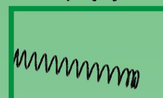
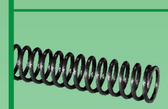
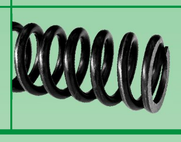
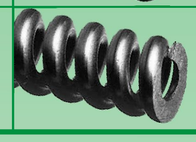
HENNLICH

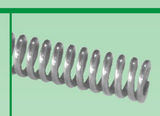
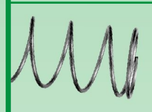
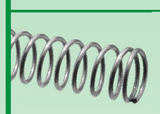
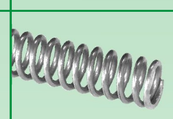
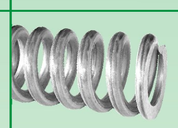
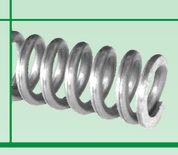
SPRĘŻYNY TECHNICZNE

Sprężyny naciskowe

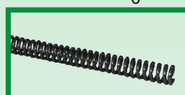
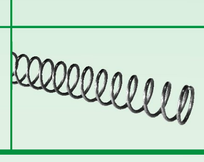
stal sprężynowa **1.1200**

	d = 0,50 mm d = 0,56 mm d = 0,63 mm		d = 2,00 mm d = 2,10 mm d = 2,25 mm d = 2,50 mm d = 2,80 mm		d = 10,00 mm d = 11,00 mm d = 12,00 mm d = 12,50 mm
	d = 0,70 mm d = 0,75 mm d = 0,80 mm d = 0,90 mm		d = 3,00 mm d = 3,20 mm d = 3,60 mm		d = 13,00 mm d = 14,00 mm d = 15,00 mm d = 16,00 mm
	d = 1,00 mm d = 1,10 mm d = 1,25 mm d = 1,30 mm d = 1,40 mm		d = 4,00 mm d = 4,50 mm d = 5,00 mm d = 6,00 mm		d = 18,00 mm
	d = 1,60 mm d = 1,80 mm		d = 7,00 mm d = 8,00 mm d = 8,20 mm d = 8,50 mm d = 9,00 mm		d = 21,00 mm d = 23,00 mm

stal nierdzewna **1.4310**

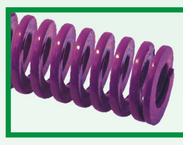
	d = 0,20 mm d = 0,25 mm d = 0,28 mm		d = 1,00 mm d = 1,10 mm d = 1,25 mm d = 1,30 mm d = 1,40 mm		d = 3,00 mm d = 3,20 mm d = 3,60 mm
	d = 0,32 mm d = 0,40 mm d = 0,45 mm		d = 1,60 mm		d = 4,00 mm d = 4,50 mm d = 5,00 mm
	d = 0,50 mm d = 0,56 mm d = 0,63 mm d = 0,70 mm d = 0,75 mm		d = 1,80 mm		d = 6,00 mm d = 6,30 mm
	d = 0,80 mm d = 0,90 mm		d = 2,00 mm d = 2,10 mm d = 2,25 mm d = 2,50 mm d = 2,80 mm		d = 8,00 mm

metrowe L_0 = 1000 mm **1.1200 lub 1.4310**

	d = 0,50 mm d = 0,56 mm d = 0,63 mm		d = 1,00 mm d = 1,10 mm d = 1,25 mm		d = 2,00 mm d = 2,10 mm d = 2,25 mm d = 2,50 mm d = 2,80 mm
	d = 0,70 mm d = 0,75 mm d = 0,80 mm d = 0,90 mm		d = 1,30 mm d = 1,40 mm d = 1,60 mm d = 1,80 mm		d = 3,00 mm d = 3,20 mm d = 3,60 mm

Sprężyny tlocznikowe

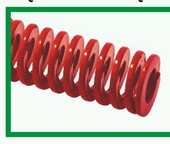
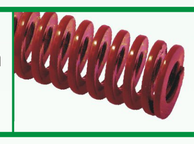
bardzo niskie i niskie obciążenia **niska wytrzymałość**

	Df = 20 mm Df = 25 mm Df = 32 mm Df = 40 mm Df = 50 mm		Df = 10 mm Df = 12,5 mm Df = 16 mm Df = 20 mm Df = 25 mm		Df = 32 mm Df = 40 mm Df = 50 mm Df = 63 mm

średnie obciążenia **średnia wytrzymałość**

	Df = 10 mm Df = 12,5 mm Df = 16 mm		Df = 20 mm Df = 25 mm Df = 32 mm		Df = 40 mm Df = 50 mm Df = 63 mm

ciężkie obciążenia **duża wytrzymałość**

	Df = 10 mm Df = 12,5 mm Df = 16 mm		Df = 20 mm Df = 25 mm Df = 32 mm		Df = 40 mm Df = 50 mm Df = 63 mm

bardzo ciężkie obciążenia **największa wytrzymałość**

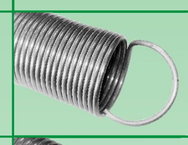
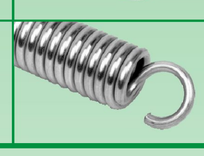
	Df = 10 mm Df = 12,5 mm Df = 16 mm		Df = 20 mm Df = 25 mm Df = 32 mm		Df = 40 mm Df = 50 mm Df = 63 mm

Sprężyny naciagowe

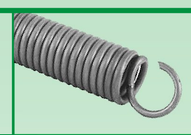
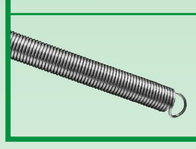
stal sprężynowa **1.1200**

	d = 0,50 mm d = 0,56 mm d = 0,63 mm		d = 1,60 mm d = 1,80 mm		d = 4,00 mm d = 5,00 mm d = 5,80 mm
	d = 0,70 mm d = 0,80 mm d = 0,90 mm		d = 2,00 mm d = 2,25 mm d = 2,50 mm d = 2,80 mm		d = 6,00 mm d = 7,00 mm
	d = 1,00 mm d = 1,10 mm d = 1,25 mm d = 1,40 mm		d = 3,20 mm d = 3,60 mm		d = 8,00 mm

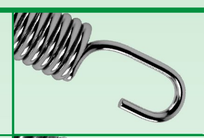
stal nierdzewna **1.4310**

	d = 0,28 mm d = 0,30 mm d = 0,40 mm		d = 0,90 mm		d = 2,00 mm d = 2,25 mm d = 2,50 mm d = 2,80 mm
	d = 0,50 mm d = 0,56 mm		d = 1,00 mm d = 1,10 mm d = 1,25 mm		d = 3,20 mm d = 3,60 mm
	d = 0,63 mm d = 0,70 mm d = 0,80 mm		d = 1,40 mm d = 1,60 mm d = 1,80 mm		d = 4,00 mm

metrowe L_0 = 1000 mm **1.1200 lub 1.4310**

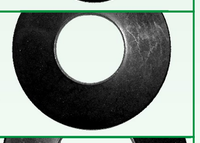
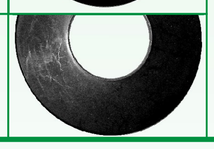
	d = 0,50 mm d = 0,56 mm d = 0,63 mm		d = 1,00 mm d = 1,10 mm d = 1,25 mm		d = 2,00 mm d = 2,25 mm d = 2,50 mm d = 2,80 mm
	d = 0,70 mm d = 0,80 mm d = 0,90 mm		d = 1,40 mm d = 1,60 mm d = 1,80 mm		d = 3,20 mm d = 3,60 mm

typy oczek

	Niemieckie oczko		Niemieckie oczko podwójne		Oko hakowe
	Niemieckie oczko		Niemieckie oczko		Oko hakowe

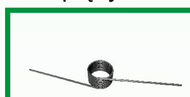
Sprężyny talerzowe

stal sprężynowa **1.1200** lub stal nierdzewna **1.4310**

	d = 6,0 mm d = 8,0 mm d = 10,0 mm d = 12,0 mm d = 12,5 mm		d = 31,5 mm d = 34,0 mm d = 35,5 mm d = 40,0 mm d = 45,0 mm		d = 100,0 mm d = 112,0 mm d = 125,0 mm
	d = 14,0 mm d = 15,0 mm d = 16,0 mm d = 18,0 mm		d = 50,0 mm d = 56,0 mm d = 60,0 mm d = 63,0 mm		d = 140,0 mm d = 150,0 mm d = 160,0 mm d = 180,0 mm
	d = 20,0 mm d = 22,5 mm d = 23,0 mm d = 25,0 mm d = 28,0 mm		d = 70,0 mm d = 71,0 mm d = 80,0 mm d = 90,0 mm		d = 200,0 mm d = 225,0 mm d = 250,0 mm

Sprężyny skrętne: lewo- lub prawoskrętne

stal sprężynowa **1.1200** lub stal nierdzewna **1.4310**

	d = 0,40 mm d = 0,50 mm d = 0,70 mm d = 1,00 mm		d = 1,20 mm d = 1,40 mm d = 2,00 mm d = 2,80 mm		d = 3,60 mm d = 4,50 mm d = 6,30 mm

Własciwosci standardowych materialow:

Numer	Nazwa	Norma	DIN	Materiał	G [N/mm²]	Rm[N/mm²]	Temp. [°C]
1.1200	stal sprężynowa	EN10270-1SH/DH	17 223-1	Ck 65/Ck 67	81500	1850	-60 do +100
1.4310	stal nierdzewna V2A	EN10270-3	17 224	X 10 CrNi188	71700	1600	-150 do +250
1.7103	stal sprężynowa	EN10270-2VDSiCr	17 223-2	67 SiCr5	79000	2050	-20 do +170
1.8159	stal sprężynowa	EN10089	17 221	51 CrV4	78000	1450	-20 do +200
1.4571	stal nierdzewna V4A	EN10270-3	17 400	X6CrNiMoTi1712	69000	1350	-200 do +300

Numer	Nazwa	Norma	DIN	Materiał	G [N/mm²]	Rm[N/mm²]	Temp. [°C]
1.4568	stal nierdzewna V2A	EN10270-3	17 224	X 7CrNiAl177	77000	1700	-200 do +350
2.1020	stal nierdzewna brąz	EN1654	17 682	CuSn6	41500	950	-200 do +80
2.4610	Hastelloy C4	-	17 744	NiMo16Cr16Ti	76000	1500	-250 do +500
2.4632	Nimonic 90	-	17 754	NiCr20Co18Ti	78000	1550	-250 do +570
2.4669	Inconel X 750	-	17 752	NiCr15Fe7TiAl	77000	1550	-250 do +530

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