

Pedestal Bearings Type WP

Diameter Range 140...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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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 18 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 Gleitlagertechnik Weißbacher GmbH

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

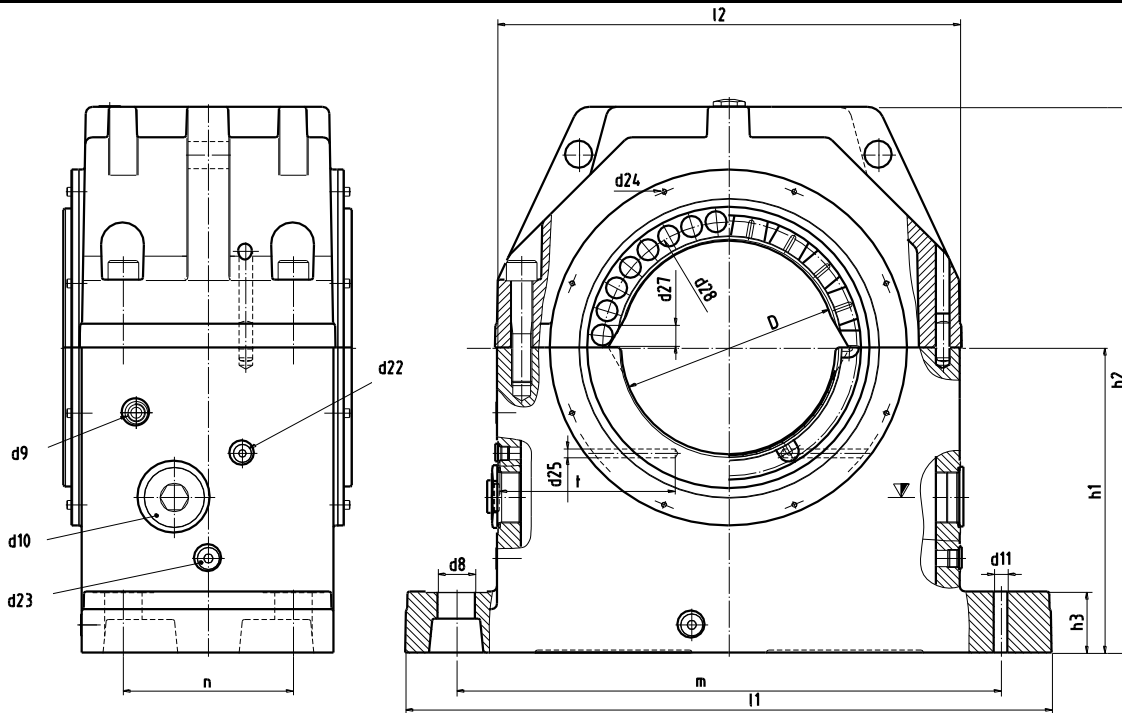
6.) Housing size

7.) Nominal bearing diameter

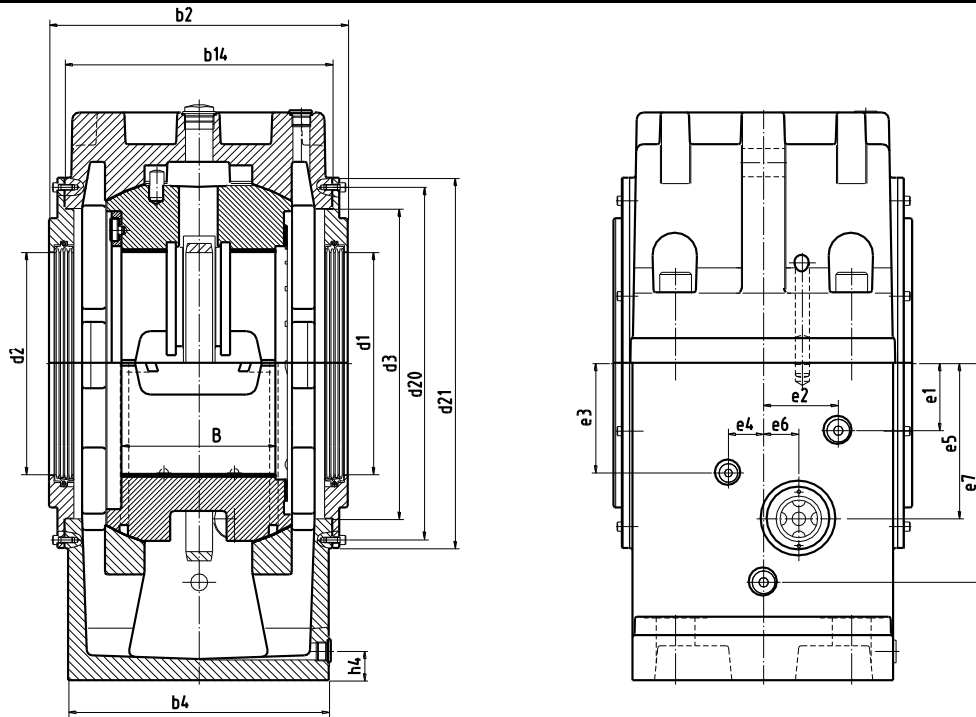
Example Pedestal bearing, housing size 22, shaft diameter 250 mm with external oil circulation system and oil cooling, two-lobe bore and taper land faces for both directions of rotation.

Slide bearing WPZYK 22-250

Dimensions of Bearings Type WP Sizes 18 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
18	140	135	160	299	245	255	140	275	40 for M30	G½	G2	15	152	195	320	340	G½	G½	8x M8	13
	160						172						215							
	180						192						240							
	200						212						250							
	225						237						275							
22	180	170	200	364	310	320	180	340	46 for M36	G¾	G2½	15	194	245	380	400	G½	G½	8x M8	13
	200						214						265							
	225						239						290							
	250						264						315							
	280						294						345							
28	225	215	250	488	370	380	225	440	55 for M42	G¾	G2½	20	241	300	500	525	G½	G¾	8x M8	13
	250						266						325							
	280						296						355							
	300						316						375							
	315						331						390							
	335						351						410							
35	280	260	300	562	440	460	280	520	55 for M42	G1	G3	20	300	365	600	640	G½	G1	12x M10	18
	300						320						385							
	315						335						400							
	335						355						425							
	355						375						450							
	375						395						470							
	400						420						495							
	425						445						520							
450	470	520																		

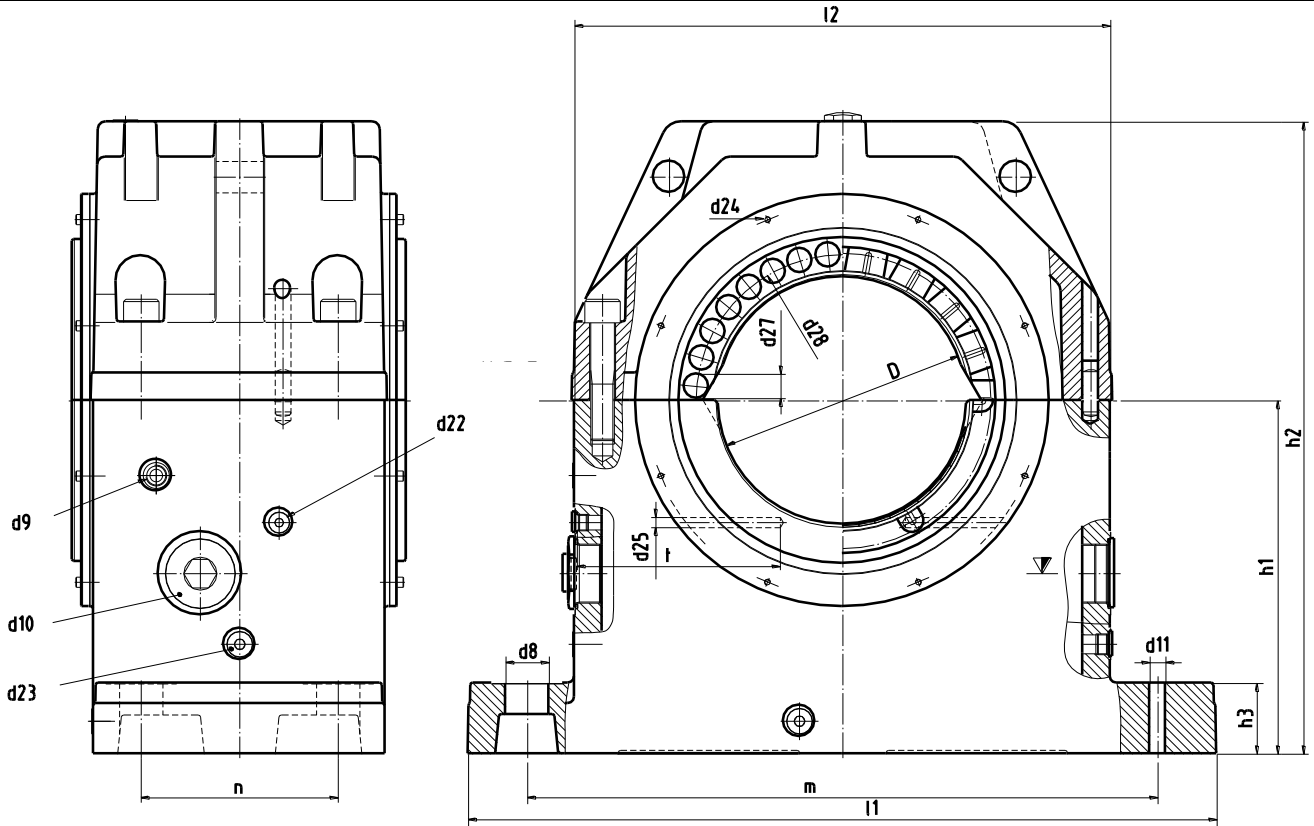


d ₂₇	d ₂₈	e ₁	e ₂	e ₃	e ₄	e ₅	e ₆	e ₇	e ₈	h ₁	h ₂	h ₃	h ₄	m	n	n ₁	l ₁	l ₂	t	z	m [kg]	V [l]
31.5/40/50	190/200/210	70	68	105	30	155	30	215	0	315	550	70	29	560	150	-	660	470	211	16/14/12	240	10
31.5/40	210/220																		18/14			
31.5	230																		20			
-	-																		190	-		
40/50/63	245/255/270	80	83	135	40	175	40	245	0	375	665	80	37	670	200	-	800	570	261	16/14/12	470	20
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	16/14/12	780	33
50/63/80	325/345/355																		18/16/12			
50/63	355/375																		20/16			
50	380																		265	22		
50	390																		256	22		
-	-																		236	-		
63/80/100	370/390/410	120	100	150	65	320	75	385	65	530	940	95	50	950	300	-	1100	800	335	16/14/12	1350	30
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																-		

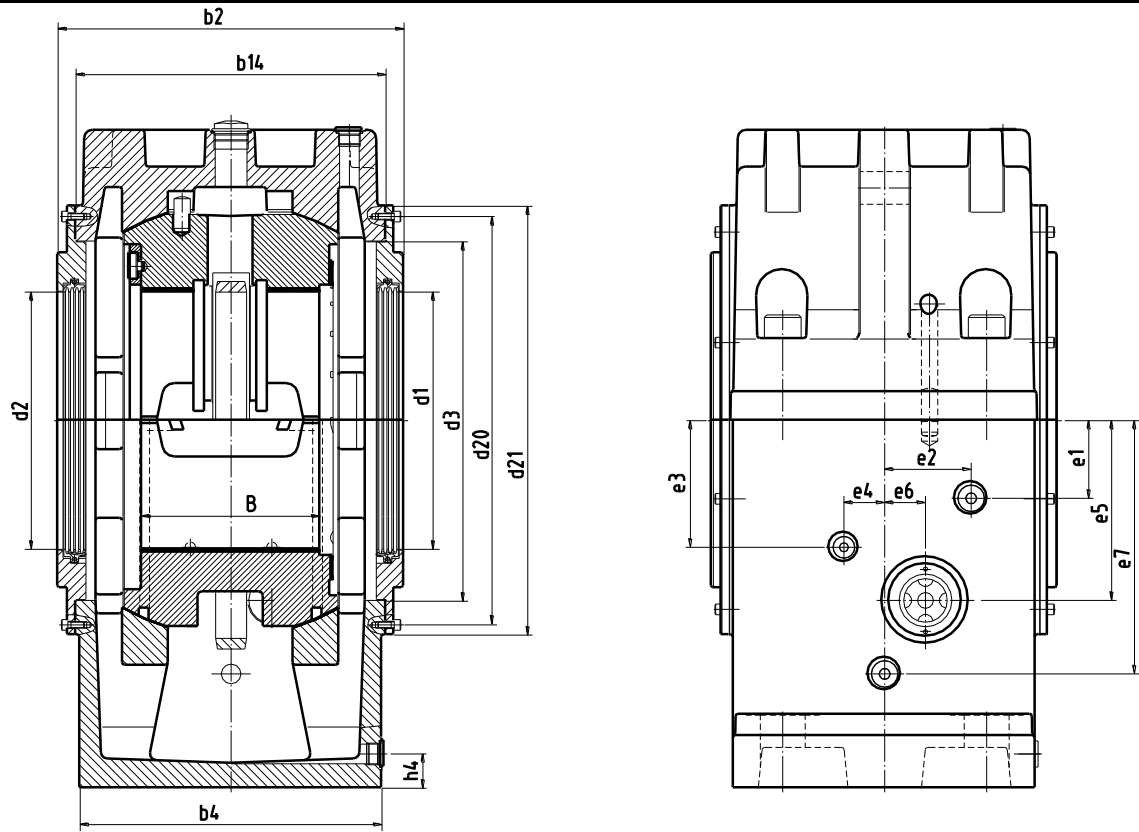
All dimensions in mm

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 ₂₇
45	355	325	375	652	530	550	355	690	62 for M48	G1	G3	20	380	460	730	780	G½	G1	12x M12	18	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
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	914	780	810	560	980	75 for M56	G1½	G4			35	595	685	1100	1150	G½	
	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					-								

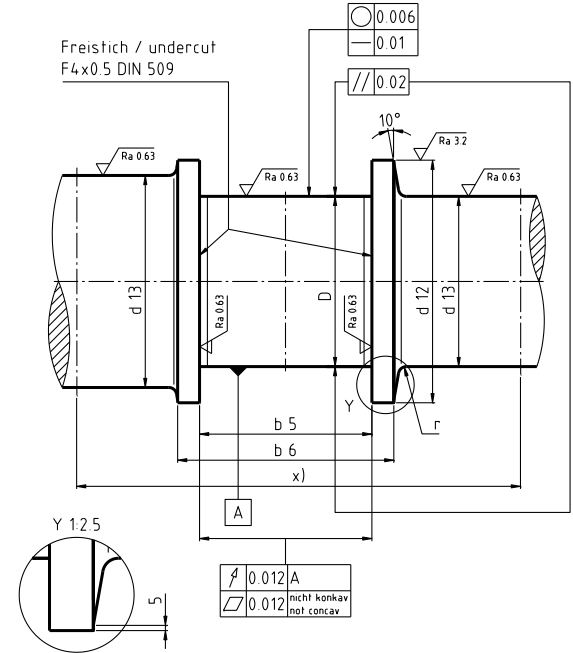
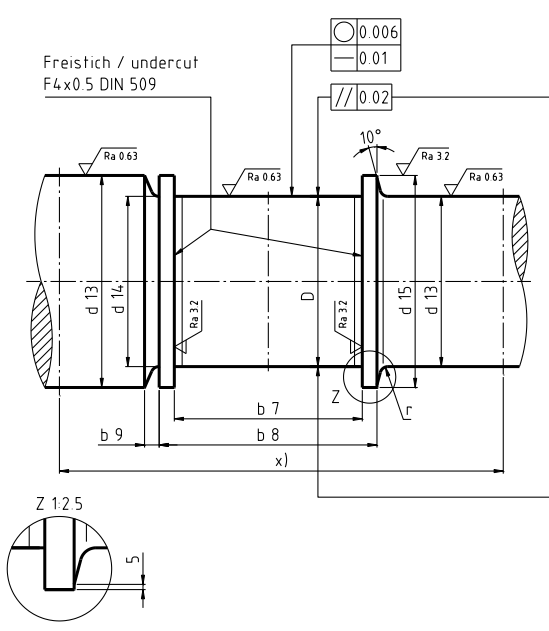


d ₂₈	e ₁	e ₂	e ₃	e ₄	e ₅	e ₆	e ₇	e ₈	h ₁	h ₂	h ₃	h ₄	m	n	n ₁	l ₁	l ₂	t	z	m [kg]	V [l]
465/485/510	130	120	190	75	360	90	420	80	600	1115	120	53	1150	355	-	1350	980	400	16/14/12	2300	50
485/505/530			190																16/14/12		
510/530			205																18/14		
535/555			215																18/16		
560			230																20		
585			245																20		
-			255																-		
-			255																-		
585/610/625	165	160	225	105	415	150	480	0	670	1315	130	58	1400	450	150	1600	1180	455	16/14/12	4000	80
610/635/650			225																16/14/12		
635/660			240																18/14		
665			255																18		
690			270																20		
-			295																-		
-			310																-		
-			310																-		
725/740/760	175	210	250	140	500	190	540	0	800	1575	206	110	1800	560	200	1990	1550	560	16/14/14	7300	115
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

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Shaft Dimensions Sizes 18 to 35

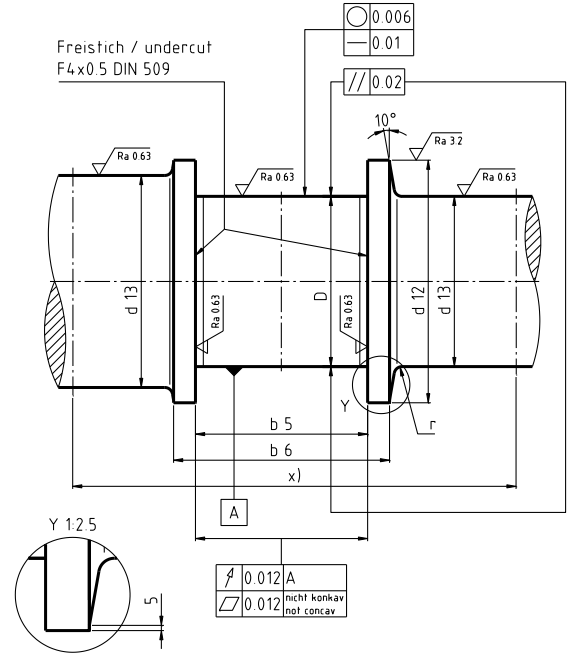
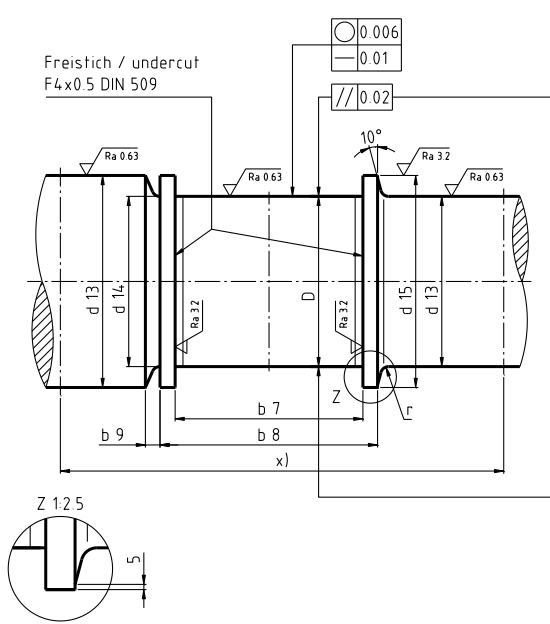


Size	D	b ₅ (±0.1)	b ₆	b ₇	b ₈	b ₉	d ₁₂		d ₁₃ (e8)/d ₁₄	d ₁₅	r	
							B,K,D	A				
18	140	160.4	190	180	190	10	195	224/242/262	160/140	180	6	
	160						215	244/262		180/160		200
	180						240	264		200/180		225
	200						250	-		225/200		250
	225						275	-		225/225		265
22	180	200.4	240	220	240	13.5	245	288/308/336	200/180	225	10	
	200						265	308/328		225/200		250
	225						290	328/348		250/225		280
	250						315	-		280/250		300
	280						345	-		280/280		315
28	225	250.4	300	280	300	19	300	348/380/418	250/225	280	10	
	250						325	378/411/438		280/250		300
	280						355	408/441		300/280		315
	300						375	433		315/300		335
	315						390	443		335/315		355
	335						410	-		355/335		375
	355						430	-		355/355		400
35	280	300.5	360	315	335	10	365	435/472/512	300/280	315	12	
	300						385	455/487/527		315/300		335
	315						400	470/507		335/315		355
	335						425	490/522		355/335		375
	355						450	510		375/355		400
	375						470	525		400/375		425
	400						495	-		425/400		450
	425						520	-		450/425		475
	450						520	-		450/450		500

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
	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

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