

Standard Sliding Bearings

J and JF



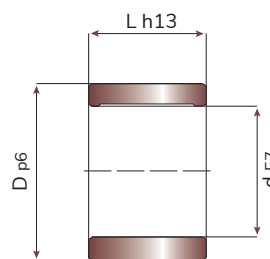
JOHNSON METALL AB

Radial bearings

Material: JM 1-15

Please state when ordering:

Radial bearings J d×L, e.g. Radial bearing J 10×16



Recommendations:

Bearing position	H7
gives in. diam.	H8 after pressing in
Shaft tolerance	e7
Surface finish, shaft	<1 Ra
Surface hardness, shaft	HB>175 (N/mm ²)

From in. diameter = 14 mm, manufactured with 1 axial lubrication groove.

Dimension list:

d mm	D mm	Length series L			d mm	D mm	Length series L		
		1 mm	2 mm	3 mm			1 mm	2 mm	3 mm
5	10	6	8	10	75	90	70	100	140
6	12	6	8	12	80	95	70	100	140
7	12	8	10	12	85	100	70	100	140
8	14	8	12	16	90	110	80	120	160
9	14	10*	16*	20*	95	115	80	120	160
10	16	10	16	20	100	120	80	120	160
12	18	12	16	25	105	125	80	120*	160*
14	20	12	20	30	110	130	80	140	200
15	22	16	20	30	120	140	80	140	200
16	22	16	20	30	130	150	90	140	200
17	25	16	20	30	140	160	90	160	200
18	25	16	20	30	150	170	100	160	240*
20	28	20	30	40	160	180	100	160	240*
22	32	20	30	40	170	190	100	160	240*
25	35	25	35	50	180	200	100	160*	240*
28	40	25	35	50*	190	210	120	200*	300*
30	40	30	45	60	200	220	120	200*	300*
35	45	35	50	70	210	230	120	200*	300*
40	50	40	60	80	220	240	140*	250*	350*
45	55	45	60	80	230	250	140*	250*	350*
50	60	50	70	100	240	260	140*	250*	350*
55	70	50	70	100	250	270	140	250*	350*
60	75	60	90	120					
65	80	60	90	120					
70	85	60	90	120					

* Limited inventory.

Sliding bearings of other dimensions and design are manufactured to order.

Standard bearings

Precision-manufactured machine element

Easy to assemble

Corrosion resistant

Great wear reserve

Excellent sliding properties

Axial lubrication groove

Excellent thermal conductivity

For grease or oil lubrication

Flange bearings

Material: JM 1-15

Please state when ordering:

Flange bearing JF d×L, e.g. Flange bearing JF 10×8

Recommendations:

Bearing position	H7
gives in. diam.	H8 after pressing in
Shaft tolerance	e7
Surface finish, shaft	<1 Ra
Surface hardness, shaft	HB>175 (N/mm ²)

From in. diameter = 14 mm, manufactured with 1 axial lubrication groove.

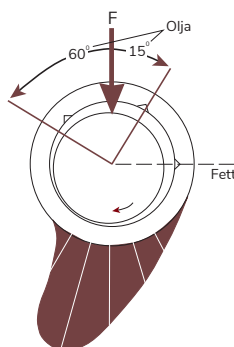
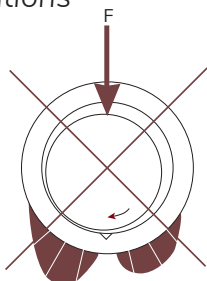
Dimension list:

d mm	D mm	D1 mm	B mm	Length series L		d mm	D mm	D1 mm	B mm	Length series L	
				1 mm	2 mm					1 mm	2 mm
5	10	12	2		6	75	90	100	8	40	70
6	12	14	2		6	80	95	105	8	40	70
7	12	16	3		8*	85	100	110	8	40*	70*
8	14	18	3		8	90	110	120	8	50	80
9	14	18	3	8*	10*	95	115	125	8	50*	80*
10	16	20	3	8	10	100	120	130	8	50	80
12	18	22	3	10	12	105	125	135	8	50*	80*
14	20	25	3	10	12	110	130	140	8	50	80
15	22	28	3	12	16	120	140	150	8	50	80
16	22	28	4	12	16	130	150	165	10	60	90
17	25	32	4	12	16*	140	160	175	10	60	90
18	25	32	4	12	16	150	170	185	10	70	100
20	28	35	4	16	20	160	180	195	10	70	100
22	32	40	5	16	20	170	190	205	10	70	100
25	35	45	5	16	25	180	200	215	10	70*	100
28	40	50	5	16	25	190	210	225	10	80*	120
30	40	50	5	20	30	200	220	235	10	80*	120
35	45	55	5	20	35	210	230	245	10	80*	120*
40	50	60	6	25	40	220	240	255	10	100*	140*
45	55	65	6	30	45	230	250	265	10	100*	140*
50	60	70	6	30	50	240	260	275	10	100*	140*
55	70	80	8	30	50	250	270	285	10	100*	140*
60	75	85	8	35	60						
65	80	90	8	35	60						
70	85	95	8	35	60						

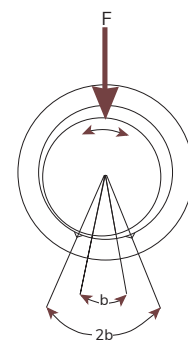
* Limited inventory

Sliding bearings of other dimensions and design are manufactured to order.

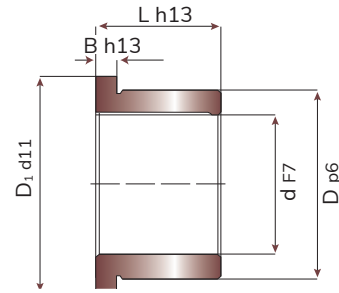
Location of the lubrication groove for different operating conditions



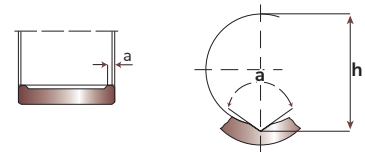
Rotating movements



Pendulum movements



d	a	h	
14-22	3	d+1	105°
25-55	3	d+1	124°
60-130	B×0.05	d+1.5	124°
140-190	B×0.05	d+2.0	124°
>190	B×0.05	d+2.5	124°



Technical information

Loadability

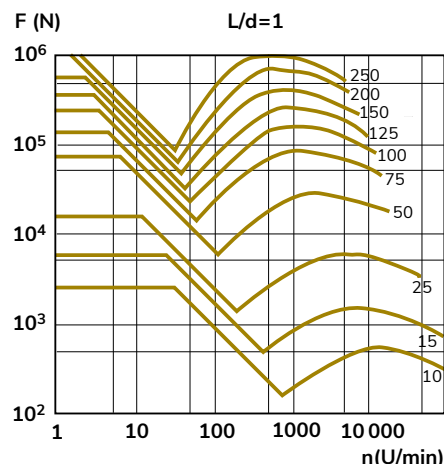
Using the chart, the loadability of the standard bearing can be estimated if the speed of the shaft is known. For moderate to large loads with sliding speed <approx. 0.3 m/sec, you usually have boundary lubrication. At higher speeds, hydrodynamic lubrication occurs if the amount of lubricant is large enough. Bearings operating with boundary lubrication are usually lubricated with grease and bearings working hydrodynamically are lubricated with oil (viscosity 4-20°). The maximum load for standard bearings is approx. 25 N/mm². In static or intermittent, slow movements (<0.01 m/sec), the load may be allowed to be 65 N/mm².

Shaft material

The quality of shafts and mating materials is crucial for the operation and service life of the bearing. For standard bearings, exposed to moderate loads, the surface hardness should not be less than 175 HB. For higher loads, harder materials should be selected (250-350 HB). Shafts with insufficient surface hardness can be hardened, case hardened or hard chrome plated (layer thickness 50-100 μ). In addition to the hard surface, hard chrome also provides excellent sliding properties.

Bearing clearance

The clearance between the shaft and bearing depends on several factors such as load, sliding speed, lubrication and temperature. The table to the right shows bearing clearance values. The clearance is specified in % of the shaft diameter, so-called relative bearing clearance. The highest values refer to small bearings, the lowest values larger bearings.



Examples of shaft materials

SS 1550	SS 2303 stainless
SS 1650	SS 2321 stainless
SS 1672	SS 2386 stainless
SS 2541	et al.
SS 2225	
et al.	

v m/s	p N/mm ²	s= d/1000
	>10	1.5-4
>5	3-10	1.7-4.5
	<3	2-5
	>10	0.8-3
0.5-5	3-10	1-3.5
	<3	1.2-4
	>10	0.3-1.2
<0.5	3-10	0.5-2
	<3	0.7-2.5



JOHNSON METALL AB

We are the Nordic countries' leading manufacturer of cast and machined bronze products for industrial applications. We offer a comprehensive range of everything from standard stocked products to custom-manufactured components. Our vision is to always be your obvious choice as a supplier.



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