Resistance to vibrations** by the solid one-piece machined cage, which minimizes resonance phenomena, and their induced failures.
- **Strengthened roller retention under vibrations** thanks to the lateral shoulders in the inner ring and to the internal clearance control at installation. To ensure correct operation in vibration applications, the tolerances on the outer diameter, the bore and the internal clearance are reduced.
- **Special radial clearance:** C4, utilizing the upper 2/3 of the C4 tolerance range, in order to perfectly control the internal clearance after installation. This type of special tolerance is also available in classes C and C3.



Tolerances and clearances

➔ Tolerances

These bearings are supplied in normal precision standards (ISO 492 Standard). The F800 series have special tolerances on the outer diameter and bore adapted to vibrating applications to secure their interchangeability. SNR can supply bearings with reduced tolerances on one or more characteristics (bore, outside diameter, precision of rotation, inner ring, etc.).

➔ Internal radial clearance

The radial clearance is defined by ISO 5753 Standard. The values are different for bearings with a tapered bore due to the reduction of the internal clearance when fitting them on their seat.

Approximate recommended residual clearance J_{rm} after fitting:

$$J_{rm} = 5\, d^{1/2}\, 10^{-3}$$

Spherical double-row rollers with cylindrical bore

Series 213-222-223-230-231-232-240-241

Bore diameter	Group 2		Group N		Group 3		Group 4		Group 5	
d (mm)	min	max	min	max	min	max	min	max	min	max
14 <d≤ 18	10	20	20	35	35	45	45	60	60	75
18 <d≤ 24	10	20	20	35	35	45	45	60	60	75
24 <d≤ 30	15	25	25	40	40	55	55	75	75	95
30 <d≤ 40	15	30	30	45	45	60	60	80	80	100
40 <d≤ 50	20	35	35	55	55	75	75	100	100	125
50 <d≤ 65	20	40	40	65	65	90	90	120	120	150
65 <d≤ 80	30	50	50	80	80	110	110	145	145	180
80 <d≤ 100	35	60	60	100	100	135	135	180	180	225
100 <d≤ 120	40	75	75	120	120	160	160	210	210	260
120 <d≤ 140	50	95	95	145	145	190	190	240	240	300
140 <d≤ 160	60	110	110	170	170	220	220	280	280	350
160 <d≤ 180	65	120	120	180	180	240	240	310	310	390
180 <d≤ 200	70	130	130	200	200	260	260	340	340	430
200 <d≤ 225	80	140	140	220	220	290	290	380	385	470
225 <d≤ 250	90	150	150	240	240	320	320	420	420	520
250 <d≤ 280	100	170	170	260	260	350	350	460	460	570
280 <d≤ 315	110	190	190	280	280	370	370	500	500	630
315 <d≤ 355	120	200	200	310	310	410	410	550	550	690
355 <d≤ 400	130	220	220	340	340	450	450	600	600	750
400 <d≤ 450	140	240	240	370	370	500	500	660	660	820
450 <d≤ 500	140	260	260	410	410	550	550	720	720	900
500 <d≤ 560	150	280	280	440	440	600	600	780	780	1000
560 <d≤ 630	170	310	310	480	480	650	650	850	850	1100
630 <d≤ 710	190	350	350	530	530	700	700	920	925	1190

Value in µm

Double-row spherical roller bearings *(continued)*

Spherical double-row rollers with tapered bore

Series 213K-222K-223K-230K-231K-232K-240K-241K

Bore diameter	Group 2		Group N		Group 3		Group 4		Group 5	
d (mm)	min	max	min	max	min	max	min	max	min	max
18 <d≤ 24	15	25	25	35	35	45	45	60	60	75
24 <d≤ 30	20	30	30	40	40	55	55	75	75	95
30 <d≤ 40	25	35	35	50	50	65	65	85	85	105
40 <d≤ 50	30	45	45	60	60	80	80	100	100	130
50 <d≤ 65	40	55	55	75	75	95	95	120	120	160
65 <d≤ 80	50	70	70	95	95	120	120	150	150	200
80 <d≤ 100	55	80	80	110	110	140	140	180	180	230
100 <d≤ 120	65	100	100	135	135	170	170	220	220	280
120 <d≤ 140	80	120	120	160	160	200	200	260	260	330
140 <d≤ 160	90	130	130	1870	180	230	230	300	300	380
160 <d≤ 180	100	140	140	200	200	260	260	340	340	430
180 <d≤ 200	110	160	160	220	220	290	290	370	370	470
200 <d≤ 225	120	180	180	250	250	320	320	410	410	520
225 <d≤ 250	140	200	200	270	270	350	350	450	450	570
250 <d≤ 280	150	220	220	300	300	390	390	490	490	620
280 <d≤ 315	170	240	240	330	330	430	430	540	540	680
315 <d≤ 355	190	270	270	360	360	470	470	590	590	740
355 <d≤ 400	210	300	300	400	400	520	520	650	650	820
400 <d≤ 450	230	330	330	440	440	570	570	720	720	910
450 <d≤ 500	260	370	370	490	490	630	630	790	790	1000
500 <d≤ 560	290	410	410	540	540	680	680	870	870	1100
560 <d≤ 630	320	460	460	600	600	760	760	980	980	1230
630 <d≤ 710	350	510	510	670	670	850	850	1090	1090	1360

Value in µm

Axial clearance

As the axial clearance J_a depends on the radial clearance J_r it can be approximated using the following formula:

$$J_a = 2{,}27\ Y_0 \cdot J_r$$

Control of fitting and clearance

During the fitting of the bearing on the sleeve the inner ring is expanded reducing he internal radial clearance of the bearing.

This clearance reduction allows one to estimate the fit. It is most important to monitor this characteristic to ensure that the final clearance is adequate to allow proper bearing operation.

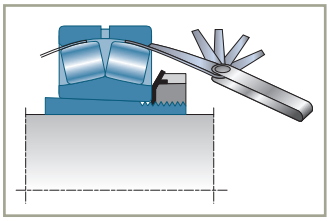
Double-row self-aligning bal bearings

Swivel the bearing outer ring by hand. The rotation must be smooth and oscillation easy.

Spherical roller bearings

• Principle of measurement

The clearance is measured by sliding a feeler gauge between the outer ring and the rollers. With large bearings do not use feeler gauges over 0.150 mm thick since they are too stiff to take the curve of the outer ring raceway. Stack up a combination of thinner gauges instead.



• Practical measurement

Place the bearing upright, the rings must be parallel. Manually rotate the inner ring to ensure that the rollers are properly seated. Find in the column 2 of the table below, the minimum value of the standardized clearance that corresponds to the bore and clearance class of the bearing. Choose a feeler gauge slightly smaller than this value.

Slide the gauge at an angle between the unloaded rollers and the outer ring race.

Progressively increase the gauge thickness. The clearance value will be situated between the last « pass » gauge and the next one that failed to « pass ».

Monitoring of fitting and clearance

• Radially

Drive up the bearing until the clearance has been reduced to the indicated limits. Check that the final residual clearance is no smaller than the value stated for the particular clearance class (column 3)

• Axially (shaft with tapered seat)

The axial movement corresponding to the tightening must be within the indicated limits (column 4). Check that the final residual clearance is no smaller than the value stated for the particular clearance class.

Double-row spherical roller bearings *(continued)*

Measurement of radial clearance during fitting

Bearing bore (mm)		Prior to mounting (2)						After mounting (3)						Axial drive-up			
		C0		C3		C4		C0		C3		C4		mm			
		According ISO 5753 (in mm)		According ISO 5753 (in mm)		According ISO 5753 (in mm)		Feeler gauge*		Feeler gauge*		Feeler gauge*		Taper 1:12		Taper 1:30	
from	including	Mini	Maxi	Mini	Maxi	Mini	Maxi	yes	no	yes	no	yes	no	Mini	Maxi	Mini	Maxi
30	40	0,035	0.050	0.050	0.065	0.065	0.085	2	3	3	4	4	5	0.350	0.400	–	–
40	50	0.045	0.060	0.060	0.080	0.080	0.100	3	4	3	5	4	6	0.400	0.450	–	–
50	65	0.055	0.075	0.075	0.095	0.095	0.120	3	5	4	6	5	7	0.450	0.600	–	–
65	80	0.070	0.095	0.095	0.120	0.120	0.150	4	6	5	7	6	8	0.600	0.750	–	–
80	100	0.080	0.110	0.110	0.140	0.140	0.180	4	6	6	8	7	10	0.700	0.900	1.700	2.200
100	120	0.100	0.135	0.135	0.170	0.170	0.220	5	7	7	9	9	12	0.750	1.100	1.900	2.700
120	140	0.120	0.160	0.160	0.200	0.200	0.260	8	11	10	13	12	17	1.100	1.400	2.700	3.500
140	160	0.130	0.180	0.180	0.230	0.230	0.300	8	12	11	15	14	19	1.200	1.600	3.000	4.000
160	180	0.140	0.200	0.200	0.260	0.260	0.340	9	13	12	17	16	21	1.300	1.700	3.200	4.200
180	200	0.160	0.220	0.220	0.290	0.290	0.370	11	16	15	20	20	26	1.400	2.000	3.500	5.000
200	225	0.180	0.250	0.250	0.320	0.320	0.410	12	17	17	22	22	28	1.600	2.200	4.000	5.500
225	250	0.200	0.270	0.270	0.350	0.350	0.450	14	19	18	24	24	31	1.700	2.400	4.200	6.700
250	280	0.220	0.300	0.300	0.390	0.390	0.490	15	21	20	27	26	33	1.900	2.700	4.700	6.700
280	315	0.240	0.330	0.330	0.430	0.430	0.540	16	23	22	29	29	37	2.000	3.000	5.000	7.500
315	355	0.270	0.360	0.360	0.470	0.470	0.590	18	25	24	32	32	40	2.400	3.300	6.000	8.200
355	400	0.300	0.400	0.400	0.520	0.520	0.650	20	27	27	36	35	44	2.600	3.600	6.500	9.000
400	450	0.330	0.440	0.440	0.570	0.570	0.720	22	30	29	39	38	49	3.100	4.000	7.700	10.000
450	500	0.370	0.490	0.490	0.630	0.630	0.790	25	33	33	43	42	54	3.300	4.400	8.200	11.000
500	600	0.410	0.540	0.540	0.680	0.680	0.870	28	37	36	46	46	59	3.700	5.000	9.200	12.500

* Practical measurement of clearance to within 1/100the of an mm by means thickness shims. For values smaller than 4/100the of an mm, use peel shims.

Design criteria

Bearing life

Axial load

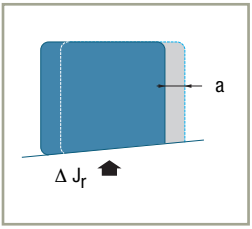
Double-row spherical roller bearings can withstand axial loads.

It is nevertheless recommended not to exceed a value of $F_a / F_r = 0,6$

Installation/assembly criteria

The residual clearance of the bearing must be checked after fitting. This check is vital for bearings with a tapered bore.

Relation between the axial displacement (a) of a tapered bore bearing and the corresponding reduction in its radial clearance ΔJ_r:



taper 1:12	$a = 12 \ \Delta J_r / t_i$
taper 1:30	$a = 30 \ \Delta J_r / t_i$

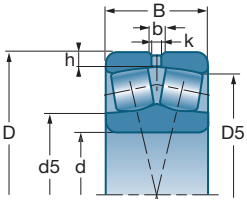
a (axial displacement)
ΔJ_r: reduction in radial clearance
t_i: repercussion factor for the interference fit of the inner ring:

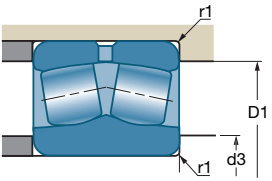
- t_i = 0.75 if the bearing is mounted directly on a tapered seat of a solid shaft
- t_i = 0.7 if the bearing is mounted on a tapered adapter sleeve

Suffixes

C2	ISO radial clearance category 2
C3	ISO radial clearance category 3
C4	ISO radial clearance category 4
C5	ISO radial clearance category 5
EA	Bearing of the range “Premier” with pressed steel cage
EG15	Bearing of the range “Premier” with polyamide 6/6 cage
EM	Bearing of the range “Premier” with Machined brass cage
EF800	Bearing of the range “Premier” for vibrations applications
K	Tapered bore, 1:12 taper
K30	Tapered bore, 1:30 taper
V	Internal design index
W33	Groove and lubrication holes in outer ring

Double-row spherical roller bearings *(continued)*





d		D	B	b	k	h	C	C_0	e
mm	References	mm	mm	mm	mm	mm	10^3N	10^3N	
25	* 22205 E	52	18	3	1.5	2.8	54.4	46.1	0.34
	21305 V	62	17			3.5	48.5	37.5	0.29
30	* 22206 E	62	20	4.4	2	2.8	72	64.5	0.31
	21306 V	72	19			3.5	63	50	0.28
35	* 22207 E	72	23	4.9	2	3.5	95.4	92	0.31
	21307 V	80	21			4.5	79	66	0.27
40	* 22208 E	80	23	5.4	2.5	3.5	110	105	0.27
	21308 V	90	23			4.5	96	84	0.26
	* 22308 E	90	33	5.9	3	4.5	161	152	0.36
45	* 22209 E	85	23	5.8	2.5	3.5	115	113	0.26
	21309 V	100	25			4.5	119	106	0.26
	* 22309 E	100	36	6.4	3	4.5	196	187	0.36
50	* 22210 E	90	23	5.8	2.5	3.5	124	124	0.24
	21310 V	110	27			5.5	137	128	0.25
	* 22310 E	110	40	7.4	3.5	5.5	237	232	0.36
55	* 22211 E	100	25	6.3	3	4.5	147	148	0.23
	21311 V	120	29			5.5	167	158	0.24
	* 22311 E	120	43	7.8	3.5	5.5	282	274	0.36
60	* 22212 E	110	28	6.9	3	4.5	178	181	0.24
	21312 V	130	31			6	186	179	0.24
	* 22312 E	130	46	8.7	4	6	323	319	0.35
65	* 22213 E	120	31	7.8	3.5	4.5	215	224	0.24
	21313 V	140	33			6	224	215	0.23
	* 22313 E	140	48	9.2	4	6	351	343	0.33
70	* 22214 E	125	31	7.4	3.5	4.5	224	240	0.22
	21314 V	150	35			6	246	240	0.23
	* 22314 E	150	51	10.4	5	6	400	396	0.34
75	* 22215 E	130	31	7.4	3.5	4.5	232	249	0.22
	21315 V	160	37			6	280	275	0.23
	* 22315 E	160	55	10.3	5	6	467	467	0.34
80	* 22216 E	140	33	7.9	3.5	5.5	265	287	0.22
	21316 V	170	39			6	305	305	0.23
	* 22316 E	170	58	10.4	5	6	515	522	0.34

* indicate bearings of the range SNR PREMIER

Characteristics

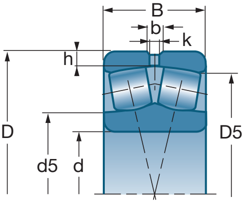
■ Spherical double-row rollers with cylindrical bore

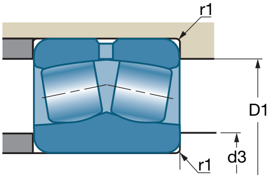


References	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	d5 ≈ mm	d3 min mm	D1 max mm	D5 ≈ mm	r1 max mm	kg
* 22205 E	2	2.98	1.96	8600	11000	30	30	47	46	1	0.170
21305 V	2.33	3.47	2.28	6800	9100	34	32	55	52	1.1	0.257
* 22206 E	2.15	3.2	2.1	7200	9300	37	36	57	55	1	0.272
21306 V	2.45	3.64	2.39	5800	7700	40	37	65	60	1.1	0.394
* 22207 E	2.21	3.29	2.16	6100	7900	45	42	66	63	1.1	0.440
21307 V	2.48	3.69	2.42	5200	6900	46	44	71	68	1.5	0.513
* 22208 E	2.47	3.67	2.41	5500	7100	50	47	74	71	1.1	0.515
21308 V	2.55	3.8	2.5	4500	6100	53	49	81	76	1.5	0.715
* 22308 E	1.87	2.79	1.83	4100	5300	52	49	83	78	1.5	1.006
* 22209 E	2.64	3.93	2.58	5100	6600	54	52	79	76	1.1	0.565
21309 V	2.64	3.93	2.58	4100	5400	59	54	91	85	1.5	0.949
* 22309 E	1.9	2.83	1.86	3700	4800	58	54	93	87	1.5	1.352
* 22210 E	2.84	4.23	2.78	4800	6200	59	57	84	81	1.1	0.603
21310 V	2.71	4.04	2.65	3700	4900	66	61	99	93	2	1.251
* 22310 E	1.87	2.79	1.83	3400	4400	63	61	101	95	2	1.810
* 22211 E	2.95	4.4	2.89	4300	5500	66	64	93	90	1.5	0.823
21311 V	2.82	4.2	2.76	3300	4500	73	66	109	102	2	1.537
* 22311 E	1.87	2.79	1.83	3100	4000	68	66	111	104	2	2.290
* 22212 E	2.84	4.23	2.78	3900	5100	71	69	103	99	1.5	1.134
21312 V	2.81	4.19	2.75	3100	4100	79	72	118	110	2.1	1.986
* 22312 E	1.95	2.9	1.91	2900	3700	75	72	120	113	2.1	2.804
* 22213 E	2.79	4.15	2.73	3600	4700	78	74	113	107	1.5	1.512
21313 V	2.91	4.33	2.84	2900	3800	85	77	128	120	2.1	2.410
* 22313 E	2.06	3.06	2.01	2700	3400	81	77	130	122	2.1	3.413
* 22214 E	3.01	4.48	2.94	3400	4400	84	79	118	113	1.5	1.586
21314 V	2.9	4.31	2.83	2700	3600	91	82	138	127	2.1	2.990
* 22314 E	2	2.98	1.96	2500	3200	85	82	140	131	2.1	4.176
* 22215 E	3.14	4.67	3.07	3200	4200	88	84	123	118	1.5	1.644
21315 V	2.94	4.37	2.87	2500	3400	97	87	148	137	2.1	3.590
* 22315 E	2	2.98	1.96	2300	3000	91	87	150	139	2.1	5.083
* 22216 E	3.14	4.67	3.07	3000	3900	94	91	131	127	2	2.071
21316 V	2.95	4.4	2.89	2400	3200	104	92	158	145	2.1	4.260
* 22316 E	2	2.98	1.96	2200	2800	98	92	160	148	2.1	6.030

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*





d	References	D	B	b	k	h	C	C0	e
mm		mm	mm	mm	mm	mm	10^3N	10^3N	
85	* 22217 E	150	36	7.9	3.5	5.5	308	330	0.22
	21317 V	180	41			7	355	365	0.23
	* 22317 E	180	60	11	5	7	570	604	0.32
90	* 22218 E	160	40	10.2	4.5	5.5	366	398	0.23
	* 23218 E	160	52.4	8.86	4	5.5	445	513	0.3
	21318 V	190	43			7	385	400	0.23
	* 22318 E	190	64	11.56	5	7	636	652	0.33
95	* 22219 E	170	43	9.93	4.5	6	395	417	0.23
	* 22319 E	200	67	12.15	6	7	696	751	0.32
100	* 24020 E	150	50	6.4	3.5	3.5	325	425	0.3
	* 23120 E	165	52	8.4	4	5.5	448	575	0.28
	* 22220 E	180	46	11.2	5	6	449	495	0.24
	* 23220 E	180	60.3	9.44	6	6	558	661	0.31
	* 22320 E	215	73	13.3	6	7	787	844	0.34
110	* 23022 E	170	45	7.83	3.5	4.4	397	517	0.23
	* 24022 E	170	60	6.8	3.5	4.4	465	615	0.33
	* 23122 E	180	56	8.86	4	5.5	521	669	0.28
	* 24122 E	180	69	8.4	4	5.5	530	675	0.36
	* 22222 E	200	53	12.2	6	6	573	643	0.25
	* 23222 E	200	69.8	10.52	5	6	716	869	0.32
	* 22322 E	240	80	15.6	7	7	928	972	0.31
120	* 23024 E	180	46	7.83	3.5	4.4	424	577	0.22
	* 24024 E	180	60	7.34	3.5	4.4	465	640	0.3
	* 23124 E	200	62	10.04	4.5	5.5	630	820	0.28
	* 24124 E	200	80	10.05	4.5	5.5	695	925	0.39
	* 22224 E	215	58	12.16	6	6	654	753	0.25
	* 23224 E	215	76	11	5	6	815	998	0.32
	* 22324 E	260	86	18	8	7	1110	1280	0.32
130	* 23026 E	200	52	8.91	4	4.4	538	721	0.22
	* 24026 E	200	69	8.4	4	4.4	590	795	0.32
	* 23126 E	210	64	10.04	4.5	5.5	675	906	0.27
	* 24126 E	210	80	9.48	4.5	5.5	720	965	0.35
	* 22226 E	230	64	13.21	6	7	768	898	0.25
	* 23226 E	230	80	11.56	5	7	912	1130	0.32
	* 22326 E	280	93	18.9	9	8.5	1260	1400	0.33

* indicate bearings of the range SNR PREMIER

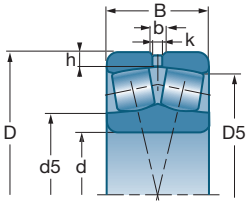
Spherical double-row rollers with cylindrical bore *(continued)*

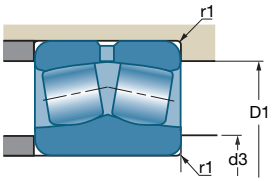


References	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	d5 ≈ mm	d3 min mm	D1 max mm	D5 ≈ mm	r1 max mm	kg
* 22217 E	3.07	4.57	3	2800	3600	100	96	141	137	2	2.560
21317 V	2.99	4.46	2.93	2200	3000	111	99	166	154	3	5.230
* 22317 E	2.09	3.11	2.04	2000	2600	107	99	166	157	3	7.061
* 22218 E	2.9	4.31	2.83	2700	3500	105	101	151	144	2	3.283
* 23218 E	2.25	3.34	2.2	2200	2900	104	101	149	141	2	4.430
21318 V	3	4.47	2.93	2100	2800	117	104	176	162	3	6.110
* 22318 E	2.06	3.06	2.01	1900	2500	110	104	176	166	3	8.285
* 22219 E	2.95	4.4	2.89	2500	3200	110	107	158	153	2.1	3.950
* 22319 E	2.09	3.11	2.04	1800	2300	120	109	186	174	3	9.890
* 24020 E	2.25	3.34	2.2	1900	2500	108	107	143	136	1.5	2.690
* 23120 E	2.39	3.56	2.34	2200	2900	114	111	154	147	2	4.400
* 22220 E	2.84	4.23	2.78	2400	3100	118	112	170	161	2.1	4.900
* 23220 E	2.18	3.24	2.13	1900	2600	127	114	168	187	2.1	6.380
* 22320 E	1.98	2.94	1.93	1700	2200	127	114	201	187	3	12.470
* 23022 E	2.95	4.4	2.89	2300	3000	123	119	161	155	2	3.550
* 24022 E	2.03	3.02	1.98	1700	2200	122	120	161	152	2	4.960
* 23122 E	2.43	3.61	2.37	2000	2700	125	121	169	161	2	5.480
* 24122 E	1.85	2.76	1.81	1000	1300	121	121	169	158	2	6.850
* 22222 E	2.69	4	2.63	2200	2800	130	122	190	179	2.1	6.929
* 23222 E	2.12	3.15	2.07	1700	2300	130	122	188	176	2.1	9.250
* 22322 E	2.09	3.11	2.04	1600	2000	139	124	226	209	3	16.870
* 23024 E	3.14	4.67	3.07	2200	2900	134	129	171	165	2	3.990
* 24024 E	2.25	3.34	2.2	1700	2100	131	129	171	165	2	5.200
* 23124 E	2.43	3.61	2.37	1800	2400	138	131	189	179	2	7.670
* 24124 E	1.74	2.59	1.7	950	1200	133	131	189	172	2	10.000
* 22224 E	2.74	4.08	2.68	1900	2500	141	132	203	193	2.1	8.693
* 23224 E	2.09	3.11	2.04	1600	2100	139	132	203	190	2.1	11.275
* 22324 E	2.09	3.11	2.04	1400	1800	156	134	246	225	3	22.170
* 23026 E	3.01	4.48	2.94	2000	2600	145	139	191	183	2	5.810
* 24026 E	2.09	3.11	2.04	1500	1900	141	139	191	179	2	7.740
* 23126 E	2.51	3.74	2.45	1700	2300	148	141	199	189	2	8.400
* 24126 E	1.92	2.86	1.88	850	1200	144	141	199	184	2	11.800
* 22226 E	2.69	4	2.63	1800	2400	151	144	216	206	3	10.771
* 23226 E	2.12	3.15	2.07	1500	2000	150	144	216	204	3	13.550
* 22326 E	2.06	3.06	2.01	1300	1700	164	144	263	243	4	26.917

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*





d		D	B	b	k	h	C	C_0	e
mm	References	mm	mm	mm	mm	mm	10^3N	10^3N	
140	* 23028 E	210	53	8.91	4	4.4	568	783	0.22
	* 24028 E	210	69	9.9	4.5	4.4	625	900	0.31
	* 23128 E	225	68	10.54	5	6	763	1030	0.26
	* 24128 E	225	85	10.7	4.5	6	830	1120	0.36
	* 22228 E	250	68	14.18	7	7	867	1010	0.25
	* 23228 E	250	88	12.6	6	7	1090	1370	0.33
	* 22328 E	300	102	18.9	9	8.5	1470	1720	0.33
150	* 23030 E	225	56	9.96	4.5	5.1	628	893	0.21
	* 24030 E	225	75	9.3	4	5.1	715	1000	0.31
	* 23130 E	250	80	12.63	6	6	1010	1350	0.29
	* 24130 E	250	100	10.4	5	6	1070	1400	0.38
	* 22230 E	270	73	15.33	7	7	1020	1220	0.25
	* 23230 E	270	96	13.7	6	7	1280	1620	0.33
	* 22330 E	320	108	19.9	9	8.5	1660	1890	0.34
160	* 23032 E	240	60	10.52	5	5.1	711	1000	0.21
	* 24032 E	240	80	9.4	4.5	5.1	785	1090	0.3
	* 23132 E	270	86	13.7	6	6	1160	1580	0.29
	* 24132 E	270	109	11.7	5	6	1260	1740	0.38
	* 22232 E	290	80	16.94	8	7	1160	1390	0.25
	* 23232 E	290	104	14.85	7	7	1470	1890	0.33
	* 22332 E	340	114	20.3	10	8.5	1850	2210	0.33
170	* 23034 E	260	67	11.59	5	5.1	869	1240	0.22
	* 24034 E	260	90	10.5	5	5.1	1010	1430	0.32
	* 23134 E	280	88	13.7	6	6	1200	1700	0.28
	* 24134 E	280	109	13.2	6	6	1310	1840	0.37
	* 22234 E	310	86	17.98	8	8.5	1330	1610	0.26
	23234 V	310	110	13.9	7.5	8.5	1210	1830	0.32
	* 22334 E	360	120	20.25	10	8.5	2100	2630	0.32
180	* 23036 E	280	74	13.24	6	5.1	1020	1450	0.23
	* 24036 E	280	100	11.7	5	5.1	1170	1700	0.33
	* 23136 E	300	96	14.85	7	7	1420	1960	0.29
	* 24136 E	300	118	14.1	6	7	1470	2050	0.38
	* 22236 E	320	86	18	8	8.5	1380	1660	0.25
	23236 V	320	112	13.9	7.5	8.5	1290	2050	0.31
	22336 V	380	126	23.1	12	8.5	1580	2190	0.31
190	* 23038 E	290	75	13.24	6	5.1	1080	1570	0.22
	* 24038 E	290	100	11.59	5	5.1	1240	1800	0.31
	23138 V	320	104	20	7.5	7	1180	1950	0.29

* indicate bearings of the range SNR PREMIER

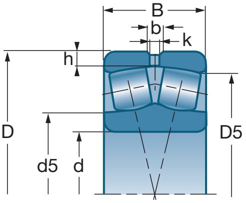
Spherical double-row rollers with cylindrical bore *(continued)*

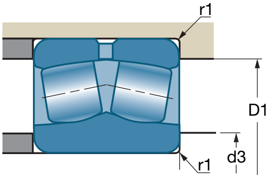


References	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	d5 ≈ mm	d3 min mm	D1 max mm	D5 ≈ mm	r1 max mm	kg
* 23028 E	3.14	4.67	3.07	1900	2500	155	149	201	193	2	6.330
* 24028 E	2.21	3.29	2.16	1400	1800	153	149	201	189	2	9.090
* 23128 E	2.55	3.8	2.5	1600	2100	159	152	213	203	2.1	10.900
* 24128 E	1.9	2.83	1.86	800	1100	154	152	213	198	2.1	13.000
* 22228 E	2.74	4.08	2.68	1700	2200	163	154	236	224	3	14.200
* 23228 E	2.06	3.06	2.01	1400	1800	162	154	236	220	3	18.400
* 22328 E	2.03	3.02	1.98	1200	1600	181	157	283	261	4	34.130
* 23030 E	3.2	4.77	3.13	1800	2300	167	161	214	207	2.1	7.620
* 24030 E	2.18	3.24	2.13	1300	1600	162	161	215	205	2.1	10.200
* 23130 E	2.35	3.5	2.3	1400	1900	171	162	238	223	2.1	15.720
* 24130 E	1.78	2.65	1.74	850	1100	165	162	240	219	2.1	19.900
* 22230 E	2.74	4.08	2.68	1500	2000	177	164	256	242	3	17.800
* 23230 E	2.03	3.02	1.98	1300	1700	174	164	256	237	2.1	23.520
* 22330 E	2	2.98	1.96	1200	1500	188	167	303	279	4	41.960
* 23032 E	3.2	4.77	3.13	1700	2200	177	172	229	221	2.1	9.150
* 24032 E	2.28	3.39	2.23	1200	1500	173	172	230	217	2.1	12.300
* 23132 E	2.35	3.5	2.3	1300	1800	185	172	258	240	2.1	20.120
* 24132 E	1.76	2.62	1.72	800	1000	180	172	260	236	2.1	25.600
* 22232 E	2.69	4	2.63	1400	1900	190	174	276	260	3	23.000
* 23232 E	2.03	3.02	1.98	1200	1600	186	174	276	259	3	29.580
* 22332 E	2.03	3.02	1.98	1100	1400	205	177	323	296	4	50.700
* 23034 E	3.07	4.57	3	1600	2000	190	181	249	238	2.1	13.000
* 24034 E	2.12	3.15	2.07	1100	1400	184	181	250	233	2.1	17.800
* 23134 E	2.39	3.56	2.34	1300	1700	195	182	268	250	2.1	21.550
* 24134 E	1.82	2.72	1.79	650	850	189	182	270	245	2.1	26.600
* 22234 E	2.6	3.87	2.54	1300	1700	201	187	293	277	4	28.177
23234 V	2.13	3.17	2.08	1000	1300	199	187	293	264	4	37.000
* 22334 E	2.09	3.11	2.04	1000	1200	223	187	343	313	4	59.000
* 23036 E	2.95	4.4	2.89	1400	1900	201	191	270	255	2.1	16.900
* 24036 E	2.03	3.02	1.98	1000	1300	198	191	270	250	2.1	22.900
* 23136 E	2.32	3.45	2.26	1200	1600	205	194	286	267	3	27.210
* 24136 E	1.78	2.65	1.74	600	800	200	194	286	261	3	33.900
* 22236 E	2.74	4.08	2.68	1300	1700	209	197	303	287	4	28.941
23236 V	2.17	3.23	2.12	1000	1300	210	197	303	274	4	39.800
22336 V	2.15	3.2	2.1	850	1100	223	197	363	313	4	67.300
* 23038 E	3.01	4.48	2.94	1400	1800	213	201	279	266	2.1	17.470
* 24038 E	2.15	3.2	2.1	1000	1300	206	201	279	261	2.1	22.530
23138 V	2.33	3.47	2.28	1000	1300	218	204	306	278	3	34.500

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*





d		D	B	b	k	h	C	C0	e
mm	References	mm	mm	mm	mm	mm	10^3N	10^3N	
190	* 24138 E	320	128	14.2	6	7	1760	2480	0.38
	* 22238 E	340	92	19.6	9	8.5	1540	1870	0.25
	23238 V	340	120	16.7	9	8.5	1480	2370	0.32
	22338 V	400	132	22.3	12	10	1830	2650	0.36
200	23940 V	280	60	12.2	6.3		620	1000	0.2
	* 23040 E	310	82	14.28	7	5.1	1250	1790	0.23
	* 24040 E	310	109	12.67	6	5.1	1440	2120	0.33
	23140 V	340	112	16.7	9	7	1290	2120	0.3
	* 24140 E	340	140	16.98	8	7	2030	2930	0.39
	* 22240 E	360	98	20	10	8.5	1720	2100	0.25
	23240 V	360	128	16.7	9	8.5	1630	2700	0.32
	22340 V	420	138	22.3	12	10	1830	2650	0.31
220	* 23944 E	300	60	13.7	6.3		665	1120	0.18
	* 23044 E	340	90	15.37	7	6.2	1450	2110	0.23
	24044 V	340	118	12.2	6.3	6.2	1400	2700	0.34
	23144 V	370	120	20.7	9	8.5	1540	2600	0.29
	24144 V	370	150	11.1	6.3	8.5	2340	3660	0.38
	* 22244 E	400	108	20.6	11	8.5	2100	2690	0.25
	* 23244 E	400	144	20.02	10	8.5	2750	3830	0.34
	22344 V	460	145	22.3	12	10	2110	3150	0.3
240	23048 V	360	92	13.9	7.5	6.2	1090	2050	0.24
	24048 V	360	118	12.2	6.3	6.2	1500	2900	0.32
	23148 V	400	128	16.7	9	8.5	1720	2950	0.29
	24148 V	400	160	11.1	6.3	8.5	2270	4240	0.38
	22248 V	440	120	22.3	12	8.5	1170	1950	0.29
	23248 V	440	160	22.3	12	8.5	2420	3950	0.33
	22348 V	500	155	22.3	12	10	2450	3700	0.29
260	23052 V	400	104	16.7	9	7.3	1490	2430	0.25
	24052 V	400	140	12.2	6.3	7.3	1900	3800	0.35
	23152 V	440	144	16.7	9	8.5	2140	3750	0.29
	24152 V	440	180	13.9	6.3	8.5	2770	5290	0.39
	23252 V	480	174	22.3	12	13	2700	4450	0.33
280	23056 V	420	106	16.7	9	7.3	1500	2850	0.23
	24056 V	420	140	12.2	6.3	7.3	2000	4000	0.25
	23156 V	460	146	16.7	9	10	2240	4050	0.28
	24156 V	460	180	12.2	6.3	10	2700	5200	0.39
	23256 V	500	176	22.3	12	10	2900	4900	0.32
	22356 V	580	175	22.3	12	13	3429	5182	0.31

* indicate bearings of the range SNR PREMIER

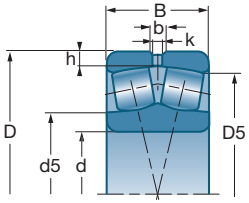
Spherical double-row rollers with cylindrical bore *(continued)*

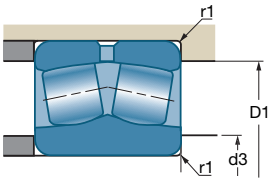


References	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	d5 ≈ mm	d3 min mm	D1 max mm	D5 ≈ mm	r1 max mm	kg
* 24138 E	1.76	2.62	1.72	550	750	213	204	308	289	3	42.100
* 22238 E	2.74	4.08	2.68	1200	1600	222	207	323	305	4	35.314
23238 V	2.13	3.17	2.08	950	1200	223	207	323	290	4	48.500
22338 V	1.88	2.8	1.84	800	1100	240	210	380	332	5	76.400
23940 V	3.42	5.09	3.34	1300	1700	217	210	269	263	2.1	12.200
* 23040 E	2.95	4.4	2.89	1300	1700	223	211	300	283	2.1	22.560
* 24040 E	2.06	3.06	2.01	950	1200	219	211	299	278	2.1	29.200
23140 V	2.28	3.39	2.23	950	1200	230	214	326	294	3	42.500
* 24140 E	1.74	2.59	1.7	550	700	225	214	326	292	3	51.300
* 22240 E	2.74	4.08	2.68	1100	1500	234	217	343	323	4	42.528
23240 V	2.12	3.16	2.08	900	1200	238	217	343	307	4	58.400
22340 V	2.17	3.24	2.12	750	1000	302	220	400	346	5	99.000
* 23944 E	3.76	5.59	3.67	950	1200	237	230	287	284	4	12.300
* 23044 E	2.95	4.4	2.89	1200	1500	246	233	327	310	3	31.800
24044 V	1.96	2.92	1.92	850	1100	246	233	328	302	3	39.500
23144 V	2.31	3.44	2.26	900	1100	253	237	353	321	4	53.000
24144 V	1.77	2.63	0.73	500	670	253	237	353	316	4	65.600
* 22244 E	2.74	4.08	2.68	1000	1300	264	237	383	358	4	59.474
* 23244 E	2	2.98	1.96	850	1100	261	237	383	350	4	79.428
22344 V	2.23	3.32	2.18	700	950	332	240	440	380	5	125.000
23048 V	2.84	4.23	2.78	1000	1300	270	253	348	324	3	33.900
24048 V	2.1	3.13	2.06	800	1000	264	253	347	319	3	43.600
23148 V	2.35	3.5	2.3	800	1000	276	257	381	348	4	67.200
24148 V	1.79	2.67	1.75	460	620	270	257	383	342	4	81.300
22248 V	2.74	4.08	2.68	730	950	333	257	423	377	4	85.000
23248 V	2.07	3.07	2.02	750	950	285	257	423	372	4	113.180
22348 V	2.29	3.42	2.24	660	850	362	260	480	414	5	159.000
23052 V	2.73	4.07	2.67	950	1200	284	275	385	364	4	47.700
24052 V	1.94	2.88	1.89	750	950	291	275	385	354	4	67.200
23152 V	2.29	3.42	2.24	750	950	302	277	423	380	4	93.400
24152 V	1.75	2.6	1.71	420	560	294	277	423	373	4	113.000
23252 V	2.06	3.07	2.02	690	850	364	280	460	405	5	147.000
23056 V	3	4.46	2.93	900	1100	311	295	405	379	4	54.950
24056 V	2.74	4.08	2.68	700	900	318	295	405	375	4	70.500
23156 V	2.37	3.53	2.32	700	900	322	300	414	401	5	100.000
24156 V	1.71	2.54	1.67	400	530	315	300	440	396	5	119.000
23256 V	2.12	3.16	2.08	650	800	327	300	480	426	5	157.200
22356 V	2.17	3.24	2.12	600	750	437	306	554	493	6	232.000

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*





d	0VDX020	D	B	b	k	h	C	C_0	e
mm	References	mm	mm	mm	mm	mm	10^3N	10^3N	
300	23060 V	460	118	16.7	9	7.3	1820	3350	0.23
	24060 V	460	160	12.2	6.3	7.3	2500	5200	0.35
	23160 V	500	160	22.4	9	10	2632	4645	0.29
	24160 V	500	200	12.2	6.3	10	3250	6300	0.4
	23260 V	540	192	22.3	12	13	3350	5600	0.32
320	23064 V	480	121	16.7	9	7.3	1920	3600	0.22
	23164 V	540	176	22.3	12	10	3050	5500	0.29
340	23068 V	520	133	22.3	12	8	2270	4200	0.23
	23168 V	580	190	22.3	12	10	3500	6100	0.29
360	23072 V	540	134	22.3	12	9	2390	4550	0.22
	23172 V	600	192	22.3	12	10	3681	6683	0.29
380	23076 V	560	135	22.3	12	9	2420	4700	0.21
400	23080 V	600	148	22.3	12	10	2926	5648	0.22

* indicate bearings of the range SNR PREMIER

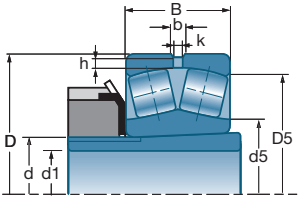
Spherical double-row rollers with cylindrical bore *(continued)*

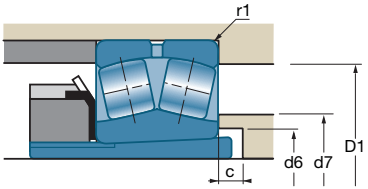


10VDXA20	Y		Yo			d5	d3	D1	D5	r1	
	Fa/Fr ≤ e	Fa/Fr > e				≈	min	max	≈	max	
References				rpm**	rpm**	mm	mm	mm	mm	mm	kg
23060 V	2.95	4.4	2.89	800	1000	376	315	445	414	4	75.270
24060 V	1.95	2.9	1.91	650	800	343	315	445	407	4	102.000
23160 V	2.32	3.45	2.26	660	850	346	320	480	435	5	134.000
24160 V	1.67	2.49	1.63	370	490	340	320	480	429	5	159.000
23260 V	2.12	3.15	2.07	610	750	415	320	520	459	5	200.000
23064 V	3.01	4.49	2.95	750	1000	355	335	465	433	4	79.500
23164 V	2.31	3.44	2.26	620	800	363	340	520	468	5	171.000
23068 V	2.98	4.43	2.91	700	950	426	358	502	468	5	109.000
23168 V	2.29	3.42	2.24	580	750	455	360	560	501	5	208.600
23072 V	3.07	4.56	3	700	900	400	378	522	488	5	114.500
23172 V	2.36	3.51	2.31	560	700	475	380	580	522	5	231.600
23076 V	3.16	4.71	3.09	670	850	466	398	542	508	5	119.800
23080 V	3.08	4.59	3.02	600	750	497	418	582	542	5	156.000

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*





d1	10VDX420	Sleeves	d	D	B	b	k	h	C	C_0	e
mm	References		mm	mm	mm	mm	mm	mm	10^3N	10^3N	
20	* 22205 EK	H305	25	52	18	3.0	1.5	2.8	54.4	46.1	0.34
	21305 VK	H305	25	62	17			3.5	48.5	37.5	0.29
25	* 22206 EK	H306	30	62	20	4.4	2.0	2.8	72	64.5	0.31
	21306 VK	H306	30	72	19			3.5	63	50	0.28
30	* 22207 EK	H307	35	72	23	4.9	2.0	3.5	95.4	92	0.31
	21307 VK	H307	35	80	21			4.5	79	66	0.27
35	* 22208 EK	H308	40	80	23	5.4	2.5	3.5	110	105	0.27
	21308 VK	H308	40	90	23			4.5	96	84	0.26
	* 22308 EK	H2308	40	90	33	5.9	3.0	4.5	161	152	0.36
40	* 22209 EK	H309	45	85	23	5.8	2.5	3.5	115	113	0.26
	21309 VK	H309	45	100	25			4.5	119	106	0.26
	* 22309 EK	H2309	45	100	36	6.4	3.0	4.5	196	187	0.36
45	* 22210 EK	H310	50	90	23	5.8	2.5	3.5	124	124	0.24
	21310 VK	H310	50	110	27			5.5	137	128	0.25
	* 22310 EK	H2310	50	110	40	7.4	3.5	5.5	237	232	0.36
50	* 22211 EK	H311	55	100	25	6.3	3.0	4.5	147	148	0.23
	21311 VK	H311	55	120	29			5.5	167	158	0.24
	* 22311 EK	H2311	55	120	43	7.8	3.5	5.5	282	274	0.36
55	* 22212 EK	H312	60	110	28	6.9	3.0	4.5	178	181	0.24
	21312 VK	H312	60	130	31			6.0	186	179	0.24
	* 22312 EK	H2312	60	130	46	8.7	4.0	6.0	323	319	0.35
60	* 22213 EK	H313	65	120	31	7.8	3.5	4.5	215	224	0.24
	21313 VK	H313	65	140	33			6.0	224	215	0.23
	* 22313 EK	H2313	65	140	48	9.2	4.0	6.0	351	343	0.33
60	* 22214 EK	H314	70	125	31	7.4	3.5	4.5	224	240	0.22
	21314 VK	H314	70	150	35			6.0	246	240	0.23
	* 22314 EK	H2314	70	150	51	10.4	5.0	6.0	400	396	0.34
65	* 22215 EK	H315	75	130	31	7.4	3.5	4.5	232	249	0.22
	21315 VK	H315	75	160	37			6.0	280	275	0.23
	* 22315 EK	H2315	75	160	55	10.3	5.0	6.0	467	467	0.34

* indicate bearings of the range SNR PREMIER

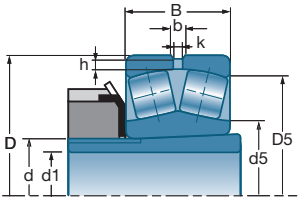
Spherical double-row rollers with tapered bore and adapter sleeves

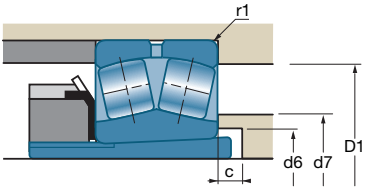


References	Sleeves	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	c	d6 min	d7 max	d5 ≈	D1 max	D5 ≈	r1 max	kg
							mm	mm	mm	mm	mm	mm	mm	
* 22205 EK	H305	2	2.98	1.96	8600	11000	5	28	30	30	47	46	1	0.160
21305 VK	H305	2.33	3.47	2.28	6800	9100	5	31	33	34	55	52	1.1	0.254
* 22206 EK	H306	2.15	3.2	2.1	7200	9300	5	33	37	37	57	55	1	0.260
21306 VK	H306	2.45	3.64	2.39	5800	7700	5	36	39	40	65	60	1.1	0.384
* 22207 EK	H307	2.21	3.29	2.16	6100	7900	5	39	43	45	66	63	1.1	0.420
21307 VK	H307	2.48	3.69	2.42	5200	6900	7	39	44	46	71	68	1.5	0.505
* 22208 EK	H308	2.47	3.67	2.41	5500	7100	5	44	49	50	74	71	1.1	0.500
21308 VK	H308	2.55	3.8	2.5	4500	6100	5	44	51	53	81	76	1.5	0.705
* 22308 EK	H2308	1.87	2.79	1.83	4100	5300	5	45	50	52	83	78	1.5	1.000
* 22209 EK	H309	2.64	3.93	2.58	5100	6600	7	50	53	54	79	76	1.1	0.545
21309 VK	H309	2.64	3.93	2.58	4100	5400	5	50	57	59	91	85	1.5	0.935
* 22309 EK	H2309	1.9	2.83	1.86	3700	4800	5	50	56	58	93	87	1.5	1.340
* 22210 EK	H310	2.84	4.23	2.78	4800	6200	9	55	57	59	84	81	1.1	0.577
21310 VK	H310	2.71	4.04	2.65	3700	4900	5	55	63	66	99	93	2	1.226
* 22310 EK	H2310	1.87	2.79	1.83	3400	4400	5	56	61	63	101	95	2	1.800
* 22211 EK	H311	2.95	4.4	2.89	4300	5500	10	60	64	66	93	90	1.5	0.766
21311 VK	H311	2.82	4.2	2.76	3300	4500	6	60	70	73	109	102	2	1.520
* 22311 EK	H2311	1.87	2.79	1.83	3100	4000	6	61	66	68	111	104	2	2.270
* 22212 EK	H312	2.84	4.23	2.78	3900	5100	9	65	70	71	103	99	1.5	1.070
21312 VK	H312	2.81	4.19	2.75	3100	4100	6	65	76	79	118	110	2.1	1.961
* 22312 EK	H2312	1.95	2.9	1.91	2900	3700	6	66	72	75	120	113	2.1	2.780
* 22213 EK	H313	2.79	4.15	2.73	3600	4700	8	70	76	78	113	107	1.5	1.450
21313 VK	H313	2.91	4.33	2.84	2900	3800	6	70	81	85	128	120	2.1	2.380
* 22313 EK	H2313	2.06	3.06	2.01	2700	3400	6	72	78	81	130	122	2.1	3.370
* 22214 EK	H314	3.01	4.48	2.94	3400	4400	11	75	81	84	118	113	1.5	1.520
21314 VK	H314	2.9	4.31	2.83	2700	3600	6	75	87	91	138	127	2.1	2.950
* 22314 EK	H2314	2	2.98	1.96	2500	3200	6	77	83	85	140	131	2.1	4.100
* 22215 EK	H315	3.14	4.67	3.07	3200	4200	12	80	86	88	123	118	1.5	1.560
21315 VK	H315	2.94	4.37	2.87	2500	3400	6	80	93	97	148	137	2.1	3.550
* 22315 EK	H2315	2	2.98	1.96	2300	3000	6	82	89	91	150	139	2.1	5.000

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*





d1	10VDXA20	Sleeves	d	D	B	b	k	h	C	C_0	e
mm	References		mm	mm	mm	mm	mm	mm	10^3N	10^3N	
70	* 22216 EK	H316	80	140	33	7.9	3.5	5.5	265	287	0.22
	21316 VK	H316	80	170	39			6.0	305	305	0.23
	* 22316 EK	H2316	80	170	58	10.4	5.0	6.0	515	522	0.34
75	* 22217 EK	H317	85	150	36	7.9	3.5	5.5	308	330	0.22
	21317 VK	H317	85	180	41			7.0	355	365	0.23
	* 22317 EK	H2317	85	180	60	11.0	5.0	7.0	570	604	0.32
80	* 22218 EK	H318	90	160	40	10.2	4.5	5.5	366	398	0.23
	* 23218 EK	H2318	90	160	52.4	8.9	4.0	5.5	445	513	0.3
	21318 VK	H318	90	190	43			7.0	385	400	0.23
	* 22318 EK	H2318	90	190	64	11.6	5.0	7.0	636	652	0.33
85	* 22219 EK	H319	95	170	43	9.9	4.5	6.0	395	417	0.23
	* 22319 EK	H2319	95	200	67	12.2	6.0	7.0	696	751	0.32
90	* 23120 EK	H3120	100	165	52	8.4	4.0	5.5	448	575	0.28
	* 22220 EK	H320	100	180	46	11.2	5.0	6.0	449	495	0.24
	* 23220 EK	H2320	100	180	60.3	9.4	4.5	6.0	558	661	0.31
	* 22320 EK	H2320	100	215	73	13.3	6.0	7.0	787	844	0.34
100	* 23022 EK	H322	110	170	45	7.8	3.5	4.4	397	517	0.23
	* 23122 EK	H3122	110	180	56	8.9	4.0	5.5	521	669	0.28
	* 22222 EK	H322	110	200	53	12.2	6.0	6.0	573	643	0.25
	* 23222 EK	H2322	110	200	69.8	10.5	5.0	6.0	716	869	0.32
	* 22322 EK	H2322	110	240	80	15.6	7.0	7.0	928	972	0.31
110	* 23024 EK	H3024	120	180	46	7.8	3.5	4.4	424	577	0.22
	* 23124 EK	H3124	120	200	62	10.0	4.5	5.5	630	820	0.28
	* 22224 EK	H3124	120	215	58	12.2	6.0	6.0	654	753	0.25
	* 23224 EK	H2324	120	215	76	11.0	5.0	6.0	815	998	0.32
	* 22324 EK	H2324	120	260	86	18.0	8.0	7.0	1110	1280	0.32
115	* 23026 EK	H3026	130	200	52	8.9	4.0	4.4	538	721	0.22
	* 23126 EK	H3126	130	210	64	10.0	4.5	5.5	675	906	0.27
	* 22226 EK	H3126	130	230	64	13.2	6.0	7.0	768	898	0.25
	* 23226 EK	H2326	130	230	80	11.6	5.0	7.0	912	1130	0.32
	* 22326 EK	H2326	130	280	93	18.9	9.0	8.5	1260	1400	0.33
125	* 23028 EK	H3028	140	210	53	8.9	4.0	4.4	568	783	0.22
	* 23128 EK	H3128	140	225	68	10.5	5.0	6.0	763	1030	0.26

* indicate bearings of the range SNR PREMIER

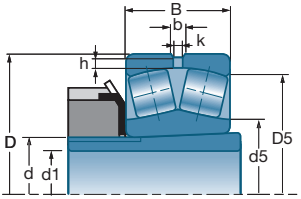
Spherical double-row rollers with tapered bore and adapter sleeves *(continued)*

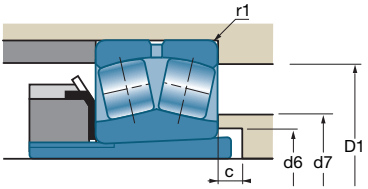


References	Sleeves	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	c	d6 min	d7 max	d5 ≈	D1 max	D5 ≈	r1 max	kg
							mm	mm	mm	mm	mm	mm	mm	
* 22216 EK	H316	3.14	4.67	3.07	3000	3900	12	85	92	94	131	127	2	2.041
21316 VK	H316	2.95	4.4	2.89	2400	3200	6	85	99	104	158	145	2.1	4.210
* 22316 EK	H2316	2	2.98	1.96	2200	2800	6	88	95	98	160	148	2.1	5.930
* 22217 EK	H317	3.07	4.57	3	2800	3600	12	91	98	100	141	137	2	2.520
21317 VK	H317	2.99	4.46	2.93	2200	3000	7	91	105	111	166	154	3	5.160
* 22317 EK	H2317	2.09	3.11	2.04	2000	2600	7	94	103	107	166	157	3	6.961
* 22218 EK	H318	2.9	4.31	2.83	2700	3500	10	96	102	105	151	144	2	3.240
* 23218 EK	H2318	2.25	3.34	2.2	2200	2900	18	100	108	104	149	141	2	4.210
21318 VK	H318	3	4.47	2.93	2100	2800	7	96	112	117	176	162	3	6.030
* 22318 EK	H2318	2.06	3.06	2.01	1900	2500	7	100	114	110	176	166	3	8.160
* 22219 EK	H319	2.95	4.4	2.89	2500	3200	9	102	114	110	158	153	2.1	3.850
* 22319 EK	H2319	2.09	3.11	2.04	1800	2300	7	105	122	122	186	174	3	9.610
* 23120 EK	H3120	2.39	3.56	2.34	2200	2900	7	107	112	114	154	147	2	4.400
* 22220 EK	H320	2.84	4.23	2.78	2400	3100	8	108	114	118	170	161	2.1	4.720
* 23220 EK	H2320	2.18	3.24	2.13	1900	2600	19	110	117	117	168	159	2.1	6.220
* 22320 EK	H2320	1.98	2.94	1.93	1700	2200	7	110	129	127	201	187	3	12.188
* 23022 EK	H322	2.95	4.4	2.89	2300	3000	14	118	125	125	161	155	2	3.450
* 23122 EK	H3122	2.43	3.61	2.37	2000	2700	7	118	128	126	169	161	2	5.310
* 22222 EK	H322	2.69	4	2.63	2200	2800	6	118	126	130	190	179	2.1	6.879
* 23222 EK	H2322	2.12	3.15	2.07	1700	2300	17	121	130	130	188	176	2.1	8.990
* 22322 EK	H2322	2.09	3.11	2.04	1600	2000	7	121	133	139	226	209	3	16.514
* 23024 EK	H3024	3.14	4.67	3.07	2200	2900	7	127	135	134	171	165	2	3.870
* 23124 EK	H3124	2.43	3.61	2.37	1800	2400	7	128	140	138	189	179	2	7.440
* 22224 EK	H3124	2.74	4.08	2.68	1900	2500	11	128	144	141	203	193	2.1	8.580
* 23224 EK	H2324	2.09	3.11	2.04	1600	2100	17	131	141	141	203	190	2.1	11.275
* 22324 EK	H2324	2.09	3.11	2.04	1400	1800	7	131	157	156	246	225	3	21.72
* 23026 EK	H3026	3.01	4.48	2.94	2000	2600	8	137	148	145	191	183	2	5.640
* 23126 EK	H3126	2.51	3.74	2.45	1700	2300	8	138	150	148	199	189	2	8.300
* 22226 EK	H3126	2.69	4	2.63	1800	2400	8	138	154	152	216	206	3	10.600
* 23226 EK	H2326	2.12	3.15	2.07	1500	2000	21	142	151	151	216	204	3	13.550
* 22326 EK	H2326	2.06	3.06	2.01	1300	1700	8	142	167	164	263	243	4	26.354
* 23028 EK	H3028	3.14	4.67	3.07	1900	2500	8	147	158	155	201	193	2	6.130
* 23128 EK	H3128	2.55	3.8	2.5	1600	2100	8	149	162	159	213	203	2.1	10.770

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*





d1		Sleeves	d	D	B	b	k	h	C	C_0	e
mm	References		mm	mm	mm	mm	mm	mm	10^3N	10^3N	
125	* 22228 EK	H3128	140	250	68	14.2	7.0	7.0	867	1010	0.25
	* 23228 EK	H2328	140	250	88	12.6	6.0	7.0	1090	1370	0.33
	* 22328 EK	H2328	140	300	102	18.9	9.0	8.5	1470	1720	0.33
135	* 23030 EK	H3030	150	225	56	10.0	4.5	5.1	628	893	0.21
	* 23130 EK	H3130	150	250	80	12.6	6.0	6.0	1010	1350	0.29
	* 22230 EK	H3130	150	270	73	15.3	7.0	7.0	1020	1220	0.25
	* 23230 EK	H2330	150	270	96	13.7	6.0	7.0	1280	1620	0.33
	* 22330 EK	H2330	150	320	108	19.9	9.0	8.5	1660	1890	0.34
140	* 23032 EK	H3032	160	240	60	10.5	5.0	5.1	711	1000	0.21
	* 23132 EK	H3132	160	270	86	13.7	6.0	6.0	1160	1580	0.29
	* 22232 EK	H3132	160	290	80	16.9	8.0	7.0	1160	1390	0.25
	* 23232 EK	H2332	160	290	104	14.9	7.0	7.0	1470	1890	0.33
	* 22332 EK	H2332	160	340	114	20.3	10.0	8.5	1850	2210	0.33
150	* 23034 EK	H3034	170	260	67	11.6	5.0	5.1	869	1240	0.22
	* 23134 EK	H3134	170	280	88	13.7	6.0	6.0	1200	1700	0.28
	* 22234 EK	H3134	170	310	86	18.0	8.0	8.5	1330	1610	0.26
	23234 VK	H2334	170	310	110	13.9	7.5	8.5	1210	1830	0.32
	* 22334 EK	H2334	170	360	120	20.3	10.0	8.5	2100	2630	0.32
160	* 23036 EK	H3036	180	280	74	13.2	6.0	5.1	1020	1450	0.23
	* 23136 EK	H3136	180	300	96	14.9	7.0	7.0	1420	1960	0.29
	* 22236 EK	H3136	180	320	86	18.0	8.0	8.5	1380	1660	0.25
	23236 VK	H2336	180	320	112	13.9	7.5	8.5	1290	2050	0.31
	22336 VK	H2336	180	380	126	23.1	12.0	8.5	1580	2190	0.31
170	* 23038 EK	H3038	190	290	75	13.2	6.0	5.1	1080	1570	0.22
	23138 VK	H3138	190	320	104	20.0	7.5	7.0	1180	1950	0.29
	* 22238 EK	H3138	190	340	92	19.6	9.0	8.5	1540	1870	0.25
	23238 VK	H2338	190	340	120	16.7	9.0	8.5	1480	2370	0.32
	22338 VK	H2338	190	400	132	22.3	9.0	10.0	1830	2650	0.33
180	* 23040 EK	H3040	200	310	82	14.3	7.0	5.1	1250	1790	0.23
	23140 VK	H3140	200	340	112	16.7	9.0	7.0	1290	2120	0.3
	* 22240 EK	H3140	200	360	98	20.0	10.0	8.5	1720	2100	0.25
	23240 VK	H2340	200	360	128	16.7	9.0	8.5	1630	2700	0.32
	22340 VK	H2340	200	420	138	22.3	12.0	10.0	1830	2650	0.31

* indicate bearings of the range SNR PREMIER

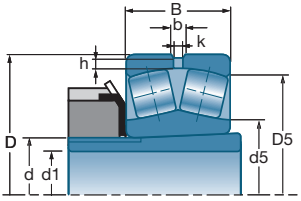
Spherical double-row rollers with tapered bore and adapter sleeves *(continued)*

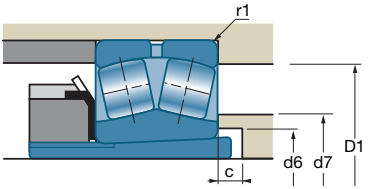


References	Sleeves	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	c	d6 min	d7 max	d5 ≈	D1 max	D5 ≈	r1 max	kg
							mm	mm	mm	mm	mm	mm	mm	kg
* 22228 EK	H3128	2.74	4.08	2.68	1700	2200	8	149	166	163	236	224	3	14.000
* 23228 EK	H2328	2.06	3.06	2.01	1400	1800	22	152	165	162	236	220	3	18.400
* 22328 EK	H2328	2.03	3.02	1.98	1200	1600	8	152	175	181	283	261	4	33.390
* 23030 EK	H3030	3.2	4.77	3.13	1800	2300	8	158	169	167	214	207	2.1	7.750
* 23130 EK	H3130	2.35	3.5	2.3	1400	1900	8	160	176	171	238	223	2.1	15.720
* 22230 EK	H3130	2.74	4.08	2.68	1500	2000	15	160	180	177	256	242	3	17.600
* 23230 EK	H2330	2.03	3.02	1.98	1300	1700	20	163	177	174	256	237	2.1	22.800
* 22330 EK	H2330	2	2.98	1.96	1200	1500	8	163	192	188	303	279	4	41.200
* 23032 EK	H3032	3.2	4.77	3.13	1700	2200	8	168	180	177	229	221	2.1	9.380
* 23132 EK	H3132	2.35	3.5	2.3	1300	1800	8	170	185	185	258	240	2.1	20.120
* 22232 EK	H3132	2.69	4	2.63	1400	1900	14	170	191	190	276	260	3	22.800
* 23232 EK	H2332	2.03	3.02	1.98	1200	1600	18	174	189	186	276	259	3	28.710
* 22332 EK	H2332	2.03	3.02	1.98	1100	1400	8	174	207	205	323	296	4	50.000
* 23034 EK	H3034	3.07	4.57	3	1600	2000	8	179	194	190	249	238	2.1	13.000
* 23134 EK	H3134	2.39	3.56	2.34	1300	1700	8	180	204	195	268	250	2.1	21.550
* 22234 EK	H3134	2.6	3.87	2.54	1300	1700	10	180	204	201	293	277	4	28.000
23234 VK	H2334	2.13	3.17	2.08	1000	1300	18	185	203	199	293	264	4	36.100
* 22334 EK	H2334	2.09	3.11	2.04	1000	1200	8	185	214	223	343	313	4	59.000
* 23036 EK	H3036	2.95	4.4	2.89	1400	1900	8	189	207	201	270	255	2.1	16.900
* 23136 EK	H3136	2.32	3.45	2.26	1200	1600	8	191	208	205	286	267	3	27.210
* 22236 EK	H3136	2.74	4.08	2.68	1300	1700	18	191	203	209	303	287	4	28.700
23236 VK	H2336	2.17	3.23	2.12	1000	1300	22	195	213	210	303	274	4	39.600
22336 VK	H2336	2.15	3.2	2.1	850	1100	8	195	226	223	363	313	4	66.300
* 23038 EK	H3038	3.01	4.48	2.94	1400	1800	9	199	214	213	279	266	2.1	17.200
23138 VK	H3138	2.33	3.47	2.28	1000	1300	9	202	221	218	306	278	3	33.500
* 22238 EK	H3138	2.74	4.08	2.68	1200	1600	21	202	215	222	323	305	4	35.000
23238 VK	H2338	2.13	3.17	2.08	950	1200	21	206	225	223	323	290	4	47.400
22338 VK	H2338	1.88	2.8	1.84	800	1100	9	206	241	240	380	332	5	75.000
* 23040 EK	H3040	2.95	4.4	2.89	1300	1700	9	210	227	223	300	283	2.1	22.560
23140 VK	H3140	2.28	3.39	2.23	950	1200	9	212	233	230	326	294	3	41.400
* 22240 EK	H3140	2.74	4.08	2.68	1100	1500	23	212	227	234	343	323	4	42.000
23240 VK	H2340	2.12	3.16	2.08	900	1100	19	216	237	238	343	307	4	58.100
22340 VK	H2340	2.17	3.24	2.12	750	1000	9	216	247	302	400	346	5	97.000

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*





d1		Sleeves	d	D	B	b	k	h	C	C_0	e
mm	References		mm	mm	mm	mm	mm	mm	10^3N	10^3N	
200	* 23044 EK	H3044H	220	340	90	15.4	7.0	6.2	1450	2110	0.23
	23144 VK	H3144H	220	370	120	20.7	9.0	8.5	1540	2600	0.29
	* 22244 EK	H3144H	220	400	108	20.6	11.0	8.5	2100	2690	0.25
	* 23244 EK	H2344H	220	400	144	20.0	10.0	8.5	2750	3830	0.34
	22344 VK	H2344H	220	460	145	22.3	12.0	10.0	2110	3150	0.3
220	23048 VK	H3048H	240	360	92	13.9	7.5	6.2	1090	2050	0.24
	23148 VK	H3148H	240	400	128	16.7	9.0	8.5	1720	2950	0.29
	22248 VK	H3148H	240	440	120	22.3	12.0	8.5	1920	2470	0.29
	23248 VK	H2348H	240	440	160	22.3	12.0	8.5	2420	3950	0.33
	22348 VK	H2348H	240	500	155	22.3	12.0	10.0	2450	3700	0.29
240	23052 VK	H3052H	260	400	104	16.7	9.0	7.3	1490	2430	0.25
	23152 VK	H3152H	260	440	144	16.7	9.0	8.5	2140	3750	0.29
	23252 VK	H2352H	260	480	174	22.3	12.0	13.0	2700	4450	0.33
260	23056 VK	H3056H	280	420	106	16.7	9.0	7.3	1500	2850	0.23
	23156 VK	H3156H	280	460	146	16.7	9.0	10.0	2240	4050	0.28
	23256 VK	H2356H	280	500	176	22.3	12.0	10.0	2900	4900	0.32
	22356 VK	H2356H	280	580	175	22.3	12.0	13.0	3429	5182	0.32
280	23060 VK	H3060H	300	460	118	16.7	9.0	7.3	1820	3350	0.23
	23160 VK	H3160H	300	500	160	16.7	9.0	10.0	2632	4645	0.32
	23260 VK	H3260H	300	540	192	22.3	12.0	13.0	3350	5600	0.32
300	23064 VK	H3064H	320	480	121	16.7	9.0	7.3	1920	3600	0.22
	23164 VK	H3164H	320	540	176	22.3	12.0	10.0	3050	5500	0.29
320	23068 VK	H3068H	340	520	133	22.3	12.0	8.0	2270	4200	0.23
	23168 VK	H3168H	340	580	190	22.3	12.0	10.0	3500	6100	0.29
340	23072 VK	H3072H	360	540	134	22.3	12.0	9.0	2390	4550	0.22
	23172 VK	H3172H	360	600	192	22.3	12.0	10.0	3681	6683	0.29
360	23076 VK	H3076H	380	560	135	22.3	12.0	9.0	2420	4700	0.21
380	23080 VK	H3080H	400	600	148	22.3	12.0	10.0	2926	5648	0.22

* indicate bearings of the range SNR PREMIER

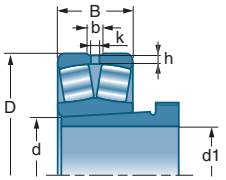
Spherical double-row rollers with tapered bore and adapter sleeves *(continued)*

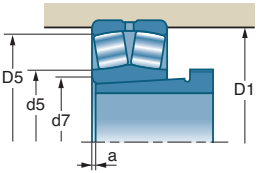


References	Sleeves	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	c	d6 min	d7 max	d5 ≈	D1 max	D5 ≈	r1 max	kg
							mm	mm	mm	mm	mm	mm	mm	
* 23044 EK	H3044H	2.95	4.4	2.89	1200	1500	9	231	249	246	327	310	3	31.450
23144 VK	H3144H	2.31	3.44	2.26	900	1100	9	233	256	253	353	321	0.4	53.000
* 22244 EK	H3144H	2.74	4.08	2.68	1000	1300	21	233	254	264	383	358	4	59.000
* 23244 EK	H2344H	2	2.98	1.96	850	1100	10	236	259	261	383	350	4	74.800
22344 VK	H2344H	2.23	3.32	2.18	700	950	9	236	273	332	440	380	5	122.000
23048 VK	H3048H	2.84	4.23	2.78	1000	1300	11	251	267	270	348	324	3	32.700
23148 VK	H3148H	2.35	3.5	2.3	800	1000	11	254	277	276	381	348	4	65.500
22248 VK	H3148H	2.3	3.42	2.25	730	950	19	254	284	333	423	377	4	85.000
23248 VK	H2348H	2.07	3.07	2.02	750	950	6	257	281	285	423	372	4	112.000
22348 VK	H2348H	2.29	3.42	2.24	660	850	11	257	297	362	480	414	5	156.000
23052 VK	H3052H	2.73	4.07	2.67	950	1200	11	272	292	284	385	364	4	45.800
23152 VK	H3152H	2.29	3.42	2.24	750	950	11	276	302	302	420	380	4	91.600
23252 VK	H2352H	2.06	3.07	2.02	690	850	2	278	312	364	460	405	5	142.000
23056 VK	H3056H	3	4.46	2.93	900	1100	12	292	315	311	405	379	4	53.310
23156 VK	H3156H	2.37	3.53	2.32	700	900	12	296	314	322	414	401	5	98.000
23256 VK	H2356H	2.12	3.16	2.08	650	800	11	299	239	327	480	426	5	152.000
22356 VK	H2356H	2.13	3.17	2.08	950	670	12	299	345	437	554	493	6	232.000
23060 VK	H3060H	2.95	4.4	2.89	800	1000	12	313	336	376	445	414	4	73.100
23160 VK	H3160H	2.1	3	2	670	850	12	318	245	346	480	435	5	129.700
23260 VK	H3260H	2.12	3.15	2.07	610	750	12	321	356	415	520	459	5	195.000
23064 VK	H3064H	3.01	4.49	2.95	750	1000	12	334	357	355	465	433	4	79.100
23164 VK	H3164H	2.31	3.44	2.26	620	800	12	338	373	369	520	468	5	168.500
23068 VK	H3068H	2.98	4.43	2.91	700	950	14	355	385	426	502	468	5	105.000
23168 VK	H3168H	2.29	3.42	2.24	580	750	14	360	394	455	560	501	5	202.200
23072 VK	H3072H	3.07	4.56	3	700	900	14	375	403	400	522	488	5	110.700
23172 VK	H3172H	2.36	3.51	2.31	560	700	14	380	418	475	580	522	5	223.800
23076 VK	H3076H	3.16	4.71	3.09	670	850	15	396	425	466	542	508	5	116.200
23080 VK	H3080H	3.08	4.59	3.02	600	750	15	417	450	497	582	542	5	155.000

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*





d1	10VDX220	Sleeves	d	D	B	b	k	h	C	C_0	e
mm	References		mm	mm	mm	mm	mm	mm	10^3N	10^3N	
20	* 22205 EK		25	52	18	3.0	1.5	2.8	54.40	46.10	0.34
	21305 VK		25	62	17			3.5	48.50	37.50	0.29
25	* 22206 EK		30	62	20	4.4	2.0	2.8	72.00	64.50	0.31
	21306 VK		30	72	19			3.5	63.00	50.00	0.28
30	* 22207 EK		35	72	23	4.9	2.0	3.5	95.40	92.00	0.31
	21307 VK		35	80	21			4.5	79.00	66.00	0.27
35	* 22208 EK	AH308	40	80	23	5.4	2.5	3.5	110.00	105.00	0.27
	21308 VK	AH308	40	90	23			4.5	96.00	84.00	0.26
	* 22308 EK	AH2308	40	90	33	5.9	3.0	4.5	161.00	152.00	0.36
40	* 22209 EK	AH309	45	85	23	5.8	2.5	3.5	115.00	113.00	0.26
	21309 VK	AH309	45	100	25			4.5	119.00	106.00	0.26
	* 22309 EK	AH2309	45	100	36	6.4	3.0	4.5	196.00	187.00	0.36
45	* 22210 EK	AHX310	50	90	23	5.8	2.5	3.5	124.00	124.00	0.24
	21310 VK	AHX310	50	110	27			5.5	137.00	128.00	0.25
	* 22310 EK	AHX2310	50	110	40	7.4	3.5	5.5	237.00	232.00	0.36
50	* 22211 EK	AHX311	55	100	25	6.3	3.0	4.5	147.00	148.00	0.23
	21311 VK	AHX311	55	120	29			5.5	167.00	158.00	0.24
	* 22311 EK	AHX2311	55	120	43	7.8	3.5	5.5	282.00	274.00	0.36
55	* 22212 EK	AHX312	60	110	28	6.9	3.0	4.5	178.00	181.00	0.24
	21312 VK	AHX312	60	130	31			6.0	186.00	179.00	0.24
	* 22312 EK	AHX2312	60	130	46	8.7	4.0	6.0	323.00	319.00	0.35
60	* 22213 EK	AH313G	65	120	31	7.8	3.5	4.5	215.00	224.00	0.24
	21313 VK	AH313G	65	140	33			6.0	224.00	215.00	0.23
	* 22313 EK	AH2313G	65	140	48	9.2	4.0	6.0	351.00	343.00	0.33
65	* 22214 EK	AH314G	70	125	31	7.4	3.5	4.5	224.00	240.00	0.22
	21314 VK	AH314G	70	150	35			6.0	246.00	240.00	0.23
	* 22314 EK	AHX2314G	70	150	51	10.4	5.0	6.0	400.00	396.00	0.34
70	* 22215 EK	AH315	75	130	31	7.4	3.5	4.5	232.00	249.00	0.22
	21315 VK	AH315	75	160	37			6.0	280.00	275.00	0.23
	* 22315 EK	AHX2315G	75	160	55	10.3	5.0	6.0	467.00	467.00	0.34

* indicate bearings of the range SNR PREMIER

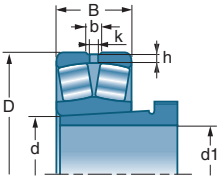
Spherical double-row rollers with tapered bore and withdrawal sleeves

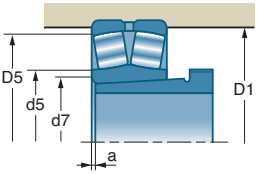


References	Sleeves	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	d7 max mm	a ≈ mm	d5 ≈ mm	D1 max mm	D5 ≈ mm	r1 max mm	kg
* 22205 EK		2.00	2.98	1.96	8600	11000	30		30	47	46	1.0	0.160
21 305 VK		2.33	3.47	2.28	6800	9100	33		34	55	52	1.1	0.254
* 22206 EK		2.15	3.20	2.10	7200	9300	37		37	57	55	1.0	0.260
21306 VK		2.45	3.64	2.39	5800	7700	39		40	65	60	1.1	0.384
* 22207 EK		2.21	3.29	2.16	6100	7900	43		45	66	63	1.1	0.420
21307 VK		2.48	3.69	2.42	5200	6900	44		46	71	68	1.5	0.505
* 22208 EK	AH308	2.47	3.67	2.41	5500	7100	49	3	50	74	71	1.1	0.500
21308 VK	AH308	2.55	3.80	2.50	4500	6100	51	3	53	81	76	1.5	0.705
* 22308 EK	AH2308	1.87	2.79	1.83	4100	5300	50	3	52	83	78	1.5	1.000
* 22209 EK	AH309	2.64	3.93	2.58	5100	6600	53	3	54	79	76	1.1	0.545
21309 VK	AH309	2.64	3.93	2.58	4100	5400	57	3	59	91	85	1.5	0.935
* 22309 EK	AH2309	1.90	2.83	1.86	3700	4800	56	3	58	93	87	1.5	1.340
* 22210 EK	AHX310	2.84	4.23	2.78	4800	6200	57	3	59	84	81	1.1	0.577
21310 VK	AHX310	2.71	4.04	2.65	3700	4900	63	3	66	99	93	2.0	1.226
* 22310 EK	AHX2310	1.87	2.79	1.83	3400	4400	61	3	63	101	95	2.0	1.800
* 22211 EK	AHX311	2.95	4.40	2.89	4300	5500	64	3	66	93	90	1.5	0.766
21311 VK	AHX311	2.82	4.20	2.76	3300	4500	70	3	73	109	102	2.0	1.520
* 22311 EK	AHX2311	1.87	2.79	1.83	3100	4000	66	3	68	111	104	2.0	2.270
* 22212 EK	AHX312	2.84	4.23	2.78	3900	5100	70	3	71	103	99	1.5	1.070
21312 VK	AHX312	2.81	4.19	2.75	3100	4100	76	3	79	118	110	2.1	1.961
* 22312 EK	AHX2312	1.95	2.90	1.91	2900	3700	72	3	75	120	113	2.1	2.780
* 22213 EK	AH313G	2.79	4.15	2.73	3600	4700	76	3	78	113	107	1.5	1.450
21313 VK	AH313G	2.91	4.33	2.84	2900	3800	81	3	85	128	120	2.1	2.380
* 22313 EK	AH2313G	2.06	3.06	2.01	2700	3400	78	3	81	130	122	2.1	3.370
* 22214 EK	AH314G	3.01	4.48	2.94	3400	4400	81	4	84	118	113	1.5	1.520
21314 VK	AH314G	2.90	4.31	2.83	2700	3600	87	4	91	138	127	2.1	2.950
* 22314 EK	AHX2314G	2.00	2.98	1.96	2500	3200	83	4	85	140	131	2.1	4.100
* 22215 EK	AH315	3.14	4.67	3.07	3200	4200	86	4	88	123	118	1.5	1.560
21315 VK	AH315	2.94	4.37	2.87	2500	3400	93	4	97	148	137	2.1	3.550
* 22315 EK	AHX2315G	2.00	2.98	1.96	2300	3000	89	4	91	150	139	2.1	5.000

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*





d1	10VDX220	Sleeves	d	D	B	b	k	h	C	C_0	e
mm	References		mm	mm	mm	mm	mm	mm	10^3N	10^3N	
75	* 22216 EK	AH316	80	140	33	7.9	3.5	5.5	265.00	287.00	0.22
	21316 VK	AH316	80	170	39			6.0	305.00	305.00	0.23
	* 22316 EK	AHX2316	80	170	58	10.4	5.0	6.0	515.00	522.00	0.34
80	* 22217 EK	AHX317	85	150	36	7.9	3.5	5.5	308.00	330.00	0.22
	21317 VK	AHX317	85	180	41			7.0	355.00	365.00	0.23
	* 22317 EK	AHX2317	85	180	60	11.0	5.0	7.0	570.00	604.00	0.32
85	* 22218 EK	AHX318	90	160	40	10.2	4.5	5.5	366.00	398.00	0.23
	* 23218 EK	AHX3218	90	160	52.4	8.9	4.0	5.5	445.00	513.00	0.30
	21318 VK	AHX318	90	190	43			7.0	385.00	400.00	0.23
	* 22318 EK	AHX2318	90	190	64	11.6	5.0	7.0	636.00	652.00	0.33
90	* 22219 EK	AHX319	95	170	43	9.9	4.5	6.0	395.00	417.00	0.23
	* 22319 EK	AHX2319	95	200	67	12.2	6.0	7.0	696.00	751.00	0.32
95	* 23120 EK	AHX3120	100	165	52	8.4	4.0	5.5	448.00	575.00	0.28
	* 22220 EK	AHX320	100	180	46	11.2	5.0	6.0	449.00	495.00	0.24
	* 23220 EK	AHX3220	100	180	60.3	9.4	4.5	6.0	558.00	661.00	0.31
	* 22320 EK	AHX2320	100	215	73	13.3	6.0	7.0	787.00	844.00	0.34
105	* 23022 EK	AHX3121	110	170	45	7.8	3.5	4.4	397.00	517.00	0.23
	* 23122 EK	AHX3122	110	180	56	8.9	4.0	5.5	521.00	669.00	0.28
	* 24122 EK	AH24122	110	180	69	8.4	4.0	5.5	530.00	675.00	0.36
	* 22222 EK	AHX3122	110	200	53	12.2	6.0	6.0	573.00	643.00	0.25
	* 23222 EK	AHX3222G	110	200	69.8	10.5	5.0	6.0	716.00	869.00	0.32
	* 22322 EK	AHX2322G	110	240	80	15.6	7.0	7.0	928.00	972.00	0.31
115	* 23024 EK	AHX3024	120	180	46	7.8	3.5	4.4	424.00	577.00	0.22
	* 24024 EK30	AH24024	120	180	60	7.3	3.5	4.4	465.00	640.00	0.30
	* 23124 EK	AHX3124	120	200	62	10.0	4.5	5.5	630.00	820.00	0.28
	* 24124 EK30	AH24124	120	200	80	10.1	4.5	5.5	695.00	925.00	0.39
	* 22224 EK	AHX3124	120	215	58	12.2	6.0	6.0	654.00	753.00	0.25
	* 23224 EK	AHX3224G	120	215	76	11.0	5.0	6.0	815.00	998.00	0.32
	* 22324 EK	AHX2324G	120	260	86	18.0	8.0	7.0	1110.00	1280.00	0.32
125	* 23026 EK	AHX3026	130	200	52	8.9	4.0	4.4	538.00	721.00	0.22
	* 24026 EK30	AH24026	130	200	69	8.4	4.0	4.4	590.00	795.00	0.32
	* 23126 EK	AHX3126	130	210	64	10.0	4.5	5.5	675.00	906.00	0.27
	* 24126 EK30	AH24126	130	210	80	9.5	4.5	5.5	720.00	965.00	0.35
	* 22226 EK	AHX3126	130	230	64	13.2	6.0	7.0	768.00	898.00	0.25

* indicate bearings of the range SNR PREMIER

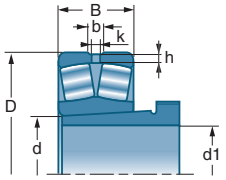
Spherical double-row rollers with tapered bore and withdrawal sleeves *(continued)*

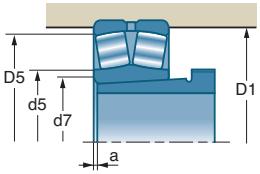


References	Sleeves	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	d7 max mm	a ≈ mm	d5 ≈ mm	D1 max mm	D5 ≈ mm	r1 max mm	kg
* 22216 EK	AH316	3.14	4.67	3.07	3000	3900	92	4	94	131	127	2.0	2.041
21316 VK	AH316	2.95	4.40	2.89	2400	3200	99	4	104	158	145	2.1	4.210
* 22316 EK	AHX2316	2.00	2.98	1.96	2200	2800	95	4	98	160	148	2.1	5.930
* 22217 EK	AHX317	3.07	4.57	3.00	2800	3600	98	4	100	141	137	2.0	2.520
21317 VK	AHX317	2.99	4.46	2.93	2200	3000	105	4	111	166	154	3.0	5.160
* 22317 EK	AHX2317	2.09	3.11	2.04	2000	2600	103	4	107	166	157	3.0	6.961
* 22218 EK	AHX318	2.90	4.31	2.83	2700	3500	102	4	105	151	144	2.0	3.240
* 23218 EK	AHX3218	2.25	3.34	2.20	2200	2900	108	4	104	149	141	2.0	4.210
21318 VK	AHX318	3.00	4.47	2.93	2100	2800	112	4	117	176	162	3.0	6.030
* 22318 EK	AHX2318	2.06	3.06	2.01	1900	2500	114	4	110	176	166	3.0	8.160
* 22219 EK	AHX319	2.95	4.40	2.89	2500	3200	114	4	110	158	153	2.1	3.850
* 22319 EK	AHX2319	2.09	3.11	2.04	1800	2300	122	4	122	186	174	3.0	9.610
* 23120 EK	AHX3120	2.39	3.56	2.34	2200	2900	112	4	114	154	147	2.0	4.400
* 22220 EK	AHX320	2.84	4.23	2.78	2400	3100	114	4	118	170	161	2.1	4.720
* 23220 EK	AHX3220	2.18	3.24	2.13	1900	2600	119	4	118	168	159	2.1	6.220
* 22320 EK	AHX2320	1.98	2.94	1.93	1700	2200	129	4	127	201	187	3.0	12.188
* 23022 EK	AHX3121	2.95	4.40	2.89	2300	3000	125	4	123	161	155	2.0	3.450
* 23122 EK	AHX3122	2.43	3.61	2.37	2000	2700	128	4	125	169	161	2.0	5.310
* 24122 EK	AH24122	1.85	2.76	1.81	1000	1300	128	9	121	169	158	2.0	6.750
* 22222 EK	AHX3122	2.69	4.00	2.63	2200	2800	126	4	130	190	179	2.1	6.879
* 23222 EK	AHX3222G	2.12	3.15	2.07	1700	2300	133	4	130	188	176	2.1	8.990
* 22322 EK	AHX2322G	2.09	3.11	2.04	1600	2000	133	4	139	226	209	3.0	16.514
* 23024 EK	AHX3024	3.14	4.67	3.07	2200	2900	135	4	134	171	165	2.0	3.870
* 24024 EK30	AH24024	2.25	3.34	2.20	1700	2100	129	9	131	171	165	2.0	5.000
* 23124 EK	AHX3124	2.43	3.61	2.37	1800	2400	140	4	138	189	179	2.0	7.440
* 24124 EK30	AH24124	1.74	2.59	1.70	950	1200	131	9	133	189	172	2.0	9.700
* 22224 EK	AHX3124	2.74	4.08	2.68	1900	2500	144	4	141	203	193	2.1	8.580
* 23224 EK	AHX3224G	2.09	3.11	2.04	1600	2100	143	4	139	203	190	2.1	11.275
* 22324 EK	AHX2324G	2.09	3.11	2.04	1400	1800	157	4	156	246	225	3.0	21.720
* 23026 EK	AHX3026	3.01	4.48	2.94	2000	2600	148	4	145	191	183	2.0	5.640
* 24026 EK30	AH24026	2.09	3.11	2.04	1500	1900	139	10	141	191	179	2.0	7.500
* 23126 EK	AHX3126	2.51	3.74	2.45	1700	2300	150	4	148	199	189	2.0	8.300
* 24126 EK30	AH24126	1.92	2.86	1.88	850	1200	142	10	144	199	184	2.0	11.400
* 22226 EK	AHX3126	2.69	4.00	2.63	1800	2400	154	4	151	216	206	3.0	10.600

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*





d1	10VDX220	Sleeves	d	D	B	b	k	h	C	C_0	e
mm	References		mm	mm	mm	mm	mm	mm	10^3N	10^3N	
125	* 23226 EK	AHX3226G	130	230	80	11.6	5.0	7.0	912.00	1130.00	0.32
	* 22326 EK	AHX2326G	130	280	93	18.9	9.0	8.5	1260.00	1400.00	0.33
135	* 23028 EK	AHX3028	140	210	53	8.9	4.0	4.4	568.00	783.00	0.22
	* 24028 EK30	AH24028	140	210	69	9.9	4.5	4.4	625.00	900.00	0.31
	* 23128 EK	AHX3128	140	225	68	10.5	5.0	6.0	763.00	1030.00	0.26
	* 24128 EK30	AH24128	140	225	85	10.7	4.5	6.0	830.00	1120.00	0.36
	* 22228 EK	AHX3128	140	250	68	14.2	7.0	7.0	867.00	1010.00	0.25
	* 23228 EK	AHX3228G	140	250	88	12.6	6.0	7.0	1090.00	1370.00	0.33
	* 22328 EK	AHX2328G	140	300	102	18.9	9.0	8.5	1470.00	1720.00	0.33
145	* 23030 EK	AHX3030	150	225	56	10.0	4.5	5.1	628.00	893.00	0.21
	* 24030 EK30	AH24030	150	225	75	9.3	4.5	5.1	715.00	1000.00	0.31
	* 23130 EK	AHX3130G	150	250	80	12.6	6.0	6.0	1010.00	1350.00	0.29
	* 24130 EK30	AH24130	150	250	100	10.4	5.0	6.0	1070.00	1400.00	0.38
	* 22230 EK	AHX3130G	150	270	73	15.3	7.0	7.0	1020.00	1220.00	0.25
	* 23230 EK	AHX3230G	150	270	96	13.7	6.0	7.0	1280.00	1620.00	0.33
	* 22330 EK	AHX2330G	150	320	108	19.9	9.0	8.5	1660.00	1890.00	0.34
150	* 23032 EK	AH3032	160	240	60	10.5	5.0	5.1	711.00	1000.00	0.21
	* 24032 EK30	AH24032	160	240	80	9.4	4.5	5.1	785.00	1090.00	0.30
	* 23132 EK	AH3132G	160	270	86	13.7	6.0	6.0	1160.00	1580.00	0.29
	* 24132 EK30	AH24132	160	270	109	11.7	5.0	6.0	1260.00	1740.00	0.38
	* 22232 EK	AH3132G	160	290	80	16.9	8.0	7.0	1160.00	1390.00	0.25
	* 23232 EK	AH3232G	160	290	104	14.9	7.0	7.0	1470.00	1890.00	0.33
	* 22332 EK	AH2332G	160	340	114	20.3	10.0	8.5	1850.00	2210.00	0.33
160	* 23034 EK	AH3034	170	260	67	11.6	5.0	5.1	869.00	1240.00	0.22
	* 24034 EK30	AH34034	170	260	90	10.5	5.0	5.1	1010.00	1430.00	0.32
	* 23134 EK	AH3134G	170	280	88	13.7	6.0	6.0	1200.00	1700.00	0.28
	* 24134 EK30	AH24134	170	280	109	13.2	6.0	6.0	1310.00	1840.00	0.37
	* 22234 EK	AH3134G	170	310	86	18.0	8.0	8.5	1330.00	1610.00	0.26
	23234 VK	AH3234G	170	310	110	13.9	7.5	8.5	1210.00	1830.00	0.32
	* 22334 EK	AH2334G	170	360	120	20.3	10.0	8.5	2100.00	2630.00	0.32
170	* 23036 EK	AH3036	180	280	74	13.2	6.0	5.1	1020.00	1450.00	0.23
	* 24036 EK30	AH24036	180	280	100	11.7	5.0	5.1	1170.00	1700.00	0.33
	* 23136 EK	AH3136G	180	300	96	14.9	7.0	7.0	1420.00	1960.00	0.29
	* 24136 EK30	AH24136	180	300	118	14.1	6.0	7.0	1470.00	2050.00	0.38
	* 22236 EK	AH2236G	180	320	86	18.0	8.0	8.5	1380.00	1660.00	0.25
	23236 VK	AH3236G	180	320	112	13.9	7.5	8.5	1290.00	2050.00	0.31
	22336 VK	AH2336G	180	380	126	23.1	12.0	8.5	1580.00	2190.00	0.31

* indicate bearings of the range SNR PREMIER

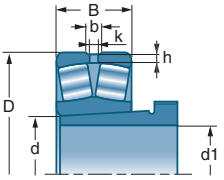
Spherical double-row rollers with tapered bore and withdrawal sleeves *(continued)*

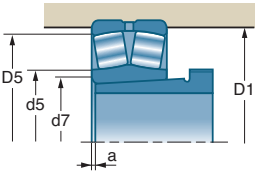


References	Sleeves	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	d7 max mm	a ≈ mm	d5 ≈ mm	D1 max mm	D5 ≈ mm	r1 max mm	kg
* 23226 EK	AHX3226G	2.12	3.15	2.07	1500	2000	152	4	150	216	204	3.0	13.550
* 22326 EK	AHX2326G	2.06	3.06	2.01	1300	1700	167	4	164	263	243	4.0	26.354
* 23028 EK	AHX3028	3.14	4.67	3.07	1900	2500	158	5	155	201	193	2.0	6.130
* 24028 EK30	AH24028	2.21	3.29	2.16	1400	1800	151	10	153	201	189	2.0	8.800
* 23128 EK	AHX3128	2.55	3.80	2.50	1600	2100	162	5	159	213	203	2.1	10.770
* 24128 EK30	AH24128	1.90	2.83	1.86	800	1100	151	10	154	213	198	2.1	12.500
* 22228 EK	AHX3128	2.74	4.08	2.68	1700	2200	166	5	163	236	224	3.0	14.000
* 23228 EK	AHX3228G	2.06	3.06	2.01	1400	1800	166	5	162	236	220	3.0	18.400
* 22328 EK	AHX2328G	2.03	3.02	1.98	1200	1600	175	5	181	283	261	4.0	33.390
* 23030 EK	AHX3030	3.20	4.77	3.13	1800	2300	169	5	167	214	207	2.1	7.750
* 24030 EK30	AH24030	2.18	3.24	2.13	1300	1600	161	11	162	215	205	2.1	9.350
* 23130 EK	AHX3130G	2.35	3.50	2.30	1400	1900	176	5	171	238	223	2.1	15.720
* 24130 EK30	AH24130	1.78	2.65	1.74	850	1100	162	11	165	240	219	2.1	19.600
* 22230 EK	AHX3130G	2.74	4.08	2.68	1500	2000	180	5	177	256	242	3.0	17.600
* 23230 EK	AHX3230G	2.03	3.02	1.98	1300	1700	177	5	174	256	237	2.1	22.800
* 22330 EK	AHX2330G	2.00	2.98	1.96	1200	1500	192	5	188	303	279	4.0	41.200
* 23032 EK	AH3032	3.20	4.77	3.13	1700	2200	180	5	177	229	221	2.1	9.380
* 24032 EK30	AH24032	2.28	3.39	2.23	1200	1500	171	11	173	230	217	2.1	12.000
* 23132 EK	AH3132G	2.35	3.50	2.30	1300	1800	185	5	185	258	240	2.1	20.120
* 24132 EK30	AH24132	1.76	2.62	1.72	800	1000	171	11	180	260	236	2.1	25.000
* 22232 EK	AH3132G	2.69	4.00	2.63	1400	1900	191	5	190	276	260	3.0	22.800
* 23232 EK	AH3232G	2.03	3.02	1.98	1200	1600	189	6	186	276	259	3.0	28.710
* 22332 EK	AH2332G	2.03	3.02	1.98	1100	1400	207	6	205	323	296	4.0	50.000
* 23034 EK	AH3034	3.07	4.57	3.00	1600	2000	194	5	190	249	238	2.1	13.000
* 24034 EK30	AH34034	2.12	3.15	2.07	1100	1400		11	184	250	233	2.1	17.400
* 23134 EK	AH3134G	2.39	3.56	2.34	1300	1700	204	5	195	268	250	2.1	21.550
* 24134 EK30	AH24134	1.82	2.72	1.79	650	850	196	11	189	270	245	2.1	25.900
* 22234 EK	AH3134G	2.60	3.87	2.54	1300	1700	204	5	201	293	277	4.0	28.000
23234 VK	AH3234G	2.13	3.17	2.08	1000	1300	203	6	199	293	264	4.0	36.100
* 22334 EK	AH2334G	2.09	3.11	2.04	1000	1200	214	6	223	343	313	4.0	59.000
* 23036 EK	AH3036	2.95	4.40	2.89	1400	1900	207	6	201	270	255	2.1	16.900
* 24036 EK30	AH24036	2.03	3.02	1.98	1000	1300	195	11	198	270	250	2.1	22.000
* 23136 EK	AH3136G	2.32	3.45	2.26	1200	1600	208	6	205	286	267	3.0	27.210
* 24136 EK30	AH24136	1.78	2.65	1.74	600	800		11	200	286	261	3.0	33.000
* 22236 EK	AH2236G	2.74	4.08	2.68	1300	1700	203	6	209	303	287	4.0	28.700
23236 VK	AH3236G	2.17	3.23	2.12	1000	1300	213	6	210	303	274	4.0	39.600
22336 VK	AH2336G	2.15	3.20	2.10	850	1100	226	6	223	363	313	4.0	66.300

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*





d1	10VDX220	Sleeves	d	D	B	b	k	h	C	C_0	e
mm	References		mm	mm	mm	mm	mm	mm	10^3N	10^3N	
180	* 23038 EK	AH3038G	190	290	75	13.2	6.0	5.1	1080.00	1570.00	0.22
	* 24038 EK30	AH24038	190	290	100	11.6	5.0	5.1	1240.00	1800.00	0.31
	23138 VK	AH3138G	190	320	104	20.0	7.5	7.0	1180.00	1950.00	0.29
	* 24138 EK30	AH24138	190	320	128	14.2	6.0	7.0	1760.00	2480.00	0.38
	* 22238 EK	AH2238G	190	340	92	19.6	9.0	8.5	1540.00	1870.00	0.25
	23238 VK	AH3238G	190	340	120	16.7	9.0	8.5	1480.00	2370.00	0.32
	22338 VK	AH2338G	190	400	132	22.3	9.0	10.0	1830.00	2650.00	0.33
190	* 23040 EK	AH3040G	200	310	82	0.0	7.0	5.1	1250.00	1790.00	0.23
	* 24040 EK30	AH24040	200	310	109	12.7	6.0	5.1	1440.00	2120.00	0.33
	23140 VK	AH3140	200	340	112	16.7	9.0	7.0	1290.00	2120.00	0.30
	* 24140 EK30	AH24140	200	340	140	17.0	8.0	7.0	2030.00	2930.00	0.39
	* 22240 EK	AH2240	200	360	98	20.0	10.0	8.5	1720.00	2100.00	0.25
	23240 VK	AH3240	200	360	128	16.7	9.0	8.5	1630.00	2700.00	0.32
	22340 VK	AH2340	200	420	138	22.3	12.0	10.0	1830.00	2650.00	0.31
200	* 23044 EK	AOH3044G	220	340	90	15.4	7.0	6.2	1450.00	2110.00	0.23
	24044 VK30	AOH24044	220	340	118	12.2	6.3	6.2	1400.00	2700.00	0.34
	23144 VK	AOH3144	220	370	120	20.7	9.0	8.5	1540.00	2600.00	0.29
	24144 VK30	AOH24144	220	370	150	11.1	6.3	8.5	1980.00	3660.00	0.38
	* 22244 EK	AOH2244	220	400	108	20.6	11.0	8.5	2100.00	2690.00	0.25
	* 23244 EK	AOH2344	220	400	144	20.0	10.0	8.5	2750.00	3830.00	0.34
	22344 VK	AOH2344	220	460	145	22.3	12.0	10.0	2110.00	3150.00	0.30
220	23048 VK	AOH3048	240	360	92	13.9	7.5	6.2	1090.00	2050.00	0.24
	24048 VK30	AOH24048	240	360	118	12.2	6.3	6.2	1500.00	2900.00	0.32
	23148 VK	AOH3148	240	400	128	16.7	9.0	8.5	1720.00	2950.00	0.29
	24148 VK30	AOH24148	240	400	160	11.1	6.3	8.5	2270.00	4240.00	0.38
	22248 VK	AOH3148	240	440	120	22.3	12.0	8.5	1920.00	2470.00	0.29
	23248 VK	AOH2348	240	440	160	22.3	12.0	8.5	2420.00	3950.00	0.33
	22348 VK	AOH2348	240	500	155	22.3	12.0	10.0	2450.00	3700.00	0.29
240	23052 VK	AOH3052	260	400	104	16.7	9.0	7.3	1490.00	2430.00	0.25
	24052 VK30	AOH24052G	260	400	140	12.2	6.3	7.3	1900.00	3800.00	0.35
	23152 VK	AOH3152G	260	440	144	16.7	9.0	8.5	2140.00	3750.00	0.29
	24152 VK30	AOH24152	260	440	180	13.9	6.3	8.5	2770.00	5290.00	0.39
	23252 VK	AOH2352G	260	480	174	22.3	12.0	13.0	2700.00	4450.00	0.33
260	23056 VK	AOH3056G	280	420	106	16.7	9.0	7.3	1500.00	2850.00	0.23
	24056 VK30	AOH24056G	280	420	140	12.2	6.3	7.3	2000.00	4000.00	0.25
	23156 VK	AOH3156G	280	460	146	16.7	9.0	10.0	2240.00	4050.00	0.28

* indicate bearings of the range SNR PREMIER

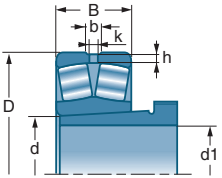
Spherical double-row rollers with tapered bore and withdrawal sleeves *(continued)*

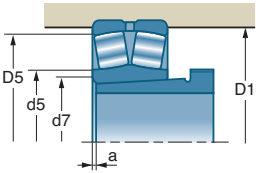


References	Sleeves	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	D7 max mm	a ≈ mm	d5 ≈ mm	D1 max mm	D5 ≈ mm	r1 max mm	kg
* 23038 EK	AH3038G	3.01	4.48	2.94	1400	1800	214	6	213	279	266	2.1	17.200
* 24038 EK30	AH24038	2.15	3.20	2.10	1000	1300		13	206	279	261	2.1	22.240
23138 VK	AH3138G	2.33	3.47	2.28	1000	1300	221	6	218	306	278	3.0	33.500
* 24138 EK30	AH24138	1.76	2.62	1.72	550	750	212	13	213	308	289	3.0	41.000
* 22238 EK	AH2238G	2.74	4.08	2.68	1200	1600	215	7	222	323	305	4.0	35.000
23238 VK	AH3238G	2.13	3.17	2.08	950	1200	225	7	223	323	290	4.0	47.400
22338 VK	AH2338G	1.88	2.80	1.84	800	1100	241	7	240	380	332	5.0	75.000
* 23040 EK	AH3040G	2.95	4.40	2.89	1300	1700	227	6	223	300	283	2.1	22.560
* 24040 EK30	AH24040	2.06	3.06	2.01	950	1200		13	219	299	278	2.1	29.710
23140 VK	AH3140	2.28	3.39	2.23	950	1200	233	6	230	326	294	3.0	41.400
* 24140 EK30	AH24140	1.74	2.59	1.70	550	700	228	13	225	326	292	3.0	52.600
* 22240 EK	AH2240	2.74	4.08	2.68	1100	1500	227	7	234	343	323	4.0	42.000
23240 VK	AH3240	2.12	3.16	2.08	900	1100	237	7	238	343	307	4.0	58.100
22340 VK	AH2340	2.17	3.24	2.12	750	1000	247	7	302	400	346	5.0	97.000
* 23044 EK	AOH3044G	2.95	4.40	2.89	1200	1500	249	6	246	327	310	3.0	31.450
24044 VK30	AOH24044	1.96	2.92	1.92	850	1100	245	14	246	328	302	3.0	38.200
23144 VK	AOH3144	2.31	3.44	2.26	900	1100	256	6	253	353	321	4.0	53.000
24144 VK30	AOH24144	1.77	2.63	1.73	500	670	250	14	253	353	316	4.0	66.100
* 22244 EK	AOH2244	2.74	4.08	2.68	1000	1300	254	8	264	383	358	4.0	59.000
* 23244 EK	AOH2344	2.00	2.98	1.96	850	1100	259	8	261	383	350	4.0	74.800
22344 VK	AOH2344	2.23	3.32	2.18	700	950	273	8	332	440	380	5.0	122.000
23048 VK	AOH3048	2.84	4.23	2.78	1000	1300	267	7	270	348	324	3.0	32.700
24048 VK30	AOH24048	2.10	3.13	2.06	800	1000	265	15	264	347	319	3.0	41.500
23148 VK	AOH3148	2.35	3.50	2.30	800	1000	277	7	276	381	348	4.0	65.500
24148 VK30	AOH24148	1.79	2.67	1.75	460	620	273	15	270	383	342	4.0	81.300
22248 VK	AOH3148	2.30	3.42	2.25	730	950	284	8	333	423	377	4.0	83.500
23248 VK	AOH2348	2.07	3.07	2.02	750	950	281	8	285	423	372	4.0	112.000
22348 VK	AOH2348	2.29	3.42	2.24	660	850	297	8	362	480	414	5.0	156.000
23052 VK	AOH3052	2.73	4.07	2.67	950	1200	292	7	284	385	364	4.0	45.800
24052 VK30	AOH24052G	1.94	2.88	1.89	750	950	293	16	291	385	354	4.0	66.500
23152 VK	AOH3152G	2.29	3.42	2.24	750	950	302	7	302	420	380	4.0	91.600
24152 VK30	AOH24152	1.75	2.60	1.71	420	560	295	16	294	423	373	4.0	113.000
23252 VK	AOH2352G	2.06	3.07	2.02	690	850	460	8	364	460	405	5.0	142.000
23056 VK	AOH3056G	3.00	4.46	2.93	900	1100	310	7	311	405	379	4.0	53.310
24056 VK30	AOH24056G	2.74	4.08	2.68	700	900	310	17	318	405	375	4.0	70.500
23156 VK	AOH3156G	2.37	3.53	2.32	700	900	314	8	322	414	401	5.0	98.000

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*





d1	10VDX220	Sleeves	d	D	B	b	k	h	C	C_0	e
mm	References		mm	mm	mm	mm	mm	mm	10^3N	10^3N	
260	24156 VK30	AOH24156	280	460	180	13.9	6.3	10.0	3390.00	5600.00	0.37
	23256 VK	AOH2356G	280	500	176	22.3	12.0	10.0	2900.00	4900.00	0.32
	22356 VK	AOH2356G	280	580	175	22.3	12.0	13.0	3429.00	5182.00	0.31
280	23060 VK	AOH3060	300	460	118	16.7	9.0	7.3	1820.00	3350.00	0.23
	24060 VK30	AOH24060	300	460	160	12.2	6.3	7.3	2500.00	5200.00	0.35
	23160 VK	AOH3160G	300	500	160	16.7	9.0	10.0	2632.00	4645.00	0.32
	24160 VK30	AOH24160	300	500	200	12.2	6.3	10.0	4070.00	6840.00	0.40
	23260 VK	AOH3260G	300	540	192	22.3	12.0	13.0	3350.00	5600.00	0.32
300	23064 VK	AOH3064G	320	480	121	16.7	9.0	7.3	1920.00	3600.00	0.22
	23164 VK	AOH3164G	320	540	176	22.3	12.0	10.0	3050.00	5500.00	0.29
320	23068 VK	AOH3068G	340	520	133	22.3	12.0	8.0	2270.00	4200.00	0.23
	23168 VK	AOH3168G	340	580	190	22.3	12.0	10.0	3500.00	6100.00	0.29
340	23072 VK	AOH3072G	360	540	134	22.3	12.0	9.0	2390.00	4550.00	0.22
	23172 VK	AOH3172	360	600	192	22.3	12.0	10.0	3681.00	6683.00	0.29
360	23076 VK	AOH3076G	380	560	135	22.3	12.0	9.0	2420.00	4700.00	0.21
380	23080 VK	AOH3080G	400	600	148	22.3	12.0	10.0	2926.00	5648.00	0.22

* indicate bearings of the range SNR PREMIER

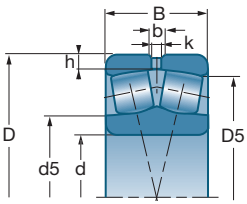
Spherical double-row rollers with tapered bore and withdrawal sleeves *(continued)*

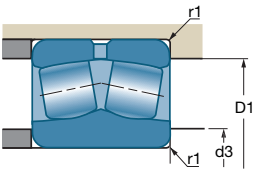


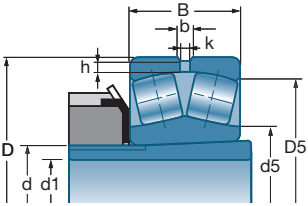
References	Sleeves	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	d7 max mm	a ≈ mm	d5 ≈ mm	D1 max mm	D5 ≈ mm	r1 max mm	kg
24156 VK30	AOH24156	1.85	2.75	1.80	400	530	310	17	315	440	396	5.0	121.000
23256 VK	AOH2356G	2.12	3.16	2.08	650	800	239	8	327	480	346	5.0	152.000
22356 VK	AOH2356G	2.17	3.24	2.12	950	670	345	8	437	554	493	6.0	230.000
23060 VK	AOH3060	2.95	4.40	2.89	800	1000	336	8	376	445	414	4.0	73.100
24060 VK30	AOH24060	1.95	2.90	1.91	650	800	337	18	343	445	407	4.0	99.400
23160 VK	AOH3160G	2.10	3.00	2.00	670	850	347	8	346	480	435	5.0	129.700
24160 VK30	AOH24160	1.67	2.49	1.63	370	490	346	18	340	480	429	5.0	160.000
23260 VK	AOH3260G	2.12	3.15	2.07	610	750	353	8	415	520	459	5.0	195.000
23064 VK	AOH3064G	3.01	4.49	2.95	750	1000	357	8	355	465	433	4.0	79.100
23164 VK	AOH3164G	2.31	3.44	2.26	620	800	373	8	363	520	468	5.0	168.500
23068 VK	AOH3068G	2.98	4.43	2.91	700	950	382	9	426	502	468	5.0	105.000
23168 VK	AOH3168G	2.29	3.42	2.24	580	750	395	9	455	560	501	5.0	202.200
23072 VK	AOH3072G	3.07	4.56	3.00	700	900	403	9	400	522	488	5.0	110.700
23172 VK	AOH3172	2.36	3.51	2.31	560	700	416	9	475	580	522	5.0	223.800
23076 VK	AOH3076G	3.16	4.71	3.09	670	850	422	10	466	542	508	5.0	116.200
23080 VK	AOH3080G	3.08	4.59	3.02	600	750	448	10	497	582	542	5.0	155.000

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*



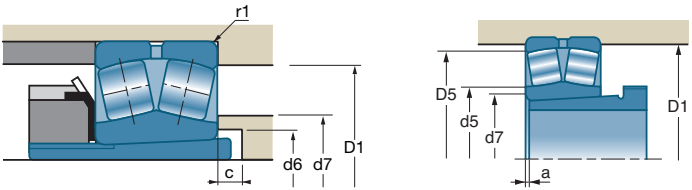




d	10VDXA20	Sleeves H	Sleeves AH	D	B	b	k	h	C	C_0	e
mm	References			mm	mm	mm	mm	mm	10^3N	10^3N	
40	* 22308 E F800			90	33	5.9	3	4.5	161	152	0.36
	* 22308 EK F800	H2308	AH2308	90	33	5.9	3	4.5	161	152	0.36
45	* 22309 E F800			100	36	6.4	3	4.5	196	187	0.36
	* 22309 EK F800	H2309	AH2309	100	36	6.4	3	4.5	196	187	0.36
50	* 22310 E F800			110	40	7.4	3.5	5.5	237	232	0.36
	* 22310 EK F800	H2310	AHX2310	110	40	7.4	3.5	5.5	237	232	0.36
55	* 22311 E F800			120	43	7.8	3.5	5.5	282	274	0.36
	* 22311 EK F800	H2311	AHX2311	120	43	7.8	3.5	5.5	282	274	0.36
60	* 22312 E F800			130	46	8.7	4	6	323	319	0.35
	* 22312 EK F800	H2312	AHX2312	130	46	8.7	4	6	323	319	0.35
65	* 22313 E F800			140	48	9.2	4	6	351	343	0.33
	* 22313 EK F800	H2313	AH2313G	140	48	9.2	4	6	351	343	0.33
70	* 22314 E F800			150	51	10.4	5	6	400	396	0.34
	* 22314 EK F800	H2314	AHX2314G	150	51	10.4	5	6	400	396	0.34
75	* 22315 E F800			160	55	10.3	5	6	467	467	0.34
	* 22315 EK F800	H2315	AHX2315G	160	55	10.3	5	6	467	467	0.34
80	* 22316 E F800			170	58	10.4	5	6	515	522	0.34
	* 22316 EK F800	H2316	AHX2316	170	58	10.4	5	6	515	522	0.34
85	* 22317 E F800			180	60	11	5	7	570	604	0.32
	* 22317 EK F800	H2317	AHX2317	180	60	11	5	7	570	604	0.32
90	* 22318 E F800			190	64	11.56	5	7	636	652	0.33
	* 22318 EK F800	H2318	AHX2318	190	64	11.56	5	7	636	652	0.33
95	* 22319 E F800			200	67	12.15	6	7	696	751	0.32
	* 22319 EK F800	H2319	AHX2319	200	67	12.15	6	7	696	751	0.32
100	* 22320 E F800			215	73	13.3	6	7	787	844	0.34
	* 22320 EK F800	H2320	AHX2320	215	73	13.3	6	7	787	844	0.34
110	* 22322 E F800			240	80	15.6	7	7	928	972	0.31
	* 22322 EK F800	H2322	AHX2322G	240	80	15.6	7	7	928	972	0.31

* indicate bearings of the range SNR PREMIER

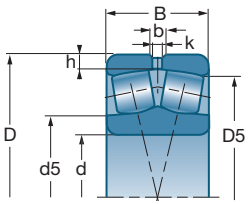
Spherical double-row rollers with tapered bore for high vibration applications

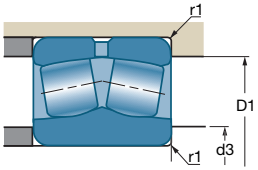


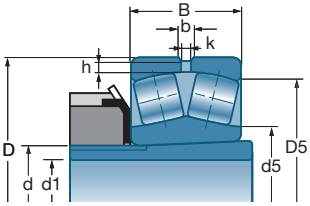
10VDXA20	Y		Yo			c	d5	d3	d6	d7	a	D1	D5	r1	
	Fa/Fr ≤ e	Fa/Fr > e					≈	min	min	max	≈	max	≈	max	
References				rpm**	rpm**	mm	mm	mm	mm	mm	mm	mm	mm	mm	kg
* 22308 E F800	1.87	2.79	1.83	4100	5300		53	49				81	78	1.5	1.021
* 22308 EK F800	1.87	2.79	1.83	4100	5300	5	53		45	50	3	83		1.5	1.000
* 22309 E F800	1.9	2.83	1.86	3700	4800		59	54				91	87	1.5	1.369
* 22309 EK F800	1.9	2.83	1.86	3700	4800	5	59		50	56	3	93		1.5	1.380
* 22310 E F800	1.87	2.79	1.83	3400	4400		65	61				99	95	2	1.834
* 22310 EK F800	1.87	2.79	1.83	3400	4400	5	65		56	61	3	101		2	1.810
* 22311 E F800	1.87	2.79	1.83	3100	4000		71	66				109	104	2	2.340
* 22311 EK F800	1.87	2.79	1.83	3100	4000	6	71		61	66	3	111		2	2.310
* 22312 E F800	1.95	2.9	1.91	2900	3700		77	72				118	113	2.1	2.892
* 22312 EK F800	1.95	2.9	1.91	2900	3700	6	77		66	72	3	120		2.1	2.880
* 22313 E F800	2.06	3.06	2.01	2700	3400		83	77				128	122	2.1	3.493
* 22313 EK F800	2.06	3.06	2.01	2700	3400	6	83		72	78	3	130		2.1	3.480
* 22314 E F800	2	2.98	1.96	2500	3200		89	82				138	131	2.1	4.274
* 22314 EK F800	2	2.98	1.96	2500	3200	6	89		77	83	4	140		2.1	4.200
* 22315 E F800	2	2.98	1.96	2300	3000		95	87				148	139	2.1	5.210
* 22315 EK F800	2	2.98	1.96	2300	3000	6	95		82	89	4	150		2.1	5.100
* 22316 E F800	2	2.98	1.96	2200	2800		101	92				158	148	2.1	6.200
* 22316 EK F800	2	2.98	1.96	2200	2800	6	101		88	95	4	160		2.1	6.180
* 22317 E F800	2.09	3.11	2.04	2000	2600		110	99				166	157	3	7.160
* 22317 EK F800	2.09	3.11	2.04	2000	2600	7	110		94	103	4	166		3	7.160
* 22318 E F800	2.06	3.06	2.01	1900	2500		113	104					176	3	8.501
* 22318 EK F800	2.06	3.06	2.01	1900	2500	7	113		100	114	4	176		3	8.400
* 22319 E F800	2.09	3.11	2.04	1800	2300		122	111				186	174	3	10.000
* 22319 EK F800	2.09	3.11	2.04	1800	2300	7	122		105	122	4	186		3	10.000
* 22320 E F800	1.98	2.94	1.93	1700	2200		129	114				201	187	3	12.776
* 22320 EK F800	1.98	2.94	1.93	1700	2200	7	129		110	129	4	201		3	12.700
* 22322 E F800	2.09	3.11	2.04	1600	2000		142	124				226	209	3	17.406
* 22322 EK F800	2.09	3.11	2.04	1600	2000	7	142		121	133	4	226		3	17.850

** These are the speed limits according to the SNR concept (see pages 85 to 87).

Double-row spherical roller bearings *(continued)*



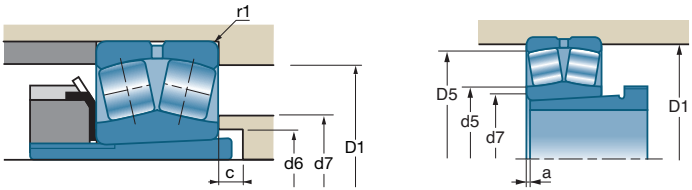




d	10VDXA20	Sleeves H	Sleeves AH	D	B	b	k	h	C	C_0	e
mm	References			mm	mm	mm	mm	mm	10^3N	10^3N	
120	* 22324 E F800			260	86	18	8	7	1110	1280	0.32
	* 22324 EK F800	H2324	AHX2324G	260	86	18	8	7	1110	1280	0.32
130	* 22326 E F800			280	93	18.9	9	8.5	1260	1400	0.33
	* 22326 EK F800	H2326	AHX2326G	280	93	18.9	9	8.5	1260	1400	0.33
140	* 22328 E F800			300	102	18.9	9	8.5	1470	1720	0.33
	* 22328 EK F800	H2328	AHX2328G	300	102	18.9	9	8.5	1470	1720	0.33
150	* 22330 E F800			320	108	19.9	9	8.5	1660	1890	0.34
	* 22330 EK F800	H2330	AHX2330G	320	108	19.9	9	8.5	1660	1890	0.34
160	* 22332 E F800			340	114	20.3	10	8.5	1850	2210	0.33
	* 22332 EK F800	H2332	AH2332G	340	114	20.3	10	8.5	1850	2210	0.33
170	* 22334 E F800			360	120	20.25	10	8.5	2100	2630	0.32
	* 22334 EK F800	H2334	AH2334G	360	120	20.25	10	8.5	2100	2630	0.32

* indicate bearings of the range SNR PREMIER

Spherical double-row rollers with tapered bore for high vibration applications *(continued)*



References	Y Fa/Fr ≤ e	Y Fa/Fr > e	Yo	rpm**	rpm**	c mm	d5 ≈ mm	d3 min mm	d6 min mm	d7 max mm	a ≈ mm	D1 max mm	D5 ≈ mm	r1 max mm	kg
* 22324 E F800	2.09	3.11	2.04	1400	1800		157	134				246	225	3	22.600
* 22324 EK F800	2.09	3.11	2.04	1400	1800	7	157		131	157	4	246		3	22.300
* 22326 E F800	2.06	3.06	2.01	1300	1700		167	147				263	243	4	27.900
* 22326 EK F800	2.06	3.06	2.01	1300	1700	8	167		142	167	4	263		4	27.600
* 22328 E F800	2.03	3.02	1.98	1200	1600		182	157				283	261	4	34.903
* 22328 EK F800	2.03	3.02	1.98	1200	1600	8	182		152	182	5	283		4	34.800
* 22330 E F800	2	2.98	1.96	1200	1500		192	167				303	279	4	41.960
* 22330 EK F800	2	2.98	1.96	1200	1500	8	192		163	192	5	303		4	42.300
* 22332 E F800	2.03	3.02	1.98	1100	1400		207	177				323	296	4	50.700
* 22332 EK F800	2.03	3.02	1.98	1100	1400	8	207		174	207	6	323		4	50.300
* 22334 E F800	2.09	3.11	2.04	1000	1200		223	187				343	313	4	59.000
* 22334 EK F800	2.09	3.11	2.04	1000	1200	8	223		185	214	6	343		4	57.500

** These are the speed limits according to the SNR concept (see pages 85 to 87).