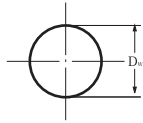


### Steel balls

Kulki stalowe

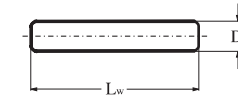


### Needle rollers

Igielki



Forme A



Forme B



NOMINAL DIAMETER		MASS PER 1000 BALLS MASA 1000 KULEK
ŚREDNICA NOMINALNA		
D		kg
mm	inch (cal)	
3.969	5/32	0.254
4.500		0.371
4.762	3/16	0.439
5.000		0.509
5.556	7/32	0.698
6.000		0.879
6.350	1/4	1.042
7.000		1.395
7.144	9/32	1.483
7.938	5/16	2.035
8.000		2.083
8.731	11/32	2.708
9.525	3/8	3.516
10.000		4.068
10.319	13/32	4.469
11.112	7/16	5.582
11.509	29/64	6.202
11.906	15/32	6.867
12.000		7.026
12.303	31/64	7.576
12.500		7.946
12.700	1/2	8.333
13.494	17/32	9.996
14.288	9/16	11.870
15.081	19/32	13.960
15.875	5/8	16.280
16.669	21/32	18.840
17.462	11/16	21.662
18.000		23.728
18.256	23/32	24.753
19.050	3/4	28.130
19.844	25/32	31.791
20.000		32.547
20.638	13/16	35.762
21.431	27/32	40.044
22.000		43.319
22.225	7/8	44.662
23.019	29/32	49.680
23.812	15/16	54.929
24.606	31/32	60.609
25.000		63.568
25.400	1	66.670
26.988	1 1/16	79.970
28.575	1 1/8	94.900
30.162	1 3/16	111.600
31.750	1 1/4	130.200

NOMINAL DIAMETER		MASS PER 1000 BALLS MASA 1000 KULEK
ŚREDNICA NOMINALNA		
D		kg
mm	inch (cal)	
33.338	1 5/16	150.700
34.925	1 3/8	173.300
36.512	1 7/16	198.000
38.100	1 1/2	225.000
40.000		260.375
41.275	1 5/8	286.100
42.862	1 11/16	320.359
44.450	1 3/4	357.301
45.000		370.729
47.625	1 7/8	439.465
<b>Big balls only on special order</b> Kulki duże tylko na specjalne zamówienie		
50.800	2	533.348
52.387	2 1/16	584.911
53.975	2 1/8	639.730
57.150	2 1/4	759.396
60.325	2 3/8	893.123
63.500	2 1/2	1 042.000
66.675	2 5/8	1 206.000
69.850	2 3/4	1 386.000
76.200	3	1 800.000
79.375	3 1/8	2 035.000
80.000		2 083.000
90.000		2 966.000
100.000		4 069.000
108.000		5 126.000
110.000		5 416.000
120.000		7 031.000
130.000		8 938.000
150.000		13 733.000
180.000		23 727.000
200.000		32 547.000
250.000		63 578.000

DESIGNATIONS WYMIARY GŁÓWNE	DIMENSIONS WYMIARY		MASS PER 1000 PCS MASA 1000 KULEK
	D <sub>w</sub>	L <sub>w</sub>	
	mm		kg
2.0 x 6.8 B	2.0000	6.80	0.166
2.0 x 7.8 A	2.0000	7.80	0.184
2.0 x 8.8 B	2.0000	8.80	0.215
2.0 x 9.05 B	2.0000	9.05	0.221
2.0 x 9.3 A	2.0000	9.30	0.221
2.0 x 9.4 A	2.0000	9.40	0.223
2.0 x 9.8 A	2.0000	9.80	0.233
2.0 x 10.2 A	2.0000	10.20	0.243
2.0 x 10.4 A	2.0000	10.40	0.247
2.0 x 10.8 A	2.0000	10.80	0.257
2.0 x 11.2 A	2.0000	11.20	0.266
2.0 x 11.7 B	2.0000	11.70	0.289
2.0 x 11.8 A	2.0000	11.80	0.282
2.0 x 12.8 A	2.0000	12.80	0.306
2.0 x 13.8 A	2.0000	13.80	0.330
2.0 x 15.8 A	2.0000	15.80	0.379
2.0 x 17.8 A	2.0000	17.80	0.428
2.0 x 19.8 A	2.0000	19.80	0.477
2.5 x 7.8 A	2.5000	7.80	0.281
2.5 x 9.8 A	2.5000	9.80	0.358
2.5 x 9.8 B	2.5000	9.80	0.374
2.5 x 17.8 B	2.5000	17.80	0.679
2.5 x 19.8 A	2.5000	19.80	0.739
3.0 x 13.8 B	3.0000	13.80	0.758
3.5 x 15.8 A	3.5000	15.80	1.140
3.5 x 17.8 A	3.5000	17.80	1.290
3.5 x 19.8 A	3.5000	19.80	1.440
4.0 x 11.8 B	4.0000	11.80	1.152
4.0 x 15 B	4.0000	15.00	1.465
4.0 x 23.8 B	4.0000	23.80	2.324
4.0 x 29.8 B	4.0000	29.80	2.910
4.0 x 32 A	4.0000	32.00	3.065
5.0 x 19.8 B	5.0000	19.80	3.021
5.0 x 23.8 A	5.0000	23.80	3.531
5.0 x 25.8 A	5.0000	25.80	3.836
5.0 x 29.8 A	5.0000	29.80	4.447
6.0 x 17.8 B	6.0000	17.80	3.911
6.0 x 21.8 A	6.0000	21.80	4.578
6.0 x 21.8 B	6.0000	21.80	4.789
6.35 x 21.59 B	6.3500	21.59	5.312

Material carbon chromium steel. | Materiał: stal łożyskowa  
 Hardness: 60-66 HRC. | Twardość: 60 + 66 HRC  
 Tolerances: grade G10 to G100. | Klasa dokładności: klasa G10 do G100.  
 The dimensional and form accuracy to ISO 3290  
 Tolerancje i dokładność kształtu wg ISO 3290

Forme A | Odmiana A  
 Forme B | Odmiana B  
 Material: carbon chromium steel | Materiał: stal łożyskowa  
 Hardness: 58-65 HRC (670-840 HV) | Twardość: 58 + 65 HRC (670-840HV)  
 Tolerances: grade G2, G3 and G5. | Klasa dokładności: klasa G2, G3 i G5  
 The dimensional and form in accordance with ISO 3096 | Tolerancje i dokładność kształtu wg ISO 3096