

DESCH DIN 502, 503, 504, 505 L, 506

Greased friction bearings



LG 11 - GB

Greased friction bearings

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Friction bearings according to DIN 502 to 506 are suitable for many different areas of use, such as the timber and steel industry, chemical plants and the food industry. Depending on the operating conditions they can be used at sliding speeds of up to approx. 1.5 m/s. For use on cutting head excavators and for ships' engines we supply guide bearings up to a diameter of 630mm. Further details can be obtained on request. The housings are made of high-grade grey cast iron EN-GJL (GG).

The structural design guarantees high durability. The bearings DIN 502 to DIN 504 can also be used if required with bearing shells of bronze with grease lubricant (maintenance-free up to 0.6 m/s). For cap bearings to DIN 506 bearing shells of grey cast iron EN-GJL (GG) can be supplied for use at high temperatures. The bearing bores are supplied in the case of friction bearings with bearing shells or bushes with a D10 tolerance. If flange bearings and eye-type bearings without bush are used, the bearing bore has a D7 tolerance.

Lubrication

Lubricant greases at bearing temperatures up to approx. 110°C. Solid lubricants up to approx. 450°C. Oil-bearing self-lubricating and oil-free friction materials up to 80°C. Lubricant feed through lubricating nipple and manual grease press, Stauffer grease box, spring bushing, central lubrication system. The lubricant is pressed through a lubricating groove into the unladen zone of the bearing gap. The lubricating groove is normally located in the top of the bearing shell. The direction of load must always be given when ordering if the direction of load deviates more than 40° from the vertical to the bearing base. Under normal conditions the grease consumption is approximately 20 g/m²h. The whole bearing running surface must be used here as the bearing surface.



Bearing types

- > DIN 502, 503
- > DIN 504
- > DIN 505 L, 506

Allowable compaction pressures

The level of maximum allowable compaction pressures depends on many conditions, such as

- matching of sliding materials
- roughness of the friction surfaces
- surface hardness of the shafts
- dimension of bearing play
- quality of the alignment of the bearing to the shaft
- direction of load
- lubricating state
- bearing temperature
- expected service life

The guide values for specific compaction pressures in the table below should not be exceeded in the design of friction bearings under normal operating conditions.

Normal operating conditions should be taken to be the following:

- shaft material, e.g. St 50, St 60, C 45, 42 CrMo4
- shaft diameter in the tolerance zone h9
- friction surfaces of the shafts \leq RZ 5 μ m
- good supply of lubricant

The values apply in the case of cap bearings for loads vertical $\pm 40^\circ$ to the bearing base. Under particularly favourable operating conditions higher loads are possible: e.g. hardened and

ground running surface of the shaft, very good lubricant supply and careful alignment.
max. sliding speed $v = 1.5$ m/s

Frictional power:

$$PR = F \cdot v \cdot \mu \text{ (W)}$$

F = bearing load (N)

v = sliding speed (m/s)

μ = coefficient of friction

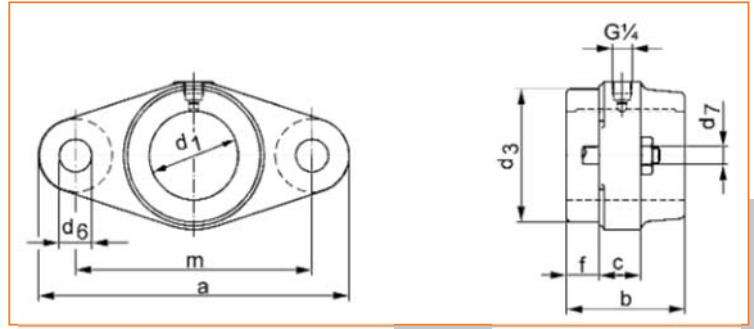
Guide values for allowable loads

Articles on stock DIN	Red bronze (RG 7) G-CuSn 7 ZnPb		Cast bronze G-CuSn 12	
	p ($\frac{N}{cm^2}$)	p · v ($\frac{N}{cm^2}$) · ($\frac{m}{s}$)	p ($\frac{N}{cm^2}$)	p · v ($\frac{N}{cm^2}$) · ($\frac{m}{s}$)
502	350	180	450	260
503	350	180	450	260
504	350	180	450	260
505 L	450	250	-	-
506	250	120	350	210

Stauffer lubrication boxes

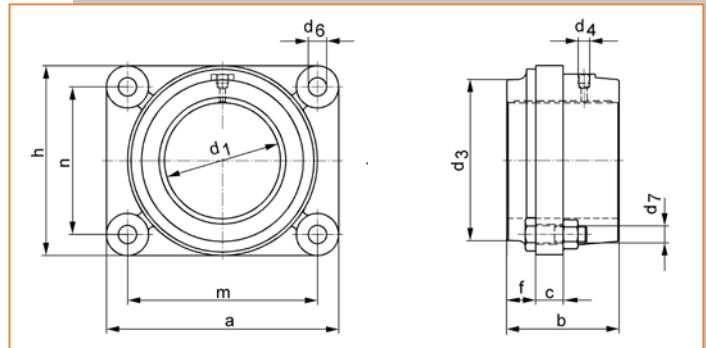
Size	Thread \varnothing	DIN 502		DIN 503		DIN 504		DIN 505	DIN 506
		A with bush	B without bush	A with bush	B without bush	A with bush	B without bush	L	A
3	G 1/4"	-	25 - 40	-	-	25 - 30	25 - 40	25 - 50	-
4	G 1/4"	25 - 40	45 - 50	35 - 50	45 - 60	35 - 50	45 - 60	55 - 80	-
5	G 1/4"	45 - 60	55 - 70	55 - 70	65 - 80	55 - 70	65 - 80	85 - 110	-
6	G 1/4"	65 - 70	75 - 80	75 - 90	85 - 110	75 - 90	85 - 110	120 - 150	80 - 110

Flange bearing DIN 502



Form A with bush ¹⁾ d ₁ (D10) mm	Form B without bush ¹⁾ d1 (D7) mm	a mm	b mm	c mm	d ₃ (h9) mm	d ₆ mm	d ₇	f mm	m mm	Weight kg
	25	135	60	20	50	14	M 12	20	100	1,2
	30									
25	35	155	60	20	65	14	M 12	20	120	1,4
30	40									
35	45	180	70	25	80	18	M 16	20	140	3
40	50									
45	55	210	80	30	90	22	M 20	20	160	4,2
50	60									
55	65	240	90	30	110	22	M 20	25	190	5,8
60	70									
70	70	275	100	35	130	26	M 24	25	220	9
	80									

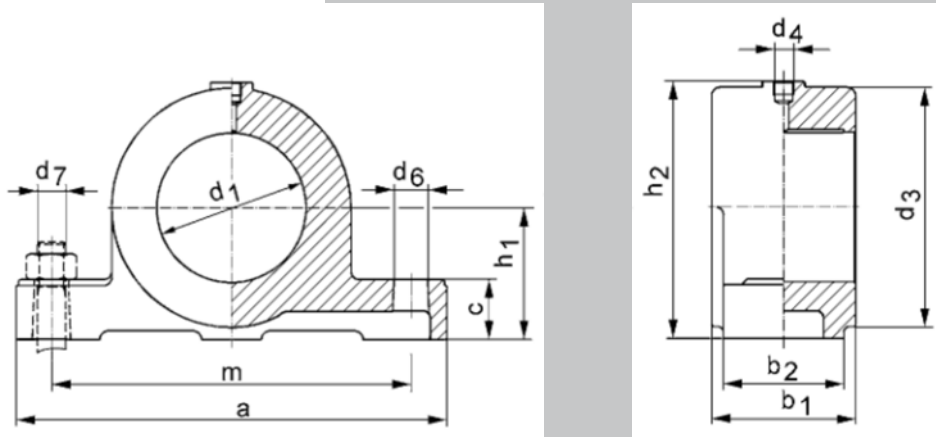
Flange bearing DIN 503



Form A with bush ¹⁾ d ₁ (D10) mm	Form B without bush ¹⁾ d1 (D7) mm	a mm	b mm	c mm	d ₃ (h9) mm	d ₄	d ₆ mm	d ₇	f mm	h mm	m mm	n mm	Weight kg
35	45	145	70	20	80	G 1/4"	14	M 12	20	85	110	50	3,1
40	50												
45	60	175	80	25	100		18	M 16	20	105	130	60	5,5
50	60												
55	70	195	90	25	120		18	M 16	25	125	150	80	8,1
60	70												
70	80	220	100	30	140		22	M 20	25	150	170	100	12,2
80	80												
80	90	240	100	30	160	22	M 20	30	170	190	120	14,9	
90	90												
90	100	260	120	30	180	22	M 20	30	190	210	140	26,6	
100	100												
100		285	120	35	200	G 3/8"	26	M 24	40	215	230	160	32

> 1) Red bronze bush Rg7

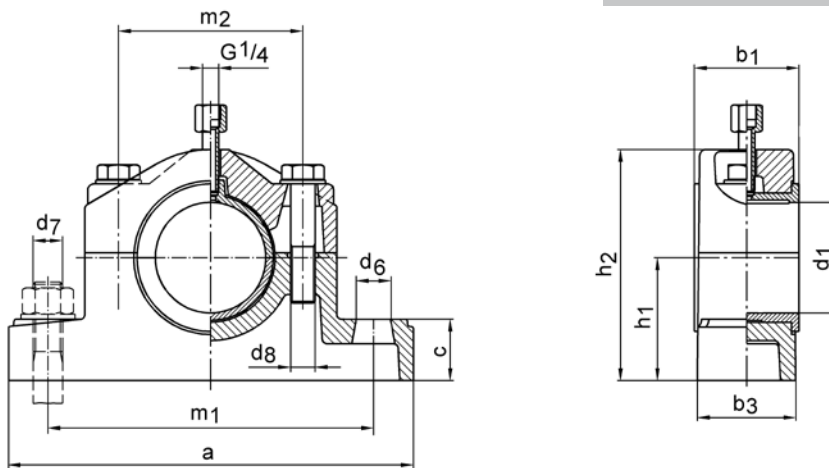
Eye-type bearing DIN 504



Form A with bush ¹⁾ d ₁ (D 10)	Form B without bush ¹⁾ d ₁ (D 7)	a	b ₁	b ₂	c	d ₃	d ₄	d ₆	d ₇	h ₁	h ₂	m	Weight
mm	mm	mm	mm	mm	mm	mm		mm		mm	mm	mm	kg
	20	110	50	35	18	45	G ¼"	12	M 10	30	56	75	1,3
	25	140	60	40	25	60		15	M 12	40	75	100	2
	30							15	M 12	50	95	120	3
25	35	160	60	45	25	80		19	M 16	60	110	140	4,2
30	40							24	M 20	70	125	160	5,5
35	45	190	70	50	30	90		24	M 20	80	145	180	8,3
40	50							28	M 24	90	165	210	11,6
45	55	220	80	55	35	100		28	M 24	100	185	240	17
50	60							28	M 24	100	195	270	22
60	70	240	90	60	35	120		28	M 24	110	215	300	35
70	80						330	120	90	45	180	G ⅜"	28
80	90	300	100	80	45	160	28	M 24	100	185	240		17
90	100						330	120	90	45	180	28	M 24
100		360	120	100	50	200	G ⅜"	28	M 24	110	215	300	35

> 1) Red bronze bush Rg7

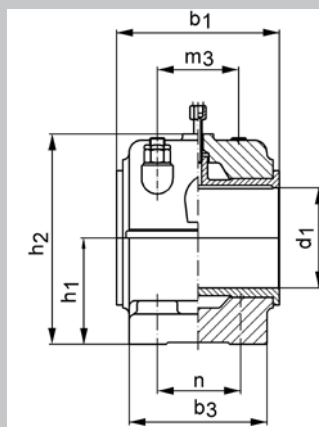
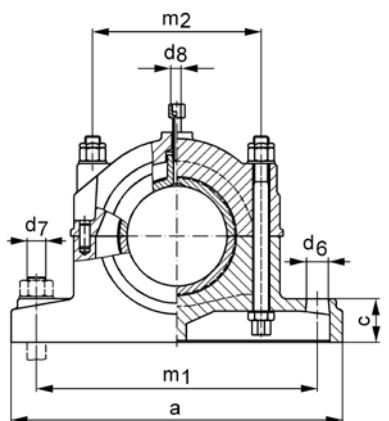
Cap bearings DIN 505 L



d_1 (D 10)	a	b_1	b_3	c	d_6	d_7	d_8	h_1	h_2	m_1	m_2	Weight
mm	mm	mm	mm	mm	mm			mm	mm	mm	mm	kg
25	165	45	40	22	15	M 12	M 10	40	78	125	65	1,6
30												
35	180	50	45	25	15	M 12	M 10	50	95	140	75	3
40												
45	210	55	50	30	19	M 16	M 12	60	114	160	90	3
50												
55	225	60	55	35	19	M 16	M 12	70	132	175	100	4
60												
70	270	65	60	40	24	M 20	M 16	80	154	210	120	7,1
80	290	75	70	45	24	M 20	M 16	90	170	230	130	10,2
90	330	85	80	50	28	M 24	M 20	100	188	265	150	13,4
100	355	95	90	55	28	M 24	M 20	110	210	290	170	19
110												
125	420	110	100	60	35	M 30	M 24	130	250	340	200	29,2
140	440	125	120	65	35	M 30	M 24	150	280	360	220	39
150												

> with bearing shells of red bronze: Rg7

Cap bearings DIN 506



d_1 (D 10)	a	b_1	b_3	c	d_6	d_7	d_8	h_1	h_2	m_1	m_2	m_3	n	Weight
mm	mm	mm	mm	mm	mm			mm	mm	mm	mm	mm	mm	kg
80	300	140	130	50	24	M 20	G ¼"	100	185	240	130	65	70	21
90	330	160	140	50	24	M 20		100	190	270	145	80	80	26
100	360	180	160	55	28	M 24		110	210	300	170	80	90	36
110								120	240	330	200	100	100	48
125	400	200	170	60	28	M 24	G ⅜"	130	255	360	215	110	110	59
130								170	330	270	130	130	115	
140	440	220	190	65	35	M 30		240	443	580	330	160	160	234
150								265	505	630	380	180	180	440
160	530	260	220	70	35	M 30		315	600	700	420	200	200	540
180								265	505	630	380	180	180	440
200	680	300	260	80	35	M 30		265	505	630	380	180	180	440
220								315	600	700	420	200	200	540
240	750	355	300	100	42	M 36		265	505	630	380	180	180	440
260								315	600	700	420	200	200	540
280	850	400	335	120	48	M 42	265	505	630	380	180	180	440	
300							315	600	700	420	200	200	540	

> with bearing shells of red bronze: Rg7



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