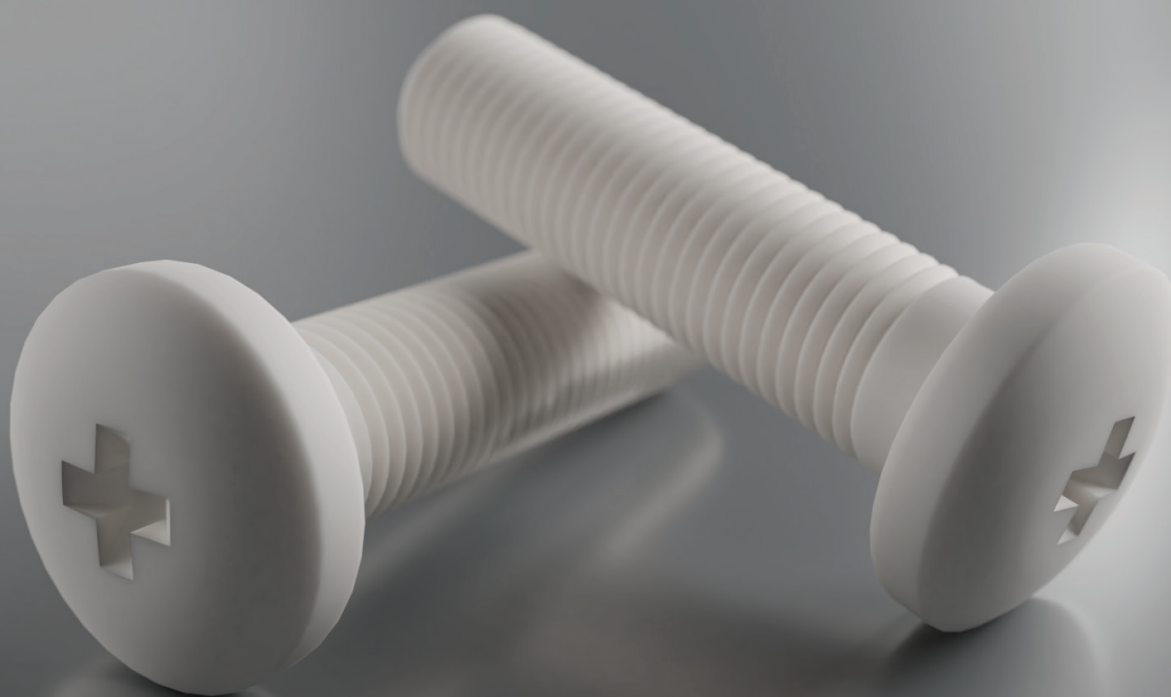




**Our screws are available in two different materials:
high purity ALUMINA (99,7%) and ZIRCONIA OXIDE (Y2O3 PSZ)**

Alumina, or Aluminium Oxide (Al_2O_3), is one of the most widely used advanced ceramic in the industry. It is a good electric insulator, has a very good wear resistance, and is chemically inert and stable at high temperature (no degassing).

Alumina can resist to temperature up to 1600°C.

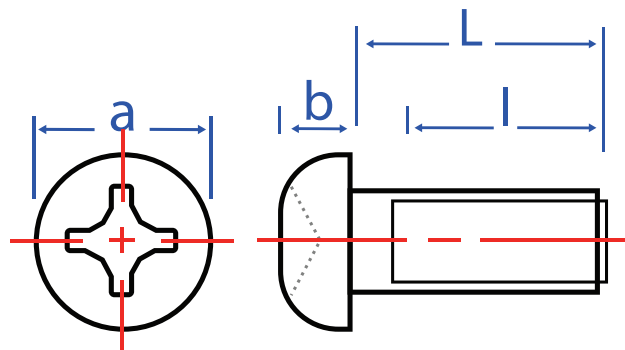
It should however not be used in case of high thermal shocks or big temperature gradient.

Zirconia Oxide is an advanced ceramic widely used in the industry, because of its superior mechanical strength, its good electrical resistance, its high coefficient of expansion (close to metal), and its low thermal conductivity.

ZrO₂ can resist up to 1200°C, however its mechanical strength starts to weaken above 450°C.

**ALUMINA (AL203 99,7%)
AND ZIRCONIA (ZrO2)**

Size	Pitch	a	b	L	I
M2	0,4	3,9	1,5	3	1,7
				5	3,7
				8	6,7
				10	8,7
M3	0,5	5,5	2,3	5	3,7
				8	6,7
				10	8,7
				12	10,7
				16	14,7
				20	15
M4	0,7	7,8	3	8	6,7
				10	8,7
				12	10,7
				16	14,7
				20	15
				25	15
M5	0,8	9,3	3,6	8	6,7
				10	8,7
				12	10,7
				16	14,7
				20	15
				25	15
				30	15
				40	15
M6	1	11,8	4,5	8	6,7
				10	8,7
				12	10,7
				16	14,7
				20	15
				25	15
				30	15
				35	15


ALUMINA (AL203 99,7%) ONLY

Size	Pitch	a	b	L	I
M8	1,25	15,8	5,9	10	8,7
				12	10,7
				16	14,7
				20	15
				25	15
				30	15
				35	15
				40	15
M10	1,50	19,7	7,3	45	15
				10	8,7
				12	10,7
				16	14,7
				20	15
				25	15
				30	15
				35	15

Material	Unit	Typical steel	Zirconia Oxide (yttria stabilized)	Alumina (99,7%)
Density	g/cc	7,6	6	3,95
Hardness	HV	700	1200	1800
Hardness	HRC	62	70	80
Young modulus	GPa	208	210	380
Thermal expansion	10 ⁻⁶ K	10	10,5	9,1
Thermal conductivity	W/M/°K	30-40	2	25
Max use temprature	°C	120	500	1850
Poisson's ratio		0,3	0,3	0,27
Flextural strength (800°C)	MPa	2400	300	220
Compressive strength	MPa	-	2100	1500
Electrical resistivity	Ohms.m	0,1-1	10 ¹⁵	10 ⁸
Toughness	MPam ^{1/2}	25	10	4,6
Corrosion resistance		Common	Excellent	Excellent