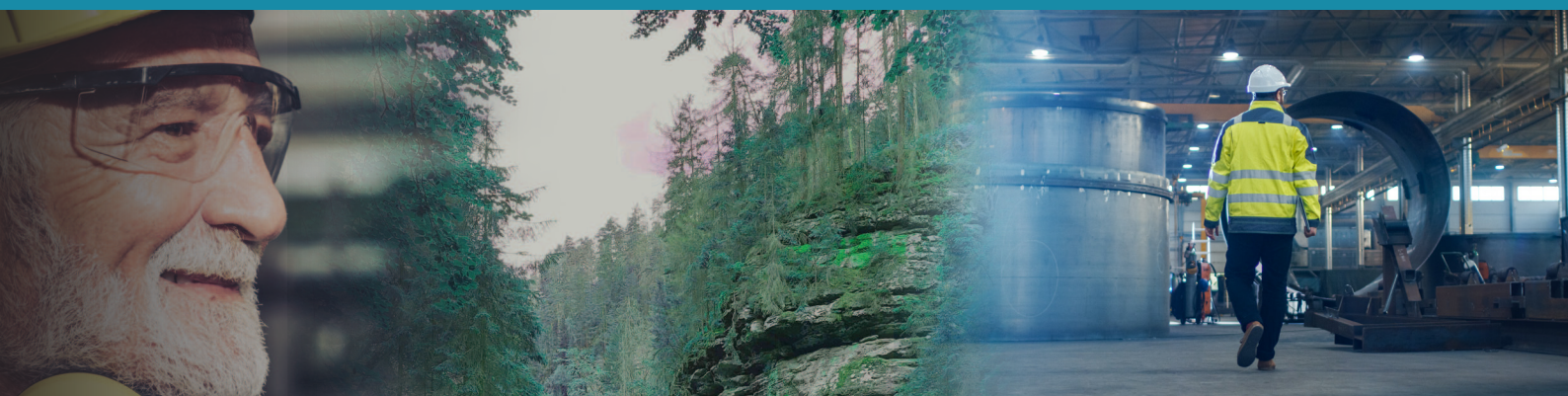




DATASHEET HOWA SPHERE-SLB



HOWA-SLB Bearing
Material Paired
with Stainless Steel

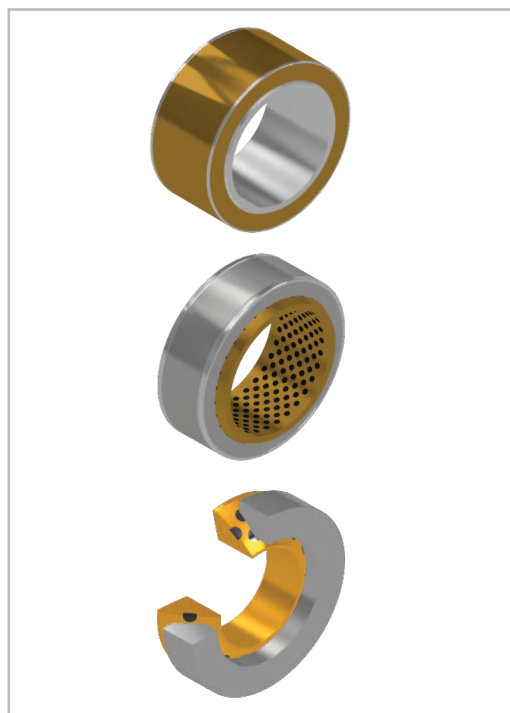


SPHERICAL PLAIN BEARINGS



FEATURES

- Highly robust and maintenance-free spherical plain bearing
- Corrosion resistant and non-seizing
- Applicable for operation in fresh and seawater
- Self-lubricating but additional grease-lubrication permitted
- Available with lubrication grooves and holes
- Optional with wiper seals, i.e. for contaminated applications
- Stainless Steel part can be made of various grades to suit application, i.e. mild or aggressive corrosive environments
- Nominal bearing dimensions according to ISO 12240 (to replace standard "GE" bearings)
- Flexible to customise bearing design, i.e. sizes, tilt angles, increased axial load capacity, etc
- At least 50% of bearing wall as wear reservoir available (if permitted by application, i.e. load acting in single direction)
- Bearing outer ring split axially or radially, depending on diameter and design requirements

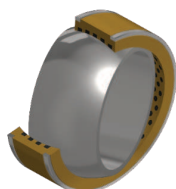


TYPICAL INDUSTRIES

- Hydromechanical
- Offshore and Marine
- Renewables
- Dredging
- Cranes and Material Handling

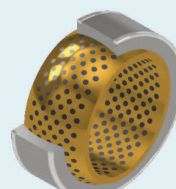
Fixed Bearing

- ▶ Sliding Area on Spherical Surfaces
- ▶ Only Rotational and Tilting Movements Possible
- ▶ Shaft Stationary with Bearing Inner Diameter



Floating Bearing

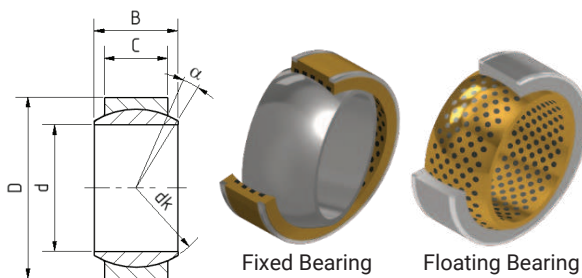
- ▶ Bearing Sliding Area on Spherical Surfaces and on Bearing Inner Diameter
- ▶ Bearing ID Permits Transfer of Linear & Rotational Movements
- ▶ Running-Clearance between Bearing and Shaft (This Benefits Shaft Installation and Extraction.) $\bar{A}$



HOWA SPHERE-SLB

HOWA SPHERE SLB NF TYPE

- Nominal Dimensions in Accordance to DIN 12240, Series E
- Available as Floating and Fixed Bearing



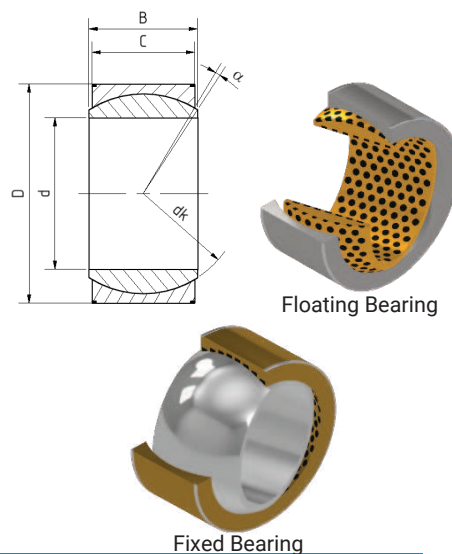
Principle Dimensions [mm]						Load Rating					
						SLB 150		SLB 280		SLB 480	
d	dk	D	C	B	α (°)	Cdyn (kN)	Cstat (kN)	Cdyn (kN)	Cstat (kN)	Cdyn (kN)	Cstat (kN)
20	29	35	12	16	9	33	60	50	84	63	105
25	35.5	42	16	20	7	54	98	82	136	103	172
30	40.7	47	18	22	6	70	127	106	176	133	221
35	47	55	20	25	6	89	163	136	226	171	284
40	53	62	22	28	7	111	202	169	280	212	352
45	60	68	25	32	7	143	260	218	360	273	453
50	66	75	28	35	6	176	320	268	444	336	558
60	80	90	36	44	7	274	498	418	691	524	870
70	92	105	40	49	6	350	637	534	883	670	1111
80	105	120	45	55	6	449	817	685	1134	860	1427
90	115	130	50	60	5	546	995	834	1380	1047	1737
100	130	150	55	70	7	679	1237	1037	1716	1301	2159
110	140	160	55	70	6	732	1332	1117	1848	1401	2325
120	160	180	70	85	6	1064	1938	1624	2688	2038	3382
140	180	210	70	90	7	1197	2180	1827	3024	2293	3805
160	200	230	80	105	8	1520	2768	2320	3840	2912	4832
180	225	260	80	105	6	1710	3114	2610	4320	3276	5436
200	250	290	100	130	7	2375	4325	3625	6000	4550	7550
220	275	320	100	135	8	2613	4758	3988	6600	5005	8305
240	300	340	100	140	8	2850	5190	4350	7200	5460	9060
260	325	370	110	150	7	3396	6185	5184	8580	6507	10797
280	350	400	120	155	6	3990	7266	6090	10080	7644	12684
300	375	430	120	165	7	4275	7785	6525	10800	8190	13590
320	380	440	135	160	4	4874	8875	7439	12312	9337	15493
340	400	460	135	160	3	5130	9342	7830	12960	9828	16308
360	420	480	135	160	3	5387	9809	8222	13608	10319	17123
380	450	520	160	190	4	6840	12456	10440	17280	13104	21744
400	470	540	160	190	3	7144	13010	10904	18048	13686	22710
420	490	560	160	190	3	7448	13563	11368	18816	14269	23677
440	520	600	185	218	3	9139	16643	13949	23088	17508	29052
460	540	620	185	218	3	9491	17283	14486	23976	18182	30170
480	565	650	195	230	3	10467	19060	15975	26442	20052	33273
500	585	670	195	230	3	10837	19735	16541	27378	20762	34451
530	620	710	205	243	3	12075	21988	18430	30504	23132	38384
560	655	750	215	258	4	13378	24363	20420	33798	25630	42529
600	700	800	230	272	3	15295	27853	23345	38640	29302	48622
630	740	850	260	300	3	18278	33285	27898	46176	35017	58105
670	785	900	260	308	3	19390	35309	29595	48984	37146	61638
710	830	950	275	325	3	21684	39487	33096	54780	41542	68932
750	875	1000	280	335	3	23275	42385	35525	58800	44590	73990
800	930	1060	300	355	3	26505	48267	40455	66960	50778	84258
850	985	1120	310	365	3	29008	52826	44276	73284	55574	92216
900	1040	1180	320	375	3	31616	57574	48256	79872	60570	100506
950	1100	1250	340	400	3	35530	64702	54230	89760	68068	112948
1000	1160	1320	370	438	3	40774	74252	62234	103008	78114	129618

HOWA SPHERE-SLB

HOWA SPHERE SLB XF TYPE

XF type benefits applications where high loads occur and design/installation spaces are limited. The Bearing inner and outer race are of extra wide built, leading to substantially higher load ratings compared to the NF type.

Bearing dimensions follow the standard of DIN 12240-1, Series H and are available as Floating Bearing and Fixed Bearing.

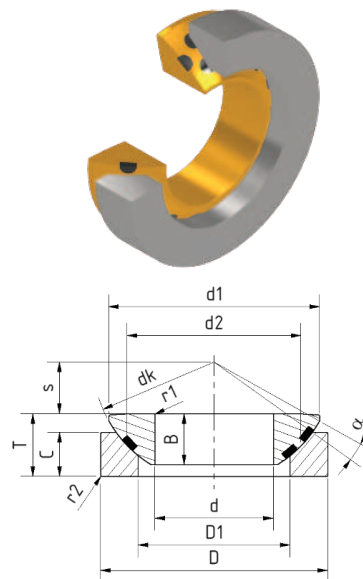


Principle Dimensions [mm]						Load Rating					
						SLB 150		SLB 280		SLB 480	
d	dk	D	C	B	α (°)	Cdyn (kN)	Cstat (kN)	Cdyn (kN)	Cstat (kN)	Cdyn (kN)	Cstat (kN)
100	135	150	67	71	2	870	1584	1327	2197	1666	2764
110	145	160	74	78	2	1032	1879	1575	2606	1976	3279
120	160	180	80	85	2	1231	2241	1878	3109	2358	3912
140	185	210	95	100	2	1690	3077	2579	4269	3237	5371
160	210	230	109	115	2	2201	4007	3359	5560	4216	6996
180	240	260	122	128	2	2815	5126	4297	7112	5393	8949
200	260	290	134	140	2	3350	6100	5112	8462	6417	10648
220	290	320	148	155	2	4126	7514	6298	10424	7905	13117
240	310	340	162	170	2	4828	8792	7369	12197	9250	15348
260	340	370	175	185	2	5720	10417	8731	14451	10959	18185
280	370	400	190	200	2	6759	12308	10316	17074	12948	21485
300	390	430	200	212	2	7499	13656	11446	18945	14366	23839
320	414	460	218	230	2	8677	15801	13244	21920	16623	27583
340	434	480	230	243	2	9597	17476	14648	24244	18385	30507
360	474	520	243	258	2	11074	20166	16902	27975	21215	35202
380	494	540	258	272	2	12253	22314	18702	30956	23475	38952
400	514	580	265	280	2	13095	23847	19987	33083	25088	41629
420	534	600	280	300	2	14375	26177	21941	36315	27539	45697
440	574	630	300	315	2	16555	30148	25269	41824	31716	52628
460	593	650	308	325	2	17559	31977	26801	44361	33640	55820
480	623	680	320	340	2	19166	34903	29254	48421	36719	60929
500	643	710	335	355	2	20709	37712	31609	52318	39674	65833
530	673	750	355	375	2	22969	41828	35058	58028	44004	73018
560	723	800	380	400	2	26414	48100	40315	66729	50603	83967
600	773	850	400	425	2	29726	54133	45372	75098	56950	94499
630	813	900	425	450	2	33219	60493	50702	83921	63640	105601
670	862	950	450	475	2	37293	67912	56920	94213	71445	118552
710	912	1000	475	500	2	41648	75843	63568	105216	79789	132396
750	972	1060	500	530	2	46724	85087	71316	118040	89513	148533
800	1022	1120	530	565	2	52075	94832	79483	131558	99765	165544
850	1112	1220	565	600	2	60403	109997	92194	152597	115719	192017
900	1142	1250	600	635	2	65875	119962	100546	166421	126203	209414
950	1242	1360	635	670	2	75823	138077	115729	191552	145260	241036
1000	1312	1450	670	710	2	84511	153899	128990	213501	161905	268656

HOWA SPHERE SLB-AXIAL

SLB-AXIAL Bearings with nominal dimensions according to ISO 12240-3, can be implemented as single bearing unit to transfer axial loads.

Radial loads are permitted but must not exceed 50% of combined axial and radial loads. For higher radial loads, a combination of single Radial- and Axial Spherical Bearing is advised. The Radial Bearing must be two size-steps higher (d) than the desired Axial bearing. (i.e. Radial Bearing (d) 120 combined with Axial (d) 80)



Principle Dimensions [mm]											Load Rating			
d	D	T	α	s	dK	B	C	d2	d1	D1	SLB 280		SLB 480	
mm	mm	mm	°	mm	mm	mm	mm	mm	mm	mm	Cdyn kN	Cstat kN	Cdyn kN	Cstat kN
20	55	20.0	6	12.5	60	14.3	13.0	40	50	33.5	180	300	227	378
25	62	22.5	7	14.0	66	16.0	17.0	45	57.5	34.5	228	379	287	478
30	75	26.0	6	17.5	80	18.0	19.5	56	69	44	353	587	445	740
35	90	28.0	6	22.0	98	22.0	20.0	66	84	52	491	816	617	1028
40	105	32.0	6	24.5	114	27.0	22.0	78	98	59	685	1139	862	1436
45	120	36.5	6	27.5	130	31.0	25.0	89	112	68	892	1483	1122	1869
50	130	42.5	5	30.0	140	33.5	32.0	98	122.5	69	1082	1799	1361	2266
60	150	45.0	7	35.0	160	37.0	33.0	108	140	86	1313	2183	1652	2751
70	160	50.0	6	35.0	170	40.0	36.0	121	149.5	95	1650	2742	2075	3455
80	180	50.0	6	42.5	194	42.0	36.0	130	168	108	1902	3163	2394	3986
100	210	59.0	7	45.0	220	50.0	42.0	155	195.5	133	2706	4499	3404	5668
120	230	64.0	8	52.5	245	52.0	45.0	170	214	154	3255	5412	4095	6819
140	260	72.0	6	52.5	272	61.0	50.0	198	244	176	4418	7343	5557	9252
160	290	77.0	7	65.0	310	65.0	52.0	213	272	199	5109	8494	6427	10703
180	320	86.0	8	67.5	335	70.0	60.0	240	300	224	6489	10787	8163	13591
200	340	87.0	8	70.0	358	74.0	60.0	265	321	246	7916	13156	9957	16576
220	370	97.0	7	75.0	388	82.0	67.0	289	350	265	9415	15647	11842	19714
240	400	103.0	6	77.5	420	87.0	73.0	314	382	294	11114	18470	13979	23271
260	430	115.0	7	82.5	449	95.0	80.0	336	409	317	12726	21149	16006	26646
280	460	110.0	4	80.0	480	100.0	85.0	366	445	337	15100	25095	18992	31618
300	480	110.0	3.5	80.0	490	100.0	90.0	388	460	356	16978	28211	21353	35541
320	520	116.0	4	95.0	540	105.0	91.0	405	500	380	18483	30722	23250	38709
340	540	116.0	4	95.0	550	105.0	91.0	432	510	380	21049	34974	26472	44061
360	560	125.0	4	95.0	575	115.0	95.0	452	535	400	23042	38286	28979	48234