

Balls and Rollers for Versatile Industries

Automotive, Bearings, Pumps, Pharmaceutical, Medical, Cosmetics, etc.

Balls:
Diameters: 0.6 to 16 mm

Rollers:
Diameters: 2 to 8 mm Length: 4 to 60 mm

Main Materials

Materials AISI Composition	304	304L	316	316L	316Ti	430	430F	420C	440B	440C	52100
C %	0,08 max	0,03 max	0,08 max	0,03 max	0,08 max	0,12 max	0,12 max	0,43 max	0,75- 0,95	0,95-1,2	0,93- 1,05
Si %	1 max	1 max	1 max	1 max	1 max	1 max	1 max	1 max	1 max	1 max	1 max
Mn %	2 max	2 max	2 max	2 max	2 max	1 max	1,25 max	1 max	1 max	1 max	1 max
S %	0,030 max	0,030 max	0,030 max	0,030 max	0,030 max	0,030 max	0,150 max	0,030 max	0,030 max	0,030 max	0,015 max
P %	0,045 max	0,045 max	0,045 max	0,045 max	0,045 max	0,040 max	0,060 max	0,040 max	0,040 max	0,040 max	0,025 max
Cr %	18-20	18-20	16-18	16-18	16-18	16-18	16-18	12,5- 14,5	16-18	16-18	1,35- 1,60
Ni %	8-11	8-12	10-14	10-14	10-14						0,25
Mo %			2-3	2-3	2-3				0,75 max	0,75 max	0,10 max
Hardness HRC	25 to 39	25 to 39	25 to 39	25 to 39	25 to 39	15 to 26	15 to 26	52 to 58	58 to 64	58 to 64	60 to 66

Different Materials

Aluminium	AISI 430F	HASTELLOY	Tantal	STELLITE	Tungsten Carbide	X65Cr13	Bronze	Gold
Titanium	AISI 630	INCONEL	PLASTIC	MONEL	Brass	Si3N4	Glass	Silver

Tolerances

According to DIN 5401 and AFBMA 10-1989.

Grades 3, 5, 10, 20, 40, 100, 200, 500, 1000 (grades 3 to 20 – for hardened steels only).

Grades 5+, 10+, 20+, 40+, 80, 500P, 1000P, 2000, 5000 (grades 5+ to 20+ - for hardened steels only grade P is specially developed for pharmaceutical and cosmetic industry).

You are welcome to put us any further questions and place your order with TTZH.

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