SKF Extended Life Plain Bearings

Virtually maintenance-free and environmentally friendly

Virtually maintenance-free bearings reduce costs and environmental impact

Now there's a choice

Steel/steel spherical plain bearings typically require relubrication as part of a regularly scheduled maintenance program. The fresh grease pumped into the bearing does little more than expel contaminants and wear debris and redistribute the grease. Relubrication extends bearing service life but also adds cost. Whether it is the cost of labour, downtime, the cost of new grease or the cost to dispose of used grease, these costs add up over time.

To help reduce these costs, SKF has introduced SKF Extended Life Plain Bearings. These sealed steel/steel spherical plain bearings and rod ends do not require relubrication in applications where contamination levels are clean to moderate. Under these conditions SKF Extended Life Plain Bearings last at least as long as standard steel/steel plain bearings even if those standard bearings are relubricated in accordance with recommended maintenance schedules. Because SKF Extended Life Plain Bearings do not require relubrication they automatically offer built in protection against bearing failures due to missed relubrication intervals.

SKF Extended Life Plain Bearings are equipped with SKF LS triple-lip seals. These seals, designed for long service life in highly contaminated environments, do an excellent job protecting the bearing's tribological system over the life of the bearing. SKF LS triple lip seals are the standard sealing solution for all SKF Extended Life Plain Bearings.

SKF Extended Life Plain Bearings

The initially greased SKF Extended Life Plain Bearings last until end of their service life without regreasing and are an excellent choice in applications where there are clean to moderate levels of contamination.

Features and benefits
SKF Extended Life Plain Bearings can replace the standard open or sealed, steel/steel plain bearings that you are using today. These bearings are designed to accommodate the same high loads and misalignment as a standard steel/steel bearing. The seals and grease can accommodate temperatures ranging from –45 to +110 °C *(–49 to +230 °F)*.

In applications where contamination levels are clean to moderate, SKF does not recommend relubricating these bearings. For highly contaminated environments, refer to the catalogue SKF heavy-duty spherical plain bearings.

Reduce costs
In addition to the cost savings that result from reduced grease consumption, downtime and maintenance, sealed SKF Extended Life Plain Bearings can further reduce costs by enabling external sealing solutions to be simplified or eliminated completely.

Also, because these bearings virtually eliminate premature bearing failures resulting from poor lubrication conditions, these bearings can last longer in applications where contamination levels are clean to moderate.

Reduce environmental impact
SKF Extended Life Plain Bearings are phosphated and then undergo further treatment to improve wear resistance and practically eliminate the risk of corrosion.

Afterwards, non-toxic grease is introduced into the bearing.

When sealed, this tribological system is so robust that relubrication is not necessary. The result: no additional grease is consumed, and no grease is purged from the bearing, which can significantly reduce environmental impact.

* Virtually maintenance-free means that the bearing should function as intended without being relubricated as long as the tribological system is not compromised. The term maintenance-free does not imply that these bearings should not be inspected as part of a regularly scheduled maintenance program.

Extended bearing service life

To test the effectiveness of the new tribological system, unsealed SKF Extended Life Plain Bearings were tested against unsealed, but initially greased, competitor bearings as well as standard SKF plain bearings. Results (→ **diagram 1**) show that the tribological system of SKF Extended Life Plain Bearings will provide significantly longer service life.

To calculate the basic rating life of an SKF Extended Life Plain Bearing, refer to the basic rating life calculation of bearings with steel/steel sliding surface combination. The calculated basic rating life with regular relubrication is the same as for an SKF Extended Life Plain Bearings without relubrication.

For additional information, refer to the catalogue *SKF spherical plain bearings and rod ends*.

Reducing friction reduces energy use

Frictional losses waste energy – energy that will not be available to future generations. Therefore, the test results (→ **diagram 2**), which show that SKF Extended Life Plain Bearings reduce frictional losses by 37%, have far-reaching implications.

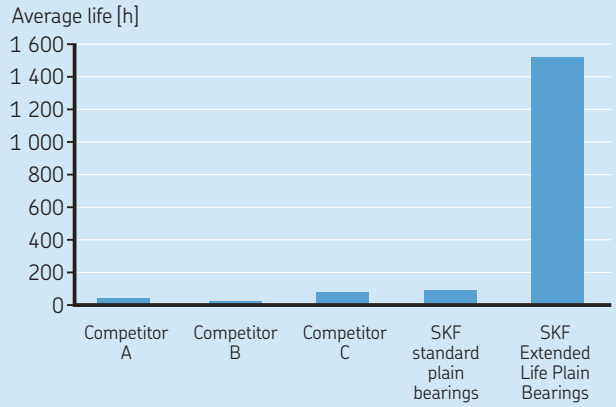
The tribological system

The tribological system combines a specially formulated non-toxic grease, optimized internal geometry, a highly effective sealing system and surface treatments to provide the following benefits:

- Optimize the effectiveness of the lubricant
- Reduce the coefficient of friction
- Avoid fretting corrosion
- Reduce environmental impact
- Avoid premature failures due to poor lubrication conditions

Diagram 1

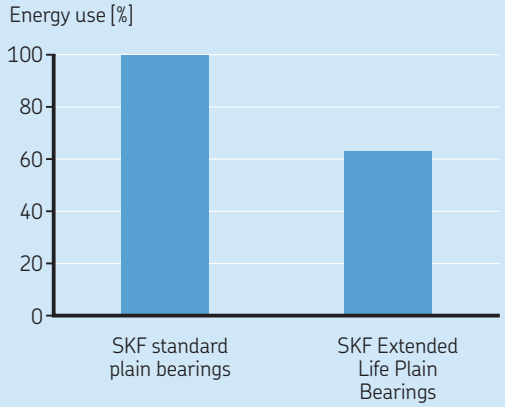
Endurance tests: SKF Extended Life Plain Bearings vs. standard steel/steel plain bearings



Note: The load on SKF Extended Life Plain Bearings was 45% higher than the load on the other bearings.

Diagram 2

Energy use: SKF standard steel/steel plain bearings vs. SKF Extended Life Plain Bearings



About the LS seal

To perform well for long periods, the seal is reinforced with a stamped steel insert (→ **fig. 1**). The steel insert protects the seal lips from larger sized contaminants. It also significantly increases the seal's retention forces and stiffness.

The design of the seal lips virtually eliminates the ingress of contaminants into the bearing (→ **fig. 2**).

Seal life test results

Tests showed that an LS seal will last up to three times longer than standard seals (→ **diagram 3**). Made of oil and wear-resistant acrylonitrile-butadiene rubber (NBR), these seals are suitable for operating temperatures ranging from –45 to +110 °C *(–45 to +230 °F)* and, for brief periods, up to +125 °C *(+250 °F)*.

NRB is highly resistant to aging and deformation, which further extends the service life of these seals.

Fig. 1

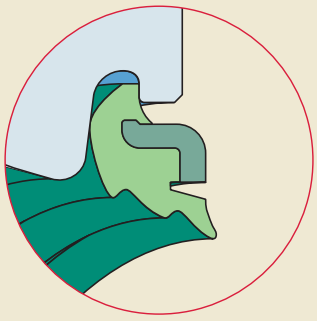


Fig. 2

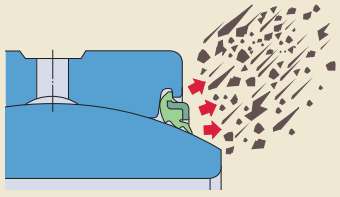
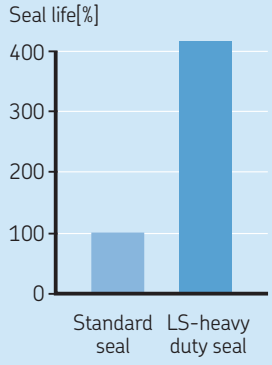


Diagram 3

Test results: seal life



Improved corrosion resistance

SKF Extended Life Plain Bearings undergo a special treatment to inhibit rust. Salt spray tests show that corrosion is reduced to a minimum (→ **diagram 4**).

Reduced total cost of ownership

SKF Extended Life Plain Bearings require less maintenance in order to achieve their calculated life. Longer service life means less downtime and lost production attributed to repairs. Lubricated-for-life also eliminates the additional costs associated with relubrication of the bearing (→ **diagram 5**).

The assortment

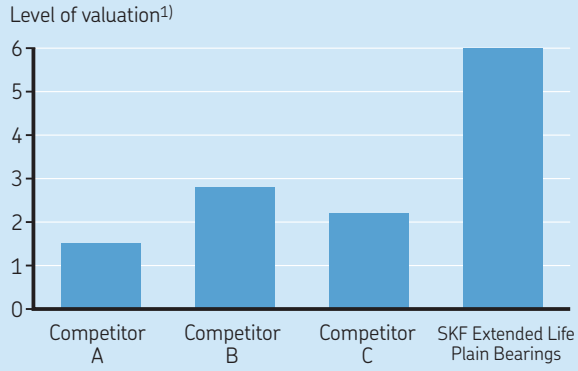
SKF Extended Life Plain Bearings are available in the GE, GEH, GEM and GEZ, GEZH and GEZM series. Rod ends of series SI(A) and SA(A) can also be equipped with these spherical plain bearings.

SKF steel/steel plain bearings are made of high grade carbon chromium steel that has been hardened, ground and phosphated. The sliding surfaces are treated further to improve wear and corrosion resistance.

The outer ring is intentionally fractured to allow for the inner ring to be inserted. The bearings are non-separable.

Diagram 4

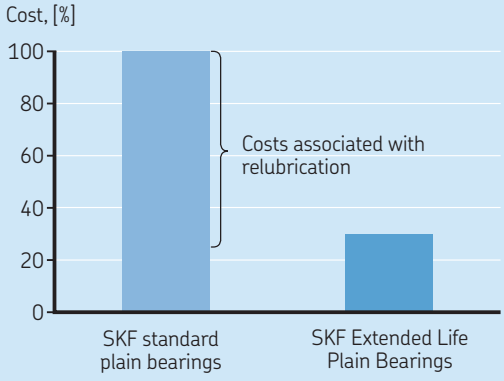
Salt spray test according to ISO 9227 after 96 hours



1) Level of valuation based on procedures according to ISO 10289.

Diagram 5

Reduced total cost of ownership



Bearing data – general

Dimensions

Boundary dimensions of metric SKF Extended Life Plain Bearings are in accordance with ISO 12240-1

- GE .. ESX-2LS and GEH .. ESX-2LS series
- GEM .. ESX-2LS series except for the inner ring

Boundary dimensions of inch SKF Extended Life Plain Bearings are in accordance with ANSI/ABMA Std. 22.2

- GEZ .. ESX-2LS and GEZH .. ESX-2LS series
- GEZM .. ESX-2LS series except for the inner ring

Tolerances

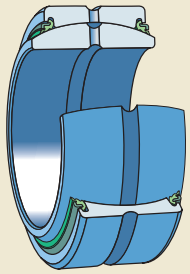
SKF metric radial spherical plain bearings are manufactured to tolerances in accordance with ISO 12240-1. SKF inch radial spherical plain bearings are manufactured to tolerances in accordance with ANSI/ABMA Std. 22.2.

Mounting and handling instructions

SKF Extended Life Plain Bearings should not be lubricated*. These bearings are lubricated at the factory under clean conditions. Introducing a foreign grease will only reduce the effectiveness of the tribological system.

When mounting, do not swivel the bearing to the point where grease will be displaced from the bearing.

Fig. 3



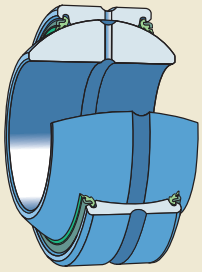
GE .. ESX-2LS

Metric radial spherical plain bearings. Range: 20 to 120 mm bore.

GEZ .. ESX-2LS

Inch size radial spherical plain bearings. Range: 1 to 6 inch bore.

Fig. 4



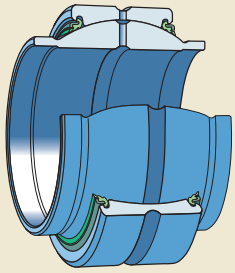
GEH .. ESX-2LS

Metric radial spherical plain bearings as GE .. ESX-2LS, but with wider inner ring and larger outside diameter. Range: 20 to 110 mm bore.

GEZH .. ESX-2LS

Inch size radial spherical plain bearings, as GEZ .. ESX-2LS, but with wider inner ring and larger outside diameter.
Range: 1.25 to 5.5 inch bore.

Fig. 5



GEM .. ESX-2LS

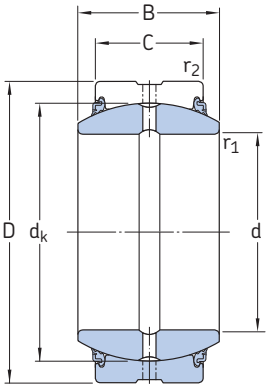
Metric radial spherical plain bearings, as GE .. ESX-2LS, but with a cylindrical extension on both sides of the inner ring. Range: 20 to 80 mm bore.

GEZM .. ESX-2LS

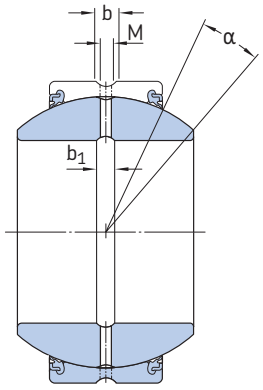
Inch size radial spherical plain bearings, as GEZ .. ESX-2LS, buth with a cylindrical extension on both sides of the inner ring. Range: 1 to 6 inch bore.

* The bearings still have lubrication holes for manufacturing reasons. Do not apply grease to the bearing.

SKF Extended Life Plain Bearings
Radial spherical plain bearings, metric sizes
d **20 – 120** mm



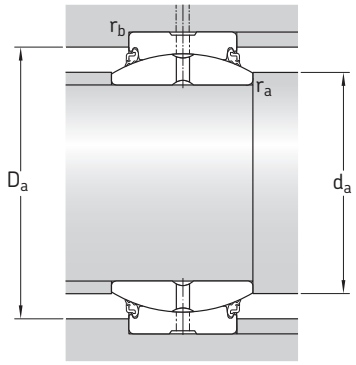
GE .. ESX-2LS



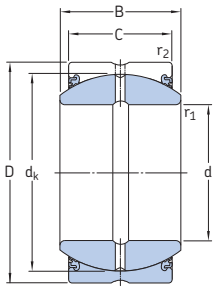
GEH .. ESX-2LS

Principal dimensions				Angle of tilt[1]	Basic load ratings dynamic	static	Mass	Designation
d	D	B	C	α	C	C_0		
mm				°	kN		kg	–
20	35	16	12	9	30	146	0,065	**GE 20 ESX-2LS**
	42	25	16	17	48	240	0,16	**GEH 20 ESX-2LS**
25	42	20	16	7	48	240	0,12	**GE 25 ESX-2LS**
	47	28	18	17	62	310	0,2	**GEH 25 ESX-2LS**
30	47	22	18	6	62	310	0,16	**GE 30 ESX-2LS**
	55	32	20	17	80	400	0,35	**GEH 30 ESX-2LS**
35	55	25	20	6	80	400	0,23	**GE 35 ESX-2LS**
	62	35	22	15	100	500	0,47	**GEH 35 ESX-2LS**
40	62	28	22	6	100	500	0,32	**GE 40 ESX-2LS**
	68	40	25	17	127	640	0,61	**GEH 40 ESX-2LS**
45	68	32	25	7	127	640	0,46	**GE 45 ESX-2LS**
	75	43	28	14	156	780	0,8	**GEH 45 ESX-2LS**
50	75	35	28	6	156	780	0,56	**GE 50 ESX-2LS**
	90	56	36	17	245	1220	1,6	**GEH 50 ESX-2LS**
60	90	44	36	6	245	1 220	1,1	**GE 60 ESX-2LS**
	105	63	40	17	315	1 560	2,4	**GEH 60 ESX-2LS**
70	105	49	40	6	315	1 560	1,55	**GE 70 ESX-2LS**
	120	70	45	16	400	2 000	3,4	**GEH 70 ESX-2LS**
80	120	55	45	5	400	2 000	2,3	**GE 80 ESX-2LS**
	130	75	50	14	490	2 450	4,1	**GEH 80 ESX-2LS**
90	130	60	50	5	490	2 450	2,75	**GE 90 ESX-2LS**
	150	85	55	15	610	3 050	6,3	**GEH 90 ESX-2LS**
100	150	70	55	6	610	3 050	4,4	**GE 100 ESX-2LS**
	160	85	55	13	655	3 250	6,8	**GEH 100 ESX-2LS**
110	160	70	55	6	655	3 250	4,8	**GE 110 ESX-2LS**
	180	100	70	12	950	4 750	11	**GEH 110 ESX-2LS**
120	180	85	70	6	950	4 750	8,25	**GE 120 ESX-2LS**

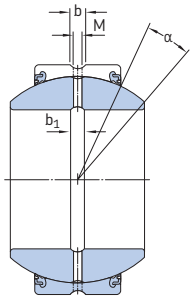
[1] To fully utilize the angle of tilt, the shaft shoulder should not be larger than $d_{a\ max}$



Dimensions						Abutment and fillet dimensions					
d	d_k	b, b_1	M	r_1 min.	r_2 min.	d_a min.	d_a max.	D_a min.	D_a max.	r_a max.	r_b max.
mm						mm					
20	29	3,1	2	0,3	0,3	22,1	24,2	30,9	33,2	0,3	0,3
	35,5	3,1	2	0,3	0,6	22,7	25,2	36,9	39,2	0,3	0,6
25	35,5	3,1	2	0,6	0,6	28,2	29,3	36,9	39,2	0,6	0,6
	40,7	3,1	2	0,6	0,6	28,6	29,5	41,3	44	0,6	0,6
30	40,7	3,1	2	0,6	0,6	33,3	34,2	41,3	44	0,6	0,6
	47	3,9	2,5	0,6	1	33,7	34,4	48,5	50,9	0,6	1
35	47	3,9	2,5	0,6	1	38,5	39,8	48,5	50,9	0,6	1
	53	3,9	2,5	0,6	1	38,8	39,8	54,5	57,8	0,6	1
40	53	3,9	2,5	0,6	1	43,6	45	54,5	57,8	0,6	1
	60	4,6	3	0,6	1	44,1	44,7	61	63,6	0,6	1
45	60	4,6	3	0,6	1	49,4	50,8	61	63,6	0,6	1
	66	4,6	3	0,6	1	49,8	50,1	66,2	70,5	0,6	1
50	66	4,6	3	0,6	1	54,6	56	66,2	70,5	0,6	1
	80	6,2	4	0,6	1	55,8	57,1	79,7	84,2	0,6	1
60	80	6,2	4	1	1	66,4	66,8	79,7	84,2	1	1
	92	7,7	4	1	1	67	67	92	99	1	1
70	92	7,7	4	1	1	76,7	77,9	92	99	1	1
	105	7,7	4	1	1	77,5	78,3	104,4	113,8	1	1
80	105	7,7	4	1	1	87,1	89,4	104,4	113,8	1	1
	115	9,5	5	1	1	87,2	87,2	112,9	123,5	1	1
90	115	9,5	5	1	1	97,4	98,1	112,9	123,5	1	1
	130	11,3	5	1	1	98,2	98,4	131	143,2	1	1
100	130	11,3	5	1	1	107,8	109,5	131	143,2	1	1
	140	11,5	5	1	1	108,1	111,2	141,5	153,3	1	1
110	140	11,5	5	1	1	118	121	141,5	153	1	1
	160	13,5	6	1	1	119,5	124,5	157,5	172	1	1
120	160	13,5	6	1	1	129,5	135,5	157,5	172	1	1



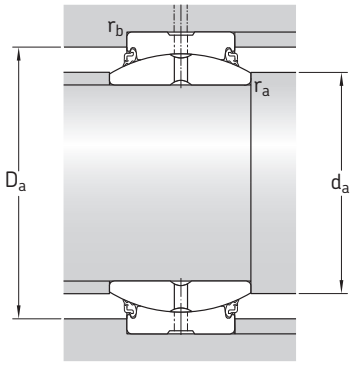
GEZ .. ESX-2LS



GEZH .. ESX-2LS

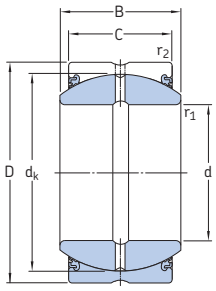
Principal dimensions				Angle of tilt[1]	Basic load ratings dynamic	static	Mass	Designation
d	D	B	C	α	C	C_0		
in./*mm*				°	lbf/*kN*		lb/*kg*	–
1	1.6250	0.875	0.750	6	12 600	37 350	0.26	**GEZ 100 ESX-2LS**
25,4	*41,275*	*22,225*	*19,05*		*56*	*166*	*0,12*	
1.25	2.0000	1.093	0.937	6	19 460	58 500	0.51	**GEZ 104 ESX-2LS**
31,75	*50,8*	*27,762*	*23,8*		*86,5*	*260*	*0,23*	
	2.4375	1.390	1.125	8	28 130	84 380	1.19	**GEZH 104 ESX-2LS**
	61,913	*35,306*	*28,575*		*125*	*375*	*0,54*	
1.375	2.1875	1.187	1.031	5	23 400	69 750	0.77	**GEZ 106 ESX-2LS**
34,925	*55,563*	*30,15*	*26,187*		*104*	*310*	*0,35*	
1.5	2.4375	1.312	1.125	6	28 130	84 380	0.93	**GEZ 108 ESX-2LS**
38,1	*61,913*	*33,325*	*28,575*		*125*	*375*	*0,42*	
	2.8125	1.580	1.312	7	38 250	114 750	1.75	**GEZH 108 ESX-2LS**
	71,438	*40,132*	*33,325*		*170*	*510*	*0,79*	
1.75	2.8125	1.531	1.312	6	38 250	114 750	1.40	**GEZ 112 ESX-2LS**
44,45	*71,438*	*38,887*	*33,325*		*170*	*510*	*0,64*	
	3.1875	1.820	1.500	7	50 400	150 750	2.50	**GEZH 112 ESX-2LS**
	80,963	*46,228*	*38,1*		*224*	*670*	*1,13*	
2	3.1875	1.750	1.500	6	50 400	150 750	2.05	**GEZ 200 ESX-2LS**
50,8	*80,963*	*44,45*	*38,1*		*224*	*670*	*0,93*	
	3.5625	2.070	1.687	8	63 000	191 250	3.50	**GEZH 200 ESX-2LS**
	90,488	*52,578*	*42,85*		*280*	*850*	*1,6*	
2.25	3.5625	1.969	1.687	6	63 000	191 250	2.85	**GEZ 204 ESX-2LS**
57,15	*90,488*	*50,013*	*42,85*		*280*	*850*	*1,3*	
	3.9375	2.318	1.875	8	77 630	234 000	4.65	**GEZH 204 ESX-2LS**
	100,013	*58,877*	*47,625*		*345*	*1040*	*2,1*	
2.5	3.9375	2.187	1.875	6	77 630	234 000	4.10	**GEZ 208 ESX-2LS**
63,5	*100,013*	*55,55*	*47,625*		*345*	*1 040*	*1,85*	
	4.3750	2.545	2.062	8	95 630	285 750	6.30	**GEZH 208 ESX-2LS**
	111,125	*64,643*	*52,375*		*425*	*1 270*	*2,85*	
2.75	4.3750	2.406	2.062	6	95 630	285 750	5.30	**GEZ 212 ESX-2LS**
69,85	*111,125*	*61,112*	*52,375*		*425*	*1 270*	*2,4*	
	4.7500	2.790	2.250	8	112 500	337 500	8.05	**GEZH 212 ESX-2LS**
	120,65	*70,866*	*57,15*		*500*	*1 500*	*3,65*	

[1] To fully utilize the angle of tilt, the shaft shoulder should not be larger than $d_{a\ max}$

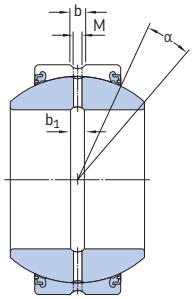


Dimensions							Abutment and fillet dimensions					
d	d_k	b	b_1	M	r_1[1] min.	r_2[2] min.	d_a min.	d_a max.	D_a min.	D_a max.	r_a max.	r_b max
in./*mm*							in./*mm*					
1	1.4370	0.126	0.118	0.098	0.012	0.039	1.08	1.14	1.39	1.48	0,012	0.039
25,4	*36,5*	*3,2*	*3*	*2,5*	*0,3*	*1*	*27,5*	*29*	*35,2*	*37,7*	*0,3*	*1*
1.25	1.7950	0.189	0.197	0.157	0.024	0.039	1.37	1.43	1.76	1.85	0.024	0.039
31,75	*45,593*	*4,8*	*5*	*4*	*0,6*	*1*	*34,8*	*36,2*	*44,8*	*47*	*0,6*	*1*
	2.1550	0.189	0.197	0.157	0.039	0.039	1.43	1.65	2.06	2.28	0.039	0.039
	54,737	*4,8*	*5*	*4*	*1*	*1*	*36,2*	*41,8*	*52,3*	*58*	*1*	*1*
1.375	1.9370	0.189	0.197	0.157	0.024	0.039	1.50	1.53	1.85	2.04	0.024	0.039
34,925	*49,2*	*4,8*	*5*	*4*	*0,6*	*1*	*38,1*	*38,9*	*47,1*	*51,7*	*0,6*	*1*
1.5	2.1550	0.189	0.197	0.157	0.024	0.039	1.63	1.71	2.06	2.28	0.024	0.039
38,1	*54,737*	*4,8*	*5*	*4*	*0,6*	*1*	*41,4*	*43,4*	*52,3*	*58*	*0,6*	*1*
	2.5150	0.189	0.197	0.157	0.039	0.039	1.69	1.96	2.41	2.65	0.039	0.039
	63,881	*4,8*	*5*	*4*	*1*	*1*	*42,8*	*49,7*	*61,3*	*67,4*	*1*	*1*
1.75	2.5150	0.189	0.197	0.157	0.024	0.039	1.91	2.00	2.41	2.65	0.024	0.039
44,45	*63,881*	*4,8*	*5*	*4*	*0,6*	*1*	*48,5*	*50,7*	*61,3*	*67,4*	*0,6*	*1*
	2.8750	0.189	0.197	0.157	0.059	0.039	2.00	2.22	2.85	2.99	0.059	0.039
	73,025	*4,8*	*5*	*4*	*1,5*	*1*	*50,9*	*56,5*	*72,4*	*75,9*	*1,5*	*1*
2	2.8750	0.189	0.197	0.157	0.024	0.039	2.17	2.28	2.85	2.99	0.024	0.039
50,8	*73,025*	*4,8*	*5*	*4*	*0,6*	*1*	*55,1*	*57,9*	*72,4*	*75,9*	*0,6*	*1*
	3.2350	0.224	0.197	0.157	0.059	0.039	2.26	2.48	3.11	3.36	0.059	0.039
	82,169	*5,7*	*5*	*4*	*1,5*	*1*	*57,5*	*63,1*	*79*	*85,3*	*1,5*	*1*
2.25	3.2350	0.224	0.197	0.157	0.024	0.039	2.43	2.57	3.11	3.36	0.024	0.039
57,15	*82,169*	*5,7*	*5*	*4*	*0,6*	*1*	*61,7*	*65,2*	*79*	*85,3*	*0,6*	*1*
	3.5900	0.354	0.315	0.256	0.059	0.039	2.52	2.74	3.43	3.73	0.059	0.039
	91,186	*9*	*8*	*6,5*	*1,5*	*1*	*64,1*	*69,6*	*87*	*94,7*	*1,5*	*1*
2.5	3.5900	0.354	0.315	0.256	0.024	0.039	2.69	2.85	3.43	3.73	0.024	0.039
63,5	*91,186*	*9*	*8*	*6,5*	*0,6*	*1*	*68,3*	*72,3*	*87*	*94,7*	*0,6*	*1*
	3.9500	0.354	0.315	0.256	0.079	0.039	2.83	3.02	3.78	4.16	0.079	0.039
	100,33	*9*	*8*	*6,5*	*2*	*1*	*72*	*76,7*	*96*	*105,7*	*2*	*1*
2.75	3.9500	0.354	0.315	0.256	0.024	0.039	2.95	3.13	3.78	4.16	0.024	0.039
69,85	*100,33*	*9*	*8*	*6,5*	*0,6*	*1*	*74,9*	*79,6*	*96*	*105,7*	*0,6*	*1*
	4.3120	0.354	0.315	0.256	0.079	0.039	3.09	3.29	4.13	4.53	0.079	0.039
	109,525	*9*	*8*	*6,5*	*2*	*1*	*78,6*	*83,5*	*104,8*	*115*	*2*	*1*

[1] Equal to maximum shaft fillet radius $r_{a\,max}$
[2] Equal to maximum housing fillet radius $r_{b\,max}$



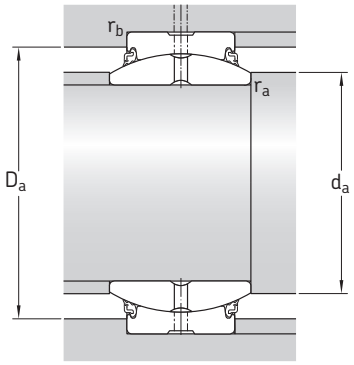
GEZ .. ESX-2LS



GEZH .. ESX-2LS

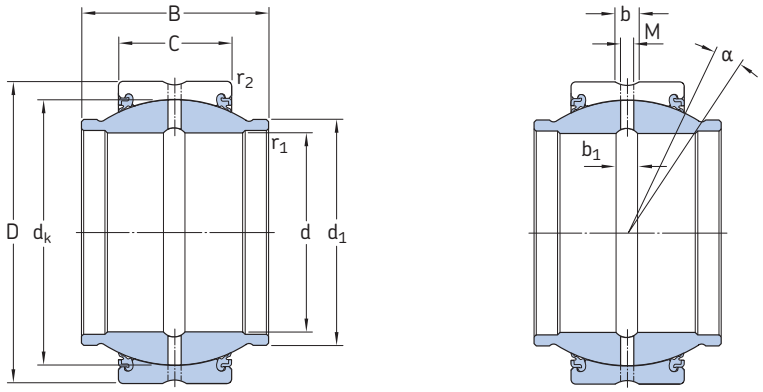
Principal dimensions				Angle of tilt[1]	Basic load ratings dynamic	static	Mass	Designation
d	D	B	C	α	C	C_0		
in./*mm*				°	lbf/*kN*		lb/*kg*	–
3	4.7500	2.625	2.250	6	112 500	337 500	6.85	**GEZ 300 ESX-2LS**
76,2	*120,65*	*66,675*	*57,15*		*500*	*1 500*	*3,1*	
	5.1250	3.022	2.437	8	131 630	396 000	10.0	**GEZH 300 ESX-2LS**
	130,175	*76,759*	*61,9*		*585*	*1 760*	*4,55*	
3.25	5.1250	2.844	2.437	6	131 630	396 000	8.40	**GEZ 304 ESX-2LS**
82,55	*130,175*	*72,238*	*61,9*		*585*	*1 760*	*3,8*	
	5.5000	3.265	2.625	9	153 000	459 000	12.4	**GEZH 304 ESX-2LS**
	139,7	*82,931*	*66,675*		*680*	*2 040*	*5,6*	
3.5	5.5000	3.062	2.625	6	153 000	459 000	10.6	**GEZ 308 ESX-2LS**
88,9	*139,7*	*77,775*	*66,675*		*680*	*2040*	*4,8*	
	5.8750	3.560	2.812	9	175 500	531 000	15.0	**GEZH 308 ESX-2LS**
	149,225	*90,424*	*71,425*		*780*	*2360*	*6,8*	
3.75	5.8750	3.281	2.812	6	175 500	531 000	12.8	**GEZ 312 ESX-2LS**
95,25	*149,225*	*83,337*	*71,425*		*780*	*2 360*	*5,8*	
	6.2500	3.738	3.000	9	202 500	596 250	17.9	**GEZH 312 ESX-2LS**
	158,75	*94,945*	*76,2*		*900*	*2 650*	*8,1*	
4	6.2500	3.500	3.000	6	202 500	596 250	15.5	**GEZ 400 ESX-2LS**
101,6	*158,75*	*88,9*	*76,2*		*900*	*2650*	*7*	
	7.0000	4.225	3.375	9	252 000	765 000	30.0	**GEZH 400 ESX-2LS**
	177,8	*107,315*	*85,725*		*1 120*	*3 400*	*13,5*	
4.5	7.0000	3.937	3.375	6	252 000	765 000	21.5	**GEZ 408 ESX-2LS**
114,3	*177,8*	*100*	*85,725*		*1 120*	*3 400*	*9,8*	
	7.7500	4.690	3.750	9	315 000	933 750	36.0	**GEZH 408 ESX-2LS**
	196,85	*119,126*	*95,25*		*1 400*	*4150*	*16,5*	
4.75	7.3750	4.156	3.562	6	281 250	843 750	25.5	**GEZ 412 ESX-2LS**
120,65	*187,325*	*105,562*	*90,475*		*1 250*	*3 750*	*11,5*	
5	7.7500	4.375	3.750	6	315 000	933 750	30.0	**GEZ 500 ESX-2LS**
127	*196,85*	*111,125*	*95,25*		*1 400*	*4150*	*13,5*	
5.5	8.7500	4.950	4.125	7	389 250	1 170 000	45.0	**GEZH 508 ESX-2LS**
139,7	*222,25*	*125,73*	*104,775*		*1 730*	*5200*	*20,5*	
6	8.7500	4.750	4.125	5	389 250	1 170 000	38.5	**GEZ 600 ESX-2LS**
152,4	*222,25*	*120,65*	*104,775*		*1 730*	*5 200*	*17,5*	

[1] To fully utilize the angle of tilt, the shaft shoulder should not be made larger than $d_{a\,max}$



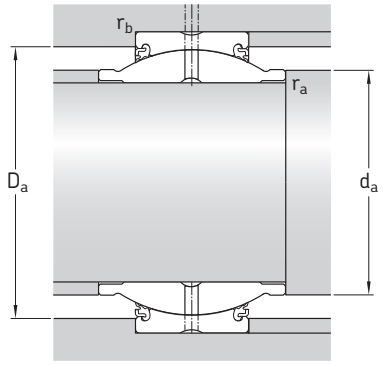
Dimensions							Abutment and fillet dimensions					
d	d_k	b	b_1	M	r_1[1] min.	r_2[2] min.	d_a min.	d_a max.	D_a min.	D_a max.	r_a max.	r_b max.
in./*mm*							in./*mm*					
3	4.3120	0.354	0.315	0.256	0,024	0.039	3.20	3.42	4.13	4.53	0.024	0.039
76,2	*109,525*	*9*	*8*	*6,5*	*0,6*	*1*	*81,4*	*86,9*	*104,8*	*115*	*0,6*	*1*
	4.6750	0.366	0.315	0.256	0.079	0.039	3.35	3.57	4.50	4.90	0.079	0.039
	118,745	*9,3*	*8*	*6,5*	*2*	*1*	*85,1*	*90,6*	*114,2*	*124,4*	*2*	*1*
3.25	4.6750	0.366	0.315	0.256	0.024	0.039	3.46	3.71	4.50	4.90	0.024	0.039
82,55	*118,745*	*9,3*	*8*	*6,5*	*0,6*	*1*	*88*	*94,2*	*114,2*	*124,4*	*0,6*	*1*
	5.0400	0.413	0.315	0.256	0.079	0.039	3.65	3.84	4.83	5.27	0.079	0.039
	128,016	*10,5*	*8*	*6,5*	*2*	*1*	*92,7*	*97,5*	*122,8*	*133,8*	*2*	*1*
3.5	5.0400	0.413	0.315	0.256	0.024	0.039	3.72	4.00	4.83	5.27	0.024	0.039
88,9	*128,016*	*10,5*	*8*	*6,5*	*0,6*	*1*	*94,6*	*101,7*	*122,8*	*133,8*	*0,6*	*1*
	5.3900	0.413	0.315	0.256	0.079	0.039	3.91	4.04	5.17	5.63	0.079	0.039
	136,906	*10,5*	*8*	*6,5*	*2*	*1*	*99,3*	*102,5*	*131,4*	*143,1*	*2*	*1*
3.75	5.3900	0.413	0.315	0.256	0.024	0.039	3.98	4.28	5.17	5.63	0.024	0.039
95,25	*136,906*	*10,5*	*8*	*6,5*	*0,6*	*1*	*101,2*	*108,6*	*131,4*	*143,1*	*0,6*	*1*
	5.7500	0.413	0.394	0.315	0.079	0.039	4.17	4.37	5.49	6.00	0.079	0.039
	146,05	*10,5*	*10*	*8*	*2*	*1*	*105,8*	*110,9*	*139,5*	*152,5*	*2*	*1*
4	5.7500	0.413	0.394	0.315	0.024	0.039	4.25	4.55	5.49	6.00	0.024	0.039
101,6	*146,05*	*10,5*	*10*	*8*	*0,6*	*1*	*108*	*115,5*	*139,5*	*152,5*	*0,6*	*1*
	6.4750	0.433	0.394	0.315	0.079	0.043	4.45	4.90	6.18	6.73	0.079	0.043
	164,465	*11*	*10*	*8*	*2*	*1,1*	*113*	*124,5*	*157*	*170,99*	*2*	*1,1*
4.5	6.4750	0.433	0.394	0.315	0.039	0.043	4.82	5.14	6.18	6.73	0.039	0.043
114,3	*164,465*	*11*	*10*	*8*	*1*	*1,1*	*122,5*	*130,5*	*157*	*171*	*1*	*1,1*
	7.1900	0.433	0.394	0.315	0.079	0.043	4.96	5.45	6.91	7.42	0.079	0.043
	182,626	*11*	*10*	*8*	*2*	*1,1*	*126*	*138,4*	*175,5*	*188,5*	*2*	*1,1*
4.75	6.8250	0.433	0.394	0.315	0.039	0.043	5.08	5.41	6.56	7.05	0.039	0.043
120,65	*173,355*	*11*	*10*	*8*	*1*	*1,1*	*129*	*137,5*	*166,5*	*179*	*1*	*1,1*
5	7.1900	0.433	0.394	0.315	0.039	0.043	5.33	5.69	6.91	7.42	0.039	0.043
127	*182,626*	*11*	*10*	*8*	*1*	*1,1*	*135,5*	*144,5*	*175,5*	*188,5*	*1*	*1,1*
5.5	8.1560	0.591	0.433	0.315	0.079	0.043	5.98	6.46	7.78	8.41	0.079	0.043
139,7	*207,162*	*15*	*11*	*8*	*2*	*1,1*	*152*	*164*	*197,5*	*213,5*	*2*	*1,1*
6	8.1560	0.591	0.433	0.315	0.039	0.043	6.34	6.61	7.78	8.41	0.039	0.043
152,4	*207,162*	*15*	*11*	*8*	*1*	*1,1*	*161*	*168*	*197,5*	*213,5*	*1*	*1,1*

[1] Equal to maximum shaft fillet radius $r_{a\,max}$
[2] Equal to maximum housing fillet radius $r_{b\,max}$

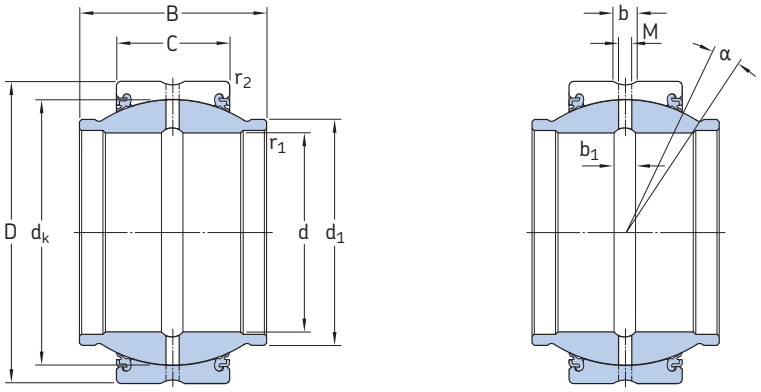


GEM .. ESX-2LS

Principal dimensions				Angle of tilt	Basic load ratings dynamic	static	Mass	Designation
d	D	B	C	α	C	C_0		
mm				°	kN		kg	–
20	35	24	12	6	30	146	0,073	**GEM 20 ESX-2LS**
25	42	29	16	4	48	240	0,13	**GEM 25 ESX-2LS**
30	47	30	18	4	62	310	0,17	**GEM 30 ESX-2LS**
35	55	35	20	4	80	400	0,25	**GEM 35 ESX-2LS**
40	62	38	22	4	100	500	0,35	**GEM 40 ESX-2LS**
45	68	40	25	4	127	640	0,49	**GEM 45 ESX-2LS**
50	75	43	28	4	156	780	0,60	**GEM 50 ESX-2LS**
60	90	54	36	3	245	1 220	1,15	**GEM 60 ESX-2LS**
70	105	65	40	4	315	1 560	1,65	**GEM 70 ESX-2LS**
80	120	74	45	4	400	2 000	2,50	**GEM 80 ESX-2LS**



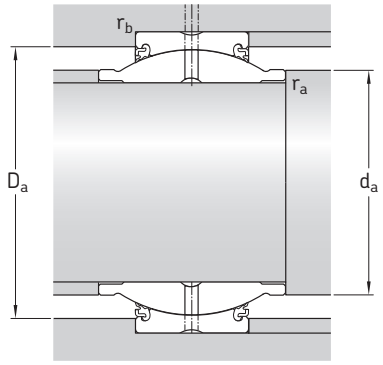
Dimensions							Abutment and fillet dimensions					
d	d_k	d_1	b, b_1	M	r_1 min.	r_2 min.	d_a min.	d_a max.	D_a min.	D_a max.	r_a max.	r_b max.
mm							mm					
20	29	24	3,1	2	0,3	0,3	23	24	30,9	33,2	0,3	0,3
25	35,5	29	3,1	2	0,3	0,6	28,3	29	36,9	39,2	0,3	0,6
30	40,7	34	3,1	2	0,3	0,6	33,5	34	41,3	44	0,3	0,6
35	47	40	3,9	2,5	0,6	1	38,8	40	48,5	50,9	0,6	1
40	53	45	3,9	2,5	0,6	1	44	45	54,5	57,8	0,6	1
45	60	52	4,6	3	0,6	1	49,6	52	61	63,6	0,6	1
50	66	57	4,6	3	0,6	1	54,8	57	66,2	70,5	0,6	1
60	80	68	6,2	4	0,6	1	65,4	68	79,7	84,2	0,6	1
70	92	78	7,7	4	0,6	1	75,7	78	92	99	0,6	1
80	105	90	7,7	4	0,6	1	86,1	90	104,4	113,8	0,6	1



GEZM .. ESX-2LS

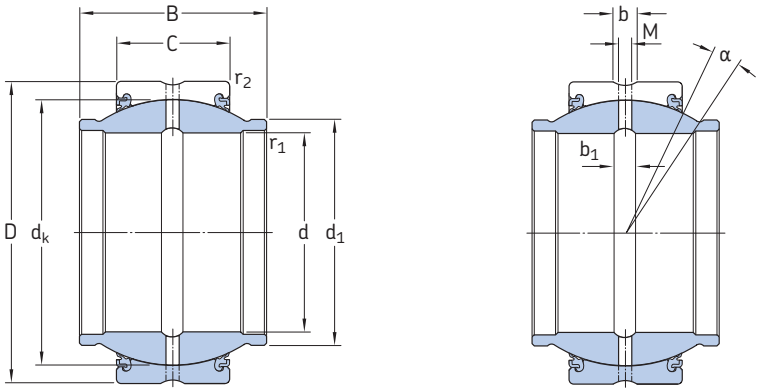
Principal dimensions				Angle of tilt[1]	Basic load ratings dynamic	static	Mass	Designation
d	D	B	C	α	C	C_0		
in./*mm*				°	lbf/*kN*		lb/*kg*	–
1 *25,4*	1.6250 *41,275*	1.500 *38,1*	0.750 *19,05*	5	12 600 *56*	37 350 *166*	0.33 *0,15*	**GEZM 100 ESX-2LS**
1.25 *31,75*	2.0000 *50,8*	1.875 *47,625*	0.937 *23,8*	5	19 460 *86,5*	58 500 *260*	0.64 *0,29*	**GEZM 104 ESX-2LS**
1.375 *34,925*	2.1875 *55,563*	2.062 *52,375*	1.031 *26,187*	5	23 400 *104*	69 750 *310*	0.82 *0,37*	**GEZM 106 ESX-2LS**
1.5 *38,1*	2.4375 *61,913*	2.250 *57,15*	1.125 *28,575*	5	28 130 *125*	84 380 *375*	1.12 *0,51*	**GEZM 108 ESX-2LS**
1.75 *44,45*	2.8125 *71,438*	2.625 *66,675*	1.312 *33,325*	5	38 250 *170*	114 750 *510*	1.79 *0,81*	**GEZM 112 ESX-2LS**
2 *50,8*	3.1875 *80,963*	3.000 *76,2*	1.500 *38,1*	5	50 400 *224*	150 750 *670*	2.65 *1,20*	**GEZM 200 ESX-2LS**
2.25 *57,15*	3.5625 *90,488*	3.375 *85,725*	1.687 *42,85*	5	63 000 *280*	191 250 *850*	3.65 *1,65*	**GEZM 204 ESX-2LS**
2.5 *63,5*	3.9375 *100,013*	3.750 *95,25*	1.875 *47,625*	5	76 500 *340*	234 000 *1 040*	4.95 *2,25*	**GEZM 208 ESX-2LS**
2.75 *69,85*	4.3750 *111,125*	4.125 *104,775*	2.062 *52,375*	5	94 500 *420*	285 750 *1 270*	6.85 *3,10*	**GEZM 212 ESX-2LS**
3 *76,2*	4.7500 *120,65*	4.500 *114,3*	2.250 *57,15*	5	112 500 *500*	337 500 *1 500*	8.80 *4,00*	**GEZM 300 ESX-2LS**
3.25 *82,55*	5.1250 *130,175*	4.875 *123,825*	2.437 *61,9*	5	130 500 *580*	396 000 *1 760*	11.0 *5,00*	**GEZM 304 ESX-2LS**
3.5 *88,9*	5.5000 *139,7*	5.250 *133,35*	2.625 *66,675*	5	153 000 *680*	459 000 *2 040*	14.0 *6,25*	**GEZM 308 ESX-2LS**
3.75 *95,25*	5.8750 *149,225*	5.625 *142,875*	2.812 *71,425*	5	175 500 *780*	531 000 *2 360*	17.0 *7,60*	**GEZM 312 ESX-2LS**
4 *101,6*	6.2500 *158,75*	6.000 *152,4*	3.000 *76,2*	5	202 500 *900*	596 250 *2 650*	20.0 *9,10*	**GEZM 400 ESX-2LS**

[1] To fully utilize the angle of tilt, the shaft shoulder should not be made larger than $d_{a\ max}$



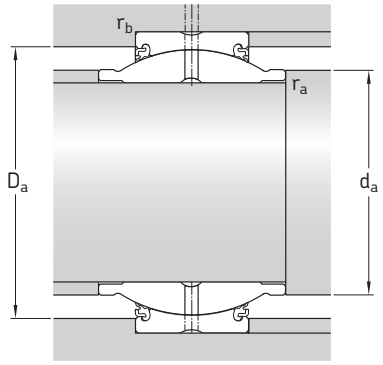
Dimensions								Abutment and fillet dimensions					
d	d_k	d_1	b	b_1	M	r_1[1] min.	r_2[2] min.	d_a min.	d_a max.	D_a min.	D_a max.	r_a max.	r_b max.
in./*mm*								in./*mm*					
1 *25,4*	1.4370 *36,5*	1.220 *30,988*	0.126 *3,2*	0.118 *3*	0.098 *2,5*	0.024 *0,6*	0.039 *1*	1.11 *28,2*	1.22 *31*	1.39 *35,2*	1.48 *37,7*	0.024 *0,6*	0.039 *1*
1.25 *31,75*	1.7950 *45,593*	1.525 *38,735*	0.189 *4,8*	0.197 *5*	0.157 *4*	0.039 *1*	0.039 *1*	1.41 *35,8*	1.52 *38,7*	1.76 *44,8*	1.85 *47*	0.039 *1*	0.039 *1*
1.375 *34,925*	1.9370 *49,2*	1.670 *42,418*	0.189 *4,8*	0.197 *5*	0.157 *4*	0.039 *1*	0.039 *1*	1.54 *39,1*	1.67 *42,4*	1.85 *47,1*	2.04 *51,7*	0.039 *1*	0.039 *1*
1.5 *38,1*	2.1550 *54,737*	1.850 *46,99*	0.189 *4,8*	0.197 *5*	0.157 *4*	0.039 *1*	0.039 *1*	1.70 *43,3*	1.85 *47*	2.06 *52,3*	2.28 *58*	0.039 *1*	0.039 *1*
1.75 *44,45*	2.5150 *63,881*	2.165 *54,991*	0.189 *4,8*	0.197 *5*	0.157 *4*	0.039 *1*	0.039 *1*	1.96 *49,9*	2.17 *55*	2.41 *61,3*	2.65 *67,4*	0.039 *1*	0.039 *1*
2 *50,8*	2.8750 *73,025*	2,460 *62,484*	0.189 *4,8*	0.197 *5*	0.157 *4*	0.039 *1*	0.039 *1*	2.22 *56,5*	2.46 *62,5*	2.85 *72,4*	2.99 *75,9*	0.039 *1*	0.039 *1*
2.25 *57,15*	3.2350 *82,169*	2.760 *70,104*	0.224 *5,7*	0.197 *5*	0.157 *4*	0.039 *1*	0.039 *1*	2.48 *63,1*	2.76 *70,1*	3.11 *79*	3.36 *85,3*	0.039 *1*	0.039 *1*
2.5 *63,5*	3.5900 *91,186*	3.060 *77,724*	0.354 *9*	0.315 *8*	0.256 *6,5*	0.039 *1*	0.039 *1*	2.74 *69,6*	3.06 *77,7*	3.43 *87*	3.73 *94,7*	0.039 *1*	0.039 *1*
2.75 *69,85*	3.9500 *100,33*	3.380 *85,852*	0.354 *9*	0.315 *8*	0.256 *6,5*	0.039 *1*	0.039 *1*	3.00 *76,2*	3.38 *85,9*	3.78 *96*	4.16 *105,7*	0.039 *1*	0.039 *1*
3 *76,2*	4.3120 *109,525*	3.675 *93,345*	0.354 *9*	0.315 *8*	0.256 *6,5*	0.039 *1*	0.039 *1*	3.26 *82,8*	3.67 *93,3*	4.13 *104,8*	4.53 *115*	0.039 *1*	0.039 *1*
3.25 *82,55*	4.6750 *118,745*	3.985 *101,219*	0.366 *9,3*	0.315 *8*	0.256 *6,5*	0.039 *1*	0.039 *1*	3.52 *89,4*	3.98 *101,2*	4.50 *114,2*	4.90 *124,4*	0.039 *1*	0.039 *1*
3.5 *88,9*	5.0400 *128,016*	4.300 *109,22*	0.413 *10,5*	0.315 *8*	0.256 *6,5*	0.039 *1*	0.039 *1*	3.78 *95,9*	4.30 *109,2*	4.83 *122,8*	5.27 *133,8*	0.039 *1*	0.039 *1*
3.75 *95,25*	5.3900 *136,906*	4.590 *116,586*	0.413 *10,5*	0.315 *8*	0.256 *6,5*	0.039 *1*	0.039 *1*	4.04 *102,5*	4.59 *116,6*	5.17 *131,4*	5.63 *143,1*	0.039 *1*	0.039 *1*
4 *101,6*	5.7500 *146,05*	4.905 *124,587*	0.413 *10,5*	0.394 *10*	0.315 *8*	0.059 *1,5*	0.039 *1*	4.33 *110*	4.91 *124,6*	5.49 *139,5*	6.00 *152,5*	0.059 *1,5*	0.039 *1*

[1] Equal to maximum shaft fillet radius $r_{a\,max}$
[2] Equal to maximum housing fillet radius $r_{b\,max}$



GEZM .. ESX-2LS

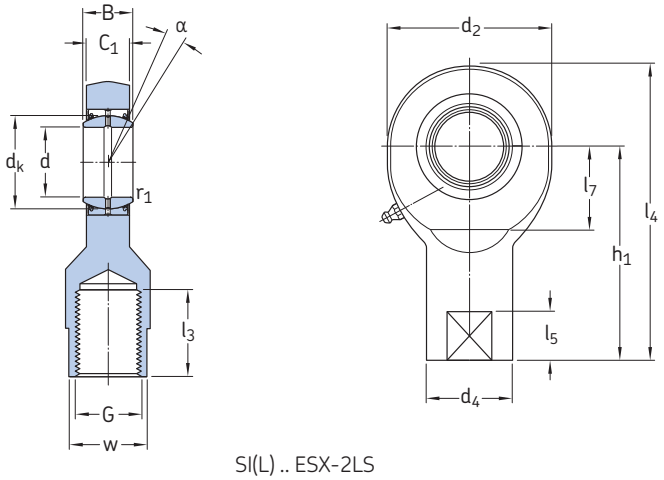
Principal dimensions				Angle of tilt	Basic load ratings dynamic	static	Mass	Designation
d	D	B	C	α	C	C_0		
in./*mm*				°	lbf/*kN*		lb/*kg*	–
4.5 *114,3*	7.0000 *177,8*	6.750 *171,45*	3.375 *85,725*	5	252 000 *1 120*	765 000 *3 400*	28.5 *13,0*	**GEZM 408 ESX-2LS**
5 *127*	7.7500 *196,85*	7.500 *190,5*	3.750 *95,25*	5	315 000 *1 400*	933 750 *4 150*	38.5 *17,5*	**GEZM 500 ESX-2LS**
6 *152,4*	8.7500 *222,25*	8.250 *209,55*	4.125 *104,775*	5	389 250 *1 730*	1 170 000 *5 200*	47.5 *21,5*	**GEZM 600 ESX-2LS**



Dimensions								Abutment and fillet dimensions					
d	d_k	d_1	b	b_1	M	r_1[1] min.	r_2[2] min.	d_a min.	d_a max.	D_a min.	D_a max.	r_a max.	r_b max.
in./*mm*								in./*mm*					
4.5 *114,3*	6.4750 *164,465*	5.525 *140,335*	0.433 *11*	0.394 *10*	0.315 *8*	0.079 *2*	0.043 *1,1*	4.94 *125,5*	5.52 *140,3*	6.18 *157*	6.73 *171*	0.079 *2*	0.043 *1,1*
5 *127*	7.1900 *182,626*	6.130 *155,702*	0.433 *11*	0.394 *10*	0.315 *8*	0.079 *2*	0.043 *1,1*	5.45 *138,5*	6.13 *155,7*	6.91 *175,5*	7.42 *188,5*	0.079 *2*	0.043 *1,1*
6 *152,4*	8.1560 *207,162*	7.020 *178,308*	0.591 *15*	0.433 *11*	0.315 *8*	0.079 *2*	0.043 *1,1*	6.46 *164*	7.02 *178,3*	7.78 *197,5*	8.41 *213,5*	0.079 *2*	0.043 *1,1*

[1] Equal to maximum shaft fillet radius $r_{a\,max}$
[2] Equal to maximum housing fillet radius $r_{b\,max}$

SKF Extended Life Plain Bearings
Rod ends with a female thread
d **20 – 80** mm



SI(L) .. ESX-2LS

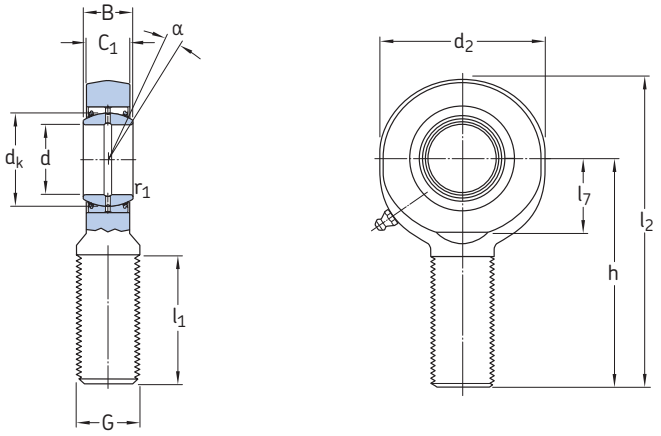
Principal dimensions						Angle of tilt	Basic load ratings dynamic	static	Mass	Designations Rod end with right-hand thread	left-hand thread
d	d_2 max	G 6H	B	C_1 max	h_1	α	C	C_0			
mm						°	kN		kg	–	–
20[1]	54	M 20×1,5	16	13,5	77	9	30	57	0,36	**SI 20 ESX-2LS**	**SIL 20 ESX-2LS**
25	65	M 24×2	20	18	94	7	48	90	0,65	**SI 25 ESX-2LS**	**SIL 25 ESX-2LS**
30	75	M 30×2	22	20	110	6	62	116	1,00	**SI 30 ESX-2LS**	**SIL 30 ESX-2LS**
35	84	M 36×3	25	22	130	6	80	134	1,40	**SI 35 ESX-2LS**	**SIL 35 ESX-2LS**
40	94	M 39×3	28	24	142	6	100	166	2,20	**SIA 40 ESX-2LS**	**SILA 40 ESX-2LS**
	94	M 42×3	28	24	145	6	100	166	2,30	**SI 40 ESX-2LS**	**SIL 40 ESX-2LS**
45	104	M 42×3	32	28	145	7	127	224	2,90	**SIA 45 ESX-2LS**	**SILA 45 ESX-2LS**
	104	M 45×3	32	28	165	7	127	224	3,20	**SI 45 ESX-2LS**	**SIL 45 ESX-2LS**
50	114	M 45×3	35	31	160	6	156	270	4,10	**SIA 50 ESX-2LS**	**SILA 50 ESX-2LS**
	114	M 52×3	35	31	195	6	156	270	4,50	**SI 50 ESX-2LS**	**SIL 50 ESX-2LS**
60	137	M 52×3	44	39	175	6	245	400	6,30	**SIA 60 ESX-2LS**	**SILA 60 ESX-2LS**
	137	M 60×4	44	39	225	6	245	400	7,10	**SI 60 ESX-2LS**	**SIL 60 ESX-2LS**
70	162	M 56×4	49	43	200	6	315	530	9,50	**SIA 70 ESX-2LS**	**SILA 70 ESX-2LS**
	162	M 72×4	49	43	265	6	315	530	10,5	**SI 70 ESX-2LS**	**SIL 70 ESX-2LS**
80	182	M 64×4	55	48	230	5	400	655	15,0	**SIA 80 ESX-2LS**	**SILA 80 ESX-2LS**
	182	M 80×4	55	48	295	5	400	655	19,0	**SI 80 ESX-2LS**	**SIL 80 ESX-2LS**

[1] Rod ends with bore size 20 mm have a lubrication hole.

Dimensions

d	d_k	d_4 ~	l_3 min.	l_4 max.	l_5 ~	l_7 min.	r_1 min.	w h14
mm								
20	29	28	30	106	16	24	0,3	24
25	35,5	35	36	128	18	30	0,6	30
30	40,7	42	45	149	19	34	0,6	36
35	47	49	60	174	25	36	0,6	41
40	53	58	65	191	25	40	0,6	50
	53	58	65	194	25	40	0,6	50
45	60	65	65	199	30	48	0,6	55
	60	65	65	219	30	48	0,6	55
50	66	70	68	219	30	58	0,6	60
	66	70	68	254	30	58	0,6	60
60	80	82	70	246	35	68	1	70
	80	82	70	296	35	68	1	70
70	92	92	80	284	40	78	1	80
	92	92	80	349	40	78	1	80
80	105	105	85	324	45	88	1	90
	105	105	85	389	45	88	1	90

SKF Extended Life Plain Bearings
Rod ends with a male thread
d **20 – 80** mm

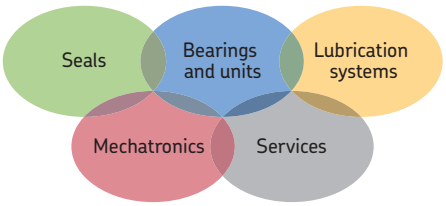


SA(L) .. ESX-2LS

Principal dimensions						Angle of tilt	Basic load ratings dynamic	static	Mass	Designations Rod end with right-hand thread	left-hand thread
d	d_2 max	G 6g	B	C_1 max	h	α	C	C_0			
mm						°	kN		kg	–	–
20	54	M 20×1,5	16	13,5	78	9	30	42,5	0,32	**SA 20 ESX-2LS**	**SAL 20 ESX-2LS**
25	65	M 24×2	20	18	94	7	48	78	0,53	**SA 25 ESX-2LS**	**SAL 25 ESX-2LS**
30	75	M 30×2	22	20	110	6	62	81,5	0,90	**SA 30 ESX-2LS**	**SAL 30 ESX-2LS**
35	84	M 36×3	25	22	130	6	80	110	1,30	**SA 35 ESX-2LS**	**SAL 35 ESX-2LS**
40	94	M 39×3	28	24	150	6	100	140	1,85	**SAA 40 ESX-2LS**	**SALA 40 ESX-2LS**
	94	M 42×3	28	24	145	6	100	140	1,90	**SA 40 ESX-2LS**	**SAL 40 ESX-2LS**
45	104	M 42×3	32	28	163	7	127	200	2,45	**SAA 45 ESX-2LS**	**SALA 45 ESX-2LS**
	104	M 45×3	32	28	165	7	127	200	2,55	**SA 45 ESX-2LS**	**SAL 45 ESX-2LS**
50	114	M 45×3	35	31	185	6	156	245	3,30	**SAA 50 ESX-2LS**	**SALA 50 ESX-2LS**
	114	M 52×3	35	31	195	6	156	245	3,90	**SA 50 ESX-2LS**	**SAL 50 ESX-2LS**
60	137	M 52×3	44	39	210	6	245	360	5,70	**SAA 60 ESX-2LS**	**SALA 60 ESX-2LS**
	137	M 60×4	44	39	225	6	245	360	6,25	**SA 60 ESX-2LS**	**SAL 60 ESX-2LS**
70	162	M 56×4	49	43	235	6	315	490	7,90	**SAA 70 ESX-2LS**	**SALA 70 ESX-2LS**
	162	M 72×4	49	43	265	6	315	490	10,00	**SA 70 ESX-2LS**	**SAL 70 ESX-2LS**
80	182	M 64×4	55	48	270	5	400	585	12,00	**SAA 80 ESX-2LS**	**SALA 80 ESX-2LS**
	182	M 80×4	55	48	295	5	400	585	14,50	**SA 80 ESX-2LS**	**SAL 80 ESX-2LS**

Dimensions

d	d_k	l_1 min.	l_2 max.	l_7 min.	r_1 min.
mm					
20	29	43	107	24	0,3
25	35,5	53	128	30	0,6
30	40,7	65	149	34	0,6
35	47	68	174	40	0,6
40	53	86	199	46	0,6
	53	90	194	46	0,6
45	60	92	217	50	0,6
	60	95	219	50	0,6
50	66	104	244	58	0,6
	66	110	254	58	0,6
60	80	115	281	73	1
	80	120	296	73	1
70	92	125	319	85	1
	92	132	349	85	1
80	105	140	364	98	1
	105	147	389	98	1



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