

Self-Lubricating Bushings

SPT090, SPT092 Series Bronze Wrapped Bushings



Structure

This is a wrapped bushing with bronze alloy CuSn8. It has the features of high load, good wear resistance. It is an economic design with diamond oil indents(SPT090) / oil holes(SPT092) to hold oil for establishing lubricating film during the initial running in of the operation.



CuSn8

Features

This is a thin wall wrapped bushing. It is suitable for a cost sensitive solution while the tolerance requirement is not critical.

SPT090 The diamond oil indents holds the grease for the lubricating film establishment during the initial running in of the operation. The ID of the bushing is machinable after assembling. Bronze alloy provides good corrosion resistance and thermal conductivity feature. It is suitable for middle to low load and low speed application and periodically greasing is recommended.

SPT092 The through hole design is suitable for oil lubricating. The fast oil film establishment reduces the adhesive wearing of the components. The ID of the bushing is machinable after assembling. Bronze alloy provides good corrosion resistance and thermal conductivity feature. It is suitable for middle to low load and low speed application and periodically light oil lubricating is recommended.

Chemical Composition

Type	Cu%	Sn%	P%	Pb%	Zn%
SPT-090	91.3	8.5	0.2	/	/
SPT-092	91.3	8.5	0.2	/	/

Tech. Data

Max. load	Static	120N/mm ²		Elongation	40%
	Dynamic	40N/mm ²		Operation Temperature range	-100℃~+200℃
Max. Speed (lubricated)		2.5m/s		Friction coefficient	0.08~0.25
Max. PV		2.8N/mm ² *m/s		Thermal conductivity	58 W(m*K) ⁻¹
Tensile Strength		450N/mm ²		Coefficient of thermal expansion	18.5*10 ⁻⁶ *K ⁻¹
Alloy Hardness		HB110~150			

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Typical Applications

The typical applications of this material include the lifting machinery, construction engineering machinery, automotive industry, tractors, trucks, agriculture machinery and mining machines. The available products include bushings, bearing shelves, flanged bushings and thrust washers.

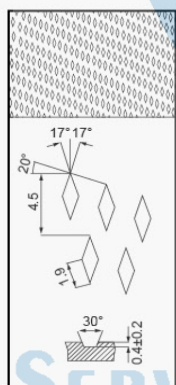


Bushing Size and Tolerance

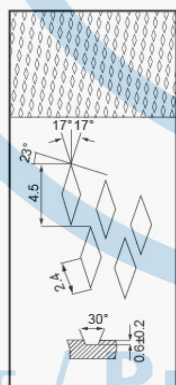
Metric Size	10~18	18~30	30~50	50~80	80~120	120~180	180~250	250~300
Tolerance(OD)	+0.065 +0.030	+0.075 +0.035	+0.085 +0.045	+0.100 +0.055	+0.120 +0.070	+0.170 +0.100	+0.210 +0.130	+0.260 +0.170
Bushing bore tolerance (After pressed in housing hole)	+0.043 0	+0.052 0	+0.062 0	+0.074 0	+0.087 0	+0.010 0	+0.0115 0	+0.0130 0

Type of oil pockets (according to DIN1494/ISO3547)

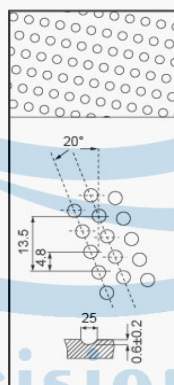
High-density bronze is rolled into shape or oil bags and oil holes specially integrated into the inner surface to reduce the wearing and prolong the service hours. Besides, it has excellent anti-corrosion functions.



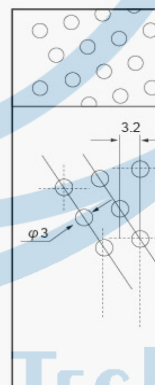
Inside the bushing
of the shaft
Rhomb oil holes $r \leq \Phi 22$



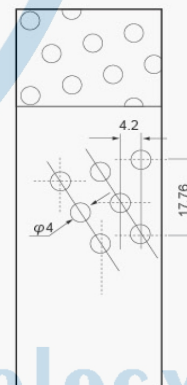
Inside the bushing
of the shaft
Rhomb oil holes $r \leq \Phi 22$



Forming a circle



ID $r \leq \Phi 25$

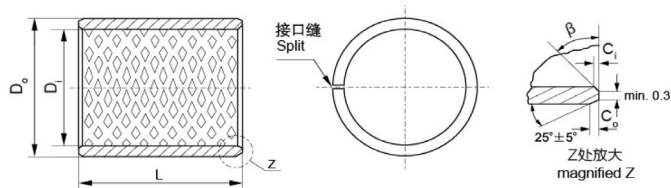


ID $r > \Phi 25$

SPT-090 Oil Pockets

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ID and OD chamfers

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	$30^\circ \pm 5^\circ$
2.50	1.8 ± 0.6	0.60 ± 0.3	$45^\circ \pm 5^\circ$

Unit:mm

d	D	f1	f2	Length ⁰ _{-0.40}													
				10	15	20	25	30	35	40	50	60	70	80	90		100
10	12	0.5	0.3	1010	1015	1020											
12	14			1210	1215	1220											
14	16			1410	1415	1420	1425										
15	17			1510	1515	1520	1525										
16	18			1610	1615	1620	1625										
18	20			1810	1815	1820	1825										
20	23	0.8	0.4	2010	2015	2020	2025										
22	25			2210	2215	2220	2225	2230									
24	27				2415	2420	2425	2430									
25	28				2515	2520	2525	2530									
28	31				2815	2820	2825	2830									
30	34			1	0.6		3015	3020	3025	3030	3035	3040					
32	36		3215			3220	3225	3230	3235	3240							
35	39		3515			3520	3525	3530	3535	3540							
40	44					4020	4025	4030	4035	4040	4050						
45	50	1.2	0.8			4520	4525	4530	4535	4540	4550						
50	55					5020	5025	5030	5035	5040	5050	5060					
55	60					5520	5525	5530	5535	5540	5550	5560					
60	65						6025	6030	6035	6040	6050	6060	6070				
65	70							6530	6535	6540	6550	6560	6570				
70	75								7030	7035	7040	7050	7060	7070	7080		
75	80								7530	7535	7540	7550	7560	7570	7580		
80	85			1.4	0.8					8030	8035	8040	8050	8060	8070	8080	
85	90								8530	8535	8540	8550	8560	8570	8580	8590	
90	95								9030	9035	9040	9050	9060	9070	9080	9090	
95	100										9540	9550	9560	9570	9580	9590	95100

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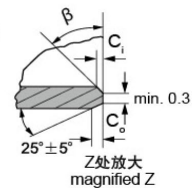
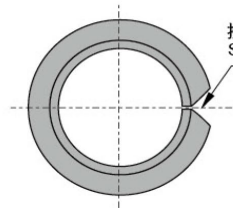
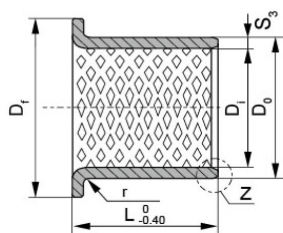


Unit: mm

d	D	f1	f2	Length ⁰ -0.40									
				25	30	35	40	50	60	70	80	90	100
100	105	1.4	0.8					10050	10060	10070	10080	10090	10100
105	110							10550	10560	10570	10580	10590	10600
110	115							11050	11060	11070	11080	11090	11100
115	120							11550	11560	11570	11580	11590	11600
120	125								12060	12070	12080	12090	12100
125	130								12560	12570	12580	12590	12600
130	135								13060	13070	13080	13090	13100
135	140								13560	13570	13580	13590	13600
140	145								14060	14070	14080	14090	14100
145	150								14560	14570	14580	14590	14600
150	155								15060	15070	15080	15090	15100
155	160								15560	15570	15580	15590	155100
160	165								16060	16070	16080	16090	160100
165	170								16560	16570	16580	16590	165100
170	175								17060	17070	17080	17090	170100
175	180								17560	17570	17580	17590	175100
180	185								18060	18070	18080	18090	180100
185	190								18560	18570	18580	18590	185100
190	195								19060	19070	19080	19090	190100
195	200								19560	19570	19580	19590	195100
200	205								20060	20070	20080	20090	200100
205	210								20560	20570	20580	20590	205100
210	215								21060	21070	21080	21090	210100
215	220								21560	21570	21580	21590	215100
220	225								22060	22070	22080	22090	220100
225	230								22560	22570	22580	22590	225100
230	235								23060	23070	23080	23090	230100
240	245								24060	24070	24080	24090	240100
250	255								25060	25070	25080	25090	250100
260	265								26060	26070	26080	26090	260100
270	275								27060	27070	27080	27090	270100
280	285								28060	28070	28080	28090	280100
290	295								29060	29070	29080	29090	290100
300	305								30060	30070	30080	30090	300100

Self-Lubricating Bushings

SPT090, SPT092 Series Bronze Wrapped Flanged Bushings



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

Unit: mm

d ₁	d ₂	d ₃	f1	f2	Length ⁰ _{-0.40}										
					15	20	25	30	35	40	50	60	70	80	90
25	28	35	0.8	0.4	2515F	2520F	2525F								
30	34	45	1.0	0.6		3020F	3025F	3030F							
35	39	50				3520F	3525F	3530F	3535F						
40	44	55					4025F	4030F	4035F	4040F					
45	50	60						4530F	4535F	4540F	4550F				
50	55	65	1.2	0.8				5030F	5035F	5040F	5050F				
55	60	70						5530F	5535F	5540F	5550F				
60	65	75						6030F	6035F	6040F	6050F	6060F			
65	70	80						6530F	6535F	6540F	6550F	6560F			
70	75	85							7035F	7040F	7050F	7060F	7070F		
75	80	90							7535F	7540F	7550F	7560F	7570F		
80	85	100							8035F	8040F	8050F	8060F	8070F	8080F	
90	95	110									9050F	9060F	9070F	9080F	9090F
100	105	120	1.4	0.8						10050F	10060F	10070F	10080F	10090F	
110	115	130									11050F	11060F	11070F	11080F	11090F
120	125	140									12050F	12060F	12070F	12080F	12090F
130	135	155										13060F	13070F	13080F	13090F
140	145	165										14060F	14070F	14080F	14090F
150	155	180										15060F	15070F	15080F	15090F
160	165	190										16060F	16070F	16080F	16090F
170	175	200										17060F	17070F	17080F	17090F
180	185	215										18060F	18070F	18080F	18090F
190	195	225										19060F	19070F	19080F	19090F
200	205	235										20060F	20070F	20080F	20090F
225	230	260										22560F	22570F	22580F	22590F
250	255	290								25060F	25070F	25080F	25090F		
265	270	305								26560F	26570F	26580F	26590F		
285	290	325								28560F	28570F	28580F	28590F		
300	305	340								30060F	30070F	30080F	30090F		