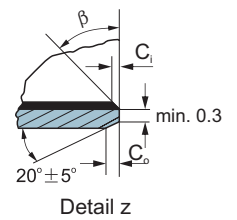
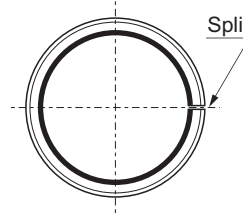
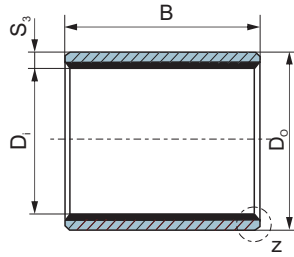


CSB-11 Metric Cylindrical Bushes



ID and OD chamfers

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° ±5°	2.00	1.2±0.4	0.50±0.3	30° ±5°
1.00	0.6±0.3	0.30±0.2	30° ±5°	2.50	1.8±0.6	0.60±0.3	45° ±5°
1.50	0.7±0.3	0.50±0.3	30° ±5°				

Unit:mm

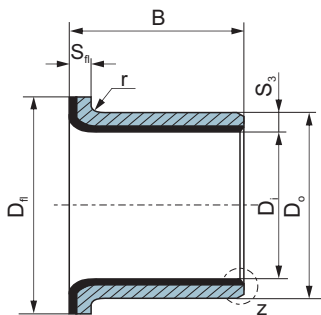
Shaft D _s	Housing H7 D _H	OD tolerance D _o	ID after fixed D _{i,a}	Clearance C _D	Wall thick- ness S ₃	B ⁰ _{-0.40} (d ≤ φ 30 B-0.3) -0.40 (d > φ 30 B-0.4)																
						6	8	10	12	15	20	25	30	40	50							
6 ^{-0.010} _{-0.022}	8 ^{+0.015}	8 ^{+0.055} _{+0.025}	6.055 5.990	0.077 0.000	1.005 0.980	CSB-11 0606	CSB-11 0608	CSB-11 0610														
8 ^{-0.013} _{-0.028}	10 ^{+0.015}	10 ^{+0.055} _{+0.025}	8.055 7.990	0.083 0.003		CSB-11 0806	CSB-11 0808	CSB-11 0810	CSB-11 0812	CSB-11 0815												
10 ^{-0.013} _{-0.028}	12 ^{+0.018}	12 ^{+0.065} _{+0.030}	10.058 9.990	0.086 0.003		CSB-11 1006	CSB-11 1008	CSB-11 1010	CSB-11 1012	CSB-11 1015	CSB-11 1020											
12 ^{-0.016} _{-0.034}	14 ^{+0.018}	14 ^{+0.065} _{+0.030}	12.058 11.990	0.092 0.006		CSB-11 1206	CSB-11 1208	CSB-11 1210	CSB-11 1212	CSB-11 1215	CSB-11 1220	CSB-11 1225										
13 ^{-0.016} _{-0.034}	15 ^{+0.018}	15 ^{+0.065} _{+0.030}	13.058 12.990			CSB-11 1310					CSB-11 1320											
14 ^{-0.016} _{-0.034}	16 ^{+0.018}	16 ^{+0.065} _{+0.030}	14.058 13.990			CSB-11 1410	CSB-11 1412	CSB-11 1415	CSB-11 1420	CSB-11 1425												
15 ^{-0.016} _{-0.034}	17 ^{+0.018}	17 ^{+0.065} _{+0.030}	15.058 14.990			CSB-11 1510	CSB-11 1512	CSB-11 1515	CSB-11 1520	CSB-11 1525												
16 ^{-0.016} _{-0.034}	18 ^{+0.018}	18 ^{+0.065} _{+0.030}	16.058 15.990			CSB-11 1610	CSB-11 1612	CSB-11 1615	CSB-11 1620	CSB-11 1625												
17 ^{-0.016} _{-0.034}	19 ^{+0.021}	19 ^{+0.075} _{+0.035}	17.061 16.990		0.095 0.006	CSB-11 1710	CSB-11 1712			CSB-11 1720												
18 ^{-0.016} _{-0.034}	20 ^{+0.021}	20 ^{+0.075} _{+0.035}	18.061 17.990	0.112 0.010	CSB-11 1810	CSB-11 1812	CSB-11 1815	CSB-11 1820	CSB-11 1825													
20 ^{-0.020} _{-0.041}	23 ^{+0.021}	23 ^{+0.075} _{+0.035}	20.071 19.990		CSB-11 2010	CSB-11 2012	CSB-11 2015	CSB-11 2020	CSB-11 2025	CSB-11 2030												
22 ^{-0.020} _{-0.041}	25 ^{+0.021}	25 ^{+0.075} _{+0.035}	22.071 21.990		CSB-11 2210	CSB-11 2212	CSB-11 2215	CSB-11 2220	CSB-11 2225	CSB-11 2230												
24 ^{-0.020} _{-0.041}	27 ^{+0.021}	27 ^{+0.075} _{+0.035}	24.071 23.990		CSB-11 2415			CSB-11 2420	CSB-11 2425	CSB-11 2430												
25 ^{-0.020} _{-0.041}	28 ^{+0.021}	28 ^{+0.075} _{+0.035}	25.071 24.990	0.126 0.010	CSB-11 2510	CSB-11 2512	CSB-11 2515	CSB-11 2520	CSB-11 2525	CSB-11 2530	CSB-11 2540	CSB-11 2550										
28 ^{-0.020} _{-0.041}	32 ^{+0.025}	32 ^{+0.085} _{+0.045}	28.085 27.990		CSB-11 2815			CSB-11 2820	CSB-11 2825	CSB-11 2830	CSB-11 2840											
30 ^{-0.020} _{-0.041}	34 ^{+0.025}	34 ^{+0.085} _{+0.045}	30.085 29.990	0.135 0.015			CSB-11 3012	CSB-11 3015	CSB-11 3020	CSB-11 3025	CSB-11 3030	CSB-11 3040										
32 ^{-0.025} _{-0.050}	36 ^{+0.025}	36 ^{+0.085} _{+0.045}	32.085 31.990							CSB-11 3220		CSB-11 3230	CSB-11 3240									
35 ^{-0.025} _{-0.050}	39 ^{+0.025}	39 ^{+0.085} _{+0.045}	35.085 34.990		CSB-11 3512	CSB-11 3515	CSB-11 3520	CSB-11 3525	CSB-11 3530	CSB-11 3540	CSB-11 3550											
38 ^{-0.025} _{-0.050}	42 ^{+0.025}	42 ^{+0.085} _{+0.045}	38.085 37.990					CSB-11 3815				CSB-11 3830	CSB-11 3840									
40 ^{-0.025} _{-0.050}	44 ^{+0.025}	44 ^{+0.085} _{+0.045}	40.085 39.990					CSB-11 4012		CSB-11 4020	CSB-11 4025	CSB-11 4030	CSB-11 4040	CSB-11 4050								

CSB-11 Metric Cylindrical Bushes

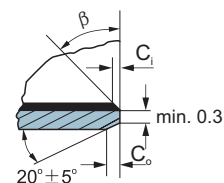
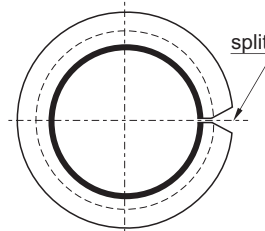
Unit:mm

Shaft D _s	Housing H7 D _H	OD tolerance D _o	ID after fixed D _{i,a}	Clearance C _D	Wall thick- ness S ₃	B _{-0.40} ⁰											
						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	CSB-11 4520	CSB-11 4525	CSB-11 4530	CSB-11 4540	CSB-11 4550							
50 ^{-0.050} _{-0.025}	55 ^{+0.030}	55 ^{+0.100} _{+0.055}	50.110 49.990	0.160 0.015		CSB-11 5020		CSB-11 5030	CSB-11 5040	CSB-11 5050	CSB-11 5060						
55 ^{-0.060} _{-0.030}	60 ^{+0.030}	60 ^{+0.100} _{+0.055}	55.110 54.990					CSB-11 5530	CSB-11 5540	CSB-11 5550	CSB-11 5560						
60 ^{-0.060} _{-0.030}	65 ^{+0.030}	65 ^{+0.100} _{+0.055}	60.110 59.990					CSB-11 6030	CSB-11 6040	CSB-11 6050	CSB-11 6060	CSB-11 6070					
65 ^{-0.060} _{-0.030}	70 ^{+0.030}	70 ^{+0.100} _{+0.055}	65.110 64.990	0.170 0.020				CSB-11 6530	CSB-11 6540	CSB-11 6550	CSB-11 6560	CSB-11 6570					
70 ^{-0.060} _{-0.030}	75 ^{+0.030}	75 ^{+0.100} _{+0.055}	70.110 69.990						CSB-11 7040	CSB-11 7050	CSB-11 7060	CSB-11 7070	CSB-11 7080				
75 ^{-0.060} _{-0.030}	80 ^{+0.030}	80 ^{+0.100} _{+0.055}	75.110 74.990					CSB-11 7530	CSB-11 7540	CSB-11 7550	CSB-11 7560	CSB-11 7570	CSB-11 7580				
80 ^{-0.046}	85 ^{+0.035}	85 ^{+0.120} _{+0.070}	80.155 80.020	0.201 0.020	2.490 2.440			CSB-11 8040	CSB-11 8050	CSB-11 8060	CSB-11 8070	CSB-11 8080	CSB-11 80100				
85 ^{-0.054}	90 ^{+0.035}	90 ^{+0.120} _{+0.070}	85.155 85.020						CSB-11 8540		CSB-11 8560		CSB-11 8580	CSB-11 85100			
90 ^{-0.054}	95 ^{+0.035}	95 ^{+0.120} _{+0.070}	90.155 90.020						CSB-11 9040	CSB-11 9050	CSB-11 9060		CSB-11 9080	CSB-11 90100			
95 ^{-0.054}	100 ^{+0.035}	100 ^{+0.120} _{+0.070}	95.155 95.020							CSB-11 9550	CSB-11 9560		CSB-11 9580	CSB-11 95100			
100 ^{-0.054}	105 ^{+0.035}	105 ^{+0.120} _{+0.070}	100.155 100.020	0.209 0.020						CSB-11 10050	CSB-11 10060		CSB-11 10080		CSB-11 100115		
105 ^{-0.054}	110 ^{+0.035}	110 ^{+0.120} _{+0.070}	105.155 105.020								CSB-11 10560		CSB-11 10580		CSB-11 105115		
110 ^{-0.054}	115 ^{+0.035}	115 ^{+0.120} _{+0.070}	110.155 110.020								CSB-11 11060		CSB-11 11080		CSB-11 110115		
120 ^{-0.054}	125 ^{+0.040}	125 ^{+0.170} _{+0.100}	120.210 120.070	0.264 0.070	2.465 2.415					CSB-11 12060		CSB-11 12080	CSB-11 120100				
125 ^{-0.063}	130 ^{+0.040}	130 ^{+0.170} _{+0.100}	125.210 125.070								CSB-11 12560			CSB-11 125100	CSB-11 125115		
130 ^{-0.063}	135 ^{+0.040}	135 ^{+0.170} _{+0.100}	130.210 130.070								CSB-11 13060		CSB-11 13080	CSB-11 130100			
140 ^{-0.063}	145 ^{+0.040}	145 ^{+0.170} _{+0.100}	140.210 140.070	0.273 0.070							CSB-11 14060		CSB-11 14080	CSB-11 140100			
150 ^{-0.063}	155 ^{+0.040}	155 ^{+0.170} _{+0.100}	150.210 150.070								CSB-11 15060		CSB-11 15080	CSB-11 150100			
160 ^{-0.063}	165 ^{+0.040}	165 ^{+0.170} _{+0.100}	160.210 160.070								CSB-11 16060		CSB-11 16080	CSB-11 160100	CSB-11 160115		
180 ^{-0.063}	185 ^{+0.046}	185 ^{+0.210} _{+0.130}	180.216 180.070	0.279 0.070		2.465 2.415							CSB-11 18080	CSB-11 180100			
190 ^{-0.072}	195 ^{+0.046}	195 ^{+0.210} _{+0.130}	190.216 190.070										CSB-11 19080	CSB-11 190100			
200 ^{-0.072}	205 ^{+0.046}	205 ^{+0.210} _{+0.130}	200.216 200.070	0.288 0.070							CSB-11 20060		CSB-11 20080	CSB-11 200100			
220 ^{-0.072}	225 ^{+0.046}	225 ^{+0.210} _{+0.130}	220.216 220.070										CSB-11 22080	CSB-11 220100			
250 ^{-0.072}	255 ^{+0.052}	255 ^{+0.260} _{+0.170}	250.222 250.070	0.294 0.070	2.465 2.415							CSB-11 25080	CSB-11 250100				
260 ^{-0.081}	265 ^{+0.052}	265 ^{+0.260} _{+0.170}	260.222 260.070										CSB-11 26080	CSB-11 260100			
280 ^{-0.081}	285 ^{+0.052}	285 ^{+0.260} _{+0.170}	280.222 280.070	0.303 0.070									CSB-11 28080	CSB-11 280100			
300 ^{-0.081}	305 ^{+0.052}	305 ^{+0.260} _{+0.170}	300.222 300.070										CSB-11 30080	CSB-11 300100			

CSB-11 Metric Flange Bushes



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



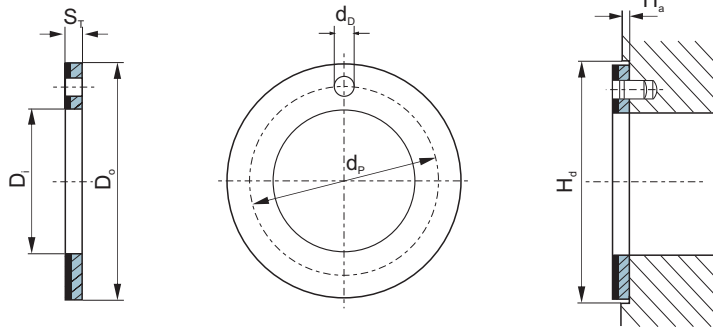
Detail z

Unit:mm

Shaft D_s	Housing H_7 D_H	OD tolerance D_o	ID after fixed $D_{l,a}$	Clearance C_o	Designation	Wall thickness S_3	Dimension				
							D_i	D_o	$D_n \pm 0.5$	$B \pm 0.25$	$S_n - 0.2$
6 -0.013 -0.028	8 +0.015	8 +0.055 +0.025	6.055 5.990	0.077 0.000	CSB-11F06040	1.005 0.980	6	8	12	4	1
					CSB-11F06070					7	
8 -0.013 -0.028	10 +0.015	10 +0.055 +0.025	8.055 7.990	0.083 0.003	CSB-11F08055	1.005 0.980	8	10	15	5.5	1
					CSB-11F08075					7.5	
10 -0.016 -0.034	12 +0.018	12 +0.055 +0.025	10.058 9.990	0.086 0.003	CSB-11F10070	1.005 0.980	10	12	18	7	1
					CSB-11F10090					9	
					CSB-11F10120					12	
12 -0.016 -0.034	14 +0.018	14 +0.065 +0.030	12.058 11.990	0.092 0.006	CSB-11F12070	1.005 0.980	12	14	20	7	1
					CSB-11F12090					9	
					CSB-11F12120					12	
14 -0.016 -0.034	16 +0.018	16 +0.065 +0.030	14.058 13.990	0.092 0.006	CSB-11F14120	1.005 0.980	14	16	22	12	1
					CSB-11F14170					17	
					CSB-11F15090					9	
15 -0.016 -0.034	17 +0.018	17 +0.065 +0.030	15.058 14.990	0.092 0.006	CSB-11F15120	1.005 0.980	15	17	23	12	1
					CSB-11F15170					17	
					CSB-11F16120					12	
16 -0.016 -0.034	18 +0.018	18 +0.065 +0.030	16.058 15.990	0.092 0.006	CSB-11F16120	1.005 0.980	16	18	24	12	1
					CSB-11F16170					17	
					CSB-11F18120					12	
18 -0.016 -0.034	20 +0.021	20 +0.075 +0.035	18.061 17.990	0.095 0.006	CSB-11F18120	1.005 0.980	18	20	26	12	1
					CSB-11F18170					17	
					CSB-11F18200					20	
20 -0.020 -0.041	23 +0.021	23 +0.075 +0.035	20.071 19.990	0.112 0.010	CSB-11F20115	1.505 1.475	20	23	30	11.5	1.5
					CSB-11F20165					16.5	
					CSB-11F20215					21.5	
22 -0.020 -0.041	25 +0.021	25 +0.075 +0.035	22.071 21.990	0.112 0.010	CSB-11F22150	1.505 1.475	22	25	32	15	1.5
					CSB-11F22200					20	
					CSB-11F25115					11.5	
25 -0.020 -0.041	28 +0.021	28 +0.075 +0.035	25.071 24.990	0.112 0.010	CSB-11F25165	1.505 1.475	25	28	35	16.5	1.5
					CSB-11F25215					21.5	
					CSB-11F30160					16	
30 -0.025 -0.050	34 +0.025	34 +0.075 +0.035	30.085 29.990	0.126 0.010	CSB-11F30160	2.005 1.970	30	34	42	26	2
					CSB-11F30260					26	
35 -0.025 -0.050	39 +0.025	39 +0.085 +0.045	35.085 34.990	0.135 0.015	CSB-11F35160	2.005 1.970	35	39	47	16	2
					CSB-11F35260					26	
40 -0.025 -0.050	44 +0.025	44 +0.085 +0.045	40.085 39.990	0.135 0.015	CSB-11F40260	2.005 1.970	40	44	53	26	2
					CSB-11F40400					40	

CSB-11 Metric Thrust Washer and Strip

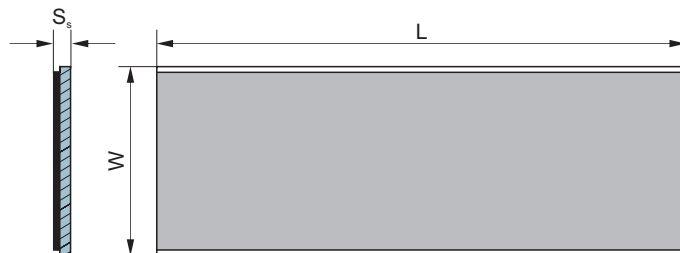
Metric thrust washer



Unit:mm

Shaft D_s	Designation	Washer dimension				Installation size		$H_b+0.12$
		$D_i +0.25$	$D_o -0.25$	$S_r -0.05$	$d_p \pm 0.125$	$d_{cb}^{+0.4}$	$H_a \pm 0.2$	
8	CSB-11WC10	10	20	1.5	15	1.5	1	20
10	CSB-11WC12	12	24		18			
12	CSB-11WC14	14	26		20			
14	CSB-11WC16	16	30		23			
16	CSB-11WC18	18	32		25			
18	CSB-11WC20	20	36		28			
20	CSB-11WC22	22	38		30			
22	CSB-11WC24	24	42		33			
24	CSB-11WC26	26	44		35			
26	CSB-11WC28	28	48		38			
30	CSB-11WC32	32	54		43			
36	CSB-11WC38	38	62		50			
40	CSB-11WC42	42	66		54			
46	CSB-11WC48	48	74		61			
50	CSB-11WC52	52	78	2	65	1.5	78	
60	CSB-11WC62	62	90		76		90	

Metric standard strip



Unit:mm

Type	Length ± 1	Width ± 1	Thickness -0.05
CSB-11SP	500	150	1.0
CSB-11SP	500	150	1.5
CSB-11SP	500	150	2.0
CSB-11SP	500	150	2.5