



### 1.5 E90A E90A Brief Description

E90A bronze wrapped bushings are made of entirely bronze CuSn8P. Because of material properties, the working surface rolled with diamond indentations (standard indentations) or stamped oil grooves according to detailed application. And it also has good performance of anti-corrosion caused by chemical and environments. During the operation, the grease & oil will be released from the indentations, which allow for long-term lubrication. Compare with machined bronze bearings; E90A can offer some advantages including thin wall, lower weight, cheaper cost, high load etc. It is suitable for high load, lower speed application like construction, transport, and agriculture machinery.



### 1.6 E92A E92A Brief Description

E92A are wrapped of cold formable tin copper, which will let bearings obtain exceptional material properties. Oil holes are punched for standard bearings, these holes will allow greater capacity to collect lubricant, which rapidly build up a lubrication film at the movement of start and reduce the friction. The kind of bearings has many benefits like high load capacity, excellent lubrication performance, high thermal conductivity etc. It is suitable for high load, slow movements application like construction machinery, forest machinery, dumpers, hydraulic cranes, transport, and agriculture machinery.



**1.6<sup>1</sup> E90A/E92A  
E90A/E92A Chemical Composition**

Part No	Material	Cu	Sn	P	Pb	Zn
E90A	CuSn8	91.3%	8.5%	0.2%	/	/
E92A	CuSn8	91.3%	8.5%	0.2%	/	/

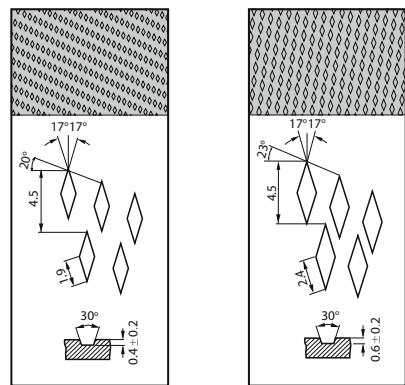
**1.6<sup>2</sup> E90A/E92A  
E90A/E92A Material Characteristics**

P	Max. Load Capacity		
0 m/s	Speed 0 m/s	N/mm <sup>2</sup>	280
0.01 m/s	Speed 0.01 m/s	N/mm <sup>2</sup>	80~120
2.0 m/s	Speed 2.0 m/s	N/mm <sup>2</sup>	30~40
V	Max. Speed	m/s	2.5
	Tensile Strength	N/mm <sup>2</sup>	450
	Yield Point	N/mm <sup>2</sup>	300
	Hardness	HB	125~150
	Coefficient of Friction	$\mu$	0.08~0.25
	Operation Temperature Range	°C	-100~200

ID Tolerance of bearing installed housing H7: H9; Recommended shaft tolerance: IT7 or IT8;

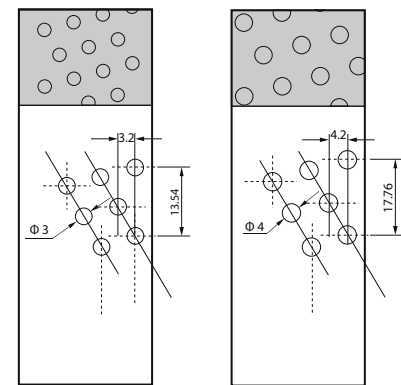
**1.6<sup>3</sup> E90A/E92A  
E90A/E92A Oil Indentations/Holes**

**E90A**



<  $\Phi$  22 Diamond Indentations Inter Diameter <  $\Phi$  22

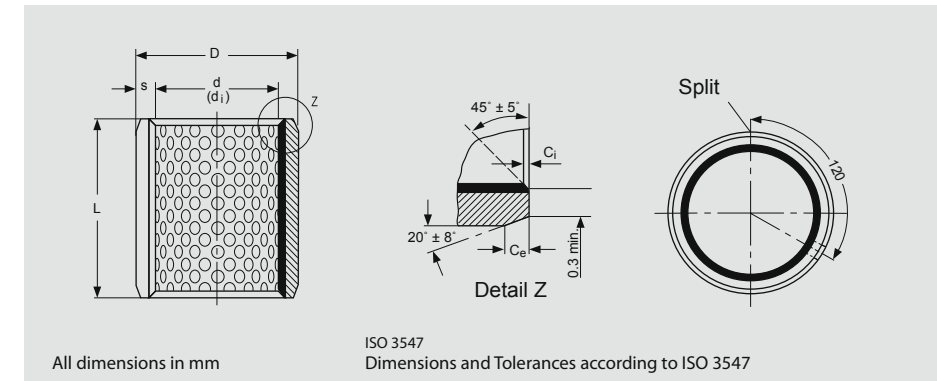
**E92A**



$\geq \Phi$  22 Diamond Indentations Inter Diameter  $\geq \Phi$  22  
 $\leq \Phi$  25 Spherical Holes Inter Diameter  $\leq \Phi$  25  
 $> \Phi$  25 Spherical Holes Inter Diameter  $> \Phi$  25



**5.14 E90A/E92A  
E90A/E92A Sleeve Bushing Specification & Tolerance**



**Inside & Outside Chamfers**

Wall thickness S	Inside Chamfer C <sub>i</sub>	Outside Chamfer C <sub>e</sub>
1.00	0.30 ± 0.20	0.60 ± 0.40
1.50	0.40 ± 0.30	0.60 ± 0.40
2.00	0.40 ± 0.30	1.20 ± 0.40
2.50	0.60 ± 0.40	1.80 ± 0.60

**Bushing Symbol**

Bushing Symbol	E9 - □	× ×	× ×
Bushing Type			
Bushing I. D.			
Bushing Length			

d	Internal Diameter		External Diameter			Length	Part No
	Shaft- $\Phi d_s$	$\Phi d_i$ (H9)	D	Housing- $\Phi D_H$	O.D. $\Phi D_t$		
10	9.984	10.043	12	12.018	12.000	ID < 80 L ± 0.25	E90A/E92A 1010
	9.957	10.000				ID > 80 L ± 0.50	E90A/E92A 1015
						E90A/E92A 1020	
12	11.984	12.043	14	14.018	14.000		E90A/E92A 1210
	11.957	12.000				E90A/E92A 1215	
						E90A/E92A 1220	
14	13.984	14.043	16	16.018	16.000		E90A/E92A 1410
	13.957	14.000				E90A/E92A 1415	
						E90A/E92A 1420	
15	14.984	15.043	17	17.018	17.000		E90A/E92A 1510
	14.957	15.000				E90A/E92A 1515	
						E90A/E92A 1520	
16	15.984	15.984	18	18.018	18.000		E90A/E92A 1610
	15.957	15.957				E90A/E92A 1615	
						E90A/E92A 1620	
							E90A/E92A 1625



Internal Diameter			External Diameter			Length	Part No
d	Shaft- $\Phi d_s$	$\Phi d_i$ (H9)	D	Housing- $\Phi D_H$	O.D. $\Phi D_t$		
18	17.984 17.957	18.043 18.000	20	20.018 20.000	+0.065 +0.030	10	E90A/E92A 1810
						15	E90A/E92A 1815
						20	E90A/E92A 1820
						25	E90A/E92A 1825
20	19.980 19.947	20.052 20.000	23	23.021 23.000	+0.075 +0.035	10	E90A/E92A 2010
						15	E90A/E92A 2015
						20	E90A/E92A 2020
						25	E90A/E92A 2025
22	21.980 21.947	22.052 22.000	25	25.021 25.000	+0.075 +0.035	10	E90A/E92A 2210
						15	E90A/E92A 2215
						20	E90A/E92A 2220
						25	E90A/E92A 2225
24	23.980 23.947	24.052 24.000	27	27.021 27.000	+0.075 +0.035	15	E90A/E92A 2415
						20	E90A/E92A 2420
						25	E90A/E92A 2425
						30	E90A/E92A 2430
25	24.980 24.947	25.052 25.000	28	28.021 28.000	+0.075 +0.035	15	E90A/E92A 2515
						20	E90A/E92A 2520
						25	E90A/E92A 2525
						30	E90A/E92A 2530
28	27.980 27.947	28.052 28.000	32	32.021 32.000	+0.075 +0.035	15	E90A/E92A 2815
						20	E90A/E92A 2820
						25	E90A/E92A 2825
						30	E90A/E92A 2830
30	29.980 29.947	30.052 30.000	34	34.021 34.000	+0.075 +0.035	15	E90A/E92A 3015
						20	E90A/E92A 3020
						25	E90A/E92A 3025
						30	E90A/E92A 3030
32	31.975 31.936	32.062 32.000	36	36.025 36.000	+0.085 +0.045	35	E90A/E92A 3035
						40	E90A/E92A 3040
						15	E90A/E92A 3215
						20	E90A/E92A 3220
32	31.975 31.936	32.062 32.000	36	36.025 36.000	+0.085 +0.045	25	E90A/E92A 3225
						30	E90A/E92A 3230
						35	E90A/E92A 3235
						40	E90A/E92A 3240
32	31.975 31.936	32.062 32.000	36	36.025 36.000	+0.085 +0.045	50	E90A/E92A 3250



Internal Diameter			External Diameter			Length	Part No
d	Shaft- $\Phi d_s$	$\Phi d_i$ (H9)	D	Housing- $\Phi D_H$	O.D. $\Phi D_t$		
35	34.975 34.936	35.062 35.000	39	39.025 39.000	+0.085 +0.045	15	E90A/E92A 3515
						20	E90A/E92A 3525
						25	E90A/E92A 3525
						30	E90A/E92A 3530
						35	E90A/E92A 3535
40	39.975 39.936	40.062 40.000	44	44.025 44.000	+0.085 +0.045	40	E90A/E92A 3540
						20	E90A/E92A 4020
						25	E90A/E92A 4025
						30	E90A/E92A 4030
						35	E90A/E92A 4035
45	44.975 44.936	45.062 45.000	50	50.025 50.000	+0.085 +0.045	40	E90A/E92A 4040
						50	E90A/E92A 4050
						20	E90A/E92A 4520
						25	E90A/E92A 4525
						30	E90A/E92A 4530
50	49.975 49.936	50.062 50.000	55	55.025 55.000	+0.085 +0.045	35	E90A/E92A 4535
						40	E90A/E92A 4540
						50	E90A/E92A 4550
						20	E90A/E92A 5020
						25	E90A/E92A 5025
55	54.970 54.924	55.074 55.000	60	60.030 60.000	+0.100 +0.055	30	E90A/E92A 5030
						35	E90A/E92A 5035
						40	E90A/E92A 5040
						50	E90A/E92A 5050
						60	E90A/E92A 5060
60	59.970 59.924	60.074 60.000	65	65.030 65.000	+0.100 +0.055	20	E90A/E92A 5520
						25	E90A/E92A 5525
						30	E90A/E92A 5530
						35	E90A/E92A 5535
						40	E90A/E92A 5540
60	59.970 59.924	60.074 60.000	65	65.030 65.000	+0.100 +0.055	50	E90A/E92A 5550
						60	E90A/E92A 5560
						25	E90A/E92A 6025
						30	E90A/E92A 6030
						35	E90A/E92A 6035
60	59.970 59.924	60.074 60.000	65	65.030 65.000	+0.100 +0.055	40	E90A/E92A 6040
						50	E90A/E92A 6050
						60	E90A/E92A 6060
						70	E90A/E92A 6070



Internal Diameter			External Diameter			Length	Part No
d	Shaft- $\Phi d_s$	$\Phi d_i$ (H9)	D	Housing- $\Phi D_H$	O.D. $\Phi D_t$	ID<80 L $\pm$ 0.25	
						ID>80 L $\pm$ 0.50	
65	64.970 64.924	65.074 65.000	70	70.030 70.000		30	E90A/E92A 6530
						35	E90A/E92A 6535
						40	E90A/E92A 6540
						50	E90A/E92A 6550
						60	E90A/E92A 6560
						70	E90A/E92A 6570
						80	E90A/E92A 6580
70	69.970 69.924	70.074 70.000	75	75.030 75.000		30	E90A/E92A 7030
						35	E90A/E92A 7035
						40	E90A/E92A 7040
						50	E90A/E92A 7050
						60	E90A/E92A 7060
						70	E90A/E92A 7070
						80	E90A/E92A 7080
75	74.970 74.924	75.074 75.000	80	80.030 80.000		30	E90A/E92A 7530
						35	E90A/E92A 7535
						40	E90A/E92A 7540
						50	E90A/E92A 7550
						60	E90A/E92A 7560
						70	E90A/E92A 7570
						80	E90A/E92A 7580
80	79.970 79.924	80.074 80.000	85	85.030 85.000		30	E90A/E92A 8030
						35	E90A/E92A 8035
						40	E90A/E92A 8040
						50	E90A/E92A 8040
						60	E90A/E92A 8060
						70	E90A/E92A 8070
						80	E90A/E92A 8080
85	84.964 84.910	85.087 85.000	90	90.035 90.000		30	E90A/E92A 8530
						35	E90A/E92A 8535
						40	E90A/E92A 8540
						50	E90A/E92A 8550
						60	E90A/E92A 8560
						70	E90A/E92A 8570
						80	E90A/E92A 8580
						90	E90A/E92A 8590
90	89.964 89.910	90.087 90.000	95	95.035 95.000		30	E90A/E92A 9030
						35	E90A/E92A 9035



Internal Diameter			External Diameter			Length	Part No
d	Shaft- $\Phi d_s$	$\Phi d_i$ (H9)	D	Housing- $\Phi D_H$	O.D. $\Phi D_t$	ID<80 L $\pm$ 0.25	
						ID>80 L $\pm$ 0.50	
90	89.964 89.910	90.087 90.000	95	95.035 95.000		40	E90A/E92A 9040
						50	E90A/E92A 9050
						60	E90A/E92A 9060
						70	E90A/E92A 9070
						80	E90A/E92A 9080
						90	E90A/E92A 9090
95	94.964 94.910	95.087 95.000	100	100.035 100.000		40	E90A/E92A 9540
						50	E90A/E92A 9550
						60	E90A/E92A 9560
						70	E90A/E92A 9570
						80	E90A/E92A 9580
						90	E90A/E92A 9590
						100	E90A/E92A 95100
100	99.964 99.910	100.087 100.000	105	105.035 105.000		50	E90A/E92A 10050
						60	E90A/E92A 10060
						70	E90A/E92A 10070
						80	E90A/E92A 10080
						90	E90A/E92A 10090
						100	E90A/E92A 100100
105	104.964 104.910	105.087 105.000	110	110.035 110.000		50	E90A/E92A 10550
						60	E90A/E92A 10560
						70	E90A/E92A 10570
						80	E90A/E92A 10580
						90	E90A/E92A 10590
						100	E90A/E92A 105100
110	109.964 109.910	110.087 110.000	115	115.035 115.000		50	E90A/E92A 11050
						60	E90A/E92A 11060
						70	E90A/E92A 11070
						80	E90A/E92A 11080
						90	E90A/E92A 11090
						100	E90A/E92A 110100
115	114.964 114.910	115.087 115.000	120	120.035 120.000		50	E90A/E92A 11550
						60	E90A/E92A 11560
						70	E90A/E92A 11570
						80	E90A/E92A 11580
						90	E90A/E92A 11590
						100	E90A/E92A 115100
120	119.964 119.910	120.087 120.000	125	125.035 125.000		60	E90A/E92A 12060
						70	E90A/E92A 12070



Internal Diameter			External Diameter			Length	Part No
d	Shaft- $\Phi d_s$	$\Phi d_i$ (H9)	D	Housing- $\Phi D_H$	O.D. $\Phi D_t$		
120	119.964 119.910	120.087 120.000	125	125.035 125.000	+0.120 +0.070	80	E90A/E92A 12080
						90	E90A/E92A 12090
						100	E90A/E92A 120100
125	124.957 124.894	125.100 125.000	130	130.040 130.000	+0.170 +0.100	60	E90A/E92A 12560
						70	E90A/E92A 12570
						80	E90A/E92A 12580
						90	E90A/E92A 12590
						100	E90A/E92A 125100
130	129.957 129.894	130.100 130.000	135	135.040 135.000	+0.170 +0.100	60	E90A/E92A 13060
						70	E90A/E92A 13070
						80	E90A/E92A 13080
						90	E90A/E92A 13090
						100	E90A/E92A 130100
135	134.957 134.894	135.100 135.000	140	140.040 140.000	+0.170 +0.100	60	E90A/E92A 13560
						70	E90A/E92A 13570
						80	E90A/E92A 13580
						90	E90A/E92A 13590
						100	E90A/E92A 135100
140	139.957 139.894	140.100 140.000	145	145.040 145.000	+0.170 +0.100	60	E90A/E92A 14060
						70	E90A/E92A 14070
						80	E90A/E92A 14080
						90	E90A/E92A 14090
						95	E90A/E92A 14095
145	144.957 144.894	145.100 145.000	150	150.040 150.000	+0.170 +0.100	60	E90A/E92A 14560
						70	E90A/E92A 14570
						80	E90A/E92A 14580
						90	E90A/E92A 14590
						100	E90A/E92A 145100
150	149.957 149.894	150.100 150.000	155	155.040 155.000	+0.170 +0.100	60	E90A/E92A 15060
						70	E90A/E92A 15070
						80	E90A/E92A 15080
						90	E90A/E92A 15090
						100	E90A/E92A 150100
155	154.957 154.894	155.100 155.000	160	160.040 160.000	+0.170 +0.100	60	E90A/E92A 15560



Internal Diameter			External Diameter			Length	Part No
d	Shaft- $\Phi d_s$	$\Phi d_i$ (H9)	D	Housing- $\Phi D_H$	O.D. $\Phi D_t$		
155	154.957 154.894	155.100 155.000	160	160.040 160.000	+0.170 +0.100	70	E90A/E92A 15570
						80	E90A/E92A 15580
						90	E90A/E92A 15590
						100	E90A/E92A 155100
160	159.957 159.894	160.100 160.000	165	165.040 165.000	+0.170 +0.100	60	E90A/E92A 16060
						70	E90A/E92A 16070
						80	E90A/E92A 16080
						90	E90A/E92A 16090
						100	E90A/E92A 160100
165	164.957 164.894	165.100 165.000	170	170.040 170.000	+0.170 +0.100	60	E90A/E92A 16560
						70	E90A/E92A 16570
						80	E90A/E92A 16580
						90	E90A/E92A 16590
						100	E90A/E92A 165100
170	169.957 169.894	170.100 170.000	175	175.040 175.000	+0.170 +0.100	60	E90A/E92A 17060
						70	E90A/E92A 17070
						80	E90A/E92A 17080
						90	E90A/E92A 17090
						100	E90A/E92A 170100
175	174.957 174.894	175.100 175.000	180	180.040 180.000	+0.170 +0.100	60	E90A/E92A 17560
						70	E90A/E92A 17570
						80	E90A/E92A 17580
						85	E90A/E92A 17585
						90	E90A/E92A 17590
180	179.957 179.894	180.100 180.000	185	185.040 185.000	+0.170 +0.100	60	E90A/E92A 18060
						70	E90A/E92A 18070
						80	E90A/E92A 18080
						90	E90A/E92A 18090
						100	E90A/E92A 180100
185	184.950 184.878	185.115 185.000	190	190.046 190.000	+0.210 +0.130	60	E90A/E92A 18560
						65	E90A/E92A 18565
						70	E90A/E92A 18570
						80	E90A/E92A 18580
						90	E90A/E92A 18590



Internal Diameter			External Diameter			Length	Part No
d	Shaft- $\Phi d_s$	$\Phi d_i$ (H9)	D	Housing- $\Phi D_H$	O.D. $\Phi D_t$	ID < 80 L $\pm$ 0.25	
						ID > 80 L $\pm$ 0.50	
185	184.950 184.878	185.115 185.000	190	190.046 190.000	+0.210 +0.130	100	E90A/E92A 185100
						60	E90A/E92A 19060
						70	E90A/E92A 19070
190	189.950 189.878	190.115 190.000	195	195.046 195.000		80	E90A/E92A 19080
						90	E90A/E92A 19090
						100	E90A/E92A 190100
						60	E90A/E92A 19560
						70	E90A/E92A 19570
195	194.950 194.878	195.115 195.000	200	200.046 200.000		80	E90A/E92A 19580
						90	E90A/E92A 19590
						100	E90A/E92A 195100
						60	E90A/E92A 20060
200	199.950 199.878	200.115 200.000	205	205.046 205.000		70	E90A/E92A 20070
						80	E90A/E92A 20080
						90	E90A/E92A 20090
						100	E90A/E92A 200100
						60	E90A/E92A 20560
205	204.950 204.878	205.115 205.000	210	210.046 210.000		70	E90A/E92A 20570
						80	E90A/E92A 20580
						90	E90A/E92A 20590
						100	E90A/E92A 205100
215	214.950 214.878	215.115 215.000	220	220.046 220.000		60	E90A/E92A 21560
						70	E90A/E92A 21570
						80	E90A/E92A 21580
					90	E90A/E92A 21590	
225	224.950 224.878	225.115 225.000	230	230.046 230.000	100	E90A/E92A 215100	
					60	E90A/E92A 22560	
					70	E90A/E92A 22570	
					80	E90A/E92A 22580	
230	229.950 229.878	230.115 230.000	235	235.046 235.000	90	E90A/E92A 22590	
					100	E90A/E92A 225100	
					60	E90A/E92A 23060	
					70	E90A/E92A 23070	
						80	E90A/E92A 23080

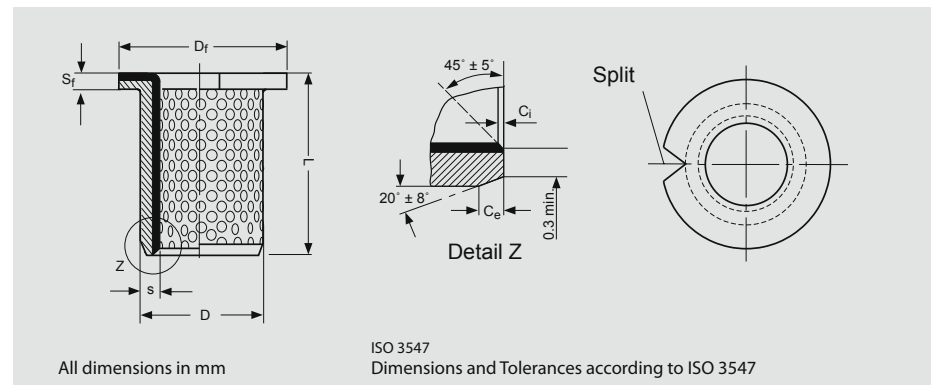


Internal Diameter			External Diameter			Length	Part No
d	Shaft- $\Phi d_s$	$\Phi d_i$ (H9)	D	Housing- $\Phi D_H$	O.D. $\Phi D_t$	ID < 80 L $\pm$ 0.25	
						ID > 80 L $\pm$ 0.50	
230	229.950 229.878	230.115 230.000	235	235.046 235.000	+0.210 +0.130	90	E90A/E92A 23090
						100	E90A/E92A 230100
						60	E90A/E92A 24060
240	239.950 239.878	240.115 240.000	245	245.046 245.000		70	E90A/E92A 24070
						80	E90A/E92A 24080
						90	E90A/E92A 24090
						100	E90A/E92A 240100
						60	E90A/E92A 25060
250	249.950 249.878	250.115 250.000	255	255.046 255.000		70	E90A/E92A 25070
						80	E90A/E92A 25080
						90	E90A/E92A 25090
						100	E90A/E92A 250100
260	259.944 259.863	260.130 260.000	265	265.052 265.000		60	E90A/E92A 25060
						70	E90A/E92A 25070
						80	E90A/E92A 25080
						90	E90A/E92A 25090
						100	E90A/E92A 250100
270	269.944 269.863	270.130 270.000	275	275.052 275.000		60	E90A/E92A 26060
						70	E90A/E92A 26070
						80	E90A/E92A 26080
						90	E90A/E92A 26090
280	279.944 279.863	280.130 280.000	285	285.052 285.000		100	E90A/E92A 260100
						60	E90A/E92A 27060
						70	E90A/E92A 27070
					80	E90A/E92A 27080	
300	299.944 289.863	300.130 300.000	305	305.052 305.000	90	E90A/E92A 27090	
					100	E90A/E92A 270100	
					60	E90A/E92A 28060	
					70	E90A/E92A 28070	
						80	E90A/E92A 28080
						90	E90A/E92A 28090
						100	E90A/E92A 280100
						60	E90A/E92A 30060
						70	E90A/E92A 30070
						80	E90A/E92A 30080
						90	E90A/E92A 30090
						100	E90A/E92A 300100





**5.15 E90A/E92A**  
**E90A/E92A Flange Bushing Specification & Tolerance**



**Inside & Outside Chamfers**

Wall thickness S	Inside Chamfer C <sub>i</sub>	Outside Chamfer C <sub>e</sub>
1.00	0.30 ± 0.20	0.60 ± 0.40
1.50	0.40 ± 0.30	0.60 ± 0.40
2.00	0.40 ± 0.30	1.20 ± 0.40
2.50	0.60 ± 0.30	1.80 ± 0.60

**Bushing Symbol**

Bushing Symbol	E9 - □	× ×	× ×
Bushing Type			
Bushing I. D.			
Bushing Length			

Internal Diameter		External Diameter			Flang Φ D <sub>f</sub>	Length ID<80 L ± 0.25 ID>80 L ± 0.50	Part No	
d	Shaft- Φ d <sub>s</sub>	Φ d <sub>i</sub> (H9)	D	Housing- Φ D <sub>H</sub>				O.D. Φ D <sub>t</sub>
25	24.980 24.947	25.052 25.000	28	28.021 28.000	+0.075 +0.035	35	15	E90A/E92A 2515
							20	E90A/E92A 2520
							25	E90A/E92A 2525
30	29.980 29.947	30.052 30.000	34	34.021 34.000	+0.075 +0.035	45	20	E90A/E92A 3020
							25	E90A/E92A 3025
							20	E90A/E92A 3020
35	34.975 34.936	35.062 35.000	39	39.025 39.000	+0.075 +0.035	50	20	E90A/E92A 3520
							25	E90A/E92A 3525
							30	E90A/E92A 3530
							35	E90A/E92A 3535
40	39.975 39.936	40.062 40.000	44	44.025 44.000	+0.085 +0.045	55	25	E90A/E92A 4025
							30	E90A/E92A 4030
							35	E90A/E92A 4035
							40	E90A/E92A 4040
45	44.975 44.936	45.062 45.000	50	50.025 50.000	+0.085 +0.045	60	30	E90A/E92A 4530
							35	E90A/E92A 4535
							40	E90A/E92A 4540
							40	E90A/E92A 4040
							50	E90A/E92A 4550



d	Internal Diameter		D	External Diameter		Flang Φ D <sub>f</sub>	Length ID<80 L ± 0.25 ID>80 L ± 0.50	Part No
	Shaft- Φ d <sub>s</sub>	Φ d <sub>i</sub> (H9)		Housing- Φ D <sub>H</sub>	O.D. Φ D <sub>t</sub>			
50	49.975 49.936	50.062 50.000	55	55.025 55.000	+0.085 +0.045	65	30	E90A/E92A 5030
							35	E90A/E92A 5035
							40	E90A/E92A 5040
							50	E90A/E92A 5050
55	54.970 54.924	55.074 55.000	60	60.030 60.000	+0.100 +0.055	70	30	E90A/E92A 5530
							35	E90A/E92A 5535
							40	E90A/E92A 5540
							50	E90A/E92A 5550
60	59.970 59.924	60.074 60.000	65	65.030 65.000	+0.100 +0.055	75	30	E90A/E92A 6030
							35	E90A/E92A 6035
							40	E90A/E92A 6040
							50	E90A/E92A 6050
							60	E90A/E92A 6060
65	64.970 64.924	65.074 65.000	70	70.030 70.000	+0.100 +0.055	80	30	E90A/E92A 6530
							35	E90A/E92A 6535
							40	E90A/E92A 6540
							50	E90A/E92A 6550
							60	E90A/E92A 6560
70	69.970 69.924	70.074 70.000	75	75.030 75.000	+0.100 +0.055	85	35	E90A/E92A 7035
							40	E90A/E92A 7040
							50	E90A/E92A 7050
							60	E90A/E92A 7060
75	74.970 74.924	75.074 75.000	80	80.030 80.000	+0.100 +0.055	90	70	E90A/E92A 7070
							35	E90A/E92A 7535
							40	E90A/E92A 7540
							50	E90A/E92A 7550
80	79.970 79.924	80.074 80.000	85	85.030 85.000	+0.100 +0.055	100	60	E90A/E92A 7560
							70	E90A/E92A 7570
							40	E90A/E92A 8040
							50	E90A/E92A 8050
90	89.964 89.910	90.087 90.000	100	100.035 100.000	+0.120 +0.070	110	60	E90A/E92A 8060
							70	E90A/E92A 8070
							80	E90A/E92A 8080
							50	E90A/E92A 9050
							60	E90A/E92A 9060



Internal Diameter			External Diameter			Flang $\Phi D_f$	Length	Part No
d	Shaft- $\Phi d_s$	$\Phi d_i(H9)$	D	Housing- $\Phi D_H$	O.D. $\Phi D_t$		ID<80 L $\pm 0.25$ ID>80 L $\pm 0.50$	
95	94.964 94.910	95.087 95.000	100	100.035 100.000		115	70	E90A/E92A 9070
							80	E90A/E92A 9080
							90	E90A/E92A 9090
100	99.964 99.910	100.087 100.000	105	105.035 105.000		120	50	E90A/E92A 10050
							60	E90A/E92A 10060
							70	E90A/E92A 10070
							80	E90A/E92A 10080
							90	E90A/E92A 10090
110	109.964 109.910	110.087 110.000	115	115.035 110.000		130	50	E90A/E92A 11050
							60	E90A/E92A 11060
							70	E90A/E92A 11070
							80	E90A/E92A 11080
							90	E90A/E92A 11090
120	119.964 119.910	120.087 120.000	125	125.035 125.000		140	60	E90A/E92A 12060
							70	E90A/E92A 12070
							80	E90A/E92A 12080
130	129.957 129.894	130.100 130.000	135	135.040 135.000		155	90	E90A/E92A 12090
							60	E90A/E92A 13060
							70	E90A/E92A 13070
140	139.957 139.894	140.100 140.000	145	145.040 145.000		165	80	E90A/E92A 13080
							90	E90A/E92A 13090
							60	E90A/E92A 14060
150	149.957 149.894	150.100 150.000	155	155.040 155.000		180	70	E90A/E92A 14070
							80	E90A/E92A 14080
							90	E90A/E92A 14090
160	159.957 159.894	160.100 160.000	165	165.040 165.000		190	60	E90A/E92A 15060
							70	E90A/E92A 15070
							80	E90A/E92A 15080
170	169.957 169.894	170.100 170.000	175	175.040 175.000		200	90	E90A/E92A 15090
							60	E90A/E92A 16060
							70	E90A/E92A 16070
							80	E90A/E92A 16080
							90	E90A/E92A 16090
							60	E90A/E92A 17060
							70	E90A/E92A 17070



Internal Diameter			External Diameter			Flang $\Phi D_f$	Length	Part No
d	Shaft- $\Phi d_s$	$\Phi d_i(H9)$	D	Housing- $\Phi D_H$	O.D. $\Phi D_t$		ID<80 L $\pm 0.25$ ID>80 L $\pm 0.50$	
170	169.957 169.894	170.100 170.000	175	175.040 175.000		200	80	E90A/E92A 17080
							90	E90A/E92A 17090
180	179.957 179.894	180.100 180.000	185	185.040 185.000		215	60	E90A/E92A 18060
							70	E90A/E92A 18070
							80	E90A/E92A 18080
							90	E90A/E92A 18090
190	189.950 189.878	190.115 190.000	195	195.046 195.000		225	60	E90A/E92A 19060
							70	E90A/E92A 19070
							80	E90A/E92A 19080
200	199.950 199.878	200.115 200.000	205	205.046 205.000		235	90	E90A/E92A 19090
							60	E90A/E92A 20060
							70	E90A/E92A 20070
225	224.950 224.878	225.115 225.000	230	230.046 230.000		260	80	E90A/E92A 20080
							90	E90A/E92A 20090
							60	E90A/E92A 22560
250	249.950 249.878	250.115 250.000	255	255.046 255.000		290	70	E90A/E92A 22570
							80	E90A/E92A 22580
							90	E90A/E92A 22590
265	264.944 264.863	265.130 265.000	270	270.052 270.000		305	60	E90A/E92A 25060
							70	E90A/E92A 25070
							80	E90A/E92A 25080
285	284.944 284.863	285.130 285.000	290	290.052 290.000		325	90	E90A/E92A 25090
							60	E90A/E92A 26560
							70	E90A/E92A 26570
300	299.944 299.863	300.130 300.000	305	305.052 305.000		340	80	E90A/E92A 26580
							90	E90A/E92A 26590
							60	E90A/E92A 28560
							70	E90A/E92A 28570
							80	E90A/E92A 28580
							90	E90A/E92A 28590
							60	E90A/E92A 30060
							70	E90A/E92A 30070
							80	E90A/E92A 30080
							90	E90A/E92A 30090





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