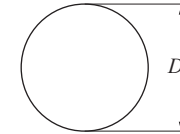


The **NTN** steel balls conform to JIS B 1501 (steel ball for ball bearings). Contact **NTN** Engineering for any request.

High-carbon chromium bearing steel is generally used for the material. Some special types use stainless steel and heat-resistant steel.

The accuracy conforms to the JIS (JIS B 1501). Please consult **NTN** Engineering for details.



**1. Ball dimensions**

Nominal dimension		Nominal diameter	Mass	Nominal dimension		Nominal diameter	Mass
Metric	Inch	$D_w$ mm	kg (approx.) 10 000 pieces	Metric	Inch	$D_w$ mm	kg (approx.) 1 000 pieces
0.3 mm		0.300 00	0.0011				
0.4 mm		0.400 00	0.0026				
0.5 mm		0.500 00	0.0051				
0.6 mm		0.600 00	0.0089				
0.7 mm	0.025	0.635 00	0.0105				
		0.700 00	0.0141				
	1/32	0.793 75	0.0205				
0.8 mm		0.800 00	0.0210				
1 mm		1.000 00	0.0410				
	3/64	1.190 62	0.0692				
1.2 mm		1.200 00	0.0708				
1.5 mm		1.500 00	0.1384				
	1/16	1.587 50	0.1640				
	5/64	1.984 38	0.3204				
2 mm		2.000 00	0.3280				
	3/32	2.381 25	0.5536				
2.5 mm		2.500 00	0.6406				
	7/64	2.778 12	0.8790				
2.8 mm		2.800 00	0.9000				
3 mm		3.000 00	1.107				
	1/8	3.175 00	1.312				
3.5 mm		3.500 00	1.758				
	9/64	3.571 88	1.868				
	5/32	3.968 75	2.563				
4 mm		4.000 00	2.624				
4.5 mm		4.500 00	3.736				
	3/16	4.762 50	4.429				
5 mm		5.000 00	5.125				
5.5 mm		5.500 00	6.821				
	7/32	5.556 25	7.032				
	15/64	5.953 12	8.650				
6 mm		6.000 00	8.856				
	1/4	6.350 00	10.50				
6.5 mm		6.500 00	11.26				
	17/64	6.746 88	12.59				
7 mm		7.000 00	14.06				
	9/32	7.143 75	14.95				
7.5 mm		7.500 00	17.30				
	5/16	7.937 50	20.50				
8 mm		8.000 00	20.99				
8.5 mm		8.500 00	25.18				
	11/32	8.731 25	27.29				
9 mm		9.000 00	29.89				
				3/8		9.525 00	3.543
				10 mm		10.000 00	4.100
					13/32	10.318 75	4.504
				11 mm		11.000 00	5.457
					7/16	11.112 50	5.626
				11.5 mm		11.500 00	6.235
					15/32	11.906 25	6.920
				12 mm		12.000 00	7.084
					1/2	12.700 00	8.398
				13 mm		13.000 00	9.007
					17/32	13.493 75	10.07
				14 mm		14.000 00	11.25
					9/16	14.287 50	11.96
				15 mm		15.000 00	13.84
					19/32	15.081 25	14.06
					5/8	15.875 00	16.40
				16 mm		16.000 00	16.79
					21/32	16.668 75	18.99
				17 mm		17.000 00	20.14
					11/16	17.462 50	21.83
				18 mm		18.000 00	23.91
					23/32	18.256 25	24.95
				19 mm		19.000 00	28.12
					3/4	19.050 00	28.34
					25/32	19.843 75	32.04
				20 mm		20.000 00	32.80
					13/16	20.637 50	36.04
				21 mm		21.000 00	37.97
					27/32	21.431 25	40.36
				22 mm		22.000 00	43.65
					7/8	22.225 00	45.01
				23 mm		23.000 00	49.88
					29/32	23.018 75	50.00
					15/16	23.812 50	55.36
				24 mm		24.000 00	56.68
					31/32	24.606 25	61.08
				25 mm		25.000 00	64.06
					1	25.400 00	67.18
				26 mm		26.000 00	72.06
					1 1/16	26.987 50	80.58
				28 mm		28.000 00	90.00
					1 1/8	28.575 00	95.66

Nominal dimension		Nominal diameter	Mass
Metric	Inch	$D_w$ mm	kg (approx.) 10 pieces
30 mm		30.000 00	1.107
	1 3/16	30.162 50	1.125
	1 1/4	31.750 00	1.312
32 mm		32.000 00	1.343
	1 5/16	33.337 50	1.519
34 mm		34.000 00	1.611
	1 3/8	34.925 00	1.747
35 mm		35.000 00	1.758
36 mm		36.000 00	1.913
	1 7/16	36.512 50	1.996
38 mm		38.000 00	2.250
	1 1/2	38.100 00	2.267
	1 9/16	39.687 50	2.563
40 mm		40.000 00	2.624
	1 5/8	41.275 00	2.883
	1 11/16	42.862 50	3.228
	1 3/4	44.450 00	3.601
45 mm		45.000 00	3.736
	1 13/16	46.037 50	4.000
	1 7/8	47.625 00	4.429
	1 15/16	49.212 50	4.886
50 mm		50.000 00	5.125
	2	50.800 00	5.375
	2 1/8	53.975 00	6.447
55 mm		55.000 00	6.821
	2 1/4	57.150 00	7.653
60 mm		60.000 00	8.856
	2 3/8	60.325 00	9.000
	2 1/2	63.500 00	10.50
65 mm		65.000 00	11.26
	2 5/8	66.675 00	12.15
	2 3/4	69.850 00	13.97
	2 7/8	73.025 00	15.97
	3	76.200 00	18.14
	3 1/4	82.550 00	23.06
	3 1/2	88.900 00	28.80
	3 3/4	95.250 00	35.43
	4	101.600 00	43.00
	4 1/4	107.950 00	51.57
	4 1/2	114.300 00	61.22

2. Applicable range of class, accuracy of shapes and surface roughness, accuracy and gauges of classification

Unit:  $\mu\text{m}$

Class	Accuracy and surface roughness of shapes <sup>1)</sup>			Accuracy and gauges of classification										
	Diameter variation (Max.)	Sphericity (Max.)	Surface roughness $R_a$ (Max.)	Mutual tolerance of lot diameter (Max.)	Gauge interval	Gauge								
G3	0.08	0.08	0.010	0.13	0.5	-5, .....	-0.5, 0, +0.5, .....	+5						
G5	0.13	0.13	0.014	0.25	1	-5, .....	-1, 0, +1, .....	+5						
G10	0.25	0.25	0.020	0.5	1	-9, .....	-1, 0, +1, .....	+9						
G16	0.4	0.4	0.025	0.8	2	-10, .....	-2, 0, +2, .....	+10						
G20	0.5	0.5	0.032	1	2	-10, .....	-2, 0, +2, .....	+10						
G24	0.6	0.6	0.040	1.2	2	-12, .....	-2, 0, +2, .....	+12						
G28	0.7	0.7	0.050	1.4	2	-12, .....	-2, 0, +2, .....	+12						
G40	1	1	0.060	2	4	-16, .....	-4, 0, +4, .....	+16						
G60	1.5	1.5	0.080	3	6	-18, .....	-6, 0, +6, .....	+18						
G100	2.5	2.5	0.100	5	10	-40, .....	-10, 0, +10, .....	+40						
G200	5	5	0.150	10	15	-60, .....	-15, 0, +15, .....	+60						

1) Measure the dimension excluding the flaws because the values do not incorporate flaws on the surface.

3. Hardness

Nominal dimension	Hardness	
	HV	HRC
0.3 mm to 3 mm	772 to 900	(63 to 67) <sup>2)</sup>
1/8 to 30 mm	—	62 to 67
1 3/16 to 4	—	61 to 67

2) The value in ( ) is shown by reference to the converted value.