



Pedestal Bearings Type WP

Diameter Range 110...900 mm

Pedestal bearings type WP are general purpose bearing systems with housings according to DIN 31690.

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

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Diameter Range 110...900 mm

Applications

Pedestal bearings type WP are used, due to their versatility, in a wide variety of applications, such as:

- Turbo generators
- Hydro generators
- Water turbines and pumps
- Blowers
- Motors and generators

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 14 through 28 and as fixed labyrinth seals for sizes 22 through 71. Special seals are available.

Electric Insulation

Pedestal bearings type WP are available with electrical insulation between shell and housing up to size 56. 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 WP series are available to optimally suit your machine design and application. The majority of WP 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. Fixed oil rings for high oil throughput in slow-speed applications are available on request. 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 GTW

2.) Type

P Pedestal housing according to DIN 31690

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

F Cylindrical bore with fixed 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

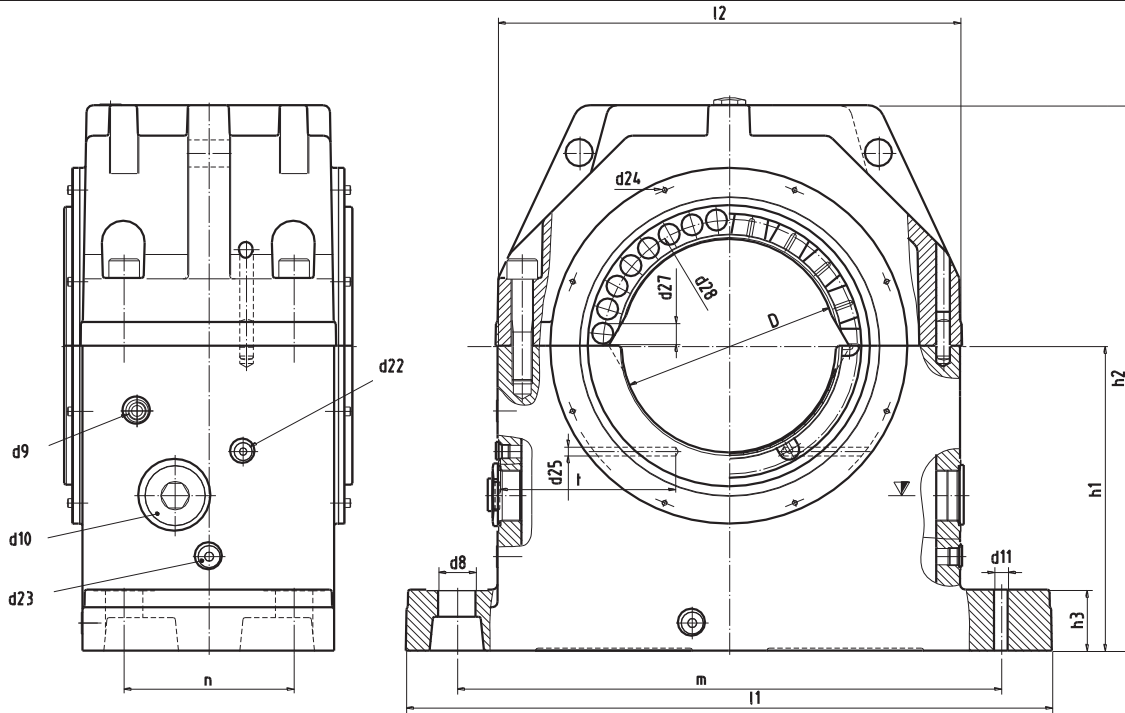
6.) Housing size

7.) Nominal bearing diameter

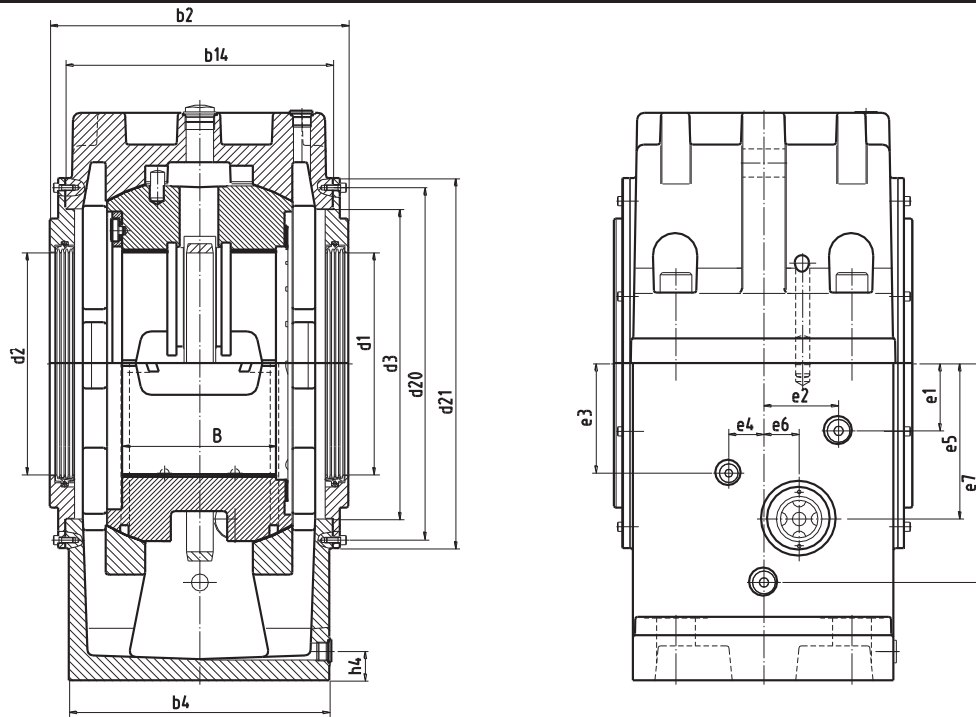
Example Pedestal bearing, housing size 22, shaft diameter 250 mm with external oil circulation system and oil cooling, two-lobe bore and taper land faces for both directions of rotation.

Slide bearing WPZYK 22-250

Dimensions of Bearings Type WP Sizes 14 to 35



Size	D H7	B	b ₁	b ₂	b ₄	b ₁₄	d ₁ /d ₂	d ₃	d ₈	d ₉	d ₁₀	d ₁₁	d ₁₈	d ₁₉	d ₂₀	d ₂₁	d ₂₂	d ₂₃	d ₂₄	d ₂₅	d ₂₆
14	110	105	125	259	205	215	110	230	30 for M24	G $\frac{1}{2}$	G2	10.4	120	155	270	290	G $\frac{1}{2}$	G $\frac{1}{2}$	6x M6	11	G $\frac{1}{2}$
	125						135						170								
	140						150						190								
	160						170						200								
	180						190						220								
18	140	135	160	299	245	255	140	275	40 for M30	G $\frac{1}{2}$	G2	15	152	195	320	340	G $\frac{1}{2}$	G $\frac{1}{2}$	8x M8	13	G $\frac{1}{2}$
	160						172						215								
	180						192						240								
	200						212						250								
	225						237						275								
22	180	170	200	364	310	320	180	340	46 for M36	G $\frac{3}{4}$	G2 $\frac{1}{2}$	15	194	245	380	400	G $\frac{1}{2}$	G $\frac{3}{4}$	8x M8	13	G $\frac{3}{4}$
	200						214						265								
	225						239						290								
	250						264						315								
	280						294						345								
28	225	215	250	424	370	380	225	440	55 for M42	G $\frac{3}{4}$	G2 $\frac{1}{2}$	20	241	300	500	525	G $\frac{1}{2}$	G $\frac{3}{4}$	8x M8	13	G $\frac{3}{4}$
	250						266						325								
	280						296						355								
	300						316						375								
	315						331						390								
35	335	260	300	562	440	460	300	520	55 for M42	G $\frac{3}{4}$	G3	20	316	375	600	640	G $\frac{1}{2}$	G1	12x M10	18	G1
	335						331						390								
	355						351						410								
	375						371						430								
	400						300						365								
	425						320						385								
	450						335						400								
							355						425								
	375	450																			
	395	470																			
	420	495																			
	445	520																			
	470	520																			

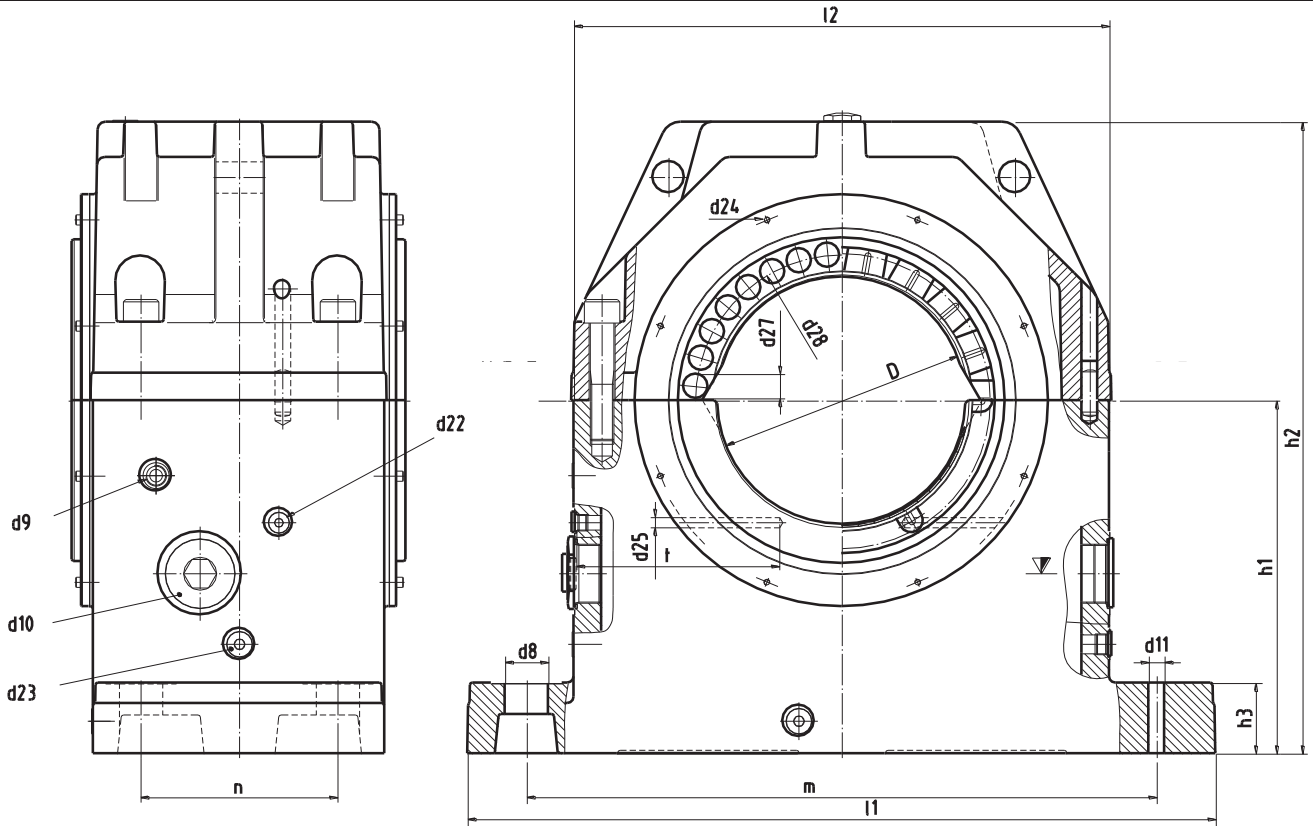


d ₂₇	d ₂₈	e ₁	e ₂	e ₃	e ₄	e ₅	e ₆	e ₇	e ₈	h ₁	h ₂	h ₃	h ₄	m	n	n ₁	l ₁	l ₂	t	k h ₆	z	m [kg]	V [l]
25/31.5/40	150/160/170	60	55	85	27	125	27	180	0	265	465	60	29	450	125	-	540	380	170	280	16/14/12	135	5
25/31.5/40	165/175/180																		18/14/12				
25/31.5	180/190																		20/16				
25	200																		22				
-	-																	150		-			
31.5/40/50	190/200/210	70	68	105	30	155	30	215	0	315	550	70	29	560	150	-	660	470	211	335	16/14/12	240	9
31.5/40	210/220																		18/14				
31.5	230																		20				
-	-																		-				
-	-																	190		-			
40/50/63	245/255/270	80	83	135	40	175	40	245	0	375	665	80	37	670	200	-	800	570	261	425	16/14/12	430	17
40/50	265/275																		18/16				
40/50	285/295																		20/16				
-	-																		-				
-	-																	248		-			
50/63/80	295/315/335	95	106	155	50	220	50	310	0	450	805	90	42	800	250	-	950	680	315	530	16/14/12	780	28
50/63/80	325/345/355																		18/16/12				
50/63	355/375																		20/16				
50	380																		22				
50	390																		256				
-	-																		236				
-	-	223																					
63/80/100	370/390/410	120	95	150	65	320	75	385	65	530	940	95	50	950	300	-	1100	800	335	630	16/14/12	1350	29
63/80/100	390/405/425			160																	16/14/12		
63/80	405/425			170																	18/14		
63/80	425/440			180																	18/16		
63	445			190																	20		
63	460			200																	20		
-	-			210																	-		
-	-			220																	-		
-	-			230																	-		

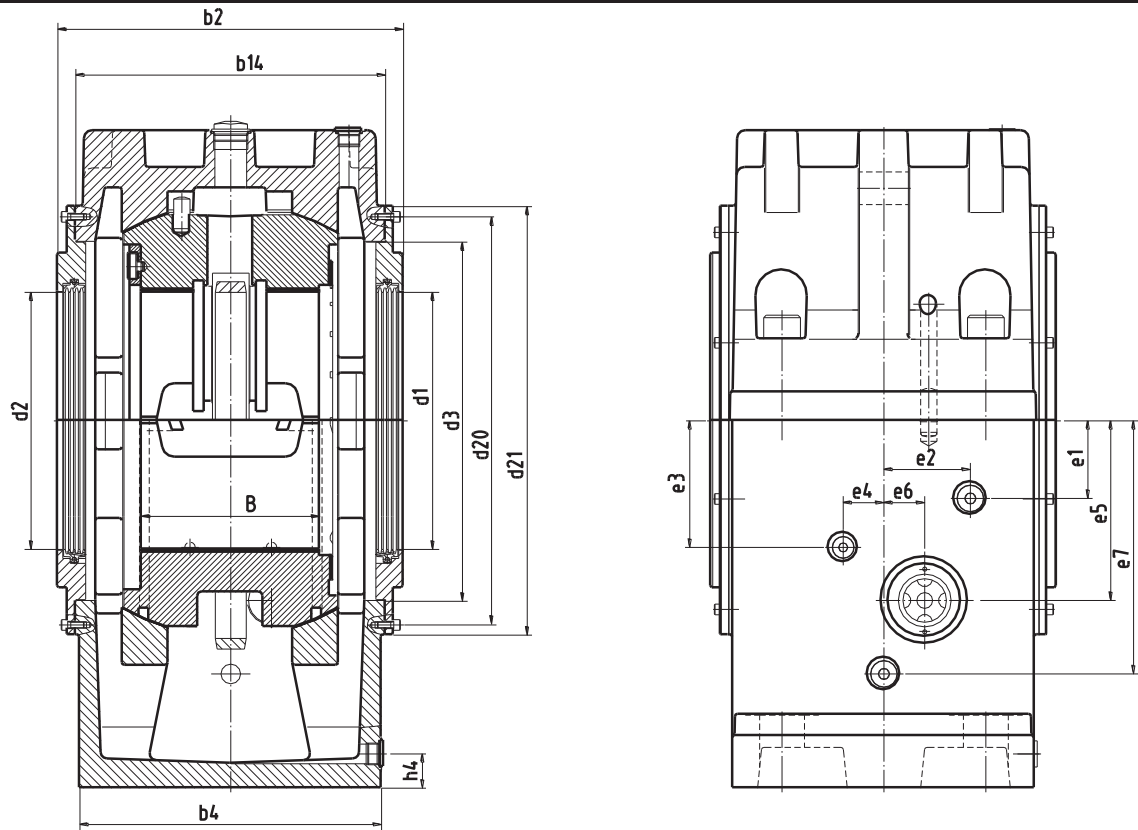
All dimensions in mm

We reserve the right to introduce modifications

Dimensions of Bearings Type WP Sizes 45 to 71



Size	D H7	B	b ₁	b ₂	b ₄	b ₁₄	d ₁ /d ₂	d ₃	d ₈	d ₉	d ₁₀	d ₁₁	d ₁₈	d ₁₉	d ₂₀	d ₂₁	d ₂₂	d ₂₃	d ₂₄	d ₂₅	d ₂₆	d ₂₇
45	355	325	375	652	530	550	355	660	62 for M48	G $\frac{3}{4}$	G3	20	380	460	730	780	G $\frac{1}{2}$	G1	12x M10	18	G1	80/100/125
	375						400						480	80/100/125								
	400						425						505	80/100								
	425						450						530	80/100								
	450						475						555	80								
	475						500						580	80								
	500						525						605	-								
	530						555						635	-								
	560						585						645	-								
56	450	415	475	762	640	660	450	800	62 for M48	G1	G3	25	480	565	890	950	G $\frac{1}{2}$	G1	12x M10	18	G1	100/125/140
	475						505						590	100/125/140								
	500						530						615	100/125								
	530						560						645	100								
	560						590						675	100								
	600						630						715	-								
	630						660						745	-								
	670						700						785	-								
	710						740						780	-								
	71						560						530	600							912	780
600		635	725	125/140/160																		
630		665	755	125/140																		
670		705	795	125																		
710		745	835	100																		
750		785	875	-																		
800		835	925	-																		
850		885	975	-																		
900		920	990	-																		

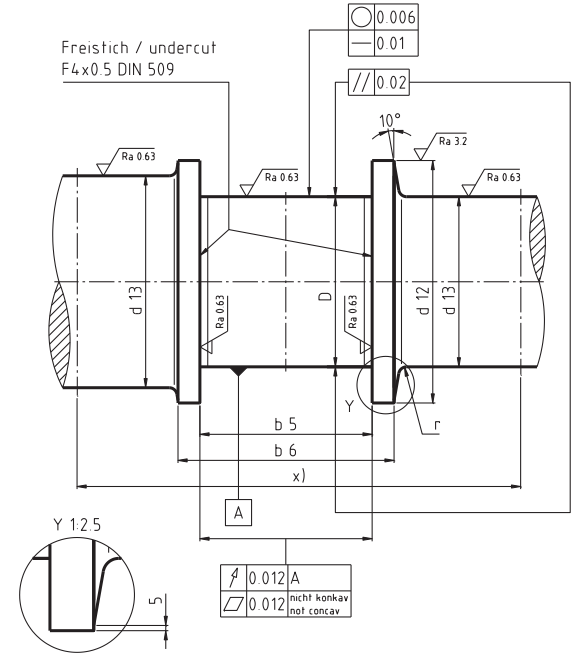
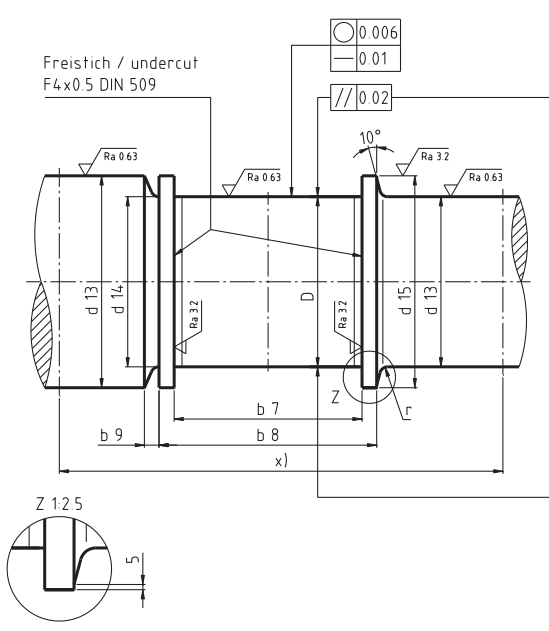


d ₂₈	e ₁	e ₂	e ₃	e ₄	e ₅	e ₆	e ₇	e ₈	h ₁	h ₂	h ₃	h ₄	m	n	n ₁	l ₁	l ₂	t	k h ₆	z	m [kg]	V [l]
465/485/510	130	120	190	75	360	90	420	80	600	1115	120	53	1150	355	-	1350	980	400	800	16/14/12	2200	52
485/505/530			190																	16/14/12		
510/530			205																	18/14		
535/555			215																	18/16		
560			230																	20		
585			245																	20		
-			255																	-		
-			255																	-		
-	270	-																				
585/610/625	165	160	225	105	415	150	480	0	670	1315	130	58	1400	450	150	1600	1180	455	950	16/14/12	4000	78
610/635/650			225																	16/14/12		
635/660			240																	18/14		
665			255																	18		
690			270																	20		
-			295																	-		
-			310																	-		
-			310																	-		
-	320	-																				
725/740/760	175	200	250	140	500	190	540	0	750	1525	160	100	1800	560	200	2000	1566	560	1180	16/14/14	6400	125
765/780/800			250																	18/16/14		
795/810			270																	18/16		
835			295																	18		
850			320																	24		
-			340																	-		
-			370																	-		
-			370																	-		
-	370	-																				

All dimensions in mm

We reserve the right to introduce modifications

Shaft Dimensions Sizes 14 to 35

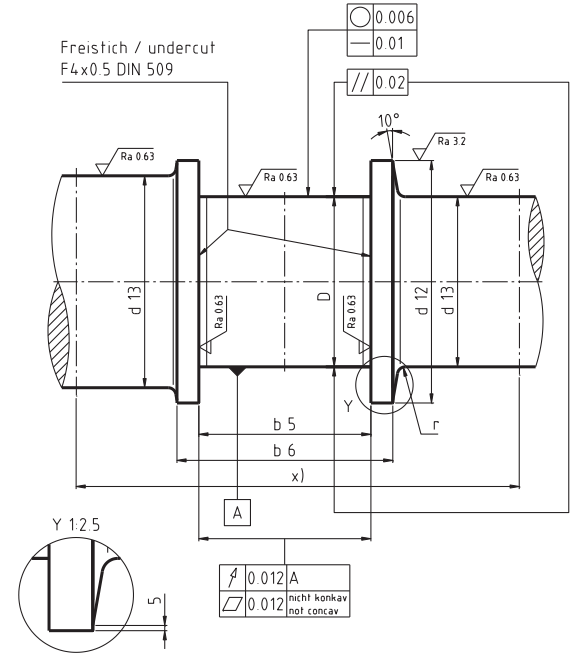
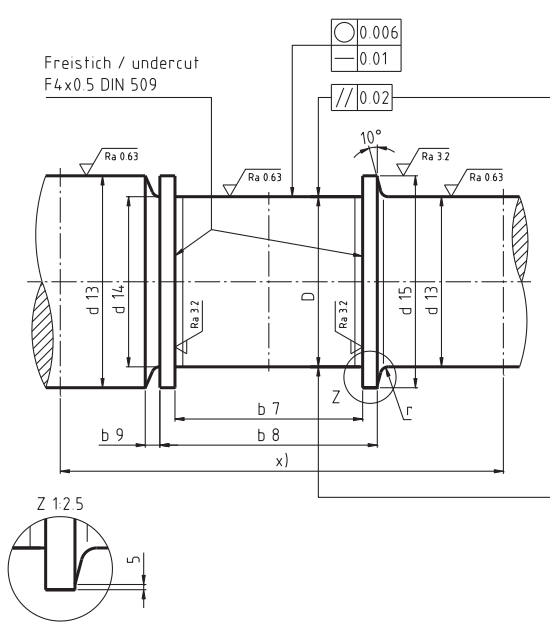


Size	D	b ₅ (±0.1)	b ₆	b ₇	b ₈	b ₉	d ₁₂		d ₁₃ (e8)/d ₁₄	d ₁₅	r
							B,K,D	A			
14	110	125.4	150	140	150	8.5	155	177/194/212	125/110	140	6
	125						170	192/209/222			
	140						190	207/224			
	160						200	227			
	180						220	-			
	220						-	-			
18	140	160.4	190	180	190	10	195	224/242/262	160/140	180	6
	160						215	244/262			
	180						240	264			
	200						250	-			
	225						275	-			
	225/225						-	-			
22	180	200.4	240	220	240	13.5	245	288/308/336	200/180	225	10
	200						265	308/328			
	225						290	328/348			
	250						315	-			
	280						345	-			
	280/280						-	-			
28	225	250.4	300	280	300	19	300	348/380/418	250/225	280	10
	250						325	378/411/438			
	280						355	408/441			
	300						375	433			
	315						390	443			
	335						410	-			
	355						430	-			
	355/355						-	-			
	355/355						-	-			
35	280	300.5	360	315	335	10	365	435/472/512	300/280	315	12
	300						385	455/487/527			
	315						400	470/507			
	335						425	490/522			
	355						450	510			
	375						470	525			
	400						495	-			
	425						520	-			
	450						520	-			
	450/450						-	-			
	450/450						-	-			

All dimensions in mm

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Shaft Dimensions Sizes 45 to 71



Size	D	b ₅ (±0.1)	b ₆	b ₇	b ₈	b ₉	d ₁₂		d _{13(e8)/d₁₄}	d ₁₅	r		
							B,D,K	A					
45	355	375.5	445	400	425	13	460	550/590/640	375/355	400	16		
	375						480	570/610/660				400/375	425
	400						505	595/635				425/400	450
	425						530	620/660				450/425	475
	450						555	645				475/450	500
	475						580	670				500/475	530
	500						605	-				530/500	560
	530						635	-				560/530	600
	560						645	-				560/560	630
	56						450	475.5				555	500
475		590	715/765/795	500/475	530								
500		615	740/790	530/500	560								
530		645	770	560/530	600								
560		675	795	600/560	630								
600		715	-	630/600	670								
630		745	-	670/630	710								
670		785	-	710/670	750								
710		780	-	710/710	790								
71		560	600.5	690	630	670	20		685	855/885/925	600/560		
	600	725						895/925/965	630/600	670			
	630	755						925/955	670/630	710			
	670	795						965	710/670	750			
	710	835						955	750/710	800			
	750	875						-	800/750	850			
	800	925						-	850/800	900			
	850	975						-	900/850	940			
	900	990						-	900/900	975			

All dimensions in mm

We reserve the right to introduce modifications