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# Centre Flange Bearings Type WM

**Diameter Range 110...450 mm**

Centre flange bearings type WM are general purpose bearing systems with housings according to DIN 31694.

They are mostly used in horizontal electrical machines such as generators and motors.

# Pedestal Bearings Type WM

## Diameter Range 110...450 mm

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### Applications

Centre flange bearings type WM are usually applied in horizontal electrical machines such as generators and motors. They are mounted directly into the machine shield with one side extending into 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 babbit.

### 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 14 through 28 and as fixed labyrinth seals for sizes 22 through 35. Combined seals with an extra chamber for aeration are available. Special seals are also available.

### Electric Insulation

Centre flange bearings type WM 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 WM series are available to optimally suit your machine design and application. The majority of WM 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.

### 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

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## 1.) Manufacturer

**W** GTW

## 2.) Type

**M** Centre flange housing according to DIN 31694

## 3.) Heat dissipation

**N** Convection via the housing surface

**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

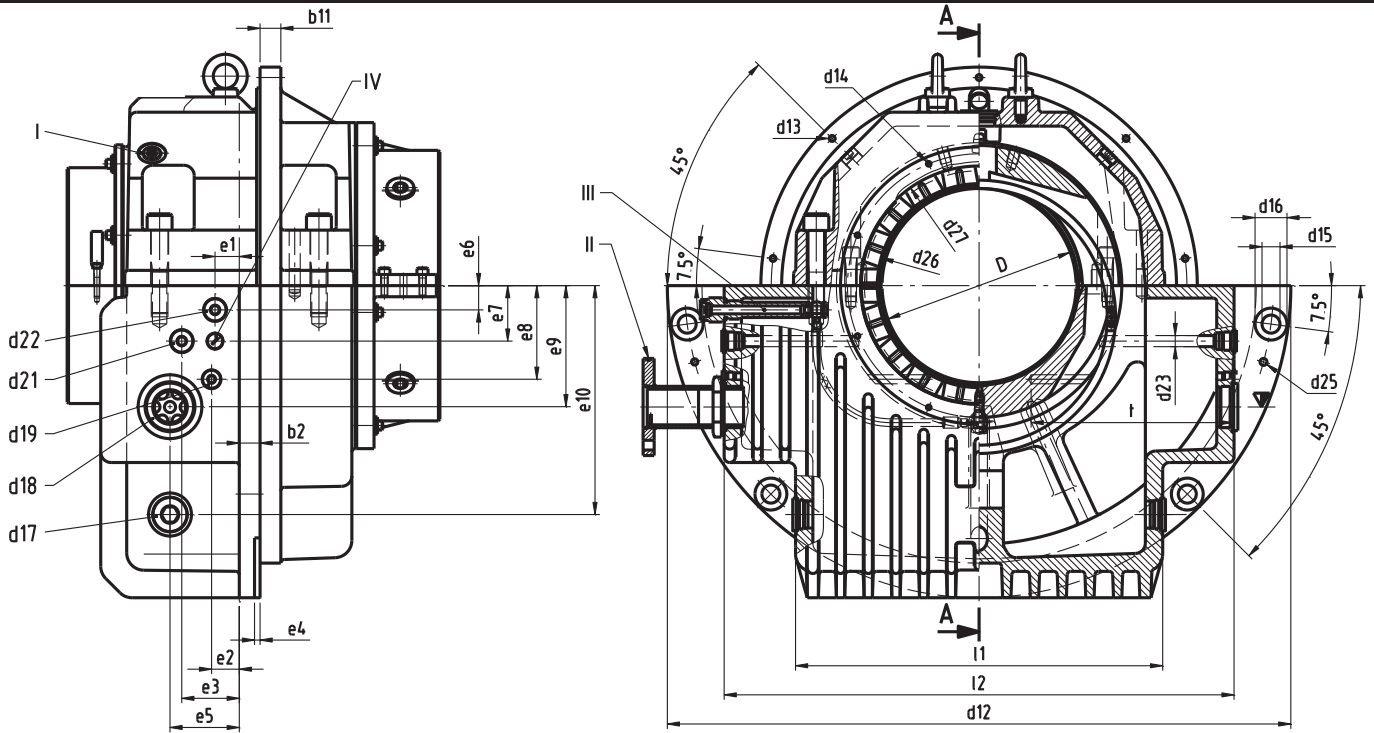
## 6.) Housing size

## 7.) Nominal bearing diameter

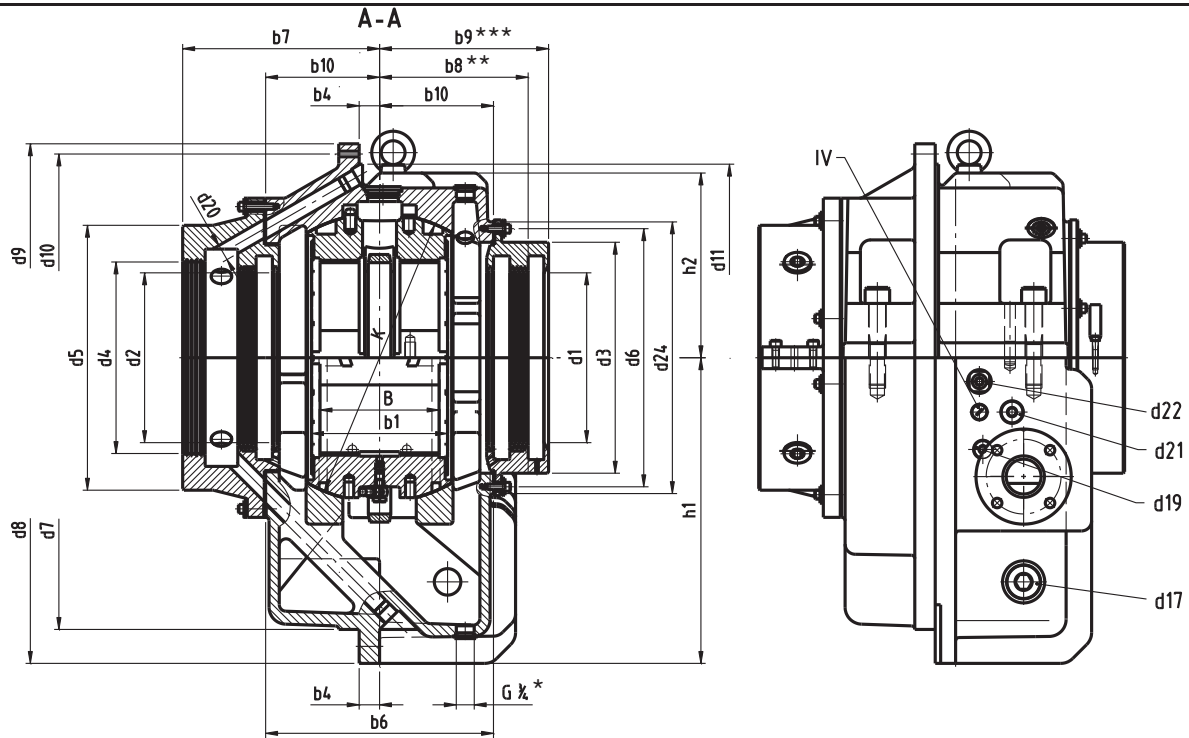
**Example** Center flange bearing, housing size 35, shaft diameter 400 mm with external oil circulation system and oil cooling, cylindrical bore and without thrust part.

**Slide bearing WMZLQ 35-400**

# Dimensions of Bearings Type WM



Size	D H7	B	b <sub>1</sub>	b <sub>2</sub> b <sub>11</sub>	b <sub>4</sub>	b <sub>6</sub>	b <sub>7</sub>	b <sub>8</sub>	b <sub>9</sub>	b <sub>10</sub>	d <sub>1</sub> /d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	d <sub>6</sub>	d <sub>9</sub>	d <sub>10</sub>	d <sub>11</sub>	d <sub>12</sub>	d <sub>13</sub>	d <sub>14</sub>	d <sub>15</sub> d <sub>16</sub>	d <sub>18</sub>
14	110	105	125	20	25	-	185	134.5	154.5	112.5	110	125	160	260	270	425	400	380	600	M6	M6	18/26	G1½
	125										140	180											
	140										160	200											
	160										180	200											
18	140	135	160	25	25	265	209.5	154.5	179.5	132.5	140	160	200	300	320	500	475	450	710	M8	M8	22/33	G1½
	160										180												
	180										200												
	200										225												
	225										250												
22	180	170	200	30	30	335	245	189.5	214.5	167.5	180	200	250	390	380	630	600	570	900	M10	M8	26/40	G2
	200										225												
	225										250												
	250										280												
	280										300												
28	225	215	250	30	30	425	329.5	244.5	296.5	212.5	225	250	300	420	500	800	765	730	1120	M12	M8	33/48	G2½
	250										280												
	280										300												
	300										315												
	315										335												
	335										355												
35	280	260	300	45 35	50	460	362	283	343	231	280	300	375	540	580	1060	1030	1000	1400	M12	M10	39/58	G3
	300										315												
	315										335												
	335										355												
	355										375												
	375										400												
	400										425												
	425										450												
450	475																						

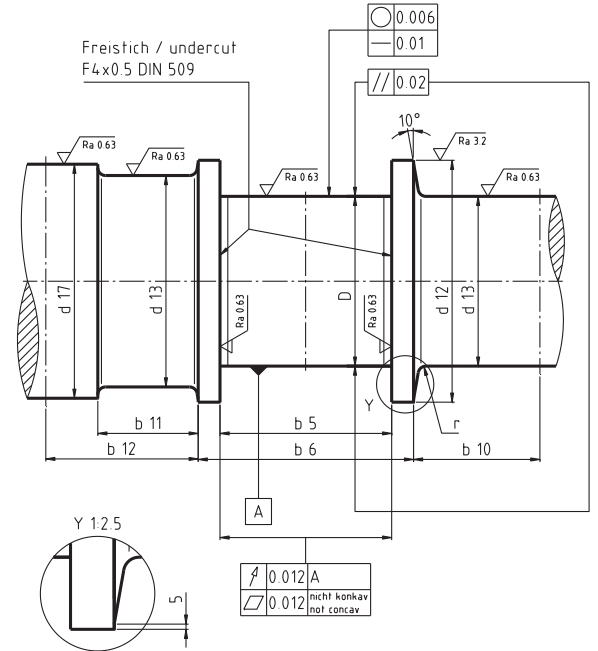
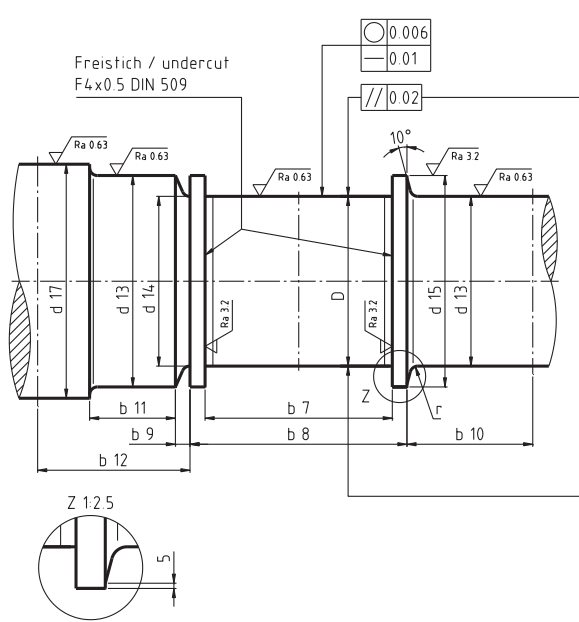


d <sub>19</sub>	d <sub>20</sub>	d <sub>21</sub>	d <sub>22</sub>	d <sub>23</sub>	d <sub>24</sub>	d <sub>26</sub>	d <sub>27</sub>	e <sub>1</sub>	e <sub>2</sub>	e <sub>3</sub>	e <sub>4</sub>	e <sub>5</sub>	e <sub>6</sub>	e <sub>7</sub>	e <sub>8</sub>	e <sub>9</sub>	e <sub>10</sub>	h <sub>1</sub>	h <sub>2</sub>	l <sub>1</sub>	l <sub>2</sub>	k h <sub>6</sub>	m [kg]	V [l]
G <sub>1/2</sub>	18.5	G <sub>3/8</sub>	-	11	290	120	155	-	27.5	55	6	70	-	60	85	125	215	300	195	355	492	280	155	7
						135	170																	
						150	190																	
						170	200																	
G <sub>1/2</sub>	18	G <sub>1/2</sub>	G <sub>3/4</sub>	13	340	152	195	30	30	68	6	80	30	70	105	155	260	355	195	425	572	335	250	11
						172	215																	
						192	240																	
						212	250																	
G <sub>1/2</sub>	24	G <sub>3/4</sub>	G <sub>3/4</sub>	13	400	194	245	35	40	83	8	100	35	80	135	175	330	450	272	530	736	425	445	29
						214	265																	
						239	290																	
						264	315																	
G <sub>1/2</sub>	30	G <sub>3/4</sub>	G <sub>3/4</sub>	13	525	241	300	50	50	106	14	130	45	95	155	230	385	560	345	670	918	530	880	52
						266	325																	
						296	355																	
						316	375																	
						331	390																	
						351	410																	
G <sub>1/2</sub>	39	G <sub>1</sub>	G <sub>3/4</sub>	16	640	300	365	48	65	100		120	30	130	210	295	488	700	435	845	1060	630	1345	80
						320	385																	
						335	400																	
						355	425																	
						375	450																	
						395	470																	
						420	495																	
						445	520																	
470	520																							

All dimensions in mm

We reserve the right to introduce modifications

# Shaft Dimensions



Size	D	b <sub>5</sub> (±0.1)	b <sub>6</sub>	b <sub>7</sub>	b <sub>8</sub>	b <sub>9</sub>	b <sub>10</sub>	b <sub>11</sub>	b <sub>12</sub>	d <sub>12</sub>		d <sub>13</sub> (e8)/d <sub>14</sub>	d <sub>15</sub>	d <sub>16</sub> (e8)	d <sub>17</sub> (e8)	r
										B,K,D	A					
14	110	125.4	150	140	150	8.5	60	60	123	155	177/194/212	125/110	140	110	140	6
	125									170	192/209/222	140/125	160	125	160	
	140									190	207/224	160/140	180	140	180	
	160									200	227	180/160	200	160	200	
	180									220	-	180/180	220	180	225	
18	140	160.4	190	180	190	10	60	65	127	195	224/242/262	160/140	180	140	180	6
	160									215	244/262	180/160	200	160	215	
	180									240	264	200/180	225	180	240	
	200									250	-	225/200	250	200	250	
	225									275	-	225/225	265	225	280	
22	180	200.4	240	220	240	13.5	70	70	140	245	288/308/336	200/180	225	180	225	10
	200									265	308/328	225/200	250	200	265	
	225									290	328/348	250/225	280	225	280	
	250									315	-	280/250	300	250	290	
	280									345	-	280/280	315	280	315	
28	225	250.4	300	280	300	19	70	75	140	300	348/380/418	250/225	280	225	280	10
	250									325	378/411/438	280/250	300	250	290	
	280									355	408/441	300/280	315	280	315	
	300									375	433	315/300	335	300	325	
	315									390	443	335/315	355	315	355	
	335									410	-	355/335	375	335	375	
	355									430	-	355/355	400	355	390	
35	280	300.5	360	315	335	10	145	120	195	365	435/472/512	300/280	315	280	315	12
	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	
	355									450	510	375/355	400	355	390	
	375									470	525	400/375	425	375	425	
	400									495	-	425/400	450	400	450	
	425									520	-	450/425	475	425		
	450									520	-	450/450	500	450		

All dimensions in mm

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