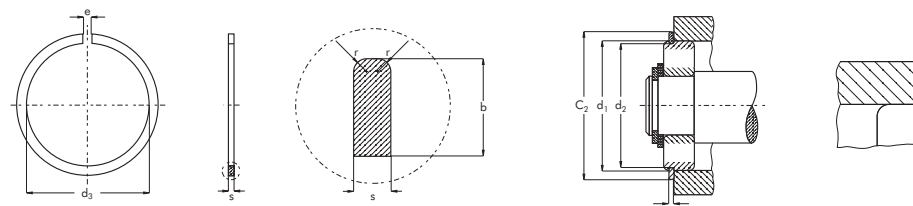



Circlips pour roulements à rouleaux Sicherungsringe für Rollenlager Anillos para cojinetes de rodillos SNAP RINGS FOR ROLLER BEARINGS


d ₁	DIN5417 M3200 SP	○									⌋										
		s	Δ	b	Δ	d ₃	Δ	e ≈	r min.	(kg/1000)	d ₂	Δ	m	Δ	C ₂	FN (kN)	FR (kN)	g	FRg (kN)	K (kN/mm)	nobl. x1000 (rpm)
30	SP30	1.12		3.25		27.4		3	0.4	2.8	28.17		1.35		34.7	13.7	16.6	2.0	2.91	35.1	16
32	SP32	1.12		3.25		29.4		3	0.4	3.0	30.15		1.35		36.7	14.6	14.6	2.0	2.57	30.0	13
35	SP35	1.12		3.25		32.4	+0.4	3	0.4	3.2	33.17		1.35		39.7	16.0	13.4	2.0	2.42	28.0	11
37	SP37	1.12		3.25		34.0		3	0.4	3.4	34.77		1.35		41.3	20.7	13.6	2.0	2.45	26.6	10
40	SP40	1.12		3.25		37.3		3	0.4	3.6	38.10		1.35		44.6	19.3	13.5	2.0	2.50	24.2	8
42	SP42	1.12		3.25		38.9		3	0.4	3.8	39.75		1.35		46.3	23.5	12.9	2.0	2.39	23.4	7
44	SP44	1.12		3.25		40.9		3	0.4	4.0	41.75		1.35		48.3	24.6	12.4	2.0	2.29	22.6	7
47	SP47	1.12		4.04		43.7	+0.5	4	0.4	5.3	44.60	-0.25	1.35		52.7	28.8	12.1	2.0	2.29	22.4	7
50	SP50	1.12		4.04		46.6		4	0.4	5.8	47.60		1.35		55.7	30.6	13.3	2.0	2.60	24.3	6
52	SP52	1.12		4.04		48.8		4	0.4	5.9	49.73		1.35		57.9	31.6	12.8	2.5	2.01	23.4	6
55	SP55	1.12		4.04		51.7		4	0.4	6.2	52.60		1.35		60.7	33.8	11.8	2.5	1.90	22.0	5
56	SP56	1.12		4.04		52.4		4	0.4	6.5	53.60		1.35		61.7	34.5	12.1	2.5	1.95	21.6	5
58	SP58	1.12		4.04		54.4		4	0.4	6.7	55.60		1.35		63.7	35.6	11.5	2.5	1.89	21.0	5
62	SP62	1.70		4.04		58.2		4	0.6	10.5	59.61		1.90		67.7	38.1	37.6	2.5	6.18	68.6	5
65	SP65	1.70		4.04		61.2		4	0.6	11.0	62.60		1.90		70.7	40.0	34.9	2.5	5.89	65.3	4
68	SP68	1.70	-0.1	4.85	-0.15	63.4	+0.8	5	0.6	12.6	64.82		1.90	+0.3	74.6	55.5	40.9	2.5	7.06	75.0	4
72	SP72	1.70		4.85		67.4		5	0.6	14.7	68.81		1.90		78.6	59.0	38.9	2.5	6.17	71.3	4
75	SP75	1.70		4.85		70.4		5	0.6	15.3	71.83		1.90		81.6	61.5	36.6	2.5	6.46	68.6	3
80	SP80	1.70		4.85		75.4		5	0.6	16.3	76.81		1.90		86.6	65.7	34.8	3.0	5.25	64.0	3
85	SP85	1.70		4.85		80.4		5	0.6	17.5	81.81		1.90		91.6	70.0	33.5	3.0	5.16	60.5	3
90	SP90	2.46		4.85		85.4		5	0.7	26.6	86.79		2.70		96.5	74.0	93.9	3.0	14.80	174.0	2
95	SP95	2.46		4.85		90.4		5	0.7	28.2	91.82		2.70		101.6	76.3	86.8	3.5	12.00	164.0	2
100	SP100	2.46		4.85		95.2		5	0.7	29.2	96.80		2.70		106.5	82.5	80.8	3.5	11.40	155.0	2
110	SP110	2.46		4.85		105.2		5	0.7	32.8	106.81		2.70		116.6	90.7	71.2	3.5	10.40	142.0	1
115	SP115	2.46		4.85		110.2	+1.0	5	0.7	34.4	111.81	-0.50	2.70		121.6	97.7	66.6	3.5	10.00	136.0	1
120	SP120	2.82		7.21		113.6		7	0.7	60.6	115.21		3.10		129.7	143.0	140.0	3.5	21.30	291.0	2
125	SP125	2.82		7.21		118.6		7	0.7	63.0	120.22		3.10		134.7	155.0	132.0	4.0	17.90	279.0	2
130	SP130	2.82		7.21		123.6		7	0.7	65.6	125.22		3.10		139.7	166.0	124.7	4.0	17.30	269.0	1
140	SP140	2.82		7.21		133.0		7	0.7	70.6	135.23		3.10		149.7	180.0	111.6	4.0	16.00	249.0	1
145	SP145	2.82		7.21		138.0		7	0.7	73.0	140.23		3.10		154.7	186.0	106.4	4.0	15.50	242.0	1
150	SP150	2.82		7.21		142.9	+1.6	7	0.7	77.2	145.24		3.10		159.7	193.0	101.5	4.0	15.00	234.0	1
160	SP160	2.82		7.21		152.9		7	0.7	81.0	155.22		3.10		169.7	206.0	92.0	4.0	14.10	220.0	1
170	SP170	3.10		9.60		161.3		10	0.7	122.0	163.65		3.50		182.9	283.0	148.0	5.0	18.70	363.0	1
180	SP180	3.10		9.60		171.2		10	0.7	128.0	173.66		3.50		192.9	292.0	135.0	5.0	17.70	344.0	1
190	SP190	3.10		9.60		181.0	+1.8	10	0.7	139.0	183.64		3.50		202.9	311.0	124.0	5.0	16.70	324.0	1

Part Number
Référence Teile Nummer Referencia de pieza
 Tolerance
Tolérance Toleranz Tolerancia
 Weight
Masse Gewicht Peso
 Ring
Anneau/Circlips Ring Anillo
 Groove
Gorge Nut Ranura





DIN 5417/M3200/SP



d ₁	DIN5417 M3200 SP	○									H				D A T A						
		s	Δ	b	Δ	d ₃	Δ	e ≈	r min.	$\frac{\Delta}{(kg/1000)}$	d ₂	Δ	m	Δ	C ₂	FN (kN)	FR (kN)	g	FRg (kN)	K (kN/mm)	nabl. ×1000 (rpm)
200	SP200	3.10	-0.15	9.60	+1.8	191.0	10	0.7	148.0	193.65	+0.3	3.50	-0.50	212.9	336.0	116.0	5.0	16.00	311.0	1.0	
210	SP210	3.10		9.60		200.9		1.2	156.0	203.60		222.8		356.0	106.0	6.0	12.70	295.0	1.0		
215	SP215	3.10		9.60		205.9		1.2	160.0	208.60		227.8		376.0	103.0	6.0	12.40	288.0	1.0		
225	SP225	3.50		10.00		214.3		1.2	196.0	217.00		237.0		462.0	144.0	6.0	17.90	416.0	1.0		
230	SP230	3.50		10.00		219.2		1.2	200.0	222.00		242.0		473.0	139.1	6.0	17.40	406.0	1.0		
240	SP240	3.50	-0.1	10.00	+2.5	229.2	10	1.2	209.0	232.00	+0.4	4.50	-0.50	252.0	495.0	130.0	6.0	16.80	390.0	0.5	
250	SP250	3.50		10.00		239.2		1.2	220.0	242.00		262.0		514.0	122.0	6.0	16.10	374.0	0.5		
260	SP260	3.50		10.00		247.5		1.2	230.0	252.00		272.0		536.0	114.0	6.0	15.50	360.0	0.5		
270	SP270	3.50		10.00		257.5		1.2	240.0	262.00		282.0		556.0	107.0	6.0	14.90	347.0	0.5		
280	SP280	3.50		10.00		267.5		1.2	250.0	272.00		292.0		578.0	101.0	6.0	14.40	335.0	0.5		
290	SP290	3.50	-0.2	10.00	-0.30	277.5	10	1.2	260.0	282.00	+0.5	4.50	-0.50	302.0	598.0	95.4	6.0	13.90	323.0	0.4	
300	SP300	4.50		12.00		284.5		1.5	400.0	290.00		314.0		694.0	230.0	7.0	34.20	795.0	0.6		
310	SP310	4.50		12.00		294.0		1.5	412.0	300.00		324.0		800.0	218.0	7.0	28.40	770.0	0.5		
320	SP320	4.50		12.00		304.0		1.5	420.0	310.00		334.0		824.0	207.0	7.0	27.60	747.0	0.5		
340	SP340	4.50		12.00		324.0		1.5	446.0	330.00		354.0		875.0	187.0	7.0	26.00	702.0	0.4		
360	SP360	4.50	-0.2	12.00	+3.0	343.0	10	1.5	475.0	350.00	+0.5	5.50	-0.50	374.0	930.0	169.0	7.0	24.50	664.0	0.4	
370	SP370	4.50		12.00		353.0		1.5	485.0	360.00		384.0		955.0	162.0	7.0	23.80	646.0	0.4		
380	SP380	4.50		12.00		363.0		1.5	500.0	370.00		394.0		995.0	154.0	7.0	23.20	629.0	0.4		
400	SP400	4.50		12.00		383.0		1.5	525.0	390.00		414.0		1040.0	144.0	7.0	22.10	598.0	0.3		

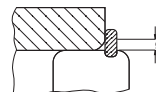
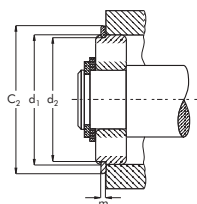
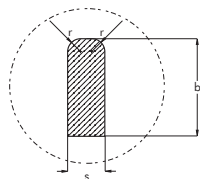
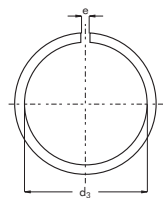
Part Number
Référence Teile Nummer Referencia de pieza

Tolerance
Tolérance Toleranz Tolerancia

Weight
Masse Gewicht Peso

Ring
Anneau/Circlips Ring Anillo

Groove
Gorge Nut Ranura





DIN 5417/M3200/SP

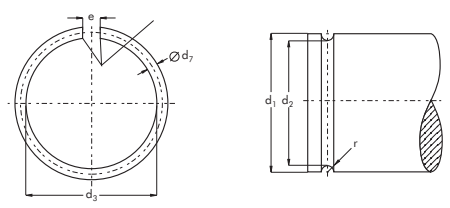


CIRTEQ

Anneaux en fil rond pour arbres Runddrahtringe für Wellen Anillos en alambre circular para ejes ROUND WIRE RINGS FOR SHAFTS

d ₁	DIN7993 A/RW	○					⌋					d ₁	DIN7993 A/RW	○					⌋				
		d ₇	d ₃	Δ	e ≈	 (kg/1000)	d ₂	Δ	r	n _{det.} x 1000 (rpm)	d ₇			d ₃	Δ	e ≈	 (kg/1000)	d ₂	Δ	r	n _{det.} x 1000 (rpm)		
4	RW4	0.8	3.1	-0.2	1	0.044	3.2	±0.05	0.5	175	40	RW40	2.5	37.1	-0.6	4	4.64	37.5	±0.10	1.4	6		
5	RW5	0.8	4.1		1	0.057	4.2		0.5	112	42	RW42	2.5	39.0	4	4.87	39.5	1.4		5			
6	RW6	0.8	5.1	-0.3	1	0.069	5.2	±0.05	0.5	77	45	RW45	2.5	42.0	-0.8	4	5.23	42.5	±0.10	1.4	4		
7	RW7	0.8	6.1		2	0.077	6.2		0.5	57	48	RW48	2.5	45.0		4	5.60	45.5		1.4	4		
8	RW8	0.8	7.1	2	0.090	7.2	0.5	44	50	RW50	2.5	47.0	4	5.83	47.5	1.4	4						
10	RW10	0.8	9.1	-0.4	2	0.115	9.2	±0.10	0.5	28	55	RW55	3.2	51.1	-1.0	4	10.51	51.8	±0.15	1.8	4		
12	RW12	1.0	10.8		3	0.210	11.0		0.6	24	60	RW60	3.2	56.1		4	11.50	56.8		1.8	3		
14	RW14	1.0	12.8	-0.5	3	0.250	13.0	±0.10	0.6	18	65	RW65	3.2	61.1	-1.2	4	12.49	61.8	±0.15	1.8	3		
16	RW16	1.6	14.2		3	0.740	14.4		0.9	22	70	RW70	3.2	66.0		5	13.40	66.8		1.8	2		
18	RW18	1.6	16.2	3	0.830	16.4	0.9	17	75	RW75	3.2	71.0	5	14.39	71.8	1.8	2						
20	RW20	2.0	17.7	-0.6	3	1.450	18.0	±0.10	1.1	18	80	RW80	3.2	76.0	-1.2	5	15.38	76.8	±0.15	1.8	2		
22	RW22	2.0	19.7		3	1.600	20.0		1.1	15	85	RW85	3.2	81.0		5	16.38	81.8		1.8	2		
24	RW24	2.0	21.7	-0.6	3	1.780	22.0	±0.10	1.1	12	90	RW90	3.2	86.0	-1.2	5	17.37	86.8	±0.15	1.8	1		
25	RW25	2.0	22.7		3	1.840	23.0		1.1	11	95	RW95	3.2	91.0		5	18.36	91.8		1.8	1		
26	RW26	2.0	23.7	3	1.910	24.0	1.1	10	100	RW100	3.2	95.8	5	19.31	96.8	1.8	1						
28	RW28	2.0	25.7	-0.6	3	2.070	26.0	±0.10	1.1	9	105	RW105	3.2	100.8	-1.2	5	20.30	101.8	±0.15	1.8	1		
30	RW30	2.0	27.7		3	2.220	28.0		1.1	8	110	RW110	3.2	105.8		5	21.29	106.8		1.8	1		
32	RW32	2.5	29.1	-0.6	4	3.670	29.5	±0.10	1.4	9	115	RW115	3.2	110.8	-1.2	5	22.29	111.8	±0.15	1.8	1		
35	RW35	2.5	32.1		4	3.980	32.5		1.4	7	120	RW120	3.2	115.8		5	23.28	116.8		1.8	1		
38	RW38	2.5	35.1	4	4.400	35.5	1.4	6	125	RW125	3.2	120.8	5	24.27	121.8	1.8	1						



 Part Number Référence Teile Nummer Referencia de pieza	 Tolerance Tolérance Toleranz Tolerancia	 Weight Masse Gewicht Peso	 Ring Anneau/Circlips Ring Anillo	 Groove Gorge Nut Ranura
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○ DIN 7993 A/RW



Anneaux en fil rond pour alésages Runddrahtringe für Bohrungen Anillos en alambre circular para agujeros ROUND WIRE RINGS FOR BORES

d ₁	DIN7993 B/RB	○					⊕			d ₁	DIN7993 B/RB	○					⊕		
		d ₇	d ₃	Δ	e	 (kg/1000)	d ₂	Δ	r			d ₇	d ₃	Δ	e	 (kg/1000)	d ₂	Δ	r
7	RB7	0.8	7.9	+0.3	4	0.071	7.8	±0.05	0.5	45	RB45	2.5	48.8	+0.8	16	4.89	47.5	±0.10	1.4
8	RB8	0.8	8.9		4	0.083	8.8		0.5	48	RB48	2.5	51.0		16	5.24	50.5		1.4
10	RB10	0.8	10.9	+0.4	4	0.108	10.8	±0.05	0.5	50	RB50	2.5	53.0	+0.8	16	5.51	52.5	±0.10	1.4
12	RB12	1.0	13.2		6	0.196	13.0		0.6	55	RB55	3.2	58.9		20	9.77	58.2		1.8
14	RB14	1.0	15.2	6	0.234	15.0	0.6	60	RB60	3.2	63.9	20	10.76	63.2	1.8				
16	RB16	1.6	17.8	+0.4	8	0.706	17.6	±0.05	0.9	65	RB65	3.2	68.9	+1.0	20	11.75	68.2	±0.15	1.8
18	RB18	1.6	19.8		8	0.804	19.6		0.9	70	RB70	3.2	74.0		25	12.44	73.2		1.8
20	RB20	2.0	22.3	+0.5	10	1.320	22.0	±0.10	1.1	75	RB75	3.2	79.0	+1.0	25	13.43	78.2	±0.15	1.8
22	RB22	2.0	24.3		10	1.470	24.0		1.1	80	RB80	3.2	84.0		25	14.42	83.2		1.8
24	RB24	2.0	26.3	10	1.630	26.0	1.1	85	RB85	3.2	89.0	25	15.41	88.2	1.8				
25	RB25	2.0	27.3	+0.5	10	1.700	27.0	±0.10	1.1	90	RB90	3.2	94.0	+1.2	25	16.40	93.2	±0.15	1.8
26	RB26	2.0	28.3		10	1.790	28.0		1.1	95	RB95	3.2	99.0		25	17.39	98.2		1.8
28	RB28	2.0	30.3	+0.6	10	1.940	30.0	±0.10	1.1	100	RB100	3.2	104.2	+1.2	32	17.98	103.2	±0.15	1.8
30	RB30	2.0	32.3		10	2.100	32.0		1.1	105	RB105	3.2	109.2		32	18.98	108.2		1.8
32	RB32	2.5	34.9	12	3.470	34.5	1.4	110	RB110	3.2	114.2	32	19.97	113.2	1.8				
35	RB35	2.5	37.9	+0.6	12	3.850	37.5	±0.10	1.4	115	RB115	3.2	119.2	+1.2	32	20.96	118.2	±0.15	1.8
38	RB38	2.5	40.9		12	4.200	40.5		1.4	120	RB120	3.2	124.2		32	21.95	123.2		1.8
40	RB40	2.5	42.9	+0.8	12	4.430	42.5	±0.10	1.4	125	RB125	3.2	129.2	+1.2	32	22.94	128.2	±0.15	1.8
42	RB42	2.5	45.0		16	4.540	44.5		1.4										

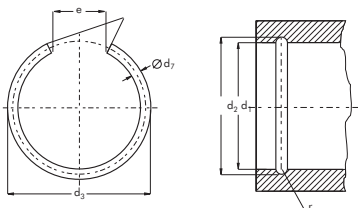
Part Number
Référence Teile Nummer Referencia de pieza

Tolerance
Tolérance Toleranz Tolerancia

Weight
Masse Gewicht Peso

Ring
Anneau/Circlips Ring Anillo

Groove
Gorge Nut Ranura



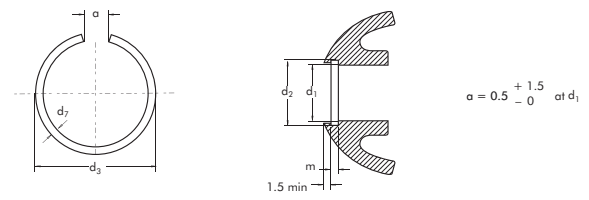
○ DIN 7993 B/RB



Anneaux en fil rond pour axes de pistons Runddrahringe Anillos en alambre circular para pistones ROUND WIRE RINGS FOR PISTONS

d ₁	DIN73130 SC	○				⊞			
		d ₇	Δ	d ₃	Δ	d ₂	Δ	m	Δ
10.0	SC10	0.8	±0.01	11.3	+0.5 -0.0	10.8		0.90	
12.0	SC12	0.8		13.6		12.8		0.90	
14.0	SC14	1.0		16.0		15.1		1.10	
15.0	SC15	1.0	±0.015	17.1		16.1		1.10	
18.0	SC18	1.5		20.7		19.7		1.60	
20.0	SC20	1.5		22.7		21.7		1.60	
22.0	SC22	1.5		24.8		23.7		1.60	
24.0	SC24	1.5	±0.02	27.2	+1.0 -0.0	25.7	+0.2 -0.0	1.60	+0.1 -0.0
25.0	SC25	1.5		28.2		26.7		1.60	
26.0	SC26	1.5		29.4		27.7		1.60	
28.0	SC28	1.5		31.4		29.7		1.60	
30.0	SC30	2.0		34.0		32.4		2.10	
32.0	SC32	2.0	±0.025	36.0	34.4	2.10			
35.0	SC35	2.0		39.0	37.4	2.10			





 Part Number Référence Teile Nummer Referencia de pieza	 Tolerance Tolérance Toleranz Tolerancia	 Weight Masse Gewicht Peso	 Ring Anneau/Circlips Ring Anillo	 Groove Gorge Nut Ranura
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○ DIN73130/SC



Anneaux pour alésages Sprengringe für Bohrungen Anillos para agujeros SNAP RINGS FOR BORES

d ₁	M2300 SB	○				⊕			D A T A		d ₁	M2300 SB	○				⊕			D A T A	
		s (-0.1)	b (-0.1)	d ₃ min.	 (kg/1000)	d ₂		m min.	FN (kN)	FR (kN)			s (-0.1)	b (-0.1)	d ₃ min.	 (kg/1000)	d ₂		m min.	FN (kN)	FR (kN)
7	SB7	0.8	1.00	7.5	0.09	7.3	+0.09	0.9	0.55	3.30	44	SB44	1.5	2.3	45.8	3.11	45.2	+0.16	1.6	14.00	19.30
8	SB8	0.8	1.00	8.5	0.10	8.3		0.9	0.65	3.25	45	SB45	1.5	2.3	46.8	3.25	46.2		1.6	14.25	19.00
9	SB9	0.8	1.10	9.5	0.13	9.3		0.9	0.70	3.20	46	SB46	1.5	2.3	47.8	3.28	47.2		1.6	14.65	18.40
10	SB10	0.8	1.20	10.6	0.15	10.4		0.9	1.05	3.15	47	SB47	1.5	2.3	48.8	3.29	48.2		1.6	14.90	18.10
11	SB11	1.0	1.30	11.6	0.21	11.4		1.1	1.15	9.15	48	SB48	1.5	2.3	49.8	3.45	49.2		1.6	15.30	17.60
12	SB12	1.0	1.30	12.7	0.25	12.4	+0.11	1.1	1.30	8.90	50	SB50	1.5	2.3	51.8	3.57	51.2	+0.19	1.6	15.80	17.20
13	SB13	1.0	1.30	13.8	0.28	13.5		1.1	1.75	8.80	52	SB52	1.5	2.3	54.3	3.58	53.5		1.6	20.65	16.30
14	SB14	1.0	1.30	14.8	0.31	14.5		1.1	1.90	8.20	53	SB53	1.5	2.3	55.3	3.82	54.5		1.6	21.05	16.10
15	SB15	1.0	1.30	15.8	0.34	15.5		1.1	2.00	7.70	55	SB55	1.5	2.3	57.3	3.93	56.5		1.6	21.80	15.70
16	SB16	1.2	1.60	16.8	0.53	16.5		1.3	2.10	15.50	57	SB57	1.5	2.3	59.3	4.12	58.5		1.6	22.60	15.30
17	SB17	1.2	1.70	17.8	0.55	17.5	+0.13	1.3	2.25	15.40	58	SB58	1.5	2.3	60.3	4.13	59.5	+0.22	1.6	23.00	15.00
18	SB18	1.2	1.75	18.9	0.68	18.5		1.3	2.40	15.10	60	SB60	1.5	2.3	62.3	4.28	61.5		1.6	23.80	14.60
19	SB19	1.2	1.75	19.9	0.72	19.6		1.3	3.00	14.80	62	SB62	1.5	2.3	64.3	4.42	63.5		1.6	24.60	14.20
20	SB20	1.2	1.75	21.0	0.76	20.6		1.3	3.20	14.20	63	SB63	1.5	2.3	65.3	4.50	64.5		1.6	25.00	13.70
21	SB21	1.2	1.75	22.0	0.79	21.6		1.3	3.35	13.70	65	SB65	1.5	2.3	67.3	4.72	66.5		1.6	25.70	13.60
22	SB22	1.2	1.75	23.0	0.81	22.6	+0.16	1.3	3.50	13.10	68	SB68	1.5	2.3	70.3	4.90	69.5	+0.27	1.6	26.90	12.90
23	SB23	1.2	1.75	24.0	0.88	23.6		1.3	3.65	12.80	70	SB70	1.5	2.3	72.3	4.93	71.5		1.6	27.70	12.80
24	SB24	1.2	1.75	25.2	0.90	24.8		1.3	5.10	12.50	72	SB72	2.0	2.8	74.6	8.49	73.8		2.2	34.20	35.70
25	SB25	1.2	1.75	26.2	0.91	25.8		1.3	5.30	12.00	73	SB73	2.0	2.8	75.6	8.52	74.8		2.2	34.70	35.30
26	SB26	1.2	1.75	27.2	0.98	26.8		1.3	5.50	11.50	74	SB74	2.0	2.8	76.6	8.60	75.8		2.2	35.30	34.80
27	SB27	1.2	1.75	28.2	1.11	27.8	+0.16	1.3	5.70	11.30	76	SB76	2.0	2.8	78.6	8.89	77.8	+0.34	2.2	36.20	33.80
28	SB28	1.2	1.75	29.2	1.13	28.8		1.3	5.95	11.00	78	SB78	2.0	2.8	80.6	9.05	79.8		2.2	37.10	32.60
29	SB29	1.2	1.75	30.2	1.15	29.8		1.3	6.15	10.90	79	SB79	2.0	2.8	81.6	9.07	80.8		2.2	37.60	32.00
30	SB30	1.5	2.30	31.4	2.00	31.0		1.6	8.00	26.00	80	SB80	2.0	2.8	82.6	9.22	81.8		2.2	38.00	31.40
31	SB31	1.5	2.30	32.4	2.03	32.0		1.6	8.25	25.60	81	SB81	2.0	2.8	83.6	9.31	82.8		2.2	38.60	31.30
32	SB32	1.5	2.30	33.4	2.11	33.0	+0.16	1.6	8.50	25.00	82	SB82	2.0	2.8	84.6	9.45	83.8	+0.42	2.2	39.00	30.70
33	SB33	1.5	2.30	34.4	2.26	34.0		1.6	8.75	24.60	83	SB83	2.0	2.8	85.6	9.63	84.8		2.2	39.50	30.10
34	SB34	1.5	2.30	35.4	2.34	35.0		1.6	9.00	23.80	85	SB85	2.0	2.8	87.6	9.81	86.8		2.2	40.40	29.60
35	SB35	1.5	2.30	36.4	2.36	36.0		1.6	9.30	23.30	86	SB86	2.0	2.8	88.6	9.91	87.8		2.2	40.90	29.00
37	SB37	1.5	2.30	38.8	2.53	38.2		1.6	11.75	22.00	88	SB88	2.5	3.4	91.0	15.40	90.0		2.7	46.50	65.80
38	SB38	1.5	2.30	39.8	2.61	39.2	+0.16	1.6	12.15	21.60	90	SB90	2.5	3.4	93.0	15.60	92.0	+0.50	2.7	47.60	63.50
39	SB39	1.5	2.30	40.8	2.67	40.2		1.6	12.40	21.00	92	SB92	2.5	3.4	95.0	16.60	94.0		2.7	48.60	62.00
40	SB40	1.5	2.30	41.8	2.80	41.2		1.6	12.70	20.70	93	SB93	2.5	3.4	96.0	16.80	95.0		2.7	49.20	61.80
42	SB42	1.5	2.30	43.8	2.92	43.2		1.6	13.30	19.80	95	SB95	2.5	3.4	98.0	16.90	97.0		2.7	50.20	59.30
43	SB43	1.5	2.30	44.8	3.03	44.2		1.6	13.70	19.60	97	SB97	2.5	3.4	100.0	17.10	99.0		2.7	51.30	58.20

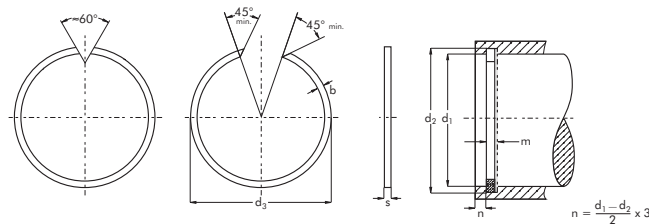
 **Part Number**
 Référence Teile Nummer Referencia de pieza

 **Tolerance**
 Tolérance Toleranz Tolerancia

 **Weight**
 Masse Gewicht Peso

 **Ring**
 Anneau/Circlips Ring Anillo

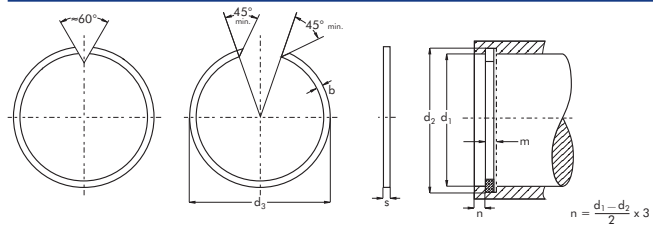
 **Groove**
 Gorge Nut Ranura



Anneaux pour alésages Sprengringe für Bohrungen Anillos para agujeros SNAP RINGS FOR BORES

d ₁	M2300 SB	○				⊕			D A T A		d ₁	M2300 SB	○				⊕			D A T A	
		s (-0.1)	b (-0.1)	d ₃ min.	$\frac{\Delta}{(kg/1000)}$	d ₂	Δ	m min.	FN (kN)	FR (kN)			s (-0.1)	b (-0.1)	d ₃ min.	$\frac{\Delta}{(kg/1000)}$	d ₂	Δ	m min.	FN (kN)	FR (kN)
98	SB98	2.5	3.4	101.0	17.5	100.0		2.7	51.8	56.6	200	SB200	3.0	5.0	205.0	64.5	203.0		3.2	158.0	59.0
100	SB100	2.5	3.4	103.0	17.9	102.0		2.7	52.8	55.5	205	SB205	3.0	5.0	210.0	66.4	208.0		3.2	162.0	57.8
102	SB102	2.5	3.4	105.3	18.4	104.3		2.7	62.0	53.6	210	SB210	3.0	5.0	215.1	68.8	213.0		3.2	166.0	56.8
103	SB103	2.5	3.4	106.3	18.5	105.3		2.7	62.6	53.2	215	SB215	3.0	5.0	220.1	69.5	218.0		3.2	169.0	55.5
105	SB105	2.5	3.4	108.3	18.7	107.3		2.7	63.8	51.8	220	SB220	3.0	5.0	225.2	72.4	223.0	+0.29	3.2	173.0	54.4
107	SB107	2.5	3.4	110.3	19.1	109.3	+0.22	2.7	65.0	50.7	225	SB225	3.0	5.0	230.2	72.9	228.0		3.2	177.0	53.3
108	SB108	2.5	3.4	111.3	19.3	110.3		2.7	65.6	50.5	230	SB230	3.0	5.0	235.3	75.2	233.0		3.2	181.0	52.0
110	SB110	2.5	3.4	113.4	19.8	112.3		2.7	66.8	49.0	240	SB240	3.0	5.0	245.4	80.9	243.0		3.2	189.0	49.6
112	SB112	2.5	3.4	115.4	20.3	114.3		2.7	68.0	47.0	250	SB250	3.0	5.0	255.5	84.2	253.0		3.2	197.0	48.5
113	SB113	2.5	3.4	116.4	20.5	115.3		2.7	68.6	46.5	260	SB260	4.0	7.5	267.6	165.0	265.0		4.2	343.0	162.0
115	SB115	2.5	3.4	118.4	20.6	117.3		2.7	69.4	45.5	270	SB270	4.0	7.5	277.7	174.0	275.0	+0.32	4.2	356.0	157.0
117	SB117	2.5	3.4	120.4	20.8	119.3		2.7	71.0	44.6	280	SB280	4.0	7.5	287.8	184.0	285.0		4.2	369.0	152.0
118	SB118	2.5	3.4	121.4	21.1	120.3		2.7	71.7	44.2	290	SB290	4.0	7.5	297.9	190.0	295.0		4.2	382.0	144.0
120	SB120	2.5	3.4	123.5	21.4	122.3		2.7	72.8	43.3	300	SB300	4.0	7.5	307.9	196.0	305.0		4.2	395.0	140.0
123	SB123	2.5	3.4	126.5	22.0	125.3		2.7	74.7	41.2	310	SB310	4.0	7.5	318.0	200.0	315.0		4.2	408.0	136.0
125	SB125	2.5	3.4	128.5	22.5	127.3		2.7	75.9	40.2	320	SB320	4.0	7.5	328.1	203.0	325.0		4.2	422.0	132.0
127	SB127	2.5	3.4	130.5	23.0	129.3		2.7	77.0	39.8	325	SB325	4.0	7.5	333.1	206.0	330.0		4.2	428.0	129.0
130	SB130	2.5	3.4	133.6	23.4	132.3		2.7	78.9	38.2	330	SB330	4.0	7.5	338.2	209.0	335.0		4.2	435.0	126.0
133	SB133	2.5	3.4	136.6	24.4	135.3		2.7	80.7	36.8	340	SB340	4.0	7.5	348.3	219.0	345.0		4.2	448.0	123.0
135	SB135	2.5	3.4	138.6	25.0	137.3		2.7	81.9	36.6	350	SB350	4.0	7.5	358.4	229.0	355.0		4.2	452.0	121.0
137	SB137	2.5	3.4	140.6	25.3	139.3	+0.25	2.7	83.0	35.6	355	SB355	4.0	7.5	363.4	231.0	360.0	+0.36	4.2	467.0	121.0
140	SB140	2.5	4.0	144.0	29.3	142.6		2.7	96.1	40.2	360	SB360	4.0	7.5	368.5	233.0	365.0		4.2	487.0	119.0
143	SB143	2.5	4.0	147.0	30.1	145.6		2.7	98.1	38.6	370	SB370	4.0	7.5	378.5	236.0	375.0		4.2	493.0	116.0
150	SB150	2.5	4.0	154.1	31.9	152.6		2.7	102.0	36.2	375	SB375	4.0	7.5	383.5	240.0	380.0		4.2	500.0	112.0
153	SB153	2.5	4.0	157.1	32.6	155.6		2.7	104.0	35.6	380	SB380	4.0	7.5	388.6	242.0	385.0		4.2	513.0	111.0
160	SB160	2.5	4.0	164.2	34.4	162.6		2.7	108.0	34.6	390	SB390	4.0	7.5	398.7	253.0	395.0		4.2	520.0	110.0
163	SB163	2.5	4.0	167.2	34.6	165.6		2.7	111.0	33.5	395	SB395	4.0	7.5	403.7	257.0	400.0		4.2	526.0	109.0
165	SB165	2.5	4.0	169.2	34.9	167.6		2.7	113.0	32.8	400	SB400	4.0	7.5	408.9	260.0	405.0		4.2	529.0	106.0
170	SB170	2.5	4.0	174.3	36.2	172.6		2.7	116.0	32.0	410	SB410	4.0	7.5	419.0	266.0	415.0		4.2	546.0	105.0
173	SB173	2.5	4.0	177.3	37.1	175.6		2.7	118.0	32.0	415	SB415	4.0	7.5	424.0	273.0	420.0		4.2	552.0	104.0
175	SB175	2.5	4.0	179.3	37.3	177.6		2.7	119.0	31.4	420	SB420	4.0	7.5	429.1	277.0	425.0	+0.40	4.2	553.0	101.0
180	SB180	2.5	4.0	184.5	38.3	182.6		2.7	123.0	30.8	430	SB430	4.0	7.5	439.2	285.0	435.0		4.2	565.0	100.0
183	SB183	2.5	4.0	187.5	41.0	185.6		2.7	125.0	30.0	440	SB440	4.0	7.5	449.3	294.0	445.0		4.2	578.0	98.0
190	SB190	3.0	5.0	194.9	61.3	193.0		3.2	150.0	62.8											
195	SB195	3.0	5.0	199.9	61.6	198.0	+0.29	3.2	154.0	61.5											

Part Number Référence Teile Nummer Referencia de pieza
 Tolerance Tolérance Toleranz Tolerancia
 Weight Masse Gewicht Peso
 Ring Anneau/Circlips Ring Anillo
 Groove Gorge Nut Ranura



d ₁	M2400 SW	○				H			D A T A			d ₁	M2400 SW	○				H			D A T A		
		s (-0.1)	b (-0.1)	d ₃ max.	(kg/1000)	d ₂	Δ	m min.	FN (kN)	FR (kN)	n _{det.} x1000 (rpm)			s (-0.1)	b (-0.1)	d ₃ max.	(kg/1000)	d ₂	Δ	m min.	FN (kN)	FR (kN)	n _{det.} x1000 (rpm)
4	SW4	0.5	0.80	3.7	0.02	3.8	-0.09	0.6	0.20	1.25	275	48	SW48	1.5	2.30	45.8	3.60	46.5	-0.16	1.6	18.70	18.60	5.0
5	SW5	0.5	1.00	4.7	0.05	4.8		0.6	0.26	1.30	192	50	SW50	1.5	2.30	47.8	3.73	48.5		1.6	19.50	18.10	5.0
6	SW6	0.7	1.10	5.6	0.09	5.7		0.8	0.46	3.50	141	52	SW52	1.5	2.30	49.8	3.92	50.5		1.6	20.20	17.70	4.0
7	SW7	0.7	1.20	6.5	0.12	6.7		0.8	0.54	3.50	134	55	SW55	1.5	2.30	52.6	4.11	53.5		1.6	21.00	16.50	4.0
8	SW8	1.0	1.30	7.4	0.20	7.6		1.1	0.82	11.30	108	58	SW58	1.5	2.30	55.6	4.40	56.5		1.6	22.50	15.70	4.0
9	SW9	1.0	1.30	8.4	0.24	8.6		1.1	0.92	10.60	80	60	SW60	1.5	2.30	57.6	4.55	58.5		1.6	23.20	15.40	4.0
10	SW10	1.0	1.30	9.4	0.25	9.6		1.1	1.03	10.30	68	63	SW63	1.5	2.30	60.6	4.58	61.5		1.6	24.40	14.70	3.0
11	SW11	1.0	1.30	10.2	0.29	10.5		1.1	1.40	9.80	64	65	SW65	1.5	2.30	62.6	4.64	63.5		1.6	25.20	14.20	3.0
12	SW12	1.0	1.30	11.2	0.30	11.5	1.1	1.53	9.30	53	68	SW68	2.0	2.80	65.4	8.59	66.2	2.2	31.70	39.60	3.0		
13	SW13	1.0	1.30	12.2	0.34	12.5	1.1	1.70	8.90	43	70	SW70	2.0	2.80	67.4	8.71	68.2	2.2	32.50	38.40	3.0		
14	SW14	1.2	1.50	13.1	0.50	13.5	-0.11	1.3	1.80	17.00	45	72	SW72	2.0	2.80	69.4	8.80	70.2	2.2	33.70	37.60	3.0	
15	SW15	1.2	1.75	14.0	0.66	14.4		1.3	2.30	18.70	44	73	SW73	2.0	2.80	70.4	8.90	71.2	2.2	34.00	37.00	3.0	
16	SW16	1.2	1.75	15.0	0.69	15.4		1.3	2.47	17.70	38	75	SW75	2.0	2.80	72.4	9.32	73.2	2.2	35.00	36.20	2.0	
17	SW17	1.2	1.75	16.0	0.72	16.4		1.3	2.63	17.00	34	80	SW80	2.0	2.80	77.4	9.67	78.2	2.2	37.40	34.20	2.0	
18	SW18	1.2	1.75	17.0	0.75	17.4		1.3	2.78	16.20	30	85	SW85	2.5	3.40	82.0	16.00	83.0	2.7	44.00	72.00	2.0	
19	SW19	1.2	1.75	17.9	0.80	18.4		1.3	2.94	15.60	29	90	SW90	2.5	3.40	87.0	16.00	88.0	2.7	46.50	66.30	2.0	
20	SW20	1.2	1.75	18.7	0.84	19.2	1.3	4.10	15.00	26	95	SW95	2.5	3.40	92.0	18.20	93.0	2.7	49.20	61.80	2.0		
21	SW21	1.2	1.75	19.7	0.87	20.2	1.3	4.30	14.60	23	100	SW100	2.5	3.40	97.0	18.90	98.0	2.7	51.90	57.30	2.0		
22	SW22	1.2	1.75	20.7	0.91	21.2	1.3	4.50	14.00	21	105	SW105	2.5	3.40	101.7	20.70	102.7	2.7	65.00	54.00	2.0		
24	SW24	1.2	1.75	22.5	0.99	23.0	1.3	6.15	13.30	18	110	SW110	2.5	3.40	106.6	20.90	107.7	2.7	69.00	50.40	1.0		
25	SW25	1.2	1.75	23.5	1.00	24.0	-0.13	1.3	6.40	12.80	16	115	SW115	2.5	3.40	111.6	22.10	112.7	2.7	71.00	47.20	1.0	
26	SW26	1.2	1.75	24.5	1.10	25.0		1.3	6.65	12.50	15	120	SW120	2.5	3.40	116.5	24.10	117.7	2.7	75.00	44.80	1.0	
27	SW27	1.5	2.30	25.5	2.00	26.0		1.6	6.95	30.00	16	125	SW125	2.5	3.40	121.5	25.10	122.7	2.7	78.50	41.80	1.0	
28	SW28	1.5	2.30	26.5	2.11	27.0		1.6	7.20	29.30	15	130	SW130	2.5	3.40	126.4	26.60	127.7	2.7	84.00	39.60	1.0	
29	SW29	1.5	2.30	27.5	2.20	28.0		1.6	7.45	28.20	14	135	SW135	2.5	4.00	131.1	30.20	132.4	2.7	87.00	44.00	1.0	
30	SW30	1.5	2.30	28.5	2.33	29.0		1.6	7.70	27.50	13	140	SW140	2.5	4.00	136.0	31.10	137.4	2.7	91.50	41.60	1.0	
32	SW32	1.5	2.30	30.2	2.41	30.8	1.6	9.90	26.50	13	145	SW145	2.5	4.00	141.0	32.60	142.4	2.7	95.00	39.60	1.0		
35	SW35	1.5	2.30	33.2	2.51	33.8	1.6	10.80	24.40	11	150	SW150	2.5	4.00	145.9	32.80	147.4	2.7	98.00	37.50	1.0		
37	SW37	1.5	2.30	35.2	2.72	35.8	1.6	11.30	23.50	9	155	SW155	2.5	4.00	150.9	34.70	154.4	2.7	100.00	36.30	1.0		
38	SW38	1.5	2.30	36.2	2.83	36.8	1.6	11.60	22.70	9	160	SW160	2.5	4.00	155.8	36.60	157.4	2.7	103.00	35.60	1.0		
40	SW40	1.5	2.30	37.8	2.91	38.5	-0.16	1.6	15.50	22.00	8	165	SW165	2.5	4.00	160.8	37.40	162.4	2.7	106.00	34.20	0.5	
42	SW42	1.5	2.30	39.8	3.10	40.5		1.6	16.20	21.40	7	170	SW170	2.5	4.00	165.7	38.50	167.4	2.7	108.00	33.50	0.5	
43	SW43	1.5	2.30	40.8	3.25	41.5		1.6	16.50	21.10	7	175	SW175	2.5	4.00	170.7	39.40	172.4	2.7	117.00	32.20	0.4	
45	SW45	1.5	2.30	42.8	3.39	43.5		1.6	17.30	20.60	6	180	SW180	3.0	5.00	175.2	61.20	177.0	3.2	140.00	67.50	1.0	
47	SW47	1.5	2.30	44.8	3.48	45.5		1.6	18.20	19.20	6	185	SW185	3.0	5.00	180.2	63.90	182.0	3.2	144.00	66.20	1.0	

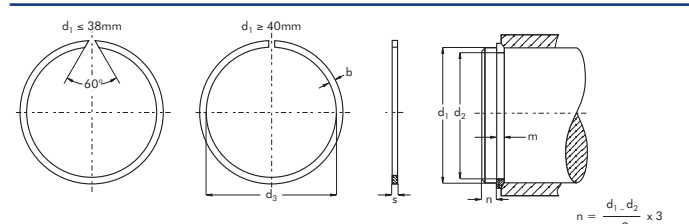
Part Number
 Référence Teile Nummer Referencia de pieza



Tolerance
 Tolérance Toleranz Tolerancia

Weight
 Masse Gewicht Peso

Ring
 Anneau/Circlips Ring Anillo

Groove
 Gorge Nut Ranura



d ₁	M2400 SW	○				H			D A T A			d ₁	M2400 SW	○				H			D A T A		
		s (-0.1)	b (-0.1)	d ₃ max.	 (kg/1000)	d ₂	Δ	m min.	FN (kN)	FR (kN)	n _{det.} x1000 (rpm)			s (-0.1)	b (-0.1)	d ₃ max.	 (kg/1000)	d ₂	Δ	m min.	FN (kN)	FR (kN)	n _{det.} x1000 (rpm)
190	SW190	3.0	5.0	185.1	65.90	187.0	-0.29	3.2	148.0	64.0	1.0	300	SW300	4.0	7.5	292.1	214.20	295.0	-0.32	4.2	390.0	145.0	0.3
195	SW195	3.0	5.0	190.1	67.50	192.0		3.2	152.0	62.6	1.0	305	SW305	4.0	7.5	297.1	219.40	300.0		4.2	396.0	142.0	0.3
200	SW200	3.0	5.0	196.0	68.40	197.0		3.2	156.0	61.4	0.5	310	SW310	4.0	7.5	302.0	223.10	305.0		4.2	402.0	139.0	0.3
210	SW210	3.0	5.0	204.9	72.00	207.0		3.2	164.0	58.0	0.5	320	SW320	4.0	7.5	311.9	225.30	315.0		4.2	416.0	137.0	0.3
220	SW220	3.0	5.0	214.8	76.30	217.0		3.2	171.0	55.5	0.4	330	SW330	4.0	7.5	321.8	228.60	325.0		4.2	428.0	132.0	0.2
230	SW230	3.0	5.0	224.7	79.80	227.0		3.2	180.0	53.0	0.3	340	SW340	4.0	7.5	331.7	239.30	335.0		4.2	442.0	129.0	0.2
240	SW240	3.0	5.0	234.6	81.70	237.0	-0.36	3.2	187.0	51.0	0.3	350	SW350	4.0	7.5	341.6	251.20	345.0	4.2	455.0	123.0	0.2	
250	SW250	3.0	5.0	244.5	86.50	247.0		3.2	195.0	49.0	0.3	360	SW360	4.0	7.5	351.5	253.10	355.0	4.2	468.0	120.0	0.2	
260	SW260	4.0	7.5	252.4	179.00	255.0		4.2	338.0	168.0	0.4	370	SW370	4.0	7.5	361.5	259.20	365.0	4.2	482.0	117.0	0.2	
265	SW265	4.0	7.5	257.4	185.20	260.0		4.2	344.0	165.0	0.4	380	SW380	4.0	7.5	371.4	265.80	375.0	4.2	494.0	115.0	0.2	
270	SW270	4.0	7.5	262.3	197.70	265.0		-0.32	4.2	350.0	162.0	0.4	390	SW390	4.0	7.5	381.3	273.90	385.0	4.2	507.0	112.0	0.2
280	SW280	4.0	7.5	272.2	198.70	275.0			4.2	362.0	155.0	0.4	400	SW400	4.0	7.5	391.2	281.10	395.0	4.2	521.0	109.0	0.1
285	SW285	4.0	7.5	277.2	199.50	280.0	4.2		370.0	151.0	0.3	420	SW420	4.5	12.0	410.0	531.00	415.0	4.8	547.0	133.0	0.3	
290	SW290	4.0	7.5	282.1	205.30	285.0	4.2		377.0	148.0	0.3	460	SW460	4.5	12.0	449.5	582.00	455.0	4.8	600.0	126.0	0.2	

 Part Number Référéce Teile Nummer Referencia de pieza	 Tolerance Tolérance Toleranz Tolerancia	 Weight Masse Gewicht Peso	 Ring Anneau/Circlips Ring Anillo	 Groove Gorge Nut Ranura
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