Flange Bearings Type WF

Diameter Range 140...450 mm

Flange bearings type WF are general purpose bearing systems with housings according to DIN 31693.
They are mostly used in horizontal electrical machines such as generators and motors.

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Applications
Flange bearings type WF are usually applied in horizontal electrical machines such as generators and motors. They are mounted to the machine from outside the machine.

Materials
Housings are made of cast iron EN-GJS-300. For high thrust loads, EN-GJS-400-15 is available. Bearing shells are made of high quality steel lined with a layer of babbitt.

Seals
Different types of seals are available, ranging from protection class IP44 up to IP55 to suit your application. Seals are available as floating labyrinth seals for sizes 18 through 28 and as fixed labyrinth seals for sizes 22 through 35. Bearings type WF sizes 18 to 28 can be combined with a machine seal for pressure equalization. For size 35, a combined seal with an extra chamber for aeration is used. Special seals are also available.

Electric Insulation
Flange bearings type WF are available with electrical insulation between shell and housing. Insulation is ensured by a high-quality spray-cast layer of ECTFE with excellent long-term stability in the spherical seat of the housing.

Special Designs
Modifications to the bearings of the WF series are available to optimally suit your machine design and application. The majority of WF bearings is specially adapted to the customers' specifications.

Oil Supply
Depending upon the application, different modes of lubrication are available. Under most conditions, lubrication is achieved via an external oil circulation system. A loose oil ring may achieve lubrication in emergency run-down condition. For slow-running applications, lubrication may be achieved by a loose oil ring alone. Bearings supplied through a single oil pocket due to changing load angles are available.

Heat Dissipation
In case of an external oil circulation system, the friction heat is dissipated by convection via the same. For slow-running low-load applications, dissipation via the housing surface may be sufficient. Internal water coolers to increase heat dissipation are available.

Temperature Control
Provisions for temperature measurements in shell and oil sump are available on both sides of the bearing. In case of tilting pad thrust bearings, provision for axial bearing temperature measurement is also available on both sides. Additional measurement provisions are available on request. Temperature readings may help in determining bearing failure when evaluating transient temperature changes.

Bearing Selection
Calculation software based on E DIN 31652, DIN 31653 and DIN 31654 for bearing pre-selection is available on request. Specified load cases will be calculated by GTW with specialized calculation software able to model bearing behaviour more precisely.

Designation of Bearing Types

1.) Manufacturer

- **W** Gleitlagertechnik Weißbacher GmbH

2.) Type

- **F** Flange housing according to DIN 31693

3.) Heat dissipation

- **N** Convection via the housing surface
- **W** Convection via the housing surface and water cooling in oil sump
- **Z** External oil circulation system with oil cooling
- **X** External oil circulation system with oil cooling and large oil throughput

4.) Shape of bore and ring lubrication

- **C** Cylindrical bore without oil ring
- **L** Cylindrical bore with loose oil ring
- **Y** Two lobe bore without oil ring
- **V** Four lobe bore without oil ring

5.) Thrust part

- **Q** Without thrust part
- **B** Babbitt-lined plain shoulders with oil grooves for small dynamic thrust loads
- **K** Taper land faces for both directions of rotation
- **D** Taper land faces for a single direction of rotation
- **A** Circular tilting pad thrust pads type WD

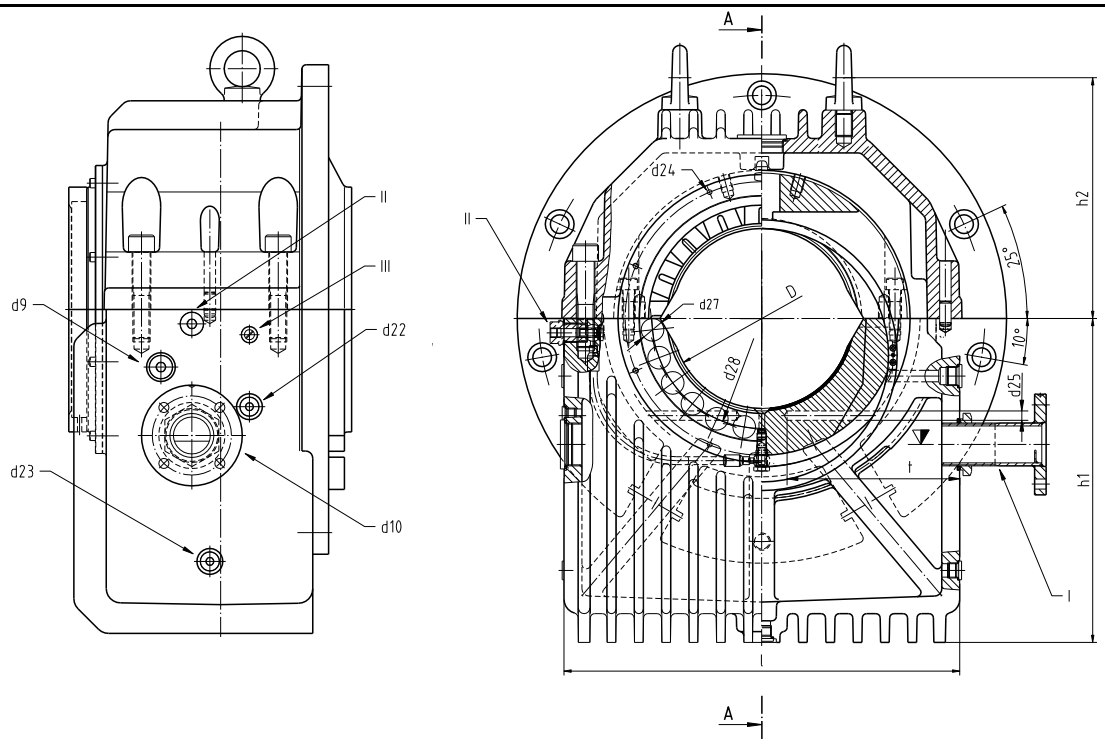
6.) Housing size

7.) Nominal bearing diameter

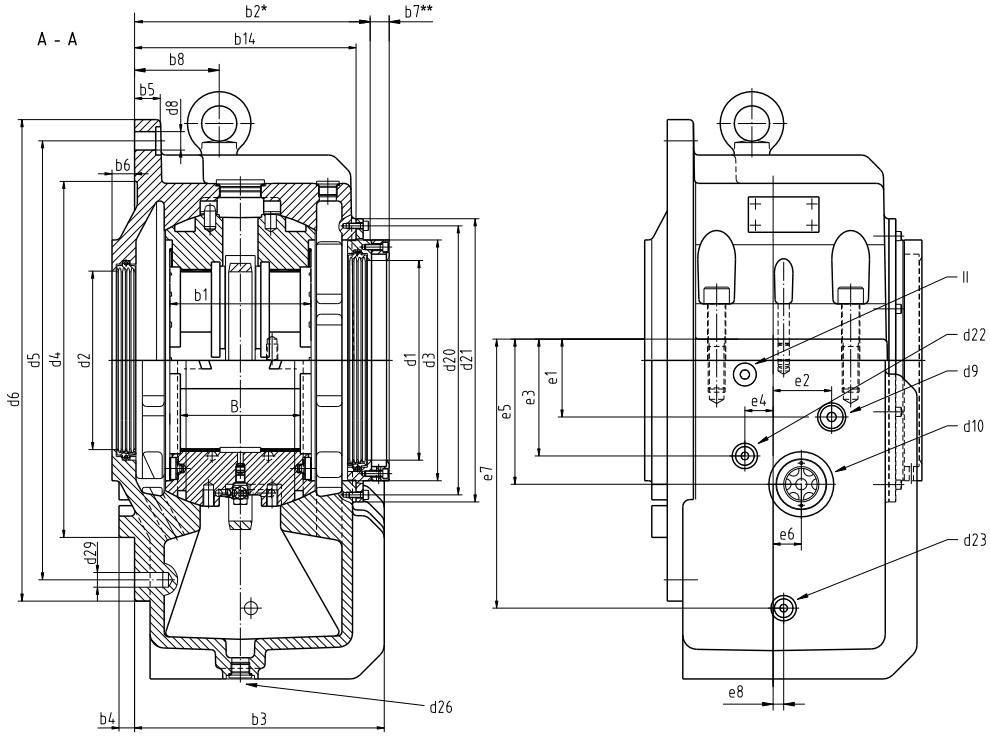
Example **Flange bearing, housing size 22, shaft diameter 200 mm, lubricated with loose oil ring, cooled with convection via the housing surface, cylindrical bore and without thrust part.**

Slide bearing WFNLQ 22-200

Dimensions of Bearings Type WF



Size	D H7	B	b_1	b_2	b_3	b_4	b_5	b_6	b_7	b_8	b_{14}	d_1	d_2	d_3	d_4	d_5	d_6	d_8	d_9	d_{10}	d_{18}	d_{19}	d_{20}
18	140 160 180 200 225	135	160	265	273	18	25	31	25	106	243	140 160 180 200 225	200 - 225	280	400	490	540	22 for M22	G½	G1½	152 172 192 212 237	195 215 240 250 275	320
22	180 200 225 250 280	170	200	336	354	22	37	32	25	120	314	180 200 225 250 280	250 - 300	340	500	620	680	26 for M24	G¾	G2	194 214 239 264 294	245 265 290 315 345	380
28	225 250 280 300 315 335 355	215	250	387	414	24	42	43	25	150	365	225 250 280 300 315 335 355	315 - 355	410	600	770	850	33 for M30	G¾	G2½	241 266 296 316 331 351 371	300 325 355 375 390 410 430	500
35	280 300 315 335 355 375 400 425 450	260	300	483	485	30	50	162	25	170	430	280 300 315 335 355 375 400 425 450	300 - 450	530	850	950	1060	39 for M36	G1	G3	300 320 335 355 375 395 420 445 470	365 385 400 425 450 470 495 520 520	580

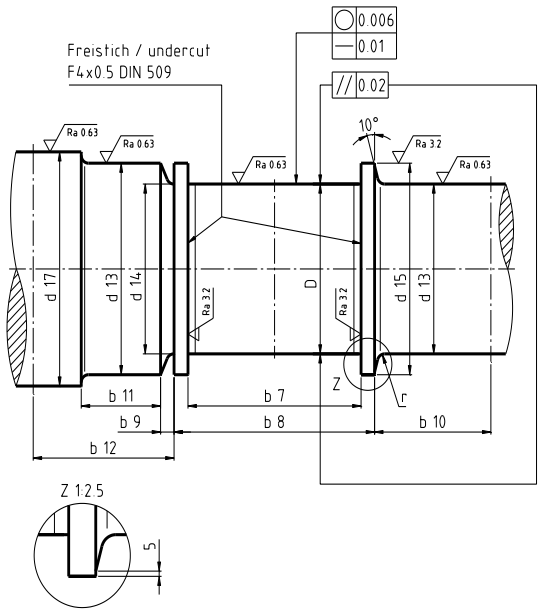


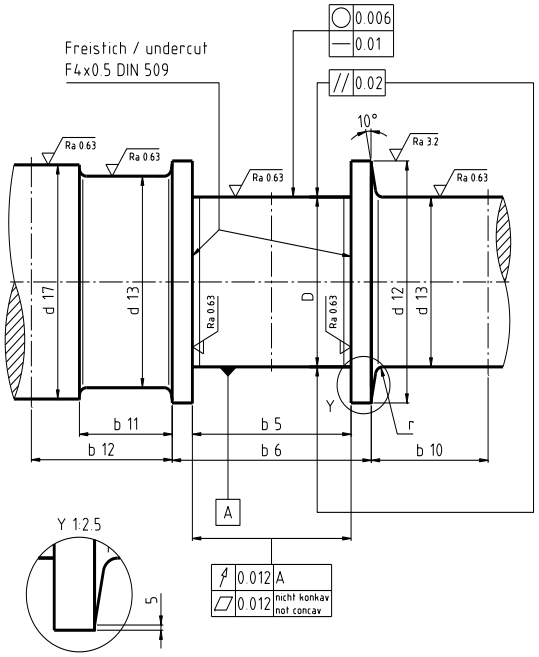
d_{21}	d_{22}	d_{23}	d_{24}	d_{25}	d_{26}	d_{27}	d_{28}	d_{29}	e_1	e_2	e_3	e_4	e_5	e_6	e_7	h_1	h_2	l	z	m [kg]	V [l]
340	G½	G½	8x M8	13	G½	31.5/40/50	190/200/210	M20	70	68	105	30	155	30	240	400	270	440	16/14/12	235	15
						31.5/40	210/220												18/14		
						31.5	230												20		
						-	-												-		
						-	-												-		
400	G½	G½	8x M8	13	G¾	40/50/63	245/255/270	M24	80	83	135	40	200	40	350	450	340	550	16/14/12	465	22
						40/50	265/275												18/16		
						40/50	285/295												20/16		
						-	-												-		
						-	-												-		
525	G½	G½	8x M8	13	G¾	50/63/80	295/315/335	M30	95	106	155	50	220	50	400	500	425	690	16/14/12	750	35
						50/63/80	325/345/355												18/16/12		
						50/63	355/375												20/16		
						50	380												22		
						50	390												22		
						-	-												-		
						-	-												-		
640	G½	G½	12x M10	18	G1	63/80/100	370/390/410	M36	120	100	210	65	295	75	500	710	530	850	16/14/12	1450	70
						63/80/100	390/405/425												16/14/12		
						63/80	405/425												18/14		
						63/80	425/440												18/16		
						63	445												20		
						63	460												20		
						-	-												-		
						-	-												-		
						-	-												-		

All dimensions in mm

We reserve the right to introduce modifications

Shaft Dimensions



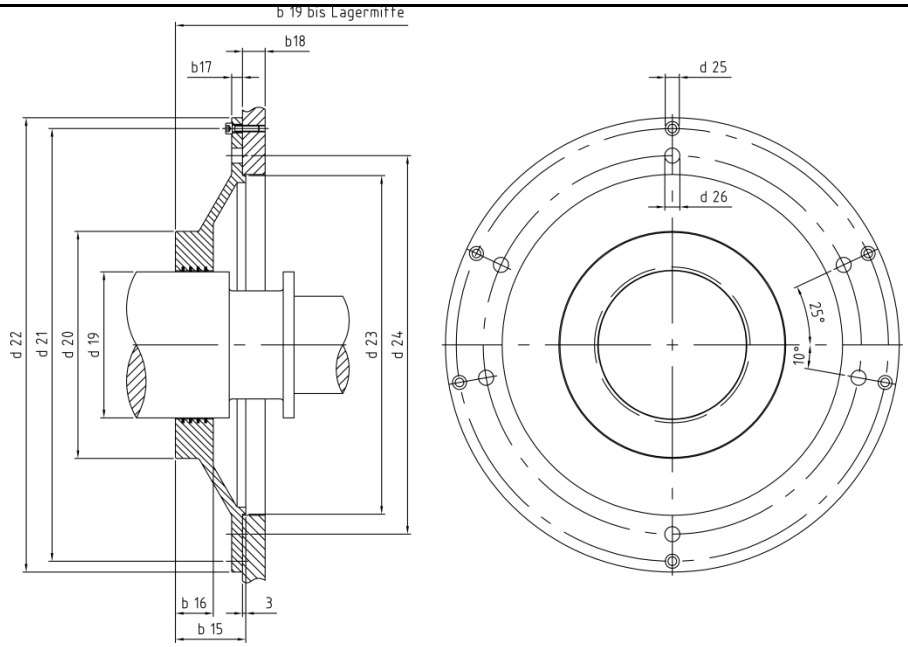


Size	D	b_5 (±0.1)	b_6	b_7	b_8	b_9	b_{10}	b_{11}	b_{12}	d_{12}		$d_{13(e8)}/d_{14}$	d_{15}	d_{16} (e8)	d_{17} (e8)	r
										B,K,D	A					
	140									195	224/242/262	200/140	180	140	215	
	160									215	244/262	200/160	200	160	215	
18	180	160.4	190	180	190	10	60	65	127	240	264	200/180	225	180	240	6
	200									250	-	225/200	250	200	250	
	225									275	-	225/225	265	225	280	
	180									245	288/308/336	200/180	225	180	250	
	200									265	308/328	225/200	250	200	265	
22	225	200.4	240	220	240	13.5	70	70	140	290	328/348	250/225	280	225	280	10
	250									315	-	280/250	300	250	290	
	280									345	-	280/280	315	280	315	
	225									300	348/380/418	315/225	280	225	280	
	250									325	378/411/438	315/250	300	250	280	
	280									355	408/441	315/280	315	280	325	
28	300	250.4	300	280	300	19	70	75	140	375	433	315/300	335	300	325	10
	315									390	443	335/315	355	315	355	
	335									410	-	355/335	375	335	375	
	355									430	-	355/355	400	355	390	
	280									365	435/472/512	300/280	315	280	315	
	300									385	455/487/527	315/300	335	300	325	
	315									400	470/507	335/315	355	315	355	
	335									425	490/522	355/335	375	335	375	
35	355	300.5	360	315	335	10	145	120	195	450	510	375/355	400	355	390	12
	375									470	525	400/375	425	375	425	
	400									495	-	425/400	450	400	450	
	425									520	-	450/425	475	425	450	
	450									520	-	450/450	500	450	450	

All dimensions in mm

We reserve the right to introduce modifications

Machine Seal Dimensions



Size	b_{15}	b_{16}	b_{17}	b_{18}	b_{19}	d_{19}	d_{20}	d_{21}	d_{22}	d_{23}	d_{24}	d_{25}	d_{26}	m [kg]
18	75	40	10	57	245	215	310	430	455	398	-	10	-	6
						240								
						250								
						275								
22	80	40	10	72	299	250	360	535	570	498	-	10	-	10
						265	380							
						280								
						290								
						315								
						335	385							
28	85	50	10	96	348	280	440	640	680	598	-	10	-	15
						325								
						355								
						375								
						390								
						410	460							
35	The machine seal for the WF 35 bearing is a combined machine seal, consisting of the seal diameter d_2 and d_{19}.													

All dimensions in mm

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