



SHANDONG FODA BEARING

Professional Supply of High Quality Bearings



SHANDONG FODA BEARING
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FODA /CAT.012

FODA[®]

山东锋迪轴承有限公司

SHANDONG FODA BEARING TRANSMISSION CO.,LTD



Catalogues



FODA 10

Self-lubricating rolled bearings

P. 02



FODA 20

Boundary Lubrication bearings

P. 07



FODA 30

Bimetallic bearings

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FODA 90

Bronze rolled bearings

P. 16



FODA 50

Inlaid solid lubricated bearings

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FODA 100

Copper sleeve for precision machinery

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FODA 40

Reinforced PTFE soft tape

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FODA 60

Steel ball cage

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FODA 70

Engineering Plastic Bearings

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FODA 110

Dedicated chute

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FODA 80

Copper/Iron Based Oiled Bearings

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FODA 120

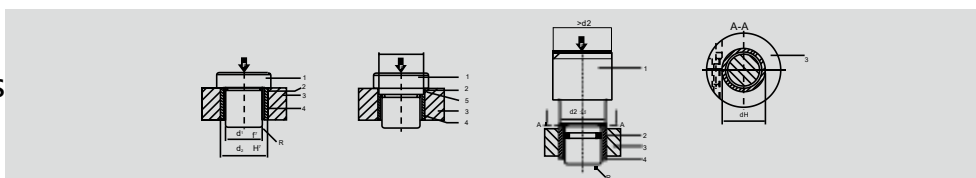
Lubricated bearings for assemblies

P. 42

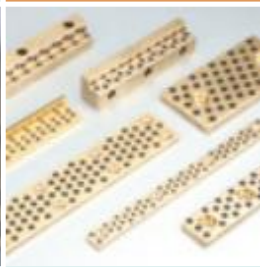
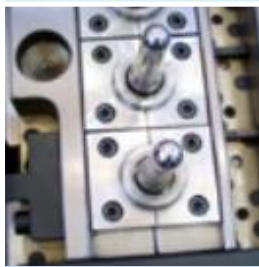
FODA

Technical parameters

P. 43



Application Examples



FODA 10(SF-1) Self-lubricating Rolled Bearings

Material organisation Metallographic organisation



1. A mixture of PTFE and Pb of 0.01 to 0.03 mm forms a good transfer film to protect the shaft against wear and provides self-lubrication of the bearing.

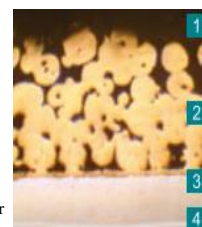
2. The copper powder layer of 0.20 to 0.35 mm has good load-bearing capacity and wear resistance, and the good thermal conductivity can transfer the heat generated during the bearing operation in a timely manner.

The composite material can penetrate into the gap between the copper powder balls.

3. Mild steel, provides good load bearing performance and heat transfer.

4. Copper/Tin plating layer 0.005mm, so that it has better corrosion resistance.

- 1、PTFE+Pb
- 2、Spherical bronze powder
- 3、Steel back
- 4、Tin or copper plating



Technical parameters

Maximum load P	Static Load	250N/mm ²
	Dynamic load	140N/mm ²
Maximum PV	Dry friction	3.6N/mm ² ·m/s
	Oil lubrication	50N/mm ² ·m/s
Working temperature		- 195°C ~ + 280°C

Friction coefficient	Dry friction	0.08 ~ 0.20
	Oil lubrication	0.02 ~ 0.07
Max line speed V	Dry friction	2m/s
	Oil lubrication	5m/s
Thermal conductivity		40W/(m·k)
Coefficient of linear expansion		12×10 ⁻⁶ /k

Application Features

- 1、Oil-free lubrication or less oil lubrication, suitable for places where it is impossible or difficult to refuel, can be No maintenance when using.
- 2、Good wear resistance, small coefficient of friction, long service life.
- 3、It has appropriate amount of elasticity and plasticity, which can distribute the stress on the wider contact surface and improve the bearing capacity of the bearings.
- 4、The coefficient of static and dynamic friction is similar, eliminating the crawling under low speed, thus ensuring the working precision of machinery.
- 5、Make the machinery to reduce vibration, reduce noise, prevent pollution, improve and optimise the working environment.
- 6、In the process of rotation can form a transfer film, play to ensure the use of the grinding shaft, no bite shaft phenomenon.

7、Low hardness requirements for grinding shafts, shafts without tempering treatment can be used, thus reducing the processing difficulty and cost of related parts.

- 8、Thin-walled structure, light weight, can reduce the mechanical volume.
- 9、The back of the steel can be plated with a variety of metals, can be used in corrosive media; has been widely used in a variety of mechanical sliding part.
For example: printing machinery, textile machinery, logistics machinery, packaging machinery, office business machinery, tobacco machinery, fitness equipment, gear pumps, micro-motors, automobiles, motorbikes, shock absorbers, agricultural and forestry machinery, food machinery, luggage hinges, automobile door hinges, seat adjustment systems, and so on.
Standard products available: straight sleeve P4, flanged sleeve P6, thrust washer P7, plate P11.
Available non-standard products: straight bushing, flap bushing, thrust washer, plate, shaft tile, slide plate, steel bushing assemblies.

FODA 11
Lead-free self
lubricating
rolled bearings

This product is a new product based on FODA 10, which was developed in accordance with international environmental requirements. It replaces lead with amphiphilic fibres and other metals and meets the EU RoHS standard for lead <0.1%. The product is widely used in general-purpose machinery and is particularly suitable for food, pharmaceutical and tobacco machinery.

Standard products available: straight sleeve P4, flanged sleeve P6, thrust washer P7, plate P11.
Available non-standard products: straight sleeve, flap sleeve, thrust washer, plate, shaft tile, slide plate, steel sleeve assemblies

FODA 10 DU Series

FODA 12(SF-1B)
Bronze self-lubricating rolled bearings

It is a mixture of specially formulated high density copper alloy as the substrate, sintered porous bronze layer in the middle and rolled PTFE on the surface. It has more corrosion resistance and higher Thermal conductivity than FODA10, in addition the copper substrate has good antimagnetic ability. The products are used in metallurgical industry, continuous rolling mills, cement grouting machines, screw conveyors, automotive door hinges, luggage compartment hinges, engine hinges, hand brakes, windscreen wipers, marine chains, drying ovens, textile machinery and so on. Standard products available: straight bushing P4, flanged bushing P6, thrust washer P7, plate P11.

Available non-standard products: straight sleeve, flanging sleeve, thrust washer, plate, shaft tile, slide plate, steel sleeve assemblies.

FODA 13(SF-1S)
Stainless steel self-lubricating bearings

The product is based on stainless steel (304/316) as a substrate, sintered porous bronze layer in the middle, rolled on the surface to PTFE as the main mixture, the material can be free of lead, can be used in medium acid, strong alkali. The products are suitable for food machinery, pharmaceutical machinery, printing and dyeing machinery, corrosion-resistant parts of the marine industry, etc., which require high corrosion resistance and hygiene.

Standard products available: straight bushing P4, flanged bushing P6, thrust washer P7, plate P11.

Available non-standard products: straight sleeve, flanging sleeve, thrust washer, plate, shaft tile, slide plate, steel sleeve assemblies.

FODA 14(SF-1T)
Bearings for Gear Pumps

This product is based on the FODA 10 material and is designed according to the specific process conditions of high PV value for gear oil pumps, which are mainly used in gear oil pumps, piston pumps, vane oil pumps and so on.

Standard products available: straight bushing P4, flanged bushing P6, thrust washer P7, plate P11.

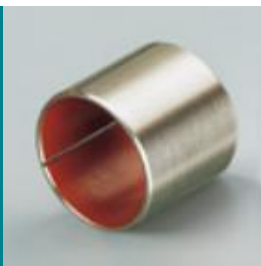
Available non-standard products: straight sleeve, flanging sleeve, thrust washer, plate, shaft tile, slide plate, steel sleeve assemblies.

FODA 15(SF-1P)
Reciprocating motion bearing

The product is based on FODA 10 material and designed according to the special process conditions of reciprocating motion, the product is mainly used in automotive, motorbike shock absorbers, hydraulic cylinders, cylinders and so on.

Standard products available: straight bushing P4, flanged bushing P6, thrust washer P7, plate P11.

Available non-standard products: straight sleeve, flanging sleeve, thrust washer, plate, shaft tile, slide plate, steel sleeve assemblies.

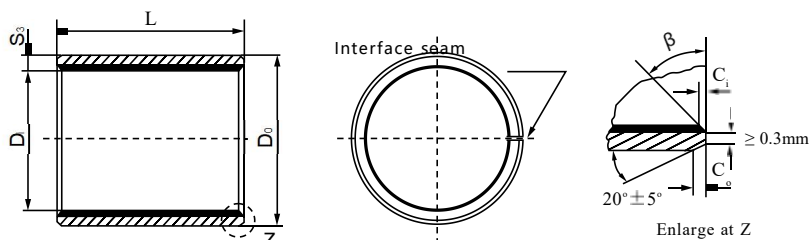
FODA 16(SF-1D)
Bearings for Hydraulics

This product is a product designed on the basis of FODA 10 material according to the special process conditions of reciprocating motion. The product is mainly used in automobile and motorbike shock absorbers, hydraulic cylinders, cylinders and so on.

Standard products available: straight bushing P4, flanged bushing P6, thrust washer P7, plate P11.

Available non-standard products: straight sleeve, flanging sleeve, thrust washer, plate, shaft tile, slide plate, steel sleeve assemblies.

FODA10(SF-1)Self-lubricating Rolled Bearings Standard Metric Size



Internal and external chamfering

S_3	C_o	C_i	β	S_3	C_o	C_i	β
0.75	0.5 ± 0.3	0.25 ± 0.2	$30^\circ \pm 5^\circ$	2.00	1.2 ± 0.4	0.50 ± 0.3	$30^\circ \pm 5^\circ$
1.00	0.6 ± 0.3	0.30 ± 0.2	$30^\circ \pm 5^\circ$	2.50	1.8 ± 0.6	0.60 ± 0.3	$45^\circ \pm 5^\circ$
1.50	0.7 ± 0.3	0.50 ± 0.3	$30^\circ \pm 5^\circ$				

Unit:mm

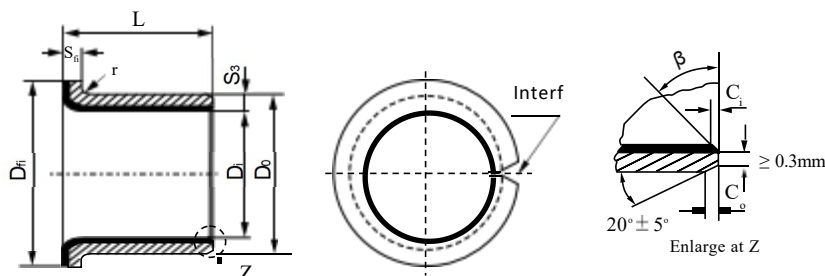
轴径(f7) Shaft D _s	座孔(H7) Housing D _H	OD 外径公差 Tolerance D _O	(ID)压装后 内孔公差 After assembled D _{i,a}	配合间隙 Clearance	壁厚 S ₃ Wall thickness	Lengths (L) lengths									
						6	8	10	12	15	20	25	30	40	50
6 ^{-0.010} -0.022	8 ^{+0.015}	8 ^{+0.055} +0.025	6.055 5.990	0.077 0.000	1.005 0.980	0606	0608	0610							
8 ^{-0.013} -0.028	10 ^{+0.015}	10 ^{+0.055} +0.025	8.055 7.990	0.083 0.003		0806	0808	0810	0812	0815					
10 ^{-0.013} -0.028	12 ^{+0.018}	12 ^{+0.065} +0.030	10.058 9.990	0.086 0.003		1006	1008	1010	1012	1015	1020				
12 ^{-0.016} -0.034	14 ^{+0.018}	14 ^{+0.065} +0.030	12.058 11.990	0.092 0.006		1206	1208	1210	1212	1215	1220	1225			
13 ^{-0.016} -0.034	15 ^{+0.018}	15 ^{+0.065} +0.030	13.058 12.990					1310		1320					
14 ^{-0.016} -0.034	16 ^{+0.018}	16 ^{+0.065} +0.030	14.058 13.990					1410	1412	1415	1420	1425			
15 ^{-0.016} -0.034	17 ^{+0.018}	17 ^{+0.065} +0.030	15.058 14.990					1510	1512	1515	1520	1525			
16 ^{-0.016} -0.034	18 ^{+0.018}	18 ^{+0.065} +0.030	16.058 15.990					1610	1612	1615	1620	1625			
17 ^{-0.016} -0.034	19 ^{+0.021}	19 ^{+0.075} +0.035	17.061 16.990	0.095 0.006				1710	1712		1720				
18 ^{-0.016} -0.034	20 ^{+0.021}	20 ^{+0.075} +0.035	18.061 17.990					1810	1812	1815	1820	1825			
20 ^{-0.020} -0.041	23 ^{+0.021}	23 ^{+0.075} +0.035	20.071 19.990	0.112 0.010	1.505 1.475			2010	2012	2015	2020	2025	2030		
22 ^{-0.020} -0.041	25 ^{+0.021}	25 ^{+0.075} +0.035	22.071 21.990					2210	2212	2215	2220	2225	2230		
24 ^{-0.020} -0.041	27 ^{+0.021}	27 ^{+0.075} +0.035	24.071 23.990							2415	2420	2425	2430		
25 ^{-0.020} -0.041	28 ^{+0.021}	28 ^{+0.075} +0.035	25.071 24.990					2510	2512	2515	2520	2525	2530	2540	2550
28 ^{-0.020} -0.041	32 ^{+0.025}	32 ^{+0.085} +0.045	28.085 27.990	0.126 0.010	2.005 1.970					2815	2820	2825	2830	2840	
30 ^{-0.020} -0.041	34 ^{+0.025}	34 ^{+0.085} +0.045	30.085 29.990						3012	3015	3020	3025	3030	3040	
32 ^{-0.025} -0.050	36 ^{+0.025}	36 ^{+0.085} +0.045	32.085 31.990	0.135 0.015							3220		3230	3240	
35 ^{-0.025} -0.050	39 ^{+0.025}	39 ^{+0.085} +0.045	35.085 34.990						2512	2515	2520	2525	2530	2540	3550
38 ^{-0.025} -0.050	42 ^{+0.025}	42 ^{+0.085} +0.045	38.085 37.990							3815			3830	3840	
40 ^{-0.025} -0.050	44 ^{+0.025}	44 ^{+0.085} +0.045	40.085 39.990					4012			4020	4025	4030	4040	4050

FODA10(SF-1)Self-lubricating Rolled Bearings Standard Metric Size

Unit:mm

轴径(f7) Shaft D _s	座孔(H7) Housing D _h	OD 外径公差 Tolerance D _o	(ID)压装后 内孔公差 After assembled D _{ia}	配合间隙 Clearance	壁厚 S ₃ Wall thickness	Lengths (L) ⁰ _{-0.40}										
						lengths										
						20	25	30	40	50	60	70	80	100	115	
45 -0.050 -0.025	50 +0.025	50 +0.085 +0.045	45.105 44.990	0.155 0.015	2.505 2.460	4520	4525	4530	4540	4550						
50 -0.050 -0.025	55 +0.030	55 +0.100 +0.055	50.110 49.990	0.160 0.015		5020		5030	5040	5050	5060					
55 -0.060 -0.030	60 +0.030	60 +0.100 +0.055	55.110 54.990	0.170 0.020				5530	5540	5550	5560					
60 -0.060 -0.030	65 +0.030	65 +0.100 +0.055	60.110 59.990					6030	6040	6050	6060	6070				
65 -0.060 -0.030	70 +0.030	70 +0.100 +0.055	65.110 64.990					6530	6540	6550	6560	6570				
70 -0.060 -0.030	75 +0.030	75 +0.100 +0.055	70.110 69.990						7040	7050	7060	7070	7080			
75 -0.060 -0.030	80 +0.030	80 +0.100 +0.055	75.110 74.990					7530	7540	7550	7560	7570	7580			
80 -0.045	85 +0.035	85 +0.120 +0.070	80.155 80.020	0.201 0.020	2.490 2.440				8040	8050	8060	8070	8080	80100		
85 -0.054	90 +0.035	90 +0.120 +0.070	85.155 85.020	0.209 0.020					8540		8560		8580	85100		
90 -0.054	95 +0.035	95 +0.120 +0.070	90.155 90.020						9040	9050	9060		9080	90100		
95 -0.054	100 +0.035	100 +0.120 +0.070	95.155 95.020							9550	9560		9580	95100		
100 -0.054	105 +0.035	105 +0.120 +0.070	100.155 100.020							10050	10060		10080		100115	
105 -0.054	110 +0.035	110 +0.120 +0.070	105.155 105.020								10560		10580		105115	
110 -0.054	115 +0.035	115 +0.120 +0.070	110.115 110.020								11060		11080		110115	
120 -0.054	125 +0.040	125 +0.170 +0.100	120.210 120.070	0.264 0.070	2.465 2.415						12060		12080	120100		
125 -0.063	130 +0.040	130 +0.170 +0.100	125.210 125.070	0.273 0.070							12560			125100	125115	
130 -0.063	135 +0.040	135 +0.170 +0.100	130.210 130.070								13060		13080	130100		
140 -0.063	145 +0.040	145 +0.170 +0.100	140.210 140.070								14060		14080	140100		
150 -0.063	155 +0.040	155 +0.170 +0.100	150.210 150.070								15060		15080	150100		
160 -0.063	165 +0.040	165 +0.170 +0.100	160.210 160.070								16060		16080	160100	160115	
180 -0.063	185 +0.046	185 +0.210 +0.130	180.216 180.070	0.279 0.070	2.465 2.415								18080	180100		
190 -0.072	195 +0.046	195 +0.210 +0.130	190.216 190.070	0.288 0.070										19080	190100	
200 -0.072	205 +0.046	205 +0.210 +0.130	200.016 200.070											20080	200100	
220 -0.072	225 +0.046	225 +0.210 +0.130	220.216 220.070								20060		22080	220100		
250 -0.072	255 +0.052	255 +0.260 +0.170	250.222 250.070	0.294 0.070	2.465 2.415								25080	250100		
260 -0.081	265 +0.052	265 +0.260 +0.170	260.222 260.070	0.303 0.070										26080	260100	
280 -0.081	285 +0.052	285 +0.260 +0.170	280.222 280.070											28080	280100	
300 -0.081	300 +0.052	300 +0.260 +0.170	300.222 300.070													

FODA10F Self-lubricating Flanged Rolled Bearings Standard Metric Size



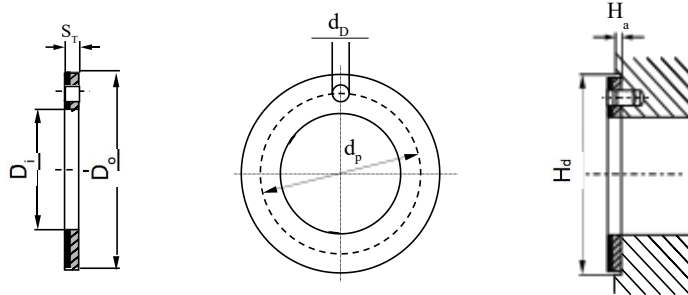
S ₃	1.0	1.5	2.0	2.5
r	1 ^{+0.5}	1 ± 0.5	1.5 ± 0.5	2 ± 0.5

* Please refer to Straight Sleeve for internal and external chamfering of end face.

Unit:mm

轴径(f7) Shaft D _s	座孔(H7) Housing D _h	OD 外径公差 Tolerance D _o	(ID)压装后 内孔公差 After assembled D _{1a}	配合间隙 Clearance	壁厚 S ₃ Wall thickness	轴径(f7) Shaft D _s	Sizes				
							D _i	D _o	D _h ±0.5	L ±0.25	S _h -0.2
6 -0.010 -0.022	8 +0.015	8 +0.055 +0.025	6.055 5.990	0.077 0.000	06040	1.005 0.980	6	8	12	4	1
					06070					7	
8 -0.013 -0.028	10 +0.015	10 +0.055 +0.025	8.055 7.990	0.083 0.003	08055		8	10	15	5.5	
					08075					7.5	
10 -0.016 -0.034	12 +0.018	12 +0.055 +0.025	10.058 9.990	0.086 0.003	10070		10	12	18	7	
					10090					9	
					10120					12	
12 -0.016 -0.034	14 +0.018	14 +0.065 +0.030	12.058 11.990	0.092 0.006	12070		12	14	20	7	
					12090					9	
					12120					12	
14 -0.016 -0.043	16 +0.018	16 +0.065 +0.030	14.058 13.990		14120		14	16	22	12	
					14170					17	
					15090					9	
15 -0.016 -0.034	17 +0.018	17 +0.065 +0.030	15.058 14.990		15120		15	17	23	12	
					15170					17	
					16120					12	
16 -0.016 -0.034	18 +0.018	18 +0.065 +0.030	16.058 15.990		16170		16	18	24	17	
					18120					12	
					18170					17	
18 -0.016 -0.034	20 +0.021	20 +0.075 +0.035	18.061 17.990	18200	18		20	26	20		
20 -0.020 -0.041	23 +0.021	23 +0.075 +0.035	20.071 19.990	0.112 0.010	20115		1.505 1.475	20	23	30	
					20165	16.5					
					20215	21.5					
22 -0.020 -0.041	25 +0.021	25 +0.075 +0.035	22.071 21.990		22150	22		25	32	15	
					22200					20	
					25115					11.5	
25 -0.020 -0.041	28 +0.021	28 +0.075 +0.035	25.071 24.990		25165	25		28	35	16.5	
					25215					21.5	
30 -0.025 -0.050	34 +0.025	34 +0.075 +0.035	30.285 29.990	0.126 0.010	30160	2.005 1.970	30	34	42	16	2
					30260					26	
35 -0.025 -0.050	39 +0.025	39 +0.085 +0.045	35.085 34.990	0.135 0.015	35160		35	39	47	16	
					35260					26	
40 -0.025 -0.050	44 +0.025	44 +0.085 +0.045	40.085 39.990		40260		40	44	53	26	
					40400					40	

FODA 10W Self-lubricating composite gasket standard size



Unit:mm

Shaft D _s	Model Specification	Size of Washer				Mounting Dimension		H _i +0.12
		D _i +0.25	D _o -0.25	S _T -0.05	d _p ±0.125	d _D ^{+0.4} _{-0.1}	H _a ±0.2	
8	W10	10	20	1.5	15	1.5	1	20
10	W12	12	24		18			24
12	W14	14	26		20	2		26
14	W16	16	30		23			30
16	W18	18	32		25			32
18	W20	20	36		28	3		36
20	W22	22	38		30			38
22	W24	24	42		33			42
24	W26	26	44		35			44
26	W28	28	48		38	4		48
30	W32	32	54		43			54
36	W38	38	62		50			62
40	W42	42	66		54			66
46	W48	48	74	2	61	1.5	74	
50	W52	52	78		65		78	
60	W62	62	90		76		90	

FODA 20(SF-2) Boundary Lubrication Bearings



Material organisation Metallography

- 1、POM
- 2、Spherical bronze powder
- 3、Steel back
- 4、Copper plated or tin plated



Technical parameters

Load capacity P	Static load	250N/mm ²
	Dynamic load	140N/mm ²
Maximum PV	Grease	3N/mm ² ·m/s
Working temperature		-40°C ~ +130°C

Friction coefμ (Grease)	0.05 ~ 0.25
Max line speed V	2.5m/s
Thermal conductivity	4W/(m·k)
Coefficient of linear expansion	12×10 ⁻⁶ /k
Grease the bore during assembly	

FODA 20 Application Features

1、 Working in less oil, the performance exceeds other known boundary lubrication materials.	in order to achieve a better assembly dimensions
2、 Friction surface is hard and thick, good wear resistance.	6、 Regular oil pockets on the surface of the wear layer can be used as oil storage.
3、 High mechanical strength, can withstand large dynamic and static loads. Suitable for high loads at low speeds under the rotary motion, swing motion and often in the case of load opening and closing frequently and is not easy to form a hydrodynamic lubrication of the occasions	7、 The products are mainly used in automobile chassis, pedal assembly, balance bushings, brake calipers, steering main pin bushings, cranes, truck-mounted cranes, metallurgical machinery, mining machinery, water conservancy machinery, steam locomotives, construction machinery, agricultural machinery, rolling equipment, logistics machinery, hydraulic motors, hydraulic cylinders and so on.
4、 in the boundary lubrication conditions can be a long time without refuelling maintenance, such as refuelling in the process of using longer working life.	
5、 The surface of the plastic layer in the processing of moulding can leave a certain margin, assembly pressure into the seat hole can be processed after their own,	Available standard products: straight bushing P9, thrust washer P11, plate P11. Available non-standard products: straight bushing, flap bushing, thrust washer, plate, shaft tile, slide plate, steel bushing assemblies.

FODA 21 Boundary lubricated lead- free bearings



FODA 21 is improved on the basis of FODA 20. The same product abroad is DX bearing, its performance is the same as FODA 20, but the product does not contain lead, in line with environmental requirements. The products are used in textile equipment, piston pump swing parts, automobile joystick parts and other occasions of medium load, medium speed, oil Grease.

Available standard products: straight sleeve P9, thrust washer P11, plate P11.

Available non-standard products: straight sleeve, thrust washer, plate, shaft tile, slide plate, steel sleeve combination parts.

FODA 22 Boundary lubricated lead- free bearings



It is a polymer material with steel backing, sintered spherical tin bronze powder in the middle and rolled modified paraformaldehyde and special lubricant on the surface. The same product in foreign countries is DS bearing, which is suitable for dry friction and less lubrication occasions under normal temperature working condition, with the advantages of low friction coef, good wear resistance and oil-free lubrication. Currently the product has been applied in the applications of oscillating motion, easy to wear and corrosion, such as winches, bulldozers, printing and dyeing machines, coal mining machines, cranes, aerial work machines and so on.

Available standard products: straight sleeve P9, thrust washer P11, plate P11.

Available non-standard products: straight sleeve, thrust washer, plate, shaft tile, slide plate, steel sleeve combination parts.

FODA 23 Boundary lubricated lead- free bearings



It is improved from FODA 20 and has similar performance to FODA 20.A 20

Available standard products: straight sleeve P9, thrust washer P11, plate P11.

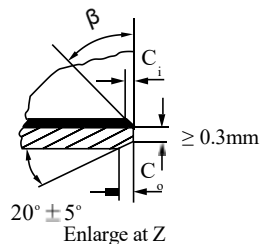
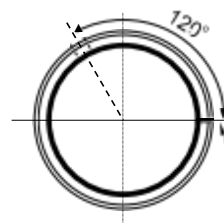
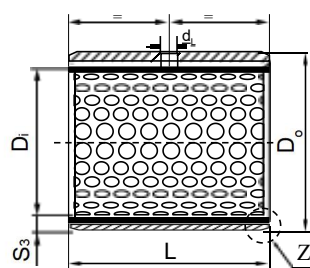
Available non-standard products: straight sleeve, thrust washer, plate, shaft tile, slide plate, steel sleeve combination parts.

FODA 17 Self-lubricating shims FODA 24 Boundary lubricated unleaded shingles



FODA 17 self-lubricating shims and FODA 24 boundary lubricating shims are widely used in high-pressure oil pumps and other machinery. .

FODA 20 Boundary lubrication Bearings Standard Metric Size



Internal and external chamfering

S_3	C_o	C_i	β
1.0	0.6 ± 0.3	0.30 ± 0.2	$30^\circ \pm 5^\circ$
1.5	0.7 ± 0.3	0.50 ± 0.2	$30^\circ \pm 5^\circ$

S_3	C_o	C_i	β
2.00	1.2 ± 0.4	0.50 ± 0.3	$30^\circ \pm 5^\circ$
2.50	1.8 ± 0.6	0.80 ± 0.3	$45^\circ \pm 5^\circ$

Unit:mm

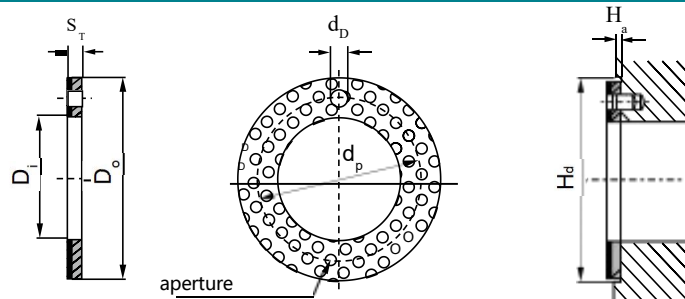
轴径(f7) Shaft D _s	座孔(H7) Housing D _{H1}	OD 外径公差 Tolerance D _O	(ID)压装后 内孔公差 After assembled D _{ia}	配合间隙 Clearance	壁厚 S ₃ Wall thickness	油孔 Oil hole d _L	长度 lengths L _{0-0.40}											
							10	15	20	25	30	35	40	45	50	60		
10 _{-0.022}	12 ^{+0.018}	12 _{+0.065 +0.030}	10.108 10.040	0.130 0.040	0.980 0.955	4	1010	1015	1020									
12 _{-0.027}	14 ^{+0.018}	14 _{+0.065 +0.030}	12.108 12.040					1210	1215	1220								
14 _{-0.027}	16 ^{+0.018}	16 _{+0.065 +0.030}	14.108 14.040				0.135 0.040		1415	1420								
15 _{-0.027}	17 ^{+0.018}	17 _{+0.065 +0.030}	15.108 15.040						1515	1520	1525							
16 _{-0.027}	18 ^{+0.018}	18 _{+0.065 +0.030}	16.108 16.040						1615	1620	1625							
18 _{-0.027}	20 ^{+0.021}	20 _{+0.075 +0.035}	18.111 18.040					0.138 0.040		1815	1820	1825						
20 _{-0.033}	23 ^{+0.021}	23 _{+0.075 +0.035}	20.131 20.050	0.164 0.050	1.475 1.445	6		2015	2020	2025	2030							
22 _{-0.033}	25 ^{+0.021}	25 _{+0.075 +0.035}	22.131 22.050					2215		2225								
25 _{-0.033}	28 ^{+0.021}	28 _{+0.075 +0.035}	25.131 25.050					2515	2520	2525	2530							
28 _{-0.033}	32 ^{+0.025}	32 _{+0.085 +0.045}	28.155 28.060	0.188 0.060				2820		2830								
30 _{-0.033}	34 ^{+0.025}	34 _{+0.085 +0.045}	30.155 30.060		1.970 1.935				3020	3025	3030		3040					
35 _{-0.039}	39 ^{+0.025}	39 _{+0.085 +0.045}	35.155 35.060	0.194 0.060					3520		3530	3535	3540					
40 _{-0.039}	44 ^{+0.025}	44 _{+0.085 +0.045}	40.155 40.060	0.234 0.080	2.460 2.415	8			4020		4030		4040		4050			
45 _{-0.039}	50 ^{+0.025}	50 _{+0.085 +0.045}	45.195 45.080				0.234 0.080			4520		4530		4540	4545	4550		
50 _{-0.039}	55 ^{+0.030}	55 _{+0.100 +0.055}	50.200 50.080								5030		5040		5050	5060		
55 _{-0.046}	60 ^{+0.030}	60 _{+0.100 +0.055}	55.200 55.080				0.246 0.080					5530		5540		5550	5560	
60 _{-0.046}	65 ^{+0.030}	65 _{+0.100 +0.055}	60.200 60.080								6030		6040		6050	6060		

FODA 20 Standard dimensions for boundary lubrication bearings

Unit:mm

轴径(f7) Shaft D _s	座孔(H7) Housing D _H	OD 外径公差 Tolerance D _o	(ID)压装后 内孔公差 After assembled D _{La}	配合间隙 Clearance	壁厚 S ₃ Wall thickness	油孔 Oil hole d _L	Lengths (L) ⁰ _{-0.40}								
							40	50	60	80	90	95	100	110	120
65 ^{-0.046}	70 ^{+0.030}	70 ^{+0.100} _{+0.055}	65.200 65.080	0.246 0.080	2.460 2.415	8	6540		6560						
70 ^{-0.046}	75 ^{+0.030}	75 ^{+0.100} _{+0.055}	70.200 70.080				7040	7050		7080					
75 ^{-0.046}	80 ^{+0.030}	80 ^{+0.100} _{+0.055}	75.200 75.080				7540		7560	7580					
80 ^{-0.046}	85 ^{+0.035}	85 ^{+0.120} _{+0.070}	80.265 80.100	0.313 0.100	2.450 2.385	9.5	8040		8060	8080					
85 ^{-0.054}	90 ^{+0.035}	90 ^{+0.120} _{+0.070}	85.265 85.100	8540				8560	8580						
90 ^{-0.054}	95 ^{+0.035}	95 ^{+0.120} _{+0.070}	90.265 90.100	9040				9060	9080	9090					
100 ^{-0.054}	105 ^{+0.035}	105 ^{+0.120} _{+0.070}	100.265 100.100	0.321 0.100				10050		10080		10095			
105 ^{-0.054}	110 ^{+0.035}	110 ^{+0.120} _{+0.070}	105.265 105.100						10560	10580		10595		105110	
110 ^{-0.054}	115 ^{+0.035}	115 ^{+0.120} _{+0.070}	110.265 110.110						11060	11080		11095		110110	
120 ^{-0.054}	125 ^{+0.040}	125 ^{+0.170} _{+0.100}	120.270 120.110				0.324 0.100			12060	12080			120110	
125 ^{-0.063}	130 ^{+0.040}	130 ^{+0.170} _{+0.100}	125.270 125.110							12560				125110	
130 ^{-0.063}	135 ^{+0.040}	135 ^{+0.170} _{+0.100}	130.270 130.110						13050	13060	13080		130100		
140 ^{-0.063}	145 ^{+0.040}	145 ^{+0.170} _{+0.100}	140.270 140.110						14050	14060	14080		140100		
150 ^{-0.063}	155 ^{+0.040}	155 ^{+0.170} _{+0.100}	150.270 150.110						15050	15060	15080		150100		
160 ^{-0.063}	165 ^{+0.040}	165 ^{+0.170} _{+0.100}	160.270 160.110	0.339 0.110		9.5		16050	16060	16080		160100			
170 ^{-0.063}	175 ^{+0.040}	175 ^{+0.170} _{+0.100}	170.270 170.110						17050		17080		170100		
180 ^{-0.063}	185 ^{+0.046}	185 ^{+0.210} _{+0.130}	180.270 180.110						18050	18060	18080		180100		
190 ^{-0.072}	195 ^{+0.046}	195 ^{+0.210} _{+0.130}	190.276 190.110						19050	19060	19080		190100		190120
200 ^{-0.072}	205 ^{+0.046}	205 ^{+0.210} _{+0.130}	200.276 200.110						20050	20060	20080		200100		200120
220 ^{-0.072}	225 ^{+0.046}	225 ^{+0.210} _{+0.130}	220.276 220.110	0.354 0.110		9.5		22050	22060	22080		220100		220120	
240 ^{-0.072}	245 ^{+0.046}	245 ^{+0.210} _{+0.130}	240.276 240.110						24050	24060	24080		240100		240120
250 ^{-0.072}	255 ^{+0.052}	255 ^{+0.260} _{+0.170}	250.282 250.110						25050	25060	25080		250100		250120
260 ^{-0.081}	265 ^{+0.052}	265 ^{+0.260} _{+0.170}	260.282 260.110						26050	26060	26080		260100		260120
280 ^{-0.081}	285 ^{+0.052}	285 ^{+0.260} _{+0.170}	280.282 280.110						28050	28060	28080		280100		280120
300 ^{-0.081}	305 ^{+0.052}	305 ^{+0.260} _{+0.170}	300.282 300.110						30050	30060	30080		300100		300120

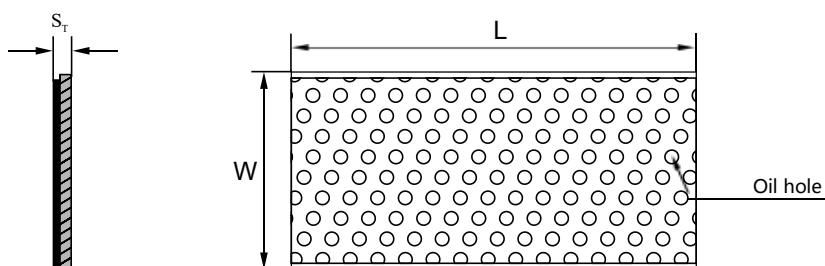
FODA 20W Thrust Washers Standard Metric Size



Unit:mm

轴径 Shaft D _s	型号规格 Standard No.	Size of Washer				Mounting Dimensions		
		D _i +0.25	D _o -0.25	S _T -0.05	d _p ±0.125	d _D ^{+0.4} _{+0.1}	H _a ±0.2	H _t +0.12
8	W10	10	20	1.5	15	1.5	1	20
10	W12	12	24		18			24
12	W14	14	26		20	2		26
14	W16	16	30		23			30
16	W18	18	32		25	3		32
18	W20	20	36		28			36
20	W22	22	38		30			38
22	W24	24	42		33			42
24	W26	26	44		35			44
26	W28	28	48		38	4		48
30	W32	32	54		43			54
36	W38	38	62		50			62
40	W42	42	66		54			66
46	W48	48	74	2	61		1.5	74
50	W52	52	78		65			78
60	W62	62	90		76	90		

FODA 20S Plate Standard Metric Size



Unit:mm

Standard No.	lengths(L) ± 1	Widths(W) ± 1	Thick-walled(S _s)-0.05
FODA 20S	500	150	1.0
FODA 20S	500	150	1.5
FODA 20S	500	150	2.0
FODA 20S	500	150	2.5

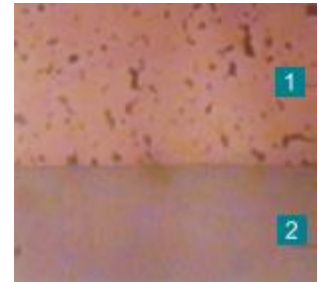
FODA 30 Bimetallic bearings



Products Briefing

FODA 30 Series Bimetallic Bushings, Bimetallic bushings, shims and thrust washers are made of high quality low carbon steel with sintered tin-bronze alloy, which is rolled into spherical oil pockets for easy storage of oil and grease, effectively reducing wear and tear. The steel backing can be copper plated or tin plated as required. The products are mainly used in automobile engine connecting rods, rocker arms, transmission gears, automobile steering knuckles, steel plate springs, construction machinery, agricultural machinery and so on.

Metallographic organisation



- 1、Spherical Bronze Powder
- 2、Steel back

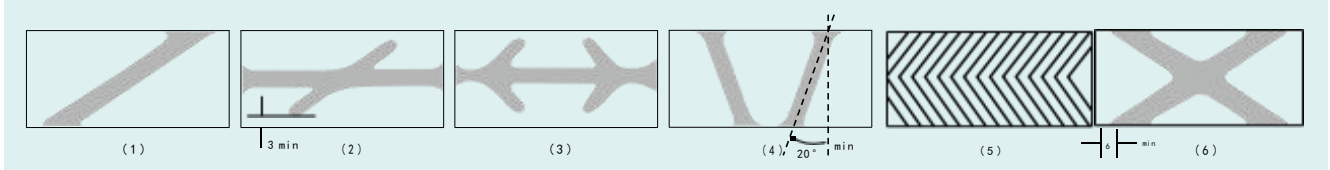
Physical Property

Maximum load	Static load	250N/mm ²	相配轴	Hardness	≥53HRC
	Dynamic load	140N/mm ²		Roughness	Ra=0.16~0.63
Maximum PV	Grease	2.8N/mm ² ·m/s	Max line speed	Grease	2.5m/s
	Oil lubrication	10N/mm ² ·m/s		Oil lubrication	5m/s
Working temperature		-40°C ~+250°C	Friction coef μ		0.06~0.20
Alloy hardness		60~100HB	Thermal conductivity		60W/(m·k)
Shear strength		350N/mm ²	Thermal conductivity		14×10 ⁻⁶ /k

Technical parameters

Product Model	Maximum load/压力 (N/mm ²)	拉伸强度 (N/mm ²)	Max line speed (Oil lubrication) (m/s)	Friction coef (μ)	合金层 Hardness	最大PV值 (N/mm ² ·m/s)	
						Grease	Oil lubrication
FODA 30(CuSn10Pb10)	150	185	5	0.06-0.14	70-90HB	2.8	10
FODA 31(08G)	140	150	10	0.06-0.16	70-100HB	2.8	10
FODA 32(CuPb24Sn)	130	170	10	0.06-0.16	40-60HB	2.8	10
FODA 33(CuPb30)	120	200	15	0.08-0.16	30-45HB	2.5	8
FODA 34(AlSn20Cu)	100	200	25	0.08-0.17	30-40HB	/	6

FODA 30Bimetallic bearing oil groove form



FODA 30Bimetallic bearing buckle form



FODA 30 Bimetallic bearing

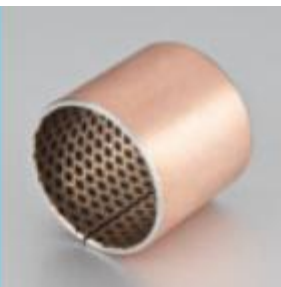


It has high fatigue strength and load bearing capacity, high impact resistance, good corrosion and wear resistance, with hardened shaft, the strength of the shaft is not less than 53HRC. It is suitable for medium load, medium to high speed, and large impact load bearings, rolled bearings, thrust washers, and internal combustion engine connecting rod piston pin bushings used in machinery and equipment.

Available standard products: straight sleeve P14, thrust washer P11, plate P11.

Available non-standard products: straight bushing, thrust washer, plate, shaft tile, slide plate, steel bushing combination parts.

FODA 31 Bimetallic bearing



FODA 31 Bimetallic rolled bearings with solid lubricant are new thin-walled solid lubricated bearings made of FODA 30 bimetallic material with alloy layer embedded with special solid lubricant. Due to the use of high-strength load-bearing alloy material as the substrate, the ideal filling material for wear-resistant agent, reasonable diamond-shaped block lubrication design, the lubrication area of more than 25 per cent, so that it can play a good lubrication and anti-wear performance.

Available standard products: straight sleeve P14, thrust washer P11, plate P11.

Available non-standard products: straight bushing, thrust washer.

FODA 32 Bimetallic bearing



High fatigue strength and load bearing capacity, good bearing surface performance, easy to lubricate oil penetration, with soft alloy coating, can be with the hard or soft shaft with. Hardness is not less than 45HRC, commonly used in internal combustion engine main shaft and connecting rod bearings, thrust shims, rolled bearings and so on.

Available standard products: straight sleeve P14, thrust washer P11, plate P11.

Available non-standard products: straight bushing, thrust washer, plate, shaft tile, slide plate, steel bushing combination parts.

FODA 33 Bimetallic bearing



Have medium fatigue strength and bearing capacity, good bearing surface performance, easy to lubricating oil penetration, bearing working surface must be plated with soft alloy layer, mating shaft strength Hardness not less than 270HB. commonly used in internal combustion engine spindle and connecting rod bearings, thrust pads, rolled bearings.

Available standard products: straight sleeve P14, thrust spacer P11, plate P11.

Available non-standard products: straight bushing, thrust washer, plate, shaft tile, slide plate, steel bushing combination parts.

FODA 34 High Tin Aluminium bearing

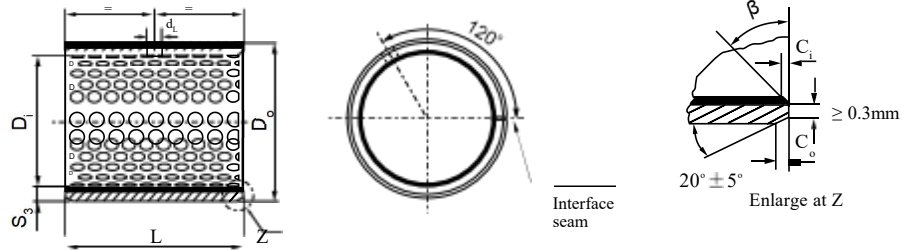


It has medium fatigue strength and bearing capacity, good corrosion resistance, good bearing surface performance, can be matched with flexible shaft, shaft strength Hardness is not less than 250HB. It is commonly used in the internal combustion engine main shaft and connecting rod bearings, thrust shims, rolled bearings, or pressurised air, refrigeration machine bearings.

Available standard products: straight sleeve P14, thrust spacer P11, plate P11.

Available non-standard products: straight bushing, thrust washer, plate, shaft tile, slide plate, steel bushing combination parts.

FODA 30Bimetallic bearings Standard Metric Size



Internal and external chamfering

S ₃	C _o	C _i	β
0.75	0.5 ± 0.3	0.25 ± 0.2	35° ± 5°
1.00	0.6 ± 0.3	0.30 ± 0.2	35° ± 5°
1.50	0.7 ± 0.3	0.50 ± 0.3	35° ± 5°

S ₃	C _o	C _i	β
2.00	1.2 ± 0.4	0.50 ± 0.3	35° ± 5°
2.50	1.8 ± 0.6	0.60 ± 0.3	45° ± 5°

Unit:mm

内径 D _i φd	外径 D _o φD	轴径(f7) Shaft D _s	座孔(H7) Housing D _H	OD 外径公差 Tolerance D _o	(ID)压装后 内孔公差 After assembled D _{i,a}	配合间隙 Clearance	油孔 Oil hole d _L	Lengths (L) ⁰ _{-0.40}						
								10	15	20	25	30	40	50
10	12	10 _{-0.022}	12 ^{+0.018}	+0.148 +0.010	0.170 0.010	0.995 0.935	4	1010	1015	1020				
12	14	12 _{-0.027}	14 ^{+0.018}					1210	1215	1220				
14	16	14 _{-0.027}	16 ^{+0.018}					1410	1415	1420				
15	17	15 _{-0.027}	17 ^{+0.018}					1510	1515	1520				
16	18	16 _{-0.027}	18 ^{+0.018}					1610	1615	1620				
18	20	18 _{-0.027}	20 ^{+0.021}	+0.151 + 0.010	0.178 0.010	1.490 1.430	6	1810	1815	1820	1825			
20	23	20 _{-0.033}	23 ^{+0.021}	+0.161 +0.020	0.194 0.020			2010	2015	2020	2025			
22	25	22 _{-0.033}	25 ^{+0.021}					2210	2215	2220	2225			
24	27	24 _{-0.033}	27 ^{+0.021}					2410	2415	2420	2425	2430		
25	28	25 _{-0.033}	28 ^{+0.021}						2515	2520	2525	2530		
26	30	26 _{-0.033}	30 ^{+0.021}	+0.181 +0.040	0.214 0.040	1.980 1.920	8		2615	2620	2625	2630		
28	32	28 _{-0.033}	32 ^{+0.025}	+0.185 +0.040	0.218 0.040				2815	2820	2825	2830	2840	
30	34	30 _{-0.033}	34 ^{+0.025}						3015	3020	3025	3030	3040	
32	36	32 _{-0.039}	36 ^{+0.025}						3215	3220	3225	3230	3240	
35	39	35 _{-0.039}	39 ^{+0.025}							3520	3525	3530	3540	3550
38	42	38 _{-0.039}	42 ^{+0.025}	+0.185 +0.040	0.224 0.040	8			3820	3825	3830	3840	3850	
40	44	40 _{-0.039}	44 ^{+0.025}								4020	4025	4030	4040

FODA 30Bimetallic bearings Standard Metric Size

Unit:mm

内径 D _i φd	外径 D _o φD	轴径(f7) Shaft D _s	座孔(H7) Housing D _h	OD 外径公差 Tolerance D _o	(ID)压装后 内孔公差 After assembled D _{i,a}	配合间隙 Clearance	油孔 Oil hole d _L	Lengths (L) ⁰ _{-0.40}							
								25	30	40	50	60	80	90	100
45	50	45 _{-0.039}	50 ^{+0.025}	+0.225 +0.080	0.264 0.080	2.460 2.400	8	4525	4530	4540	4550				
50	55	50 _{-0.039}	55 ^{+0.030}	+0.230+ 0.080	0.269 0.080				5030	5040	5050	5060			
55	60	55 _{-0.046}	60 ^{+0.030}						5530	5540	5550	5560			
60	65	60 _{-0.046}	65 ^{+0.030}						6030	6040	6050	6060			
65	70	65 _{-0.046}	70 ^{+0.030}						6530	6540	6550	6560			
70	75	70 _{-0.046}	75 ^{+0.030}						7030	7040	7050	7060	7080		
75	80	75 _{-0.046}	80 ^{+0.030}	+0.235 +0.080	0.281 0.080		9.5		7530	7540	7550	7560			
80	85	80 _{-0.046}	85 ^{+0.035}							8040	8050	8060	8080		
85	90	85 _{-0.054}	90 ^{+0.035}		0.289 0.080				8530		8550	8560	8580		85100
90	95	90 _{-0.054}	95 ^{+0.035}								9050	9060	9080		90100
95	100	95 _{-0.054}	100 ^{+0.035}									9560	9580	9590	95100
100	105	100 _{-0.054}	105 ^{+0.035}									10060	10080	10090	100100
105	110	105 _{-0.054}	110 ^{+0.035}									10560	10580		105100
110	115	110 _{-0.054}	115 ^{+0.035}									11060	11080		110100
115	120	115 _{-0.054}	120 ^{+0.035}					+0.240 +0.080	0.303 0.080				11550		11580
120	125	120 _{-0.054}	125 ^{+0.040}									12050	12030		
125	130	125 _{-0.063}	130 ^{+0.040}												125100
130	135	130 _{-0.063}	135 ^{+0.040}									13060			130100
135	140	135 _{-0.063}	140 ^{+0.040}									13560	13580		
140	145	140 _{-0.063}	145 ^{+0.040}									14060	14080		140100
150	155	150 _{-0.063}	155 ^{+0.040}									15060	15080		150100

FODA 90 Bronze rolled bearings



Product Overview

FODA 90 Series Bronze rolled bearings It is a new generation of bushing developed and designed by our factory on the basis of FODA 30 steel, copper and lead bimetallic bushing, which is widely used abroad. With the increasing number of new types of machinery and equipment introduced into our country, designers are increasingly in need of new friction materials and bushings. Therefore, this product has a wide range of applications and practical value in China's machinery manufacturing.

The most important feature of FODA 90 Series bushings is their thin-walled construction, which does not occupy a large assembly space. The bushing material is a specially formulated high-density copper alloy strip, which has the advantages of high density, no air-shrinkage holes, high load capacity, and wear resistance and fatigue resistance compared with the traditional cast copper bushing. The bushing is manufactured with advanced tooling and moulds, which can process oil holes, pits and grooves on the friction surface of the strip to suit various conditions. As a result, a large amount of lubricating grease can be stored in the bushing during use and the refuelling interval can be prolonged, which effectively improves the service life. FODA 90 Series bearings are widely used in lifting machinery, mining machinery, agricultural machinery, construction machinery, engineering machinery, automotive industry and so on.

Advantages of the FODA 90 Series

1. Saving a lot of copper material, saving the turning of copper bushings man-hours, economic bearings;
2. Light weight and low cost compared with the car-made bushings and rolling bearings;
3. can be processed in the friction surface of a variety of oil holes, oil pits, storage of certain grease, extend the refuelling time is five times as much as the copper bushings;
4. extremely high load carrying capacity, especially for the rougher friction;
5. Convenient replacement and easy procurement of standard Series.

Standard products available: straight sleeve P19, flanged sleeve P21, thrust washer P7, plate P11.
Available non-standard products: straight sleeve, flanged sleeve, thrust washer, plate, shaft tile, slide plate, steel sleeve assembly.

Typical Applications



FODA 90(FB090)Bronze rolled bearings



Material Structure

Adopting high-density bronze rolled to form diamond-shaped oil holes to store grease, it has good fatigue strength and load-bearing capacity, corrosion resistance, anti-wear. At the beginning of the movement can be easier to form a film of oil to reduce the beginning of the Friction coef.

Chemical Composition

Materials	Copper	Tin	Phosphorus
CuSn8	91.3%	8.5%	0.2%

Physical Characteristics

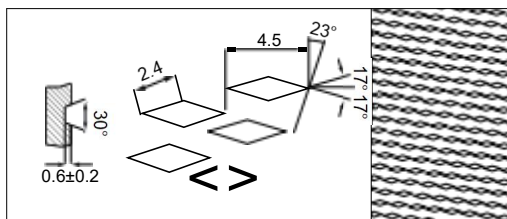
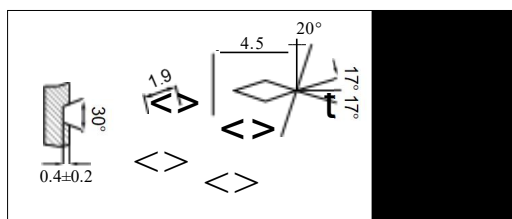
Maximum load	Static load	120N/mm ²	pette	Hardness	≥50HRC
	Dynamic load	40N/mm ²		Roughness	Ra=0.4~1.0
Maximum PV (Grease)		2.8N/mm ² ·m/s	Friction coef μ		0.08~0.25
Working temperature		-100°C ~+200°C	Max line speed (Grease)		2m/s
Tensile Strength		470N/mm ²	Thermal conductivity		58W/(m·k)
Yield Strength		280N/mm ²	Thermal conductivity		18.5×10 ⁻⁶ /k
Hardness		100~150HB	Densities		8.8g/cm ³

Applications

This series of bearings are widely used in agricultural machinery, construction machinery and engineering machinery and other high-load low-speed occasions.

Oil pockets category

(According to DIN1494/ISO34570)



Available Products

In addition to the standard products shown in the catalogue, non-standard products can be supplied or ordered according to customer drawing requirements.

Ordering example

Standard Straight Sleeve Products:		
Series	Inner Diameter	Height
FODA 90	10	10

Standard flap products:		
Series	Inner Diameter	Height
FODA 90F	10	10

FODA 91 (FB09G) Bronze Rolled Bearings With Solid lubricant



Material Structure

The same process as FODA 90, but with a diamond-shaped oil cavity filled with a solid lubricant based on graphite, resulting in a lower Friction coef at the start-up phase and during the process, and maintaining good working conditions in the event of short-term oil cuts.

Physical Characteristics

(Special points compared to FODA 90)

Model Number	Max line speed	Friction coef μ
FODA 91	2.5m/s	0.03~0.1

Applications

This series of bearings are widely used in construction machinery, gearbox transmission parts, automobile and locomotive clutches, starter motors, trucks, automobiles, tractors and other high-load and medium-speed applications.

FODA 92(FB092)Bronze Punched Rolled Bearings



Material Structure

High-density bronze as the base material rolled from the working surface at a certain angle, density uniform arrangement of lubrication holes, easy to form a film of oil at the start, thus reducing the Friction coef It has good fatigue strength of the load-bearing capacity, corrosion resistance, wear resistance.

Chemical Composition

Materials	Copper	Tin	Phosphorus
CuSn8	91.3%	8.5%	0.2%

Physical Characteristics

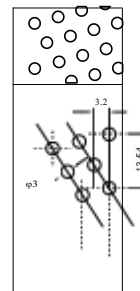
Maximum load	Static load	120N/mm ²	Pette	Hardness	≥50HRC
	Dynamic load	40N/mm ²		Roughness	Ra=0.4~1.0
Maximum PV (Grease)		2.8N/mm ² ·m/s	Friction coef μ		0.06~0.25
Working temperature		-100°C ~+200°C	Max line speed (Grease)		2m/s
Tensile Strength		470N/mm ²	Thermal conductivity		58W/(m·k)
Yield Strength		280N/mm ²	Thermal conductivity		18.5×10 ⁻⁶ /k
Hardness		100~150HB	Intensity		8.8g/cm ³

Applications

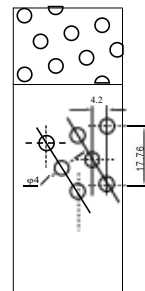
These Series bearings are widely used in conveyors, elevators, winches, levelling machines and other medium-duty and low-speed applications.

Oil pockets category

(According to DIN1494/ISO34570)



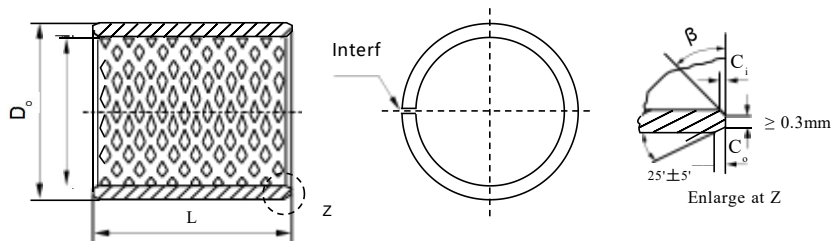
衬套内
球形油孔内径 $r \leq \varnothing 25$



衬套内
球形油孔内径 $r > \varnothing 25$



FODA 90Bronze Rolled Bearings Standard Metric Size



Internal and external chamfering

S_3	C_o	C_i	β
0.75	0.5 ± 0.3	0.25 ± 0.2	$35^\circ \pm 5^\circ$
1.00	0.6 ± 0.3	0.30 ± 0.2	$35^\circ \pm 5^\circ$
1.50	0.7 ± 0.3	0.50 ± 0.3	$35^\circ \pm 5^\circ$

S_3	C_o	C_i	β
2.00	1.2 ± 0.4	0.50 ± 0.3	$35^\circ \pm 5^\circ$
2.50	1.8 ± 0.6	0.60 ± 0.3	$45^\circ \pm 5^\circ$

Unit:mm

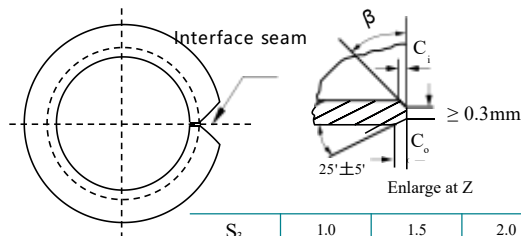
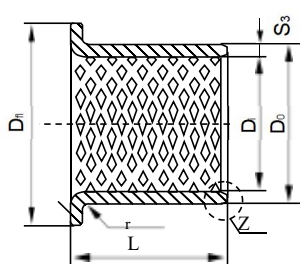
相配轴径	相配座孔	外径公差	压入H7座孔后内径	Lengths (L)																
				0 -0.40																
Matching Shaft (f7) D _s	Matching Housing (H7) D _H	Tolerance D _o	I.D.after H7 fixed D _i																	
10 -0.013 -0.028	12 +0.018 0	12 +0.065 +0.030	10 +0.036 0	10	15	20	25	30	35	40	50	60	70	80	90	100				
12 -0.013 -0.034	14 +0.018 0	14 +0.065 +0.030	12 +0.043 0	1010	1015	1020														
14 -0.016 -0.034	16 +0.018 0	16 +0.065 +0.030	14 +0.043 0	1210	1215	1220														
15 -0.016 -0.034	17 +0.018 0	17 +0.065 +0.030	15 +0.043 0	1410	1415	1420	1425													
16	-0.016 -0.034	18 +0.018 0	18 +0.065 +0.030	1510	1515	1520	1525													
18 -0.016 -0.034	20	+0.021 0	16 +0.043 0	1610	1615	1620	1625													
20 -0.020 -0.041	23 +0.021 0	20 +0.075 +0.035	18 +0.043 0	1810	1815	1820	1825													
22 -0.020 -0.041	25 +0.021 0	23 +0.075 +0.035	20 +0.052 0	2010	2015	2020	2025													
24 -0.020 -0.041	27 +0.021 0	25 +0.075 +0.035	22 +0.052 0	2210	2215	2220	2225	2230												
25 -0.020 -0.041	28 +0.021 0	27 +0.075 +0.035	24 +0.052 0		2415	2420	2425	2430												
28 -0.020 -0.041	31 +0.025 0	28 +0.075 +0.035	25 +0.052 0		2515	2520	2525	2530												
30 -0.020 -0.041	34 +0.025 0	31 +0.085 +0.045	28 +0.052 0		2815	2820	2825	2830												
32 -0.025 -0.050	36 +0.025 0	34 +0.085 +0.045	30 +0.052 0		3015	3020	3025	3030	3035	3040										
35 -0.025 -0.050	39 +0.025 0	36 +0.085 +0.045	32 +0.062 0		3215	3220	3225	3230	3235	3240										
40 -0.025 -0.050	44 +0.025 0	39 +0.085 +0.045	35 +0.062 0		3515	3520	3525	3530	3535	3540										
45 -0.025 -0.050	50 +0.025 0	44 +0.085 +0.045	40 +0.062 0			4020	4025	4030	4035	4040	4050									
50 -0.025 -0.050	55 +0.030 0	50 +0.085 +0.045	45 +0.062 0			4520	4525	4530	4535	4540	4550									
55 -0.030 -0.060	60 +0.030 0	55 +0.100 +0.055	50 +0.062 0			5020	5025	5030	5035	5040	5050	5060								
60 -0.030 -0.060	65 +0.030 0	60 +0.100 +0.055	55 +0.074 0			5520	5525	5530	5535	5540	5550	5560								
65 -0.030 -0.060	70 +0.030 0	65 +0.100 +0.055	60 +0.074 0				6025	6030	6035	6040	6050	6060	6070							
70 -0.030 -0.060	75 +0.030 0	70 +0.100 +0.055	65 +0.074 0					6530	6535	6540	6550	6560	6570							
75 -0.030 -0.060	80 +0.035 0	75 +0.100 +0.055	70 +0.074 0					7030	7035	7040	7050	7060	7070	7080						
80 -0.036 -0.071	85 +0.035 0	80 +0.100 +0.055	75 +0.074 0					7530	7535	7540	7550	7560	7570	7580						
85 -0.036 -0.071	90 +0.035 0	85 +0.120 +0.070	80 +0.087 0					8030	8035	8040	8050	8060	8070	8080						
90 -0.036 -0.071	95 +0.035 0	90 +0.120 +0.070	85 +0.087 0					8530	8535	8540	8550	8560	8570	8580	8590					
95 -0.036 -0.071	100 +0.035 0	95 +0.120 +0.070	90 +0.087 0					9030	9035	9040	9050	9060	9070	9080	9090					
		100 +0.120 +0.070	95 +0.087 0							9540	9550	9560	9570	9580	9590	95100				

FODA 90Bronze rolled bearings Standard Metric Size

Unit:mm

Matching Shaft (f7) D _s	Matching Housing (H7) D _H	Tolerance D _o	压入H7座 孔后内径 I.D.after fixed D _i	Lengths (L) ⁰ _{-0.40}										
				25	30	35	40	50	60	70	80	90	100	
100 ^{-0.036} _{-0.071}	105 ^{+0.035} ₀	100 ^{+0.120} _{+0.070}	105 ^{+0.087} ₀					10050	10060	10070	10080	10090	100100	
105 ^{-0.036} _{-0.071}	110 ^{+0.035} ₀	105 ^{+0.120} _{+0.070}	110 ^{+0.087} ₀					10550	10560	10570	10580	10590	105100	
110 ^{-0.036} _{-0.071}	115 ^{+0.035} ₀	110 ^{+0.120} _{+0.070}	115 ^{+0.087} ₀					11050	11060	11070	11080	11090	110100	
115 ^{-0.036} _{-0.071}	120 ^{+0.040} ₀	115 ^{+0.120} _{+0.070}	120 ^{+0.087} ₀					11550	11560	11570	11580	11590	115100	
120 ^{-0.043} _{-0.083}	125 ^{+0.040} ₀	120 ^{+0.170} _{+0.100}	125 ^{+0.100} ₀						12060	12070	12080	12090	120100	
125 ^{-0.043} _{-0.083}	130 ^{+0.040} ₀	125 ^{+0.170} _{+0.100}	130 ^{+0.100} ₀						12560	12570	12580	12590	125100	
130 ^{-0.043} _{-0.083}	135 ^{+0.040} ₀	130 ^{+0.170} _{+0.100}	135 ^{+0.100} ₀						13060	13070	13080	13090	130100	
135 ^{-0.043} _{-0.083}	140 ^{+0.040} ₀	135 ^{+0.170} _{+0.100}	140 ^{+0.100} ₀						13560	13570	13580	13590	135100	
140 ^{-0.043} _{-0.083}	145 ^{+0.040} ₀	140 ^{+0.170} _{+0.100}	145 ^{+0.100} ₀						14060	14070	14080	14090	140100	
145 ^{-0.043} _{-0.083}	150 ^{+0.040} ₀	145 ^{+0.170} _{+0.100}	150 ^{+0.100} ₀						14560	14570	14580	14590	145100	
150 ^{-0.043} _{-0.083}	155 ^{+0.040} ₀	150 ^{+0.170} _{+0.100}	155 ^{+0.100} ₀						15060	15070	15080	15090	150100	
155 ^{-0.043} _{-0.083}	160 ^{+0.040} ₀	155 ^{+0.170} _{+0.100}	160 ^{+0.100} ₀						15560	15570	15580	15590	155100	
160 ^{-0.043} _{-0.083}	165 ^{+0.040} ₀	160 ^{+0.170} _{+0.100}	165 ^{+0.100} ₀						16060	16070	16080	16090	160100	
165 ^{-0.043} _{-0.083}	170 ^{+0.040} ₀	165 ^{+0.170} _{+0.100}	170 ^{+0.100} ₀						16560	16570	16580	16590	165100	
170 ^{-0.043} _{-0.083}	175 ^{+0.040} ₀	170 ^{+0.170} _{+0.100}	175 ^{+0.100} ₀						17060	17070	17080	17090	170100	
175 ^{-0.043} _{-0.083}	180 ^{+0.040} ₀	175 ^{+0.170} _{+0.100}	180 ^{+0.115} ₀						17560	17570	17580	17590	175100	
180 ^{-0.050} _{-0.096}	185 ^{+0.046} ₀	180 ^{+0.210} _{+0.130}	185 ^{+0.115} ₀						18060	18070	18080	18090	180100	
185 ^{-0.050} _{-0.096}	190 ^{+0.046} ₀	185 ^{+0.210} _{+0.130}	190 ^{+0.115} ₀						18560	18570	18580	18590	185100	
190 ^{-0.050} _{-0.096}	195 ^{+0.046} ₀	190 ^{+0.210} _{+0.130}	195 ^{+0.115} ₀						19060	19070	19080	19090	190100	
195 ^{-0.050} _{-0.096}	200 ^{+0.046} ₀	195 ^{+0.210} _{+0.130}	200 ^{+0.115} ₀						19560	19570	19580	19590	195100	
200 ^{-0.050} _{-0.096}	205 ^{+0.046} ₀	200 ^{+0.210} _{+0.130}	205 ^{+0.115} ₀						20060	20070	20080	20090	200100	
205 ^{-0.050} _{-0.096}	210 ^{+0.046} ₀	205 ^{+0.210} _{+0.130}	210 ^{+0.115} ₀						20560	20570	20580	20590	205100	
210 ^{-0.050} _{-0.096}	215 ^{+0.046} ₀	210 ^{+0.210} _{+0.130}	215 ^{+0.115} ₀						21060	21070	21080	21090	210100	
215 ^{-0.050} _{-0.096}	220 ^{+0.046} ₀	215 ^{+0.210} _{+0.130}	220 ^{+0.115} ₀						21560	21570	21580	21590	215100	
220 ^{-0.050} _{-0.096}	225 ^{+0.046} ₀	220 ^{+0.210} _{+0.130}	225 ^{+0.115} ₀						22060	22070	22080	22090	220100	
225 ^{-0.050} _{-0.096}	230 ^{+0.046} ₀	225 ^{+0.210} _{+0.130}	230 ^{+0.115} ₀						22560	22570	22580	22590	225100	
230 ^{-0.050} _{-0.096}	235 ^{+0.046} ₀	230 ^{+0.210} _{+0.130}	235 ^{+0.115} ₀						23060	23070	23080	23090	230100	
240 ^{-0.050} _{-0.096}	245 ^{+0.046} ₀	240 ^{+0.210} _{+0.130}	245 ^{+0.115} ₀						24060	24070	24080	24090	240100	
250 ^{-0.056} _{-0.108}	255 ^{+0.052} ₀	250 ^{+0.260} _{+0.170}	255 ^{+0.13} ₀						25060	25070	25080	25090	250100	
260 ^{-0.056} _{-0.108}	265 ^{+0.052} ₀	260 ^{+0.260} _{+0.170}	265 ^{+0.13} ₀						26060	26070	26080	26090	260100	
270 ^{-0.056} _{-0.108}	275 ^{+0.052} ₀	270 ^{+0.260} _{+0.170}	275 ^{+0.13} ₀						27060	27070	27080	27090	270100	
280 ^{-0.056} _{-0.108}	285 ^{+0.052} ₀	280 ^{+0.260} _{+0.170}	285 ^{+0.13} ₀						28060	28070	28080	28090	280100	
290 ^{-0.056} _{-0.108}	295 ^{+0.052} ₀	290 ^{+0.260} _{+0.170}	295 ^{+0.13} ₀						29060	29070	29080	29090	290100	
300 ^{-0.056} _{-0.108}	305 ^{+0.052} ₀	300 ^{+0.260} _{+0.170}	305 ^{+0.13} ₀						30060	30070	30080	30090	300100	

FODA 90F Flanged Bearings Standard Metric Size



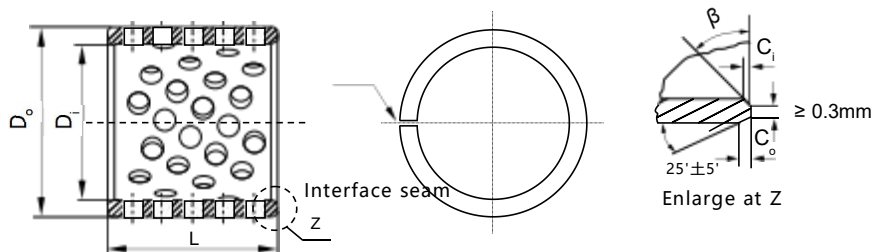
S ₃	1.0	1.5	2.0	2.5
r	1 ^{+0.5}	1±0.5	1.5±0.5	2±0.5

* Please refer to Straight Sleeve for internal and external chamfering of end face.

Unit:mm

Matching Shaft (f7) D _s	Matching Housing (H7) D _h	Tolerance D ₀	压入H7座 孔后内径 I.D.after fixed D _i	Lengths (L) ⁰ / _{-0.40}										
				15	20	25	30	35	40	50	60	70	80	90
25 ^{-0.020} / _{-0.041}	28 ^{+0.021} / ₀	28 ^{+0.075} / _{+0.035}	25 ^{+0.052} / ₀	25150	25200	25250								
30 ^{-0.020} / _{-0.041}	34 ^{+0.025} / ₀	34 ^{+0.085} / _{+0.045}	30 ^{+0.052} / ₀		30200	30250	30300							
35 ^{-0.025} / _{-0.050}	39 ^{+0.025} / ₀	39 ^{+0.085} / _{+0.045}	35 ^{+0.062} / ₀		35200	35250	35300	35350						
40 ^{-0.025} / _{-0.050}	44 ^{+0.025} / ₀	44 ^{+0.085} / _{+0.045}	40 ^{+0.062} / ₀			40250	40300	40350	40400					
45 ^{-0.025} / _{-0.050}	50 ^{+0.025} / ₀	50 ^{+0.085} / _{+0.045}	45 ^{+0.062} / ₀				45300	45350	45400	45500				
50 ^{-0.025} / _{-0.050}	55 ^{+0.030} / ₀	55 ^{+0.100} / _{+0.055}	50 ^{+0.062} / ₀				50300	50350	50400	50500				
55 ^{-0.030} / _{-0.060}	60 ^{+0.030} / ₀	60 ^{+0.100} / _{+0.055}	55 ^{+0.074} / ₀				55300	55350	55400	55500				
60 ^{-0.030} / _{-0.060}	65 ^{+0.030} / ₀	65 ^{+0.100} / _{+0.055}	60 ^{+0.074} / ₀				60300	60350	60400	60500	60600			
65 ^{-0.030} / _{-0.060}	70 ^{+0.030} / ₀	70 ^{+0.100} / _{+0.055}	65 ^{+0.074} / ₀				65300	65350	65400	65500	65600			
70 ^{-0.030} / _{-0.060}	75 ^{+0.030} / ₀	75 ^{+0.100} / _{+0.055}	70 ^{+0.074} / ₀					70350	70400	70500	70600	70700		
75 ^{-0.030} / _{-0.060}	80 ^{+0.035} / ₀	80 ^{+0.100} / _{+0.055}	75 ^{+0.074} / ₀					75350	75400	75500	75600	75700		
80 ^{-0.036} / _{-0.071}	85 ^{+0.035} / ₀	85 ^{+0.120} / _{+0.070}	80 ^{+0.087} / ₀					80350	80400	80500	80600	80700	80800	
90 ^{-0.036} / _{-0.071}	95 ^{+0.035} / ₀	95 ^{+0.120} / _{+0.070}	90 ^{+0.087} / ₀							90500	90600	90700	90800	90900
100 ^{-0.036} / _{-0.071}	105 ^{+0.035} / ₀	105 ^{+0.120} / _{+0.070}	100 ^{+0.087} / ₀							100500	100600	100700	100800	100900
110 ^{-0.036} / _{-0.071}	115 ^{+0.035} / ₀	115 ^{+0.120} / _{+0.070}	110 ^{+0.087} / ₀							110500	110600	110700	110800	110900
120 ^{-0.043} / _{-0.083}	125 ^{+0.040} / ₀	125 ^{+0.170} / _{+0.100}	120 ^{+0.100} / ₀							120500	120600	120700	120800	120900
130 ^{-0.043} / _{-0.083}	135 ^{+0.040} / ₀	135 ^{+0.170} / _{+0.100}	130 ^{+0.100} / ₀								130600	130700	130800	130900
140 ^{-0.043} / _{-0.083}	145 ^{+0.040} / ₀	145 ^{+0.170} / _{+0.100}	140 ^{+0.100} / ₀								140600	140600	140800	140900
150 ^{-0.043} / _{-0.083}	155 ^{+0.040} / ₀	155 ^{+0.170} / _{+0.100}	150 ^{+0.100} / ₀								150600	150700	150800	150900
160 ^{-0.043} / _{-0.083}	165 ^{+0.040} / ₀	165 ^{+0.170} / _{+0.100}	160 ^{+0.100} / ₀								160600	160700	160800	160900
170 ^{-0.043} / _{-0.083}	175 ^{+0.040} / ₀	175 ^{+0.170} / _{+0.100}	170 ^{+0.100} / ₀								170600	170700	170800	170900
180 ^{-0.043} / _{-0.083}	185 ^{+0.046} / ₀	185 ^{+0.210} / _{+0.130}	180 ^{+0.115} / ₀								180600	180700	180800	180900

FODA 92Bronze Coiled Bearings



Internal and external chamfering

S ₃	C _o	C _i	β	S ₃	C _o	C _i	β
0.75	0.5 ± 0.3	0.25 ± 0.2	35°, 5°	2.00	1.2 ± 0.4	0.50 ± 0.3	35°, 5°
1.00	0.6 ± 0.3	0.30 ± 0.2	35°, 5°	2.50	1.8 ± 0.6	0.60 ± 0.3	45°, 5°
1.50	0.7 ± 0.3	0.50 ± 0.3	35°, 5°				

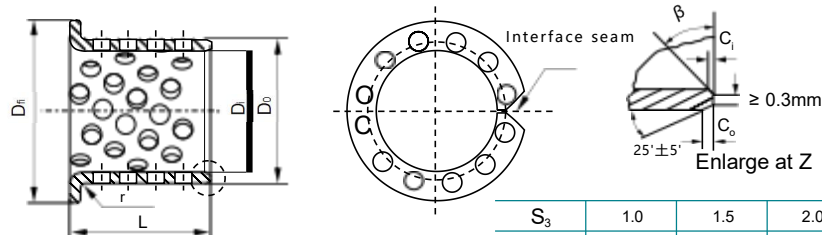
单位:mm

Matching Shaft (f7) D _s	Matching Housing (H7) D _h	Tolerance D _o	压入H7座 孔后内径 I.D.after fixed D _i	Lengths (L) ⁰ / _{-0.40}												
				10	15	20	25	30	35	40	50	60	70	80	90	100
10 -0.013 -0.028	12 +0.018 0	12 +0.065 +0.030	10 +0.036 0	1010	1015	1020										
12 -0.013 -0.034	14 +0.018 0	14 +0.065 +0.030	12 +0.043 0	1210	1215	1220										
14 -0.016 -0.034	16 +0.018 0	16 +0.065 +0.030	14 +0.043 0	1410	1415	1420	1425									
15 -0.016 -0.034	17 +0.018 0	17 +0.065 +0.030	15 +0.043 0	1510	1515	1520	1525									
16 -0.016 -0.034	18 +0.018 0	18 +0.065 +0.030	16 +0.043 0	1610	1615	1620	1625									
18 -0.016 -0.034	20 +0.021 0	20 +0.075 +0.035	18 +0.043 0	1810	1815	1820	1825									
20 -0.020 -0.041	23 +0.021 0	23 +0.075 +0.035	20 +0.052 0	2010	2015	2020	2025									
22 -0.020 -0.041	25 +0.021 0	25 +0.075 +0.035	22 +0.052 0	2210	2215	2220	2225	2230								
24 -0.020 -0.041	27 +0.021 0	27 +0.075 +0.035	24 +0.052 0		2415	2420	2425	2430								
25 -0.020 -0.041	28 +0.021 0	28 +0.075 +0.035	25 +0.052 0		2515	2520	2525	2530								
28 -0.020 -0.041	31 +0.025 0	31 +0.085 +0.045	28 +0.052 0		2815	2820	2825	2830								
30 -0.020 -0.041	34 +0.025 0	34 +0.085 +0.045	30 +0.052 0		3015	3020	3025	3030	3035	3040						
32 -0.025 -0.050	36 +0.025 0	36 +0.085 +0.045	32 +0.062 0		3215	3220	3225	3230	3235	3240						
35 -0.025 -0.050	39 +0.025 0	39 +0.085 +0.045	35 +0.062 0		3515	3520	3525	3530	3535	3540						
40 -0.025 -0.050	44 +0.025 0	44 +0.085 +0.045	40 +0.062 0			4020	4025	4030	4035	4040	4050					
45 -0.025 -0.050	50 +0.025 0	50 +0.085 +0.045	45 +0.062 0			4520	4525	4530	4535	4540	4550					
50 -0.025 -0.050	55 +0.030 0	55 +0.100 +0.055	50 +0.062 0			5020	5025	5030	5035	5040	5050	5060				
55 -0.030 -0.060	60 +0.030 0	60 +0.100 +0.055	55 +0.074 0			5520	5525	5530	5535	5540	5550	5560				
60 -0.030 -0.060	65 +0.030 0	65 +0.100 +0.055	60 +0.074 0				6025	6030	6035	6040	6050	6060	6070			
65 -0.030 -0.060	70 +0.030 0	70 +0.100 +0.055	65 +0.074 0					6530	6535	6540	6550	6560	6570			
70 -0.030 -0.060	75 +0.030 0	75 +0.100 +0.055	70 +0.074 0					7030	7035	7040	7050	7060	7070	7080		
75 -0.030 -0.060	80 +0.035 0	80 +0.100 +0.055	75 +0.074 0					7530	7535	7540	7550	7560	7570	7580		
80 -0.036 -0.071	85 +0.035 0	85 +0.120 +0.070	80 +0.087 0					8030	8035	8040	8050	8060	8070	8080		
85 -0.036 -0.071	90 +0.035 0	90 +0.120 +0.070	85 +0.087 0					8530	8535	8540	8550	8560	8570	8580	8590	
90 -0.036 -0.071	95 +0.035 0	95 +0.120 +0.070	90 +0.087 0					9030	9035	9040	9050	9060	9070	9080	9090	
95 -0.036 -0.071	100 +0.035 0	100 +0.120 +0.070	95 +0.087 0							9540	9550	9560	9570	9580	9590	95100

单位:mm

23

FODA 92FBronze rolled bearing standard size



S_3	1.0	1.5	2.0	2.5
r	$1^{+0.5}$	1 ± 0.5	1.5 ± 0.5	2 ± 0.5

Please refer to Straight Sleeve for internal and external chamfering of end face.

Unit:mm

Matching Shaft (f7) D_s	Matching Housing (H7) D_H	Tolerance D_o	压入H7座孔后内径 I.D.after fixed D_i	Lengths (L) $0_{-0.40}^0$										
				15	20	25	30	35	40	50	60	70	80	90
25 $-0.020_{-0.041}$	28 $+0.021_0$	28 $+0.075_{+0.035}$	25 $+0.052_0$	25150	25200	25250								
30 $-0.020_{-0.041}$	34 $+0.025_0$	34 $+0.085_{+0.045}$	30 $+0.052_0$		30200	30250	30300							
35 $-0.025_{-0.050}$	39 $+0.025_0$	39 $+0.085_{+0.045}$	35 $+0.062_0$		35200	35250	35300	35350						
40 $-0.025_{-0.050}$	44 $+0.025_0$	44 $+0.085_{+0.045}$	40 $+0.062_0$			40250	40300	40350	40400					
45 $-0.025_{-0.050}$	50 $+0.025_0$	50 $+0.085_{+0.045}$	45 $+0.062_0$				45300	45350	45400	45500				
50 $-0.025_{-0.050}$	55 $+0.030_0$	55 $+0.100_{+0.055}$	50 $+0.062_0$				50300	50350	50400	50500				
55 $-0.030_{-0.060}$	60 $+0.030_0$	60 $+0.100_{+0.055}$	55 $+0.074_0$				55300	55350	55400	55500				
60 $-0.030_{-0.060}$	65 $+0.030_0$	65 $+0.100_{+0.055}$	60 $+0.074_0$				60300	60350	60400	60500	60600			
65 $-0.030_{-0.060}$	70 $+0.030_0$	70 $+0.100_{+0.055}$	65 $+0.074_0$				65300	65350	65400	65500	65600			
70 $-0.030_{-0.060}$	75 $+0.030_0$	75 $+0.100_{+0.055}$	70 $+0.074_0$					70350	70400	70500	70600	70700		
75 $-0.030_{-0.060}$	80 $+0.035_0$	80 $+0.100_{+0.055}$	75 $+0.074_0$					75350	75400	75500	75600	75700		
80 $-0.036_{-0.071}$	85 $+0.035_0$	85 $+0.120_{+0.070}$	80 $+0.087_0$					80350	80400	80500	80600	80700	80800	
90 $-0.036_{-0.071}$	95 $+0.035_0$	95 $+0.120_{+0.070}$	90 $+0.087_0$							90500	90600	90700	90800	90900
100 $-0.036_{-0.071}$	105 $+0.035_0$	105 $+0.120_{+0.070}$	100 $+0.087_0$							100500	100600	100700	100800	100900
110 $-0.036_{-0.071}$	115 $+0.035_0$	115 $+0.120_{+0.070}$	110 $+0.087_0$							110500	110600	110700	110800	110900
120 $-0.043_{-0.083}$	125 $+0.040_0$	125 $+0.170_{+0.100}$	120 $+0.100_0$							120500	120600	120700	120800	120900
130 $-0.043_{-0.083}$	135 $+0.040_0$	135 $+0.170_{+0.100}$	130 $+0.100_0$								130600	130700	130800	130900
140 $-0.043_{-0.083}$	145 $+0.040_0$	145 $+0.170_{+0.100}$	140 $+0.100_0$								140600	140600	140800	140900
150 $-0.043_{-0.083}$	155 $+0.040_0$	155 $+0.170_{+0.100}$	150 $+0.100_0$								150600	150700	150800	150900
160 $-0.043_{-0.083}$	165 $+0.040_0$	165 $+0.170_{+0.100}$	160 $+0.100_0$								160600	160700	160800	160900
170 $-0.043_{-0.083}$	175 $+0.040_0$	175 $+0.170_{+0.100}$	170 $+0.100_0$								170600	170700	170800	170900
180 $-0.043_{-0.083}$	185 $+0.046_0$	185 $+0.210_{+0.130}$	180 $+0.115_0$								180600	180700	180800	180900

FODA 50(JDB)Series Inlaid solid lubricated bearings



Product Overview
 FODA 50 series inlaid solid lubrication bearings are made of high-strength copper alloy as the base material, and holes are drilled on the working surface and embedded with solid lubricant to release and generate a solid lubricant film to achieve self-lubrication in the friction process, which combines the advantages of metallic and non-metallic materials, and is particularly suitable for high loads, high temperatures, low speeds, etc., and can not be refuelled on the workplace.

Application Specialties
 1. Can be used in the oil-free state, without the need for No oil supply device is required, which greatly reduces the manufacturing cost.
 2. Suitable for reciprocating motion, shaking and It is suitable for reciprocating motion, rocking and frequent starting and stopping, etc., where it is difficult to form an oil film.
 It has excellent abrasion resistance and excellent friction performance
 3. Excellent chemical resistance and corrosion resistance.
 4. Flexible, simple and convenient design

Technical Parameter

Model Number	FODA —50	FODA —51	FODA —52	FODA —53	FODA —54	FODA —55
Schema						
Base material	CuZn25AL6Mn4	CuSn6Zn6Pb3	Steel+CuSn6Zn6Pb3	GCr-15	HT250	CuAl10Fe3
Material density	8	8.9	8.9	7.8	7.8	7.8
Substrate hardness	220~260HB	80~100HB	60~90HB	HRC55~60	190~230HB	160~180HB
Temp. Limits°C	300°C	350°C	300°C	350°C	400°C	400°C
Max. Dynamic Load	100N/mm ²	60N/mm ²	70N/mm ²	250N/mm ²	60N/mm ²	50N/mm ²
Max.speed	Dry 0.4m/s Oil 1m/s	2m/s	2m/s	0.1m/s	0.5m/s	1m/s
Friction	< 0.16 μ	< 0.15 μ	< 0.15 μ	< 0.17 μ	< 0.18 μ	< 0.16 μ
Max.PV (Dry Lubrication)	1.8N/mm ² ·m/s	0.5N/mm ² ·m/s	0.6N/mm ² ·m/s	2.5N/mm ² ·m/s	0.8N/mm ² ·m/s	1.25N/mm ² ·m/s
Max.PV (Oil Lubrication)	3.8N/mm ² ·m/s	3.8N/mm ² ·m/s	3.8N/mm ² ·m/s	3.8N/mm ² ·m/s	3.8N/mm ² ·m/s	2.45N/mm ² ·m/s

Wear performance (comparison of wear resistance with conventional CuSn6Zn6Pb3 copper bushings is shown in the table below)

Test Pressure		62N/mm ²		24.5N/mm ²		14.7N/mm ²	
Items		Wear Volume	Times	Wear Volume	Times	Wear Volume	Times
Model Number	Lubrication condition	(mm)	(hrs)	(mm)	(hrs)	(mm)	(hrs)
Copper sleeveCuSn6Zn6Pb3	Oil Lubrication	0.098	10	0.125	100	0.10	100
FODA 50	Non - lubricated	0.075	100	0.015	100	0.012	100
FODA 51	Non - lubricated	0.025	30	0.065	100	0.025	100
FODA 52	Non - lubricated	0.03	30	0.12	100	0.015	100
FODA 53	Non - lubricated	0.022	10	0.013	100	0.01	100
FODA 54	Non - lubricated	0.03	10	0.25	20	0.011	100
FODA 55	Non - lubricated	0.055	80	0.035	100	0.018	100

Application Features

FODA 50 is a universal basic product, no matter high pressure, low load, high temperature, low temperature, oil lubrication, oil-free lubrication or water lubrication, can be adapted to the product with a special formula of high-force brass as a substrate, the surface of a certain angle and density inlaid with a solid lubricant, precision machining and become a hardness of twice than the general copper bushings, wear-resistant performance to double the number of times, so there are metallurgical industry of continuous casting machine, Rolling mill, conveyor can be used. It is also used in plastic injection moulding machines, extrusion machines, automatic switches of high-voltage electrical appliances, lifting and supporting parts of construction machines, arc gate support of water conservancy hub projects, pulley and transmission wheel parts, paper machine drying channels, automobile moulds, anchor sliding parts of ships, train brackets, rolling mill equipment, mining machinery, turbines and so on.

FODA 51 products are made of tin-bronze matrix, inlaid with solid lubricant on the surface at a certain angle and density, and precision machined, mainly suitable for low load, high temperature and medium speed applications, such as fireplace door hinges, oven rollers, light industrial machinery, machine tool industry and so on.

Solid lubricants

Solid lubricants	Characterise	Typical Application
High purity graphite + Additives1# 	Good abrasion resistance and chemical stability, the use of temperature < 400 °C	Applied to general machinery, used in the atmosphere
PTFE+Additives2# 	Extremely low coefficient of friction and very good water lubrication, the use of temperature < 300 °C	For water and seawater lubrication, e.g. for ships, turbines, etc. Use stainless steel or chrome-plated material for the pair of shafts.

The inner material of FODA 52 is the same as that of FODA 51, which, in addition to the functions of FODA 51, embodies cost savings, increased compressive strength and the possibility of welding the end face to the substrate for installation.

FODA 53 is a reinforced product with high compressive strength, which makes it particularly suitable for use in the support areas of cranes and excavators, but because the base material is steel, it is not suitable for use in water or in acid or alkaline environments.

FODA 54 is a typical material-saving product, the product is based on cast iron, it can be used as an alternative material to FODA 51, which can greatly reduce the cost and meet the requirements of use, the product is used in automotive moulds and injection moulding machine mould holders.

FODA 55 is made of aluminium bronze, with good corrosion resistance, inlaid with solid lubricant on the surface according to a certain angle and density, and processed by precision machining, the product is widely used in medium load, high temperature and medium speed applications.

Standard products available: straight bushing P27, flanged bushing P29, thrust washer P30, slide plate P31.

Available non-standard products: straight bushing, flanged bushing, thrust washer, plate, shaft tile, slide plate.

Typical applications



construction machinery



wind power



agricultural machinery



Port Machinery



Logistics machinery



Injection moulding machines

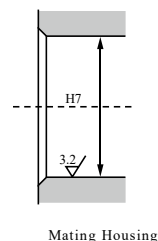
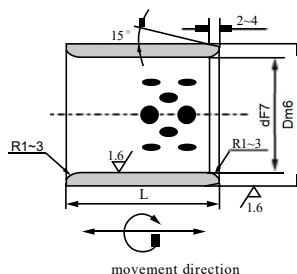
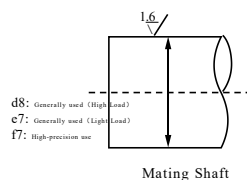


Heavy duty trucks



hydraulic engineering

FODA 50(JDB)SeriesInlaid solid lubricated bearings Standard Metric Size



材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4+ Graphite

Unit:mm

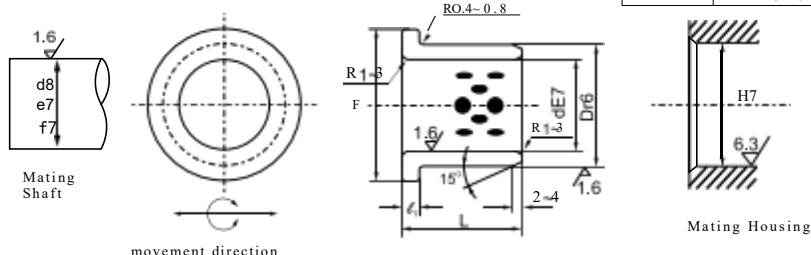
内径 IDF7 ϕd		外径 ODm6 ϕD		Lengths (L) ^{-0.10 0.30}													
				8	10	12	15	16	20	25	30	35	40	50	60	70	80
8	+0.028 +0.013	12	+0.018 +0.007	081208	081210	081212	081215										
10		14		101408	101410	101412	101415		101420								
12	+0.034 +0.016	18	+0.021 +0.008		121810	121812	121815	121816	121820	121825	121830						
13		19			131910		131915	131916									
14		20			142010	142012	142015		142020	142025	142030						
15		21			152110	152112	152115	152116	152120	152125	152130						
16		22			162210	162212	162215	162216	162220	162225	162230	162235	162240				
18		24					182412	182415	182416	182420	182425	182430	182435	182440			
20		28				202810	202812	202815	202816	202820	202825	202830	202835	202840	202850		
22	+0.041 +0.020	32	+0.025 +0.009			223212	223215		223220	223225							
25		33				253312	253315	253316	253320	253325	253330	253335	253340	253350	253360		
30		38				303812	303815		303820	303825	303830	303835	303840	303850	303860		
35	+0.050 +0.025	45	+0.030 +0.011						354520	354525	354530	354535	354540	354550	354560		
40		50							405020	405025	405030	405035	405040	405050	405060	405070	405080
45		55	+0.030 +0.011								455530	455535	455540	455550	455560		
50		60										506030	506035	506040	506050	506060	506070

FODA 50(JDB)Series Inlaid solid lubricated bearings Standard Metric Size

Unit:mm

内径 IDF7 φd		外径 ODm6 φD		Lengths (L) ^{+0.10} _{-0.30}											
				30	35	40	50	60	70	80	100	120	130	140	150
50	+0.050 +0.025	62		506230	506235	506240	506250	506260	506270						
50		65		506530		506540	506550	506560	506570	506580	5065100				
55		70	+0.030 +0.011			557040	557050	557060	557070						
60		74		607430	607435	607440	607450	607460	607470	607480					
60		75		607530	607535	607540	607550	607560	607570	607580	6075100				
63		75						637560	637570	637580					
65		80					658050	658060	658070	658080					
70		85			708535	708540	708550	708560	708570	708580	7085100				
70	+0.060 +0.030	90	+0.035 +0.013				709050	709060	709070	709080					
75		90						759060	759070	759080	7590100				
75		95						759560	759570	759580	7595100				
80		96				809640	809650	809660	809670	809680	8096100	8096120			
80		100				8010040	8010050	8010060	8010070	8010080	80100100	80100120		80100140	
90		110		9011030			9011050	9011060	9011070	9011080	90110100	90110120			
100	+0.071 +0.036	120	+0.040 +0.015					10012060	10012070	10012080	100120100	100120120		100120140	
110		130								11013080	110130100	110130120			
120		140								12014080	120140100	120140120		120140140	
125		145									125145100	125145120			
130		150									130150100		130150130		
140		160									140160100			140160140	
150	+0.083 +0.043	170									150170100				150170150
160		180									160180100				160180150

FODA 50F(JFB)Flanged Bearing Standard Metric Size

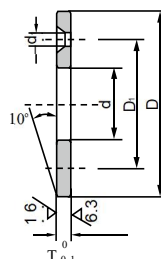
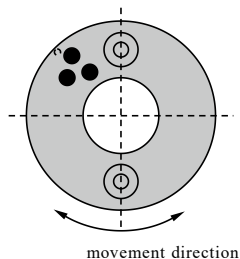


材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4+ Graphite

Unit:mm

内径 IDE7 φd	外径 ODr6 φD	Flanged		Lengths (L) ^{-0.10 -0.30}									
		F	ϵ_1 -0.10	15	20	25	30	35	40	50	60	80	100
10	+0.040 +0.025	14	+0.034 +0.023	22	2	1015F	1020F						
12		18		25		1215F	1220F						
13		19		26		1315F	1320F						
14	+0.050 +0.032	20		27	3	1415F	1420F						
15		21	+0.041 +0.028	28		1515F	1520F	1525F	1530F				
16		22		29		1615F	1620F	1625F	1630F				
20		30		40		2015F	2020F	2025F	2030F		2040F		
25	+0.061 +0.040	35		45		2515F	2520F	2525F	2530F		2540F		
30		40		50			3020F	3025F	3030F	3035F	3040F	3050F	
31.5		40	+0.050 +0.034				3120F			3135F			
35		45		60	5		3520F		3530F		3540F	3550F	
40	+0.075 +0.050	50		65			4020F		4030F		4040F	4050F	
45		55		70					4530F		4540F	4550F	4560F
50		60	+0.060 +0.041	75					5030F		5040F	5050F	5060F
55		65		80						5540F		5560F	
60		75	+0.062 +0.043	90						6040F	6050F		6080F
63		75		85	7.5								6367F
70	+0.090 +0.060	85		105							7050F		7080F
75		90	+0.073 +0.051	110								7560F	
80		100		120								8060F	8080F 80100F
90		110	+0.076 +0.054	130	10							9060F	9080F
100	+0.107 +0.072	120		150									10080F 100100F
120		140	+0.088 +0.063	170									12080F 120100F

FODA 50W(JTW)Thrust washers Standard Metric Size

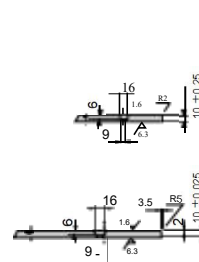
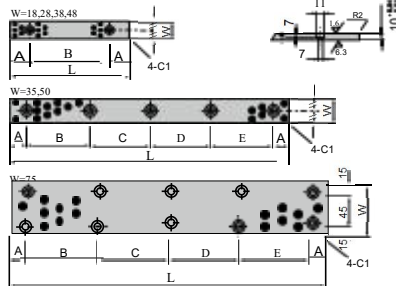


材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4+ Graphite

Unit:mm

规格(Specification)	内径 d	外径 D	Thickness T- 0 0.1	螺栓(Bolt)			
				D ₁	Amount	Dimension	d ₁
JTW-10	10.2	30	3	---	---	---	---
JTW-12	12.2	40		28	2	M3	3.5
JTW-13	13.2						
JTW-14	14.2			50	35	2	M3
JTW-15	15.2						
JTW-16	16.2	---			---	---	---
JTW-16N		---			---	---	---
JTW-18	18.2	5		35	2	M3	3.5
JTW-20	20.2		M5			6	
JTW-20N		---	---	---	---		
JTW-25	25.2	55	5	40	2	M5	6
JTW-25N				---	---	---	---
JTW-30	30.2	60		45	2	M5	6
JTW-35	35.2	70					
JTW-40	40.2	80	7	60	2	M6	7
JTW-45	45.3	90		67.5			
JTW-50	50.3	100	8	75	4	M6	7
JTW-55	55.3	110		85			
JTW-60	60.3	120		90		M8	9
JTW-65	65.3	125		95			
JTW-70	70.3	130	10	100	4	M8	9
JTW-75	75.3	140		110			
JTW-80	80.3	150		120		M10	11
JTW-90	90.5	170		140			
JTW-100	100.5	190		160			
JTW-120	120.5	200		175			

FODA 50P Guideway Standard Metric Size



材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4+ Graphite

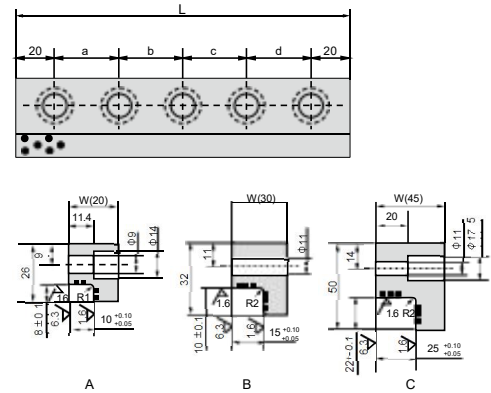
Unit:mm

Model Specification	W	L	A	B	C	D	E	Flathead screw	Amount
JSP-1875	18	75	15	45				M6	2
JSP-18100		100	25	60					
JSP-18125		125		75					
JSP-18150		150		100					
JSP-2875	28	75	15	45					
JSP-28100		100	25	50					
JSP-28125		125		75					
JSP-28150		150		100					
JSP-35100	35	100	20	60				M8	3
JSP-35150		150		55	55				
JSP-35200		200		55	50	55			
JSP-35250		250		70	70	70			
JSP-35300		300		65	65	65	65		
JSP-35350		350		80	75	75	80		
JSP-3875	38	75	15	45				M6	2
JSP-38100		100	25	50					
JSP-38125		125		75					
JSP-38150		150		100					
JSP-4875	48	75	15	45					
JSP-48100		100	25	50					
JSP-48125		125		75					
JSP-48150		150		100					
JSP-50100	50	100	20	60				M8	3
JSP-50150		150		55	55				
JSP-50200		200		55	50	55			
JSP-50250		250		70	70	70			
JSP-50300		300		65	65	65	65		
JSP-50400		400		90	90	90	90		
JSP-75150	75	150	20	110				M8	4
JSP-75200		200		80	80				
JSP-75250		250		105	105				
JSP-75300		300		85	90	85			
JSP-75400		400		120	120	120			
JSP-75500		500		115	115	115	115		

FODA 50L Guideway Standard Metric Size

Code	W	L	Bolts				Size	Q'ty	Diagram
			a	b	c	d			
20×100	20	100	60	---	---	---	M8	2	A
20×150		150	55	55	---	---		3	
20×200		200	55	50	55	---		4	
30×100	30	100	60	---	---	---	M10	2	B
30×150		150	55	55	---	---		3	
30×200		200	55	50	55	---		4	
30×250		250	70	70	70	---		4	
45×200	45	200	55	50	55	---	M10	4	C
45×250		250	70	70	70	---		4	
45×300		300	65	65	65	65		5	
45×350		350	80	75	75	80		5	

材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4+ Graphite

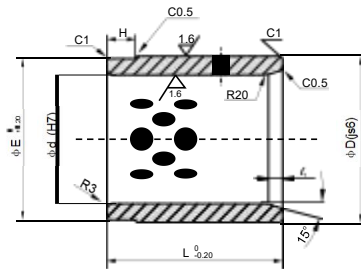


FODA 54Guide Bushing for Automotive MouldsStandard Metric Size

Iems	Code	Dimension	ΦD	Φd	L	ΦE	H	ΦC ₁
1	30	50×30×50	50	30	50	49	10	10
2	40	60×40×50	60	40	60	59	10	
3	50	70×50×50	70	50	75	69	15	
4	60	80×60×90	80	60	90	79	20	
5	80	100×80×120	100	80	120	99	25	
6	100	120×100×130	120	100	150	119	25	
7	120	140×120×180	140	120	180	139	25	

材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4+ Graphite

材质	FC铸铁 + 石墨
Material	HT250#+ Graphite

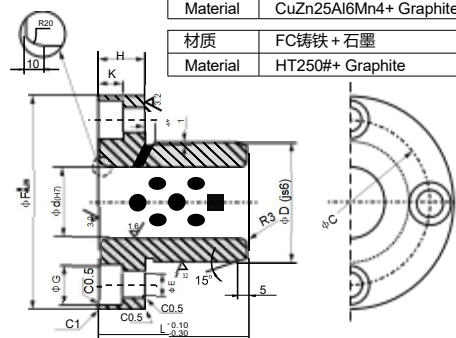


FODA 54FGuide Bushing for Automotive MouldsStandard Metric Size

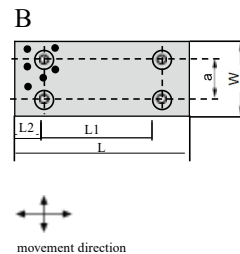
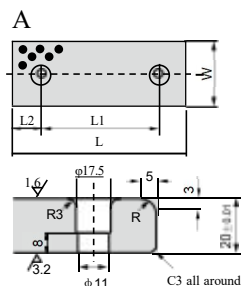
Iems	Code	Dimension	ΦF	ΦD	Φd	H	L	ΦC	ΦE	ΦG	K
1	30	90×50×30×50	90	50	30	20	50	70	11	17.5	10.8
2	40	100×60×40×65	100	60	40	20	65	80	11	17.5	10.8
3	50	125×75×50×80	125	75	50	20	80	100	11	17.5	10.8
4	60	135×85×60×100	135	85	60	20	100	110	11	17.5	10.8
5	80	170×110×80×130	170	110	80	25	130	140	14	20	13
6	100	190×130×100×160	190	130	100	25	160	160	14	20	13

材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4+ Graphite

材质	FC铸铁 + 石墨
Material	HT250#+ Graphite



FODA 50CAutomotive Moulds GuidewayStandard Metric Size



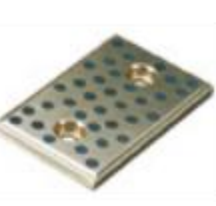
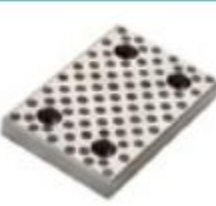
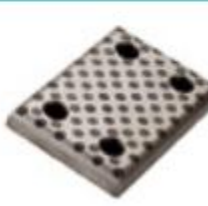
材质	高力黄铜 + 石墨
Material	CuZn25Al6Mn4+ Graphite

Unit:mm

Code	W	L	a	L1	L2	Diagram
28 × 75	28	75		45	15	A (w=28~75)
28 × 100		100		50	25	
28 × 150		150		100		
38 × 75	38	75		45	15	
38 × 100		100		50	25	
38 × 150		150		100		
48 × 75	48	75		45	15	
48 × 100		100		50	25	
48 × 125		125		75		
48 × 150		150		100		
48 × 200		200		150		
58 × 75	58	75		45	15	
58 × 100		100		50	25	
58 × 150		150		100		
75 × 75	75	75		25		
75 × 100		100		50		
75 × 125		125		75		
75 × 150		150		100		
75 × 200		200		150		
100 × 100	100	100	50	50	25	B (w≥100)
100 × 125		125		75		
100 × 125		150		100		
100 × 200		200		150		
100 × 250		250		200		
125 × 125	125	125	50	75		
125 × 150		150		100		
125 × 200		200		150		
125 × 250		250		200		
150 × 150	150	150	100	100		
150 × 200		200		150		
150 × 250		250		200		
150 × 300		300		250		
200 × 200	200	200	150	150		
200 × 250		250		200		
200 × 300		300		250		

长度可按要求定制

FODA 50Self-Lubricating Bearing

50	50F	50F1	50F2	50F3
				
50F4	50F5	50F6	54	54F
				
55	56	50L1	50L2	50L3
				
50L4	50L5	50L6	50L7	50L8
				
50L9	50L10	50L11	50L12	50L13
				
50L14	50L15	50L16	50L17	50L18
				

FODA 100 Precision Machinery Copper sleeve



Product Description

Finished tin bronze bearings are specially suitable for high-speed precision machinery, with no pollution, no oil lubrication, no need for maintenance, high load bearing, good corrosion resistance, dimensional processing arbitrariness and other characteristics. It has higher dimensional accuracy than rolled bronze bearings. Specialised in the introduction of Taiwan's technology, the first domestic manufacturer of copper bushings for precision machinery. Can be customised according to customer requirements.

Technical Parameter

Basic Materials	CuSn6Zn6Pb3
Basic Hardness	80-100HB
Temp. Limits°C	350°C
Maximum Dynamic Load	60N/mm ²
Max. Dynamic Load	15N/mm ²
Max.speed	2m/s

FODA 40(FR)Series -Reinforced PTFE soft tape



Product Description

The soft tape material is based on a bronze wire mesh, which is sintered and surface rolled with a reinforcing and friction-reducing material such as PTFE. This material structure makes the product lighter in weight and easier to install. The product has a low friction coefficient and good wear resistance. Due to its excellent flexibility, it can be processed into an isolation film between steel and steel metal, realising the ideal state of no gap, no noise, no oil lubrication, no maintenance and no pollution.

Scope of application

Automotive door and window hinges, textile machinery, joint bearings, chemical industry, food industry, valve control mechanism, office machinery, instrumentation, etc., light loads and low speeds, but the need for self-lubricating different occasions.

Product Features

1、It can work stably in oil-free self-lubrication state. 2、It is suitable for low-speed reciprocating motion, swinging and intermittent operation and other working conditions. 3、Good anti-wear and friction reduction characteristics. 4、Good corrosion resistance

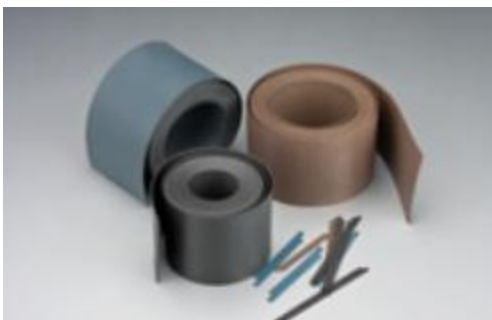
Metal Bearing Capacity	Thickness	Self - lubrication
Tin Bronze	0.48 ^{+0.02}	PTFE and related friction - reducing materials
Brass	0.48 ^{+0.02}	
Stainless Steel	0.48 ^{+0.02}	

Thickness tolerances on request

Technical Parameter

Maximum Bearing Capacity		30N/mm ²
Applicable Temperature		-20℃~ + 250℃
Max.speed	Dry Friction	0.5m/s
	Oil Lubrication	2m/s
Maximum Permissible PV Value		1.65/mm ² ·m/s
Frictionμ		0.05~0.20

FODA 41(FD)Copper - containing PTFE soft tape



Product Description

Soft belt material is PTFE as the main raw material, filled with copper powder and other wear-resistant materials, sintered by the mould pressing has good wear resistance. In the oil lubrication and oil-free lubrication conditions can be used normally, the products are widely used in automotive shock absorbers, piston rings, machine tool guide veneer, gasoline pump flow pump piston and other occasions.

Technical Parameter

Tensile strength	22N/mm ²
Max.speed	1.5m/s
Friction	0.09~0.2
Applicable temperature	-100°C~250°C