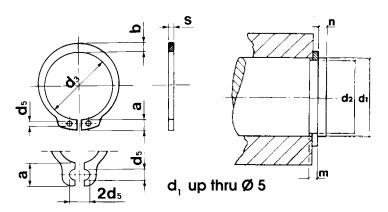
## External Retaining Rings (A) DIN 471



d, up thru Ø 27 = C60-DIN 17222 d, Ø 28 and above = C75 DIN 17222 d, up thru Ø 48 =47- 54 HRc hardness d, Ø 50 and above =44 - 51 HRc hardness

	s		а		d <sub>5</sub>		Groove	
d,	hll	$d_3$	max.	b	min.	$d_2$	Width min.	Weight kg/1000
A 3	0.40	2.7	2.0	1.6	1	2.8	0.50	0.017
A 4	0.40	3.7	2.2	0.9	1 1	3.8 4.8	0.50	0.035
A 5 A 6	0.60 0.70	4.7 5.6	2.5 2.7	1.1 1.3	1.2	4.8 5.7	0.70 0.80	0.081 0.124
A 7	0.80	6.5	3.1	1.4	1.2	6.7	0.90	0.124
A 8	0.80	7.4	3.2	1.5	1.2	7.6	0.90	0.227
A 9	1.00	8.4	3.3	1.7	1.2	8.6	1.10	0.382
A 10	1.00	9.3	3.3	1.8	1.5	9.6	1.10	0.416
A 11 A 12	1.00	10.2 11.0	3.3	1.8	1.5 1.7	10.5	1.10	0.465
A 12	1.00	11.0	3.3	1.8	1.7	11.5	1.10	0.487
A 13	1.00	11.9	3.4	2.0	1.7	12.4	1.10	0.587
A 14	1.00	12.9	3.5	2.1	1.7	13.4	1.10	0.655
A 15	1.00	13.8	3.6	2.2	1.7	14.3	1.10	0.746
A 16 A 17	1.00 1.00	14.7 15.7	3.7 3.8	2.2 2.3	1.7 1.7	15.2 16.2	1.10 1.10	0.794 0.901
A 17	1.00	13.7				10.2		0.901
A 18	1.20	16.5	3.9	2.4	2	17.0	1.30	1.19
A 19	1.20	17.5	3.9	2.5	2	18.0	1.30	1.27
A 20	1.20	18.5	4.0	2.6	2	19.0	1.30	1.36
A 21	1.20	19.5	4.1	2.7	2	20.0	1.30	1.47
A 22	1.20	20.5	4.2	2.8	2	21.0	1.30	1.62
A 23	1.20	21.5	4.3	2.9	2	22.0	1.30	1.77
A 24	1.20	22.2	4.4	3.0	2	22.9	1.30	1.87
A 25	1.20	23.2	4.4	3.0	2	23.9	1.30	1.92
A 26	1.20	24.2	4.5	3.1	2	24.9	1.30	2.11
A 27	1.20	24.9	4.6	3.1	2	25.6	1.30	2.19
A 28	1.50	25.9	4.7	3.2	2	26.6	1.60	2.88
A 29	1.50	26.9	4.8	3.4	2	27.6	1.60	3.11
A 30	1.50	27.9	5.0	3.5	2	28.6	1.60	3.39
A 31	1.50	28.6	5.0	3.5	2.5	29.3	1.60	3.42
A 32	1.50	29.6	5.2	3.6	2.5	30.3	1.60	3.55
A 33	1.50	30.5	5.2	3.7	2.5	31.3	1.60	4.01
A 34	1.50	31.5	5.4	3.8	2.5	32.3	1.60	4.14
A 35	1.50	32.2	5.6	3.9	2.5	33.0	1.60	4.34
A 36	1.75	33.2	5.6	4.0	2.5	34.0	1.85	4.80
A 37	1.75	34.2	5.7	4.1	2.5	35.0	1.85	5.50
A 38	1.75	35.2	5.8	4.2	2.5	36.0	1.85	5.82
A 39	1.75	36.0	5.9	4.3	2.5	37.0	1.85	6.10
A 40	1.75	36.5	6.0	4.4	2.5	37.5	1.85	6.30
A 41	1.75	37.5	6.2	4.5	2.5	38.5	1.85	6.45
A 42	1.75	38.5	6.5	4.5	2.5	39.5	1.85	6.65
A 44	1.75	40.5	6.6	4.6	2.5	41.5	1.85	7.20
						_		7.50

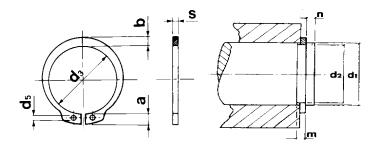
	S		а		d <sub>5</sub>		Groove	e Weight
$\mathbf{d}_{_{1}}$	hll	$d_{_3}$	max.	b	min.	$d_2$	min.	kg/1000
A 45	1.75	41.5	6.7	4.7	2.5	42.5	1.85	7.65
A 46	1.75	42.5	6.7	4.8	2.5	43.5	1.85	7.80
A 47	1.75	43.5	6.8	4.9	2.5	44.5	1.85	7.90
A 48	1.75	44.5	6.9	5.0	2.5	45.5	1.85	40.00
A E0	2.00	4E 0	6.0	E 1	2.5	47.0	0.45	10.20
A 50 A 52	2.00 2.00	45.8 47.8	6.9 7.0	5.1 5.2	2.5 2.5	47.0 49.5	2.15 2.15	11.10 11.20
A 54	2.00	49.8	7.0	5.3	2.5	51.0	2.15	11.50
A 55	2.00	50.8	7.2	5.4	2.5	52.0	2.15	11.80
A 56	2.00	51.8	7.3	5.5	2.5	53.0	2.15	11.00
								12.25
A 57	2.00	52.8	7.3	5.5	2.5	54.0	2.15	12.60
A 58	2.00	53.8	7.3	5.6	2.5	55.0	2.15	12.90
A 60	2.00	55.8	7.4	5.8	2.5	57.0	2.15	14.30
A 62	2.00	57.8	7.5	6.0	2.5	59.0	2.15	15.90
A 63	2.00	58.8	7.6	6.2	2.5	60.0	2.15	40.00
A CE	2.50	60.0	7.0	6.2	2	60.0	0.65	18.20 20.30
A 65 A 67	2.50 2.50	60.8 62.5	7.8 7.9	6.3 6.4	3 3	62.0 64.0	2.65 2.65	20.30
A 68	2.50	63.5	8.0	6.5	3	65.0	2.65	22.10
A 70	2.50	65.5	8.1	6.6	3	67.0	2.65	22.50
A 72	2.50	67.5	8.2	6.8	3	69.0	2.65	22.00
								24.60
A 75	2.50	70.5	8.4	7.0	3	72.0	2.65	25.30
A 77	2.50	72.5	8.5	7.2	3	74.0	2.65	26.20
A 78	2.50	73.5	8.6	7.3	3	75.0	2.65	27.30
A 80	2.50	74.5	8.6	7.4	3	76.5	2.65	31.20
A 82	2.50	76.5	8.7	7.6	3	78.5	2.65	00.40
A 0.E	2.00	70 F	0.7	7.0	2.5	01 5	2.45	36.40
A 85 A 87	3.00 3.00	79.5 81.5	8.7 8.8	7.8 7.9	3.5 3.5	81.5 83.5	3.15 3.15	39.70 41.20
A 88	3.00	82.5	8.8	8.0	3.5	84.5	3.15	44.50
A 90	3.00	84.5	8.8	8.2	3.5	86.5	3.15	47.10
A 92	3.00	86.5	9.0	8.4	3.5	88.5	3.15	
								49.00
A 95	3.00	89.5	9.4	8.6	3.5	91.5	3.15	51.30
A 97	3.00	91.5	9.4	8.8	3.5	93.5	3.15	52.10
A 98	3.00	92.5	9.5	9.0	3.5	94.5	3.15	53.70
A 100	3.00	94.5	9.6	9.0	3.5	96.5	3.15	78.70
A 102	4.00	95.0	9.7	9.2	3.5	98.0	4.15	80.0
A 105	4.00	98.0	9.9	9.3	3.5	101.0	4.15	80.0 81.2
A 103	4.00	100.0	10.0	9.5	3.5	101.0	4.15	81.9
A 108	4.00	101.0	10.0	9.5	3.5	104.0	4.15	82.5
A 110	4.00	103.0	10.1	9.6	3.5	106.0	4.15	83.4
A 112	4.00	105.0	10.3	9.7	3.5	108.0	4.15	
								84.7
A 115	4.00	108.0	10.6	9.8	3.5	111.0	4.15	85.2
A 117	4.00	110.0	10.8	10.0	3.5	113.0	4.15	85.8

ISO/ DIN No.	С	Si	Mn	Р	S	Cr	Мо	Ni
Heat-treatable Steel	%	%	%	≤%	≤%	%	%	%
C60 (Nr.1.0601)	0.57-0.65	≤0.40	0.60-0.90	0.045	0.045	≤0.40	≤0.10	≤0.40
C75 (Nr.1.0605)	0.70-0.80	0.15-0.35	0.60-0.80	0.045	0.045	-	-	-



American Metric® Corporation

## External Retaining Rings (A) DIN 471



d, up thru Ø 27 = C60-DIN 17222 d, Ø 28 and above = C75 DIN 17222 d, up thru Ø 48 =47- 54 HRc hardness d, Ø 50 and above =44 - 51 HRc hardness

							_	
	S		а		d <sub>5</sub>		Groove	e Weight
d,	hll	$d_3$	max.	b	min.	$d_2$	min.	kg/1000
A 118	4.00	111.0	10.9	10.1	3.5	114.0	4.15	86.3
A 120	4.00	113.0	11.0	10.2	3.5	116.0	4.15	88.1
A 122	4.00	115.0	11.2	10.3	4	118.0	4.15	
4.405	4.00	440.0	44.4	40.4		404.0	4.45	90
A 125 A 127	4.00 4.00	118.0 120.0	11.4 11.4	10.4 10.5	4 4	121.0 123.0	4.15 4.15	94 96
A 127	4.00	120.0	11.4	10.5	4	123.0	4.15	100
A 130	4.00	123.0	11.6	10.7	4	126.0	4.15	102
A 132	4.00	125.0	11.7	10.8	4	128.0	4.15	102
								104
A 135	4.00	128.0	11.8	11.0	4	131.0	4.15	106
A 137	4.00	130.0	11.9	11.0	4	133.0	4.15	107
A 138	4.00	131.0	11.9	11.1	4	134.0	4.15	110
A 140	4.00	133.0	12.0	11.2	4	136.0	4.15	112
A 142	4.00	135.0	12.1	11.3	4	138.0	4.15	445
A 445	4.00	120.0	10.0	11 E	4	1110	4 1 5	115 117
A 145 A 147	4.00	138.0 140.0	12.2 12.3	11.5 11.6	4	141.0 143.0	4.15 4.15	117
A 147	4.00	140.0	12.3	11.7	4	144.0	4.15	120
A 150	4.00	142.0	13.0	11.8	4	145.0	4.15	135
A 155	4.00	146.0	13.0	12.0	4	150.0	4.15	100
								150
A 160	4.00	151.0	13.3	12.2	4	155.0	4.15	160
A 165	4.00	155.5	13.5	12.5	4	160.0	4.15	170
A 170	4.00	160.5	13.5	12.9	4	165.0	4.15	180
A 175	4.00	165.5	13.5	12.9	4	170.0	4.15	190
A 180	4.00	170.5	14.2	13.5	4	175.0	4.15	000
A 185	4.00	175.5	14.2	10 E	4	100.0	4 1 E	200 210
A 105 A 190	4.00	175.5	14.2	13.5 14.0	4	180.0 185.0	4.15 4.15	210
A 195	4.00	185.5	14.2	14.0	4	190.0	4.15	230
A 200	4.00	190.5	14.2	14.0	4	195.0	4.15	248
A 210	5.00	198.0	14.2	14.0	4	204.0	5.15	2.0
								255
A 215	5.00	203.0	14.2	14.0	4	209.0	5.15	265
A 220	5.00	208.0	14.2	14.0	4	214.0	5.15	290
A 230	5.00	218.0	14.2	14.0	4	224.0	5.15	310
A 240	5.00	228.0	14.2	14.0	4	234.0	5.15	335
A 250	5.00	238.0	14.2	14.0	4	244.0	5.15	245
A 255	5.00	240.0	16.2	16.0	5	247.0	5.15	345 355
A 260	5.00	245.0	16.2	16.0	5	252.0	5.15	375
A 270	5.00	255.0	16.2	16.0	5	262.0	5.15	398
A 280	5.00	265.0	16.2	16.0	5	272.0	5.15	418
A 290	5.00	275.0	16.2	16.0	5	282.0	5.15	
								440
A 300	5.00	285.0	16.2	16.0	5	292.0	5.15	770
A 320	6.00	303.0		20.0	5			800
A 330	6.00	313.0		20.0	6			840

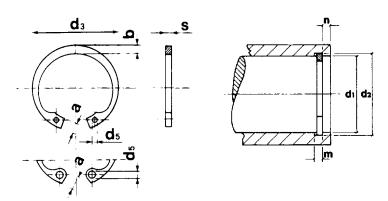
							Groove
l .	S		а		d₅ min.		Width Weight
d <sub>1</sub>	hll	$d_3$	max.	b	mın.	$d_2$	min. kg/1000
A 340	6.00	323.0	20.0	6			880
A 360	6.00	343.0	20.0	6			930
A 380	6.00	363.0	20.0	6			1600
A 460	7.00	440.0	26.0	6			1660
A 480 A 490	7.00 7.00	460.0 470.0	26.0 26.0	6 6			1725 1790
A 500	7.00	480.0	26.0	6			1790

ISO/ DIN No. Heat-treatable Steel	C	Si	Mn	P	\$	Cr	Mo	Ni
	%	%	%	<%	<%	%	%	%
C60 (Nr.1.0601)	0.57-0.65	≤0.40	0.60-0.90	0.045	0.045	≤0.40	≤0.10	≤0.40
C75 (Nr.1.0605)	0.70-0.80	0.15-0.35	0.60-0.80	0.045	0.045	-	-	-



**American Metric® Corporation** 

## Internal Retaining Rings (J) DIN 471



d<sub>1</sub> up thru Ø 33 = C60-DIN 17222 d<sub>1</sub> Ø 34 and above = C75-DIN 17222 d<sub>1</sub> up thru Ø 49 =47- 54 HRc hardness d<sub>1</sub> Ø 50 and above =44 - 51 HRc hardness

d <sub>1</sub>	S hll	d <sub>3</sub>	a max.	b	d₅ min.	d <sub>2</sub>	Groove Width min.	
J 8 J 9 J 10 J 11 J 12	0.8 0.8 1 1	8.7 9.8 10.8 11.8 13.0	2.4 2.5 3.2 3.3 3.4	1.1 1.3 1.4 1.5 1.7	1 1 1.2 1.2 1.5	8.4 9.4 10.4 11.4 12.5	0.09 0.09 1.10 1.10 1.10	0.135 0.146 0.272 0.298 0.333
J 13 J 14 J 15 J 16 J 17	1 1 1 1	14.1 15.1 16.2 17.3 18.3	3.6 3.7 3.7 3.8 3.9	1.8 1.9 2.0 2.0 2.1	1.5 1.7 1.7 1.7 1.7	13.6 14.6 15.7 16.8 17.8	1.10 1.10 1.10 1.10 1.10	0.360 0.450 0.481 0.521 0.60
J 18 J 19 J 20 J 21 J 22	1 1 1 1	19.5 20.5 21.5 22.5 23.5	4.1 4.1 4.2 4.2 4.2	2.2 2.2 2.3 2.4 2.5	2 2 2 2 2	19.0 20.0 21.0 22.0 23.0	1.10 1.10 1.10 1.10 1.10	0.67 0.71 0.76 0.86 0.94
J 23	1.2	24.6	4.2	2.5	2	24.1	1.30	1.20
J 24	1.2	25.9	4.4	2.6	2	25.2	1.30	1.32
J 25	1.2	26.9	4.5	2.7	2	26.2	1.30	1.36
J 26	1.2	27.9	4.7	2.8	2	27.2	1.30	1.47
J 27	1.2	29.1	4.7	2.9	2	28.4	1.30	1.57
J 28	1.2	30.1	4.8	2.9	2	29.4	1.30	1.62
J 29	1.2	31.1	4.8	3.0	2	30.4	1.30	1.67
J 30	1.2	32.1	4.8	3.0	2	31.4	1.30	1.85
J 31	1.2	33.4	5.2	3.2	2.5	32.7	1.30	1.95
J 32	1.2	34.4	5.4	3.2	2.5	33.7	1.30	2.10
J 33	1.2	35.5	5.4	3.3	2.5	34.7	1.60	2.20
J 34	1.5	36.5	5.4	3.3	2.5	35.7	1.60	2.91
J 35	1.5	37.8	5.4	3.4	2.5	37.0	1.60	3.02
J 36	1.5	38.8	5.4	3.5	2.5	38.0	1.60	3.10
J 37	1.5	39.8	5.5	3.6	2.5	39.0	1.60	3.34
J 38	1.5	40.8	5.5	3.7	2.5	40.0	1.60	3.50
J 39	1.5	42.5	5.6	3.8	2.5	41.0	1.85	3.90
J 40	1.75	43.5	5.8	3.9	2.5	42.5	1.85	4.70
J 41	1.75	44.5	5.9	4.0	2.5	43.5	1.85	5.15
J 42	1.75	45.5	5.9	4.1	2.5	44.5	1.85	5.40
J 43	1.75	46.5	5.9	4.2	2.5	45.5	1.85	5.60
J 44	1.75	47.5	6.0	4.2	2.5	46.5	1.85	5.80
J 45	1.75	48.5	6.2	4.3	2.5	47.5	1.85	6.00
J 46	1.75	49.5	6.3	4.4	2.5	48.5	1.85	6.10
J 47	1.75	50.5	6.4	4.4	2.5	49.5	1.85	6.20
J 48 J 49	1.75 1.75	51.5 52.5	6.4 6.5	4.5 4.5	2.5 2.5	50.5	1.85	6.70 6.90

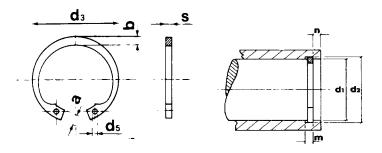
							Groove	
	S	_	а		d₅	_		Weight
d <sub>1</sub>	hll	d <sub>3</sub>	max.	b	min.	d <sub>2</sub>	min.	kg/1000
J 50	2	54.2	6.5	4.6	2.5	53.0	2.15	7.80
J 51	2	55.2	6.5	4.7	2.5	54.0	2.15	8.05
J 52	2	56.2	6.7	4.7	2.5	55.0	2.15	8.40
J 53	2	57.2	6.7	4.9	2.5	56.0	2.15	8.60
J 54	2	58.2	6.7	5.0	2.5	57.0	2.15	8.75
J 55	2 2	59.2	6.8	5.0	2.5	58.0	2.15	9.10
J 56 J 57	2	60.2 61.2	6.8 6.8	5.1 5.1	2.5 2.5	59.0 60.0	2.15 2.15	9.65 10.20
J 58	2 2	62.2	6.9	5.2	2.5	61.0	2.15	10.50
J 60 J 62	2	64.2 66.2	7.3 7.3	5.4 5.5	2.5 2.5	63.0 65.0	2.15 2.15	11.10 11.25
J 63	2	67.2	7.3	5.6	2.5	66.0	2.15	11.70
J 64	2	68.2	7.6	5.8	2.5	00.0	20	14.30
1.05	0.5	CO 0	7.0	<b>.</b> 0	•	00.0	0.05	44.00
J 65 J 67	2.5 2.5	69.2 71.5	7.6 7.7	5.8 6.0	3 3	68.0 70.0	2.65 2.65	14.30 15.35
J 68	2.5	72.5	7.8	6.1	3	71.0	2.65	16.00
J 70	2.5	74.5	7.8	6.2	3	73.0	2.65	16.60
J 72	2.5	76.5	7.8	6.4	3	75.0	2.65	18.10
J 75	2.5	79.5	7.8	6.6	3	78.0	2.65	18.80
J 77	2.5	81.5	7.9	6.7	3	80.0	2.65	19.60
J 78	2.5	82.5	8.5	6.8	3	81.0	2.65	20.40
J 80	2.5	85.5	8.5	7.0	3	83.5	2.65	22.00
J 82	2.5	87.5	8.5	7.0	3	85.5	2.65	24.00
J 85	3	90.5	8.6	7.2	3.5	88.5	3.15	25.30
J 87	3	92.5	8.6	7.3	3.5	90.5	3.15	27.10
J 88	3	93.5	8.6	7.4	3.5	91.5	3.15	28.00
J 90 J 92	3 3	95.5 97.5	8.6 8.7	7.6 7.8	3.5 3.5	93.5 95.5	3.15 3.15	31.00 32.00
J 95	3	100.5	8.8	8.1	3.5	98.5	3.15	35.00
J 97 J 98	3 3	102.5 103.5	8.8 9.0	8.2 8.3	3.5 3.5	100.5 101.5	3.15 3.15	36.00 37.00
J 100	3	105.5	9.0	8.4	3.5	101.5	3.15	38.00
J 102	4	108.0	9.5	8.5	3.5	106.0	4.15	55.00
J 105	4	112.0	9.5	8.7	3.5	109.0	4.15	56.00
J 107	4	114.0	9.5	8.8	3.5	111.0	4.15	58.50
J 108	4	115.0	9.5	8.9	3.5	112.0	4.15	60.00
J 110	4	117.0	10.4	9.0	3.5	114.0	4.15	64.50
J 112	4	119.0	10.5	9.1	3.5	116.0	4.15	72.00
J 115	4	122.0	10.5	9.3	3.5	119.0	4.15	74.50
J 117	4	124.0	10.6	9.5	3.5	121.0	4.15	76.00
J 118	4	125.0	10.7	9.6	3.5	122.0	4.15	76.50
J 120	4	127.0	11.0	9.7	3.5	124.0	4.15	77.50

ISO/ DIN No.	C	Si	Mn	P	\$	Cr	Mo	Ni
Heat-treatable Steel	%	%	%	≤%	≤%	%	%	%
C60 (Nr.1.0601)	0.57-0.65	≤0.40	0.60-0.90	0.045	0.045	≤0.40	≤0.10	≤0.40
C75 (Nr.1.0605)	0.70-0.80	0.15-0.35	0.60-0.80	0.045	0.045	-	-	-



**American Metric® Corporation** 

## Internal Retaining Rings (J) DIN 471



d, up thru Ø 33 = C60-DIN 17222 d, Ø 34 and above = C75-DIN 17222 d, up thru Ø 49 =47- 54 HRc hardness d, Ø 50 and above =44 - 51 HRc hardness

	s		а		d <sub>5</sub>		Groove	
d,	hll	d <sub>3</sub>	max.	b	o₅ min.	$d_{_2}$	Width min.	Weight kg/1000
J 122	4	129.0	11.0	9.8	4	126.0	4.15	78.50
J 125	4	132.0	11.0	10.0	4	129.0	4.15	79.50
J 127	4	134.0	11.0	10.1	4	131.0	4.15	80.50
J 128	4	135.0	11.0	10.2	4	132.0	4.15	81.00
J 130	4	137.0	11.0	10.2	4	134.0	4.15	82.00
J 132	4	139.0	11.0	10.3	4	136.0	4.15	83.00
J 135	4	142.0	11.2	10.5	4	139.0	4.15	84.00
J 137	4	144.0	11.2	10.5	4	141.0	4.15	85.50
J 138	4	145.0	11.2	10.6	4	142.0	4.15	86.00
J 140	4	147.0	11.2	10.7	4	144.0	4.15	87.50
J 142	4	149.0	11.3	10.8	4	146.0	4.15	91.00
J 145	4	152.0	11.4	10.9	4	149.0	4.15	93.00
J 147	4	154.0	11.6	11.0	4	151.0	4.15	96.00
J 148	4	155.0	11.8	11.1	4	152.0	4.15	97.00
J 150	4	158.0	12.0	11.2	4	155.0	4.15	99.00
J 152	4	161.0	12.0	11.4	4	157.0	4.15	103.0
J 155	4	164.0	12.0	11.4	4	160.0	4.15	105.0
J 158	4	167.0	13.0	11.6	4	163.0	4.15	108.0
J 160	4	169.0	13.0	11.6	4	165.0	4.15	110.0
J 165	4	174.5	13.0	11.8	4	170.0	4.15	125.0
J 168	4	177.5	13.5	12.2	4	173.0	4.15	130.0
J 170	4	179.5	13.5	12.2	4	175.0	4.15	140.0
J 175	4	184.5	13.5	12.7	4	180.0	4.15	150.0
J 178	4	187.5	14.2	13.2	4	183.0	4.15	160.0
J 180	4	189.5	14.2	13.2	4	185.0	4.15	165.0
J 185	4	194.5	14.2	13.7	4	190.0	4.15	170.0
J 190	4	199.5	14.2	13.8	4	195.0	4.15	175.0
J 195	4	204.5	14.2	13.8	4	200.0	4.15	183
J 200	4	209.5	14.2	14.0	4	205.0	4.15	195
J 205	5	217.0	14.2	14.0	4	211.0	5.15	225
J 210	5	222.0	14.2	14.0	4	216.0	5.15	270
J 215	5	227.0	14.2	14.0	4	221.0	5.15	300
J 220	5	232.0	14.2	14.0	4	226.0	5.15	315
J 225	5	237.0	14.2	14.0	4	231.0	5.15	323
J 230	5	242.0	14.2	14.0	4	236.0	5.15	330
J 235	5	247.0	14.2	14.0	4			338
J 240	5	252.0	14.2	14.0	4	246.0	5.15	345
J 245	5	257.0	14.2	14.0	4	251.0	5.15	353
J 250	5	262.0	14.2	14.0	4	256.0	5.15	360
J 255	5	270.0	16.2	16.0	5	000.0	F 45	368
J 260	5	275.0	16.2	16.0	5	268.0	5.15	375

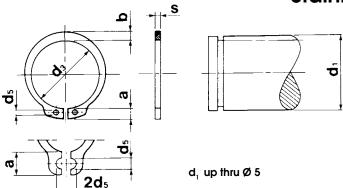
	S		а		d₅		Groove Width Weight
d <sub>1</sub>	h11	d <sub>3</sub>	max.	b	min.	$d_2$	min. kg/1000
J 265 J 270 J 275 J 280 J 285	5 5 5 5	280.0 285.0 290.0 295.0 300.0	16.2 16.2 16.2 16.2 16.2	16.0 16.0 16.0 16.0 16.0	5 5 5 5	278.0 283.0 288.0	5.15 5.15 5.15
J 290 J 300 J 305 J 310 J 320	5 5 6 6	305.0 315.0 322.0 327.0 337.0	16.2 16.2	16.0 16.0 20.0 20.0 20.0	5 5 6 6	308.0	5.15
J 330 J 340 J 350 J 360 J 380	6 6 6 6	347.0 357.0 367.0 377.0 397.0		20.0 20.0 20.0 20.0 20.0	6 6 6 6		
J 390 J 400 J 420 J 430 J 440	6 6 7 7 7	407.0 417.0 440.0 450.0 460.0		20.0 20.0 26.0 26.0 26.0	6 6 6 6		
J 450 J 460 J 470 J 480 J 500	7 7 7 7	470.0 480.0 490.0 500.0 520.0		26.0 26.0 26.0 26.0 26.0	6 6 6 6		

ISO/ DIN No.	C	Si	Mn	P	\$	Cr	Mo	Ni
Heat-treatable Steel	%	%	%	≤%	≤%	%	%	%
C60 (Nr.1.0601)	0.57-0.65	≤0.40	0.60-0.90	0.045	0.045	≤0.40	≤0.10	≤0.40
C75 (Nr.1.0605)	0.70-0.80	0.15-0.35	0.60-0.80	0.045	0.045	-	-	-



**American Metric® Corporation** 

#### External Retaining Rings (A) DIN 471 Stainless Steel



 $d_1$  up thru Ø 27 = DIN X 45 CrMoV 15  $d_1$  Ø 28 and above = DIN X 35 CrMo 17 (~ AISI 420)
d, up thru Ø 48 =47-54 HRc hardness
d, Ø 50 and above =44 - 51 HRc hardness

	S		а		d <sub>s</sub>	Weight
d <sub>1</sub>	hll	$d_3$	max	b	u₅ min.	kg/1000
4	0.4	3.7	2.2	0.9	1	0.034
5	0.6	4.7	2.5	1.1	1	0.081
6	0.7	5.6	2.7	1.3	1.2	0.121
7	0.8	6.5	3.1	1.4	1.2	0.189
8	0.8	7.4	3.2	1.5	1.2	0.220
9 10 11 12 13	1 1 1 1	8.4 9.3 10.2 11.0 11.9	3.3 3.3 3.3 3.3 3.4	1.7 1.8 1.8 1.8 2.0	1.2 1.5 1.5 1.7 1.7	0.368 0.402 0.445 0.469 0.571
14	1	12.9	3.5	2.1	1.7	0.644
15	1	13.8	3.6	2.2	1.7	0.704
16	1	14.7	3.7	2.2	1.7	0.771
17	1	15.7	3.8	2.3	1.7	0.881
18	1.2	16.5	3.9	2.4	2	1.154
19	1.2	17.5	3.9	2.5	2	1.230
20	1.2	18.5	4.0	2.6	2	1.321
21	1.2	19.5	4.1	2.7	2	1.450
22	1.2	20.5	4.2	2.8	2	1.599
23	1.2	21.5	4.3	2.9	2	1.724
24	1.2	22.2	4.4	3.0	2	1.776
25	1.2	23.2	4.4	3.0	2	1.907
26	1.2	24.2	4.5	3.1	2	1.980
27	1.2	24.9	4.6	3.1	2	2.149
28	1.5	25.9	4.7	3.2	2	2.781
29	1.5	26.9	4.8	3.4	2	3.027
30	1.5	27.9	5.0	3.5	2	3.335
31	1.5	28.6	5.0	3.5	2.5	3.228
32	1.5	29.6	5.2	3.6	2.5	3.430
33	1.5	30.5	5.2	3.7	2.5	3.917
34 35 36 37 38 39 40	1.5 1.5 1.75 1.75 1.75 1.75	31.5 32.2 33.2 34.2 35.2 36.0 36.5	5.4 5.6 5.6 5.7 5.8 5.9 6.0	3.8 3.9 4.0 4.1 4.2 4.3	2.5 2.5 2.5 2.5 2.5 2.5 2.5	4.086 4.329 4.860 5.300 5.360 5.650 5.420
41 42 44 45 46	1.75 1.75 1.75 1.75 1.75 1.75	37.5 38.5 40.5 41.5 42.5	6.2 6.5 6.6 6.7 6.7	4.5 4.5 4.6 4.7 4.8	2.5 2.5 2.5 2.5 2.5	6.550 6.620 6.820 7.100 7.290

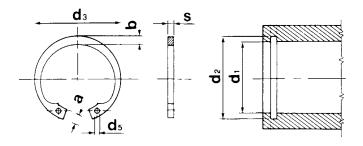
	S		а		d <sub>5</sub>	Weight
d,	hll	d <sub>3</sub>	max	b	min.	kg/1000
47	1.75	43.5	6.8	4.9	2.5	7.690
48	2	44.5	6.9	5.0	2.5	7.960
50	2	45.8	6.9	5.1	2.5	9.750
52	2	47.8	7.0	5.2	2.5	10.100
54	2	49.8	7.1	5.3	2.5	10.700
55	2 2	50.8	7.2	5.4	2.5	10.900
56	2	51.8	7.3	5.5	2.5	11.280
57	2	52.8	7.3	5.5	2.5	11.800
58	2	53.8	7.3	5.6	2.5	12.090
60		55.8	7.4	5.8	2.5	12.570
	2					
62	2	57.8	7.5	6.0	2.5	14.030
63	2.5	58.8	7.6	6.2	2.5	14.850
65 67	2.5	60.8	7.8	6.3	3 3	19.310
67 68	2.5	62.5 63.5	7.9 8.0	6.4 6.5	3	20.900 21.010
00	2.5	03.3	0.0	0.5	3	21.010
70	2.5	65.5	8.1	6.6	3	21.730
72	2.5	67.5	8.2	6.8	3	23.490
75	2.5	70.5	8.4	7.0	3	24.770
77	2.5	72.5	8.5	7.2	3	25.800
78		73.5	8.6	7.3	3	26.900
	2.5					
80	2.5	74.5	8.6	7.4	3	27.120
82	3	76.5	8.7	7.6	3	27.430
85	3 3	79.5	8.7	7.8	3.5	37.300
87 88	3	81.5 82.5	8.8 8.8	7.9 8.0	3.5 3.5	39.000 39.600
00	3	02.5	0.0	0.0	3.3	39.000
90	3	84.5	8.8	8.2	3.5	39.890
92	3	86.5	9.0	8.4	3.5	43.800
95	3	89.5	9.4	8.6	3.5	45.000
97	3	91.5	9.4	8.8	3.5	52.310
98		92.5	9.5	9.0	3.5	48.950
100	3	94.5	9.6	9.0	3.5	49.720
100		34.3	9.0	9.0	3.3	49.720

DIN No.	C	Si	Mn	P	\$	Cr	Mo	Ni	V
Stainless Steel	%	≤%	≤%	≤%	≤%	%	%	%	%
X 45 CrMoV 15	0.42-0.50	1.00	1.00	0.045	0.030	13.8-15.0	0.45-0.60	-	0.10-0.15
X 35 CrMo 17	0.35-0.45	1.00	1.00	0.045	0.030	15.5-17.5	0.80-1.30	≤1.00	-



**American Metric® Corporation** 

## Internal Retaining Rings (J) DIN 471 Stainless Steel



d, up thru Ø 33 = DIN X 45 CrMoV 15 d, Ø 34 and above = DIN X 35 CrMo 17 (~ AISI 420) d, up thru Ø 49 =47- 54 HRc hardness d, Ø 50 and above =44 - 51 HRc hardness

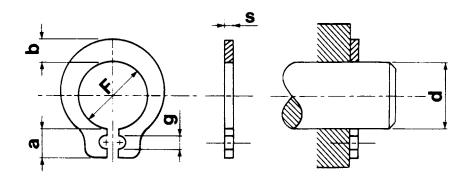
\$ h11	$d_3$	a max	b	d₅ min.	Weight kg/1000
0.8 0.8 1 1	8.7 9.8 10.8 11.8 13.0	2.4 2.5 3.2 3.3 3.4	1.1 1.3 1.4 1.5 1.7	1 1 1.2 1.2 1.5	0.116 0.146 0.261 0.289 0.309
1 1 1 1	14.1 15.1 16.2 17.3 18.3	3.6 3.7 3.7 3.8 3.9	1.8 1.9 2.0 2.0 2.1	1.5 1.7 1.7 1.7 1.7	0.363 0.421 0.481 0.510 0.568
1 1 1 1	19.5 20.5 21.5 22.5 23.5	4.1 4.1 4.2 4.2 4.2	2.2 2.2 2.3 2.4 2.5	2 2 2 2 2	0.648 0.682 0.743 0.803 0.875
1.2 1.2 1.2 1.2 1.2	24.6 25.9 26.9 27.9 29.1	4.2 4.4 4.5 4.7	2.5 2.6 2.7 2.8 2.9	2 2 2 2 2	1.140 1.270 1.320 1.440 1.530
1.2 1.2 1.2 1.2 1.2	30.1 31.1 32.1 33.4 34.4	4.8 4.8 4.8 5.2 5.4	2.9 3.0 3.0 3.2 3.2	2 2 2 2.5 2.5	1.600 1.700 1.820 1.973 2.070
1.2 1.5 1.5 1.5 1.5	35.5 36.5 37.8 38.8 39.8	5.4 5.4 5.4 5.4 5.5	3.3 3.3 3.4 3.5 3.6	2.5 2.5 2.5 2.5 2.5	2.240 2.870 2.970 3.110 3.250
1.5 1.75 1.75 1.75 1.75 1.75 1.75 1.75 1	40.8 42.5 43.5 44.5 46.5 47.5 48.5 49.5 50.5 51.5	5.5 5.6 5.8 5.9 5.9 5.9 6.0 6.2 6.3 6.4 6.4	3.7 3.8 3.9 4.0 4.1 4.2 4.2 4.3 4.4 4.4	2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	3.520 3.810 4.580 5.080 5.260 5.480 5.560 5.860 6.100 6.740 6.530 7.050
	0.8 0.8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.8 8.7 0.8 9.8 1 10.8 1 11.8 1 13.0 1 14.1 1 15.1 1 16.2 1 17.3 1 18.3 1 19.5 1 20.5 1 21.5 1 22.5 1 23.5 1 22.5 1 23.5 1 22.5 1 23.5 1 22.5 1 23.5 1 22.5 1 23.5 1 22.5 1 23.5 1 24.6 1.2 25.9 1.2 26.9 1.2 27.9 1.2 29.1 1.2 30.1 1.2 31.1 1.2 32.1 1.2 32.1 1.2 33.4 1.2 34.4 1.2 35.5 1.5 36.5 1.5 37.8 1.5 38.8 1.5 39.8 1.5 42.5 1.75 44.5 1.75 44.5 1.75 44.5 1.75 44.5 1.75 44.5 1.75 45.5 1.75 46.5 1.75 47.5 1.75 46.5 1.75 47.5 1.75 48.5 1.75 49.5 1.75 50.5 51.5 50.	0.8 8.7 2.4 0.8 9.8 2.5 1 10.8 3.2 1 11.8 3.3 1 13.0 3.4  1 14.1 3.6 1 15.1 3.7 1 16.2 3.7 1 17.3 3.8 1 18.3 3.9  1 19.5 4.1 1 20.5 4.1 1 20.5 4.1 1 22.5 4.2 1 22.5 4.2 1 23.5 4.2  1.2 24.6 4.2 1.2 25.9 4.4 1.2 26.9 4.5 1.2 27.9 4.7 1.2 29.1 4.7  1.2 30.1 4.8 1.2 32.1 4.8 1.2 32.1 4.8 1.2 32.1 4.8 1.2 32.1 4.8 1.2 33.4 5.2 1.2 34.4 5.4  1.2 35.5 5.4 1.5 36.5 5.4 1.5 37.8 5.4 1.5 38.8 5.4 1.5 39.8 5.5 1.5 40.8 5.5 1.75 44.5 5.9 1.75 45.5 5.9 1.75 45.5 5.9 1.75 45.5 5.9 1.75 45.5 5.9 1.75 45.5 5.9 1.75 45.5 5.9 1.75 45.5 5.9 1.75 45.5 5.9 1.75 46.5 5.9 1.75 47.5 6.0 1.75 49.5 6.3 1.75 50.5 6.4 1.75 50.5 6.4 1.75 50.5 6.4 1.75 50.5 6.4	0.8	0.8       8.7       2.4       1.1       1         0.8       9.8       2.5       1.3       1         1       10.8       3.2       1.4       1.2         1       11.8       3.3       1.5       1.2         1       13.0       3.4       1.7       1.5         1       14.1       3.6       1.8       1.5         1       15.1       3.7       1.9       1.7         1       16.2       3.7       2.0       1.7         1       17.3       3.8       2.0       1.7         1       18.3       3.9       2.1       1.7         1       19.5       4.1       2.2       2         1       20.5       4.1       2.2       2         1       20.5       4.1       2.2       2         1       20.5       4.1       2.2       2         1       22.5       4.2       2.4       2         1       22.5       4.2       2.4       2         1       22.5       4.2       2.4       2         1       22.5       4.2       2.5       2 <td< th=""></td<>

	S		а		d <sub>s</sub>	Weight
$\mathbf{d}_{_{1}}$	hìi	$d_3$	max	b	min.	kg/1000
50	2	54.2	6.5	4.6	2.5	8.370
51	2	55.2	6.5	4.7	2.5	8.600
52	2	56.2	6.7	4.7	2.5	8.340
53	2	57.2	6.7	4.9	2.5	9.380
54	2	58.2	6.7	5.0	2.5	9.420
55	2	59.2	6.8	5.0	2.5	9.560
56	2	60.2	6.8	5.1	2.5	10.000
57	2	61.2	6.8	5.1	2.5	10.170
58	2	62.2	6.9	5.2	2.5	10.680
60	2	64.2	7.3	5.4	2.5	10.820
62	2	66.2	7.3	5.5	2.5	11.190
63	2	67.2	7.3	5.6	2.5	11.690
65	2.5	69.2	7.6	5.8	3	16.100
67	2.5	71.5	7.7	6.0	3	17.340
68	2.5	72.5	7.8	6.1	3	17.920
70	2.5	74.5	7.8	6.2	3	18.640
72	2.5	76.5	7.8	6.4	3	19.000
75	2.5	79.5	7.8	6.6	3	21.150
77	2.5	81.5	7.9	6.7	3	22.750
78	2.5	82.5	8.5	6.8	3	23.040
80	2.5	85.5	8.5	7.0	3	24.310
82	2.5	87.5	8.5	7.0	3	24.900
85	3	90.5	8.6	7.2	3.5	31.900
87	3	92.5	8.6	7.3	3.5	34.000
88	3	93.5	8.6	7.4	3.5	35.120
90	3	95.5	8.6	7.6	3.5	35.420
92	3	97.5	8.7	7.8	3.5	38.170
95	3	100.5	8.8	8.1	3.5	40.450
97	3	102.5	8.8	8.2	3.5	40.320
98	3	103.5	9.0	8.3	3.5	40.800
100	3	105.5	9.2	8.4	3.5	43.150

DIN No.	C	Si	Mn	P	\$	Cr	Mo	Ni	V
Stainless Steel	%	≤%	≤%	≤%	≤%	%	%	%	%
X 45 CrMoV 15	0.42-0.50	1.00	1.00	0.045	0.030	13.8-15.0	0.45-0.60	-	0.10-0.15
X 35 CrMo 17	0.35-0.45	1.00	1.00	0.045	0.030	15.5-17.5	0.80-1.30	≤1.00	



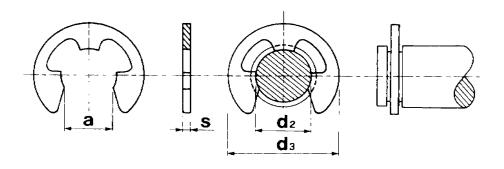
# Metric Grip Rings For Shafts Without Grooves



Part No.	For Shaft Ø d mm	F	s	а	b	<b>g</b> min
GR 2	2	1.90	0.5	1.85	1.45	1
GR 2.5	2.5	2.35	0.6	1.90	1.50	1
GR 3	3	2.80	0.6	2	1.60	1.10
GR 4	4	3.80	0.8	2.80	1.80	1.20
GR 5	5	4.75	0.8	2.90	2.20	1.30
GR 6	6	5.70	1	3	2.50	1.40
GR 7	7	6.65	1	3.20	2.80	1.40
GR 8	8	7.65	1	3.40	3	1.50
GR 9	9	8.60	1.20	3.50	3.20	1.70
GR 10	10	9.60	1.20	3.50	3.50	1.70
GR 11	11	10.50	1.20	3.90	3.90	1.70
GR 12	12	11.50	1.30	4.40	4.30	2

Material C60-DIN (AISI 1060) HRc 47-54 phosphate finish hardened spring steel

# Metric "E" Rings DIN 6799 Plain, Zinc Plated & Stainless Steel



Groove Dia. h 11	Shaft D	iameter				
$d_2$	from	to	d <sub>3 max.</sub>	S	а	Kg/ 1000
1.2	1.4	2.0	3.25	0.30	1.01	0.007
1.5	2.0	2.5	4.25	0.40	1.28	0.019
1.9	2.5	3.0	4.8	0.50	1.61	0.028
2.3	3.0	4.0	6.3	0.60	1.94	0.060
3.2	4.0	5.0	7.3	0.60	2.70	0.075
4.0	5.0	7.0	9.3	0.70	3.34	0.147
5.0	6.0	8.0	11.3	0.70	4.11	0.215
6.0	7.0	9.0	12.3	0.70	5.26	0.230
7.0	8.0	11.0	14.3	0.90	5.84	0.416
8.0	9.0	12.0	16.3	1.00	6.52	0.613
9.0	10.0	14.0	18.8	1.10	7.63	0.905
10.0	11.0	15.0	20.4	1.20	8.32	1.14
12.0	13.0	18.0	23.4	1.30	10.45	1.55
15.0	16.0	24.0	29.4	1.50	12.61	3.01
19.0	20.0	31.0	37.6	1.75	15.92	5.56
24.0	25.0	38.0	44.6	2.00	21.88	8.15
30.0	32.0	42.0	52.6	2.50	25.80	13.50

Hardness = HRc 46-54 Stainless Steel = DIN X2 CrNiMo 18 14 3 (AISI 316L)

DIN No.	C	Si	Mn	P	S	Cr	Mo	Ni	V
Stainless Steel	%	≤%	≤%	≤%	≤%	%	%	%	%
X 2 CrNiMo 18 14 3	≤030	1.00	2.00	0.045	0.025	17.0-18.5	2.50-3.00	12.5-15.0	-

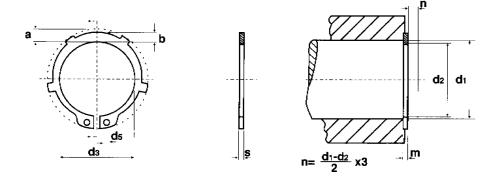
#### **Ordering Examples:**

E 4 = Plain E-Ring E 4 ST = Plain Stacked E 4 Z = Zinc Plated E-RingE 4 Z ST= Zinc Plated Stacked

E 4 SS = Stainless Steel E-Ring E 4 SS ST Stainless Steel Stacked

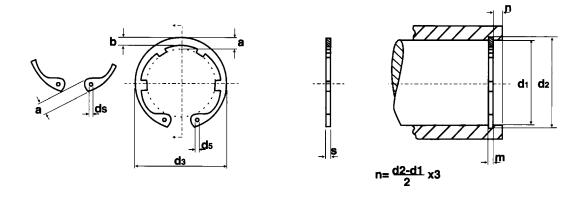


## Metric Retaining Rings (DIN 983)



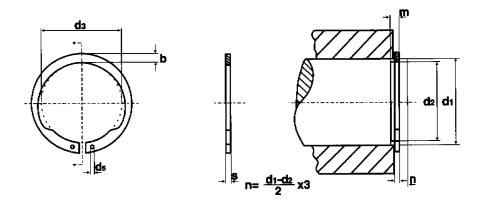
Part No.	d,	s	$d_3$	a max	b	<b>d</b> <sub>5</sub>	Weight kg/ 1000
AK 18	18	1.2	16.5	3.7	2.5	2	1.24
AK 20	20	1.2	18.5	3.8	2.6	2	1.45
AK 22	22	1.2	20.5	4.0	2.8	2	1.77
AK 25	25	1.2	23.2	4.3	3.0	2	2.12
AK 26	26	1.2	24.2	4.4	3.1	2	2.18
AK 30	30	1.5	27.9	4.7	3.4	2	3.65
AK 35	35	1.5	32.2	5.2	3.8	2.5	4.38
AK 40	40	1.75	36.5	7.2	4.2	2.5	7.00
AK 45	45	1.75	41.5	7.2	4.6	2.5	8.50
AK 50	50	2	45.8	8.2	5.0	2.5	11.55
AK 55	55	2	50.8	8.2	5.4	2.5	12.99
AK 65	65	2.5	60.8	10.2	6.2	3	21.70

## Metric Retaining Rings (DIN 984)



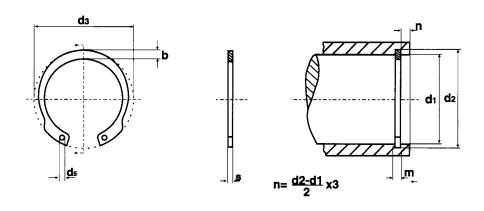
Part				а		d <sub>5</sub>	Weight
No.	$\mathbf{d}_{_{1}}$	S	$d_3$	max	b	min	kg/ 1000
IK 17	17	1	18.3	3.7	2.2	1.7	0.80
IK 18	18	1	19.5	4.1	2.3	2 2	0.90
IK 19	19	1	20.5	3.8	2.3	2	0.99
IK 20	20	1	21.5	3.9	2.4	2	1.06
IK 22	22	1	23.5	4.0	2.6	2	1.28
IK 24	24	1.2	25.9	4.2	2.6	2 2 2	1.60
IK 26	26	1.2	28.5	4.4	2.8	2	2.00
IK 27	27	1.2	29.1	4.5	2.9	2	2.00
IK 30	30	1.2 1.2	32.1	4.9	3.2	2 2 2	2.35
IK 32	32	1.2	34.4	5.1	3.3	2.5	2.50
IK 34	34	1.5	36.5	5.3	3.4	2.5	3.80
IK 35	35	1.5	37.8	5.5	3.6	2.5	4.00
IK 36	36	1.5	38.8	5.6	3.6	2.5	4.15
IK 38	38	1.5	40.8	6.1	3.8	2.5	4.40
IK 40	40	1.75	43.5	7.2	4.0	2.5	5.30
IK 42	42	1.75	45.5	7.2	4.1	2.5	6.00
IK 45	45	1.75	48.5	7.2	4.3	2.5	6.60
IK 47	47	1.75	50.5	7.2	4.5	2.5	6.90
IK 50	50	2	54.2	8.2	4.7	2.5	8.50
IK 52	52	2	56.2	8.2	4.7	2.5	9.40
IK 57	57	2 2 2	61.2	8.2	5.2	2.5	11.65
IK 75	75	2.5	79.5	10.2	6.6	3	22.60

## **AV Type Metric Retaining Rings**

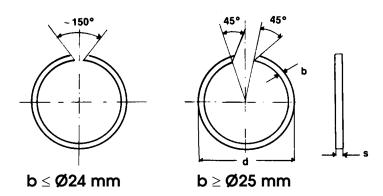


Part No.	d,	s	$d_3$	b	$\mathbf{d}_{\scriptscriptstyle{5}}$	Weight kg/ 1000
AV 12	12	1	11.0	1.8	1.3	0.25
AV 13	13	1	11.9	2.1	1.3	0.56
AV 14	14	1	12.9	2.1	1.3	0.58
AV 16	16	1	14.7	2.3	1.3	0.72
AV 17	17	1	15.7	2.4	1.3	0.81
AV 18	18	1.2	16.5	2.6	1.5	1.14
AV 20	20	1.2	18.5	2.8	1.5	1.43
AV 22	22	1.2	20.5	3.0	1.5	1.63
AV 25	25	1.2	23.2	3.4	1.5	2.10
AV 30	30	1.5	27.9	3.9	2.0	3.58
AV 32	32	1.5	29.6	4.0	2.0	3.88
AV 35	35	1.5	32.2	4.2	2.0	4.53
AV 40	40	1.75	36.5	4.7	2.0	6.49
AV 50	50	2	45.8	5.2	2.5	9.84
AV 60	60	2 2	55.8	5.8	2.5	13.80
AV 65	65	2.5	60.8	6.0	2.5	20.75
AV 75	75	2.5	70.5	6.5	2.5	27.50

## IV Type Metric Retaining Rings



Part	ai.	_	4	L.	d <sub>5</sub>	Weight
No.	d <sub>1</sub>	S	d <sub>3</sub>	b	min	kg/ 1000
IV 16	16	1	17.3	2.1	1.3	0.53
IV 17	17	1	18.3	2.1	1.3	0.58
IV 19	19	1	20.5	2.2	1.3	0.66
IV 20	20	1	21.5	2.3	1.3	0.80
IV 22	22	1	23.5	2.4	1.3	0.83
IV 24	24	1.2	25.9	2.8	1.5	1.30
IV 25	25	1.2	26.9	2.8	1.5	1.40
IV 26	26	1.2	27.9	3.0	1.5	1.50
IV 27	27	1.2	29.1	3.0	1.5	1.53
IV 28	28	1.2	30.1	3.1	1.5	1.80
IV 30	30	1.2	32.1	3.2	1.5	2.03
IV 32	32	1.2	34.4	3.3	1.5	2.05
IV 33	33	1.2	35.5	3.3	1.5	2.35
IV 35	35	1.5	37.8	3.4	1.7	3.20
IV 36	36	1.5	38.8	3.6	1.7	3.23
IV 38	38	1.5	40.8	3.8	1.7	3.68
IV 40	40	1.75	43.5	4.2	2.0	4.75
IV 42	42	1.75	45.5	4.2	2.0	5.20
IV 45	45	1.75	48.5	4.2	2.0	6.00
IV 47	47	1.75	50.5	4.7	2.0	6.50
IV 50	50	2	54.2	5.2	2.5	8.50
IV 55	55	2	59.2	5.2	2.5	10.00
IV 58	58	2	62.2	5.2	2.5	10.50
IV 60	60	2 2 2	64.2	5.2	2.5	11.25
IV 62	62	2	66.2	5.2	2.5	11.75
IV 68	68	2.5	72.5	5.7	2.5	17.75
IV 80	80	2.5	85.5	6.0	2.5	22.90
IV 85	85	3	90.5	6.6	3.0	30.00



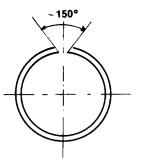
#### SB Type Snap Ring

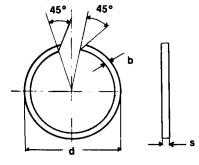
Part No.	Shaft Ø mm	s -0.1	b -0.1	d min.	Part No.	Shaft Ø mm	s -0.1	b -0.1	d min.
SB 7*	7	0.8	1.0	7.5	SB 50	50	1.5	2.3	51.8
SB 8*	8	8.0	1.0	8.5	SB 52	52			54.3
SB 9*	9	0.8	1.1	9.5			1.5	2.3	
					SB 53	53	1.5	2.3	55.3
SB 10*	10	8.0	1.2	10.6	SB 55	55	1.5	2.3	57.3
SB 11*	11	1.0	1.3	11.6	SB 57	57			59.3
SB 12*	12	1.0	1.3	12.7			1.5	2.3	
					SB 58	58	1.5	2.3	60.3
SB 13*	13	1.0	1.3	13.8	SB 60	60	1.5	2.3	62.3
SB 14*	14	1.0	1.3	14.8	SB 62	62			64.3
SB 15*	15	1.0	1.3	15.8			1.5	2.3	
					SB 63	63	1.5	2.3	65.3
SB 16	16	1.2	1.6	16.8	SB 65	65	1.5	2.3	67.3
SB 17	17	1.2	1.7	17.8	SB 68	68			70.3
SB 18	18	1.2	1.75	18.9			1.5	2.3	
				10.5	SB 70	70	2.0	2.8	72.3
SB 19	19	1.2	1.75	19.9	SB 72	72	2.0	2.8	74.6
SB 20	20	1.2	1.75	21.0	SB 73	73			75.6
SB 21	21	1.2	1.75	22.0			2.0	2.8	
				22.0	SB 74	74	2.0	2.8	76.6
SB 22	22	1.2	1.75	23.0	SB 76	76	2.0	2.8	78.6
SB 23	23	1.2	1.75	24.0	SB 78	78			80.6
SB 24	24	1.2	1.75	25.2			2.0	2.8	
<b>55</b> 2.			0	25.2	SB 79	79	2.0	2.8	81.6
SB 25	25	1.2	1.75	26.2	SB 80	80	2.0	2.8	82.6
SB 26	26	1.2	1.75	27.2	SB 81	81	2.0	2.0	83.6
SB 27	27	1.2	1.75	28.2	020.	01	2.0	2.8	00.0
<b>V</b> 2 - 1			0	20.2	SB 82	82	2.0	2.8	84.6
SB 28	28	1.2	1.75	29.2	SB 83	83	2.0	2.8	85.6
SB 29	29	1.2	1.75	30.2	SB 85	85	2.0	2.0	87.6
SB 30	30	1.5	2.3	31.4	02.00	•	2.0	2.8	00
02.00	00	1.0	2.0	31.4	SB 86	86	2.5	3.4	88.6
SB 31	31	1.5	2.3	32.4	SB 88	88	2.5	3.4	91.0
SB 32	32	1.5	2.3	33.4	SB 90	90	2.0	0.1	93.0
SB 33	33	1.5	2.3	34.4	1 02 00	00	2.5	3.4	00.0
02.00			2.0	34.4	SB 92	92	2.5	3.4	95.0
SB 34	34	1.5	2.3	35.4	SB 93	93	2.5	3.4	96.0
SB 35	35	1.5	2.3	36.4	SB 95	95	2.0	0	98.0
SB 37	37	1.5	2.3	38.8	1 02 00	00	2.5	3.4	00.0
050,	O1	1.0	2.0	30.0	SB 97	97	2.5	3.4	100.0
SB 38	38	1.5	2.3	39.8	SB 98	98	2.5	3.4	101.0
SB 39	39	1.5	2.3		SB 100	100	2.0	0.4	103.0
SB 40	40	1.5	2.3	40.8	05 100	100	2.5	3.4	100.0
J 55 70	70	1.5	2.0	41.8	SB 102	102	2.5	3.4	105.3
SB 42	42	1.5	2.3	42.0	SB 102	103	2.5	3.4	106.3
SB 43	43	1.5	2.3	43.8	SB 105	105	2.0	5.7	108.3
SB 44	44	1.5	2.3	44.8	05 100	100	2.5	3.4	100.0
55 44	77	1.5	2.0	45.8	SB 107	107	2.5	3.4	110.3
SB 45	45	1.5	2.3	40.0	SB 107	107	2.5	3.4	111.3
SB 46	46	1.5	2.3	46.8	SB 100	110	2.0	J. <del>T</del>	113.3
SB 47	47	1.5	2.3	47.8	35 110	110	2.5	3.4	110.0
35 47	41	1.5	2.3	48.8	SB 112	112	2.5	3.4	115.3
SB 48	48	1.5	2.3	40.0	SB 112	113	2.5	3.4	116.3
35 40	40	1.5	2.3	49.8	36 113	110	2.5	3.4	110.5

<sup>\*</sup> Items only available by special quote.



**American Metric® Corporation** 





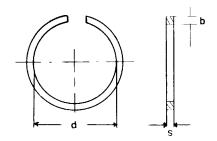
 $b \leq \not \! \! \text{ Ø 24 mm}$ 

 $b \ge \emptyset 25 \ mm$ 

#### SB Type Snap Ring

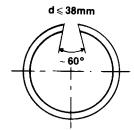
SB 115	Part No.	Shaft	s 0.1	b	d	Part	Shaft	s 0.1	b	d
SB 117   117   2.5   3.4   120.3   SB 300   300   4.0   7.5   307.0	No.	Ø mm	-0.1	-0.1	min.	No.	Ø mm	-0.1	-0.1	min.
SB 117     117     2.5     3.4     120.3     SB 310     310     317.0       SB 120     120     123.3     SB 320     4.0     7.5     327.0       SB 123     123     2.5     3.4     126.3     SB 325     325     4.0     7.5     332.0       SB 125     125     2.5     3.4     128.3     330     330     337.0       SB 127     127     130.3     SB 330     330     4.0     7.5     347.0       SB 130     130     2.5     3.4     128.3     4.0     7.5     347.0       SB 131     130     2.5     3.4     133.3     SB 350     350     4.0     7.5     347.0       SB 133     130     2.5     3.4     133.3     SB 355     355     362.0       SB 133     136     138.3     SB 360     360     4.0     7.5     367.0       SB 143     140     2.5     4.0     140.3     SB 375     375     382.0       SB 143     143     143     140.6     58 380     380     4.0     7.5     387.0       SB 150     150     2.5     4.0     153.6     SB 389     380     4.0     7.5     387.0       S	SB 115	115			118.3	SB 290	290	4.0	7.5	297.0
SB 118         118         2.5         3.4         121.3         \$6.320         4.0         7.5         327.0           SB 120         123         3.4         128.3         \$8.326         3.20         4.0         7.5         332.0           SB 123         125         2.5         3.4         128.3         \$8.330         330         332.0           SB 127         127         130.3         \$8.340         34.0         4.0         7.5         347.0           SB 130         130         2.5         3.4         133.3         \$8.350         360         4.0         7.5         357.0           SB 133         133         2.5         3.4         136.3         \$8.350         360         4.0         7.5         362.0           SB 133         133         2.5         3.4         138.3         \$8.350         360         4.0         7.5         367.0           SB 143         137         2.5         4.0         140.3         \$8.370         370         4.0         7.5         367.0           SB 143         137         2.5         4.0         143.6         \$8.300         360         4.0         7.5         387.0			2.5	3.4		SB 300		4.0	7.5	
SB 120		117				SB 310	310			317.0
88 123         123         2.5         3.4         126.3         SB 330         330         337.0           SB 125         125         2.5         3.4         128.3         SB 340         340         4.0         7.5         347.0           SB 130         130         2.5         3.4         130.3         SB 350         350         4.0         7.5         347.0           SB 131         133         2.5         3.4         138.3         SB 350         350         4.0         7.5         347.0           SB 133         133         2.5         3.4         138.3         SB 360         360         4.0         7.5         367.0           SB 137         137         2.5         4.0         140.3         SB 370         370         4.0         7.5         377.0           SB 140         140         2.5         4.0         143.6         SB 370         370         4.0         7.5         387.0           SB 153         150         2.5         4.0         153.6         SB 380         4.0         7.5         387.0           SB 153         150         2.5         4.0         153.6         SB 380         4.0         7.5 <t< th=""><th></th><th></th><th>2.5</th><th>3.4</th><th></th><th></th><th></th><th></th><th>7.5</th><th></th></t<>			2.5	3.4					7.5	
SB 123     123     2.5     3.4     128.3     SB 330     337.0       SB 127     127     130.3     SB 340     34.0     4.0     7.5       SB 128     127     130.3     SB 340     34.0     4.0     7.5     357.0       SB 130     130     2.5     3.4     133.3     SB 355     355.0     4.0     7.5     357.0       SB 133     133     2.5     3.4     133.3     SB 355     355.0     4.0     7.5     357.0       SB 135     136     138.3     SB 360     360     4.0     7.5     367.0       SB 137     137     2.5     4.0     140.3     SB 370     370     4.0     7.5     377.0       SB 140     140     2.5     4.0     143.6     SB 375     375     4.0     7.5     387.0       SB 153     153     2.5     4.0     153.6     SB 380     380     4.0     7.5     387.0       SB 160     150     2.5     4.0     153.6     SB 395     395     7.5     402.0       SB 161     160     163.6     SB 400     400     4.0     7.5     470.0       SB 175     173     2.5     4.0     166.6     SB 415	SB 120	120			123.3					
SB 125     125     2.5     3.4     128.3     4.0     7.5     347.0       SB 127     127     130.3     \$B 340     340     4.0     7.5     347.0       SB 130     130     2.5     3.4     133.3     \$B 355     355     362.0       SB 133     133     2.5     3.4     136.3     \$B 355     355     4.0     7.5     357.0       SB 137     137     2.5     4.0     140.3     \$B 357     375     367.0       SB 140     140     2.5     4.0     143.6     \$B 375     375     382.0       SB 141     140     2.5     4.0     143.6     \$B 360     380     4.0     7.5     377.0       SB 153     150     2.5     4.0     143.6     \$B 375     375     382.0       SB 150     150     2.5     4.0     153.6     \$B 390     390     4.0     7.5     387.0       SB 153     153     2.5     4.0     156.6     \$B 395     395     7.5     402.0       SB 160     160     2.5     4.0     166.6     \$B 395     395     7.5     407.0       SB 175     173     2.5     4.0     168.6     \$B 415     410 <t< th=""><th></th><th></th><th>2.5</th><th>3.4</th><th></th><th></th><th>325</th><th>4.0</th><th>7.5</th><th></th></t<>			2.5	3.4			325	4.0	7.5	
SB 127			2.5			SB 330	330			337.0
SB 130       130       2.5       3.4       133.3       38.855       355       4.0       7.5       357.0       362.0       SB 133       133       2.5       3.4       136.3       SB 355       355       4.0       7.5       367.0       SB 135       136.0       4.0       7.5       367.0       SB 75       377.0       387.0       4.0       7.5       367.0       SB 77.0       382.0       SB 375       375       375.0       382.0       382.0       382.0       382.0       382.0       382.0       4.0       7.5       367.0       382.0       382.0       4.0       7.5       367.0       382.0       382.0       4.0       7.5       367.0       382.0       382.0       4.0       7.5       387.0       382.0       382.0       4.0       7.5       387.0       382.0       382.0       4.0       7.5       387.0       382.0       382.0       4.0       7.5       387.0       382.0       382.0       4.0       7.5       387.0       382.0       382.0       382.0       4.0       7.5       387.0       382.0       382.0       382.0       382.0       382.0       382.0       382.0       382.0       382.0       382.0       382.0       382.0 <t< th=""><th></th><th></th><th>2.5</th><th>3.4</th><th></th><th></th><th></th><th></th><th></th><th></th></t<>			2.5	3.4						
SB 130     130     2.5     3.4     133.3     SB 355     362.0       SB 135     136     136.3     136.3     4.0     7.5     367.0       SB 137     137     2.5     4.0     140.3     SB 370     370     4.0     7.5     367.0       SB 140     140     2.5     4.0     143.6     SB 375     375     4.0     7.5     387.0       SB 150     150     2.5     4.0     143.6     SB 380     380     4.0     7.5     387.0       SB 150     150     2.5     4.0     153.6     SB 380     380     4.0     7.5     397.0       SB 153     153     2.5     4.0     153.6     SB 395     395     7.5     397.0       SB 160     160     163.6     SB 395     395     7.5     402.0       SB 163     153     2.5     4.0     156.6     4.0     4.0     7.5     407.0       SB 163     163     2.5     4.0     166.6     SB 410     410     4.0     7.5     417.0       SB 165     165     2.5     4.0     168.6     SB 415     415     7.5     422.0       SB 173     173     2.5     4.0     178.6     SB	SB 127	127			130.3					
SB 133         133         2.5         3.4         136.3         SB 350         360         4.0         7.5         367.0           SB 137         137         2.5         3.4         SB 377         370         4.0         7.5         377.0         387.0         370         4.0         7.5         377.0         387.0         381.0         4.0         7.5         377.0         382.0         381.0         4.0         7.5         387.0         382.0         380         4.0         7.5         387.0         382.0         380         4.0         7.5         387.0         382.0         381.0         4.0         7.5         387.0         382.0         380         4.0         7.5         387.0         387.0         382.0         380         4.0         7.5         387.0         387.0         382.0         380         4.0         7.5         387.0         387.0         387.0         387.0         387.0         387.0         387.0         387.0         387.0         382.0         4.0         7.5         402.0         387.0         387.0         387.0         387.0         387.0         387.0         387.0         388.10         4.0         4.0         4.0         4.0         4.0								4.0	7.5	
SB 135						SB 355	355			362.0
SB 137			2.5	3.4			000			007.0
SB 137     137     2.5     4.0     140.3     SB 375     375     382.0       SB 140     140     2.5     4.0     143.6     SB 380     380     4.0     7.5     387.0       SB 150     150     2.5     4.0     153.6     SB 390     390     4.0     7.5     387.0       SB 150     150     2.5     4.0     153.6     SB 395     395     7.5     402.0       SB 160     160     163.6     SB 400     4.0     7.5     407.0       SB 163     163     2.5     4.0     166.6     SB 440     410     4.0     7.5     407.0       SB 163     163     2.5     4.0     166.6     SB 410     410     4.0     7.5     407.0       SB 165     165     2.5     4.0     168.6     SB 410     410     4.0     7.5     422.0       SB 173     173     2.5     4.0     176.6     SB 420     420     4.0     7.5     437.0       SB 180     180     180     183.6     183.6     183.6     183.6     183.6     183.6     183.6     183.6     183.6     183.6     183.6     183.6     183.6     183.6     183.6     183.6     183.6 <td< th=""><th>SB 135</th><td>136</td><td>0.5</td><td>0.1</td><td>138.3</td><td></td><td></td><td></td><td></td><td></td></td<>	SB 135	136	0.5	0.1	138.3					
SB 140     140     2.5     4.0     143.6     4.0     4.3.6       SB 143     143     2.5     4.0     146.6     SB 390     390     4.0     7.5     387.0       SB 150     150     2.5     4.0     153.6     SB 395     395     7.5     402.0       SB 160     160     163.6     SB 400     400     4.0     7.5     407.0       SB 163     163     2.5     4.0     168.6     SB 410     410     4.0     7.5     407.0       SB 163     163     2.5     4.0     168.6     SB 410     400     4.0     7.5     407.0       SB 170     170     2.5     4.0     168.6     SB 415     415     7.5     427.0       SB 173     173     2.5     4.0     176.6     SB 430     430     4.0     7.5     437.0       SB 180     180     180     183.6     SB 430     430     4.0     7.5     447.0       SB 180     180     180     2.5     4.0     178.6     SB 430     430     4.0     7.5     447.0       SB 180     180     180     2.5     4.0     178.6     SB 430     430     4.0     7.5     447.0 <t< th=""><th>00.407</th><th>407</th><th></th><th></th><th>440.0</th><th></th><th></th><th>4.0</th><th>7.5</th><th></th></t<>	00.407	407			440.0			4.0	7.5	
SB 143						SB 375	3/5	4.0		382.0
SB 150			2.5	4.0		00.000	000			007.0
SB 150     150     2.5     4.0     153.6     SB 153     153     2.5     4.0     153.6     SB 150     160     160     163.6     SB 160     160     163.6     SB 400     4.0     7.5     402.0       SB 163     163     2.5     4.0     166.6     SB 410     410     4.0     7.5     417.0       SB 165     165     2.5     4.0     168.6     SB 415     415     7.5     422.0       SB 170     170     173.6     SB 415     415     4.0     7.5     427.0       SB 173     173     2.5     4.0     176.6     SB 420     420     4.0     7.5     427.0       SB 183     183     2.5     4.0     176.6     SB 430     430     4.0     7.5     427.0       SB 180     180     183.6     88 40     440     440     7.5     447.0       SB 183     183     3.0     5.0     194.5     58 440     440     7.5     447.0       SB 200     200     3.0     5.0     204.5     58 240     440     440     7.5     447.0       SB 215     215     3.0     5.0     204.5     204.5     204.5     204.5     204.5     204.5 <th>SB 143</th> <td>143</td> <td>2.5</td> <td>4.0</td> <td>146.6</td> <td></td> <td></td> <td></td> <td></td> <td></td>	SB 143	143	2.5	4.0	146.6					
SB 153       153       2.5       4.0       156.6       4.0       4.0       7.5       407.0       407.0       5B 16.0       160       2.5       4.0       163.6       SB 410       410       4.0       7.5       407.0       417.0       5B 16.3       163       2.5       4.0       166.6       5B 410       410       4.0       7.5       422.0       417.0       422.0       410       7.5       422.0       420       4.0       7.5       422.0       420       4.0       7.5       427.0       427.0       5B 173       173       2.5       4.0       178.6       5B 420       420       4.0       7.5       427.0       437.0       5B 175       175       2.5       4.0       178.6       5B 430       430       4.0       7.5       427.0       447.0       5B 180       180       7.5       427.0       5B 430       430       4.0       7.5       427.0       5B 430       430       440       7.5       427.0       5B 430       5B 430       430       440       7.5       447.0       5B 437.0       5B 447.0       5B 447.0       5B 440       440       7.5       447.0       5B 447.0       5B 440.0       440       7.5       447.0       5B 447.0 </th <th>00.450</th> <td>450</td> <td>2.5</td> <td></td> <td>450.0</td> <td></td> <td></td> <td>4.0</td> <td></td> <td></td>	00.450	450	2.5		450.0			4.0		
SB 160       160       163.6       SB 400       400       4.0       7.5       407.0         SB 163       163       2.5       4.0       166.6       SB 415       415       7.5       417.0         SB 170       170       173.6       168.6       4.0       168.6       4.0       58 420       420       4.0       7.5       422.0         SB 173       173       2.5       4.0       176.6       SB 430       430       4.0       7.5       427.0         SB 175       175       2.5       4.0       178.6       SB 440       440       7.5       427.0         SB 180       180       180       183.6       88.40       440       440       7.5       447.0         SB 183       183       3.0       5.0       194.5       58.6       58.40       440       440       7.5       447.0         SB 200       200       3.0       5.0       194.5       199.5       <						SB 395	395	4.0	7.5	402.0
SB 163			2.5	4.0		00.400	400			407.0
SB 163       163       2.5       4.0       166.6       SB 415       415       7.5       422.0         SB 170       170       173.6       SB 420       420       4.0       7.5       427.0         SB 173       173       2.5       4.0       176.6       SB 430       430       4.0       7.5       437.0         SB 175       175       2.5       4.0       178.6       SB 440       440       7.5       447.0         SB 180       180       183.6 <t< th=""><th>SB 160</th><th>160</th><th>0.5</th><th>4.0</th><th>163.6</th><th></th><th></th><th></th><th></th><th></th></t<>	SB 160	160	0.5	4.0	163.6					
SB 165     165     2.5     4.0     168.6       SB 170     170     173.6     173.6     SB 420     4.0     7.5     427.0       SB 173     173     2.5     4.0     176.6     SB 430     430     4.0     7.5     437.0       SB 175     175     2.5     4.0     176.6     SB 440     440     7.5     447.0       SB 180     180     2.5     4.0     178.6     SB 440     440     7.5     447.0       SB 183     183     3.0     5.0     183.6     58 440     440     7.5     447.0       SB 183     183     3.0     5.0     184.5     58 440     440     7.5     447.0       SB 190     190     3.0     5.0     184.5     58 440     440     7.5     447.0       SB 200     200     3.0     5.0     194.5     58 210     210     214.5     215.5     215.5     215.5     215.5     215.5     215.5     215.5     215.5     215.5     215.5     215.5     215.5     225.5     229.5     229.5     229.5     229.5     229.5     229.5     229.5     229.5     229.5     229.5     229.5     229.5     229.5     229.5     229.5 <t< th=""><th>00.400</th><th>400</th><th></th><th></th><th>400.0</th><th></th><th></th><th>4.0</th><th></th><th>417.0</th></t<>	00.400	400			400.0			4.0		417.0
SB 170     170     173.6     SB 420     420     4.0     7.5     427.0       SB 173     173     2.5     4.0     176.6     SB 430     430     4.0     7.5     437.0       SB 175     175     2.5     4.0     178.6     SB 430     430     4.0     7.5     437.0       SB 180     180     180     183.6 <td< th=""><th></th><th></th><th></th><th></th><th></th><th>SB 415</th><th>415</th><th>4.0</th><th>7.5</th><th>422.0</th></td<>						SB 415	415	4.0	7.5	422.0
SB 173			2.5	4.0		CD 400	400		7.5	407.0
SB 173       173       2.5       4.0       176.6       SB 440       440       7.5       447.0         SB 180       180       183.6	SB 170	170	0.5	4.0	1/3.6					
SB 175     175     2.5     4.0     178.6       SB 180     180     183.6       2.5     4.0     4.0       SB 183     183     3.0     5.0     186.6       SB 190     190     3.0     5.0     194.5       SB 195     195     199.5       3.0     5.0     204.5       SB 205     205     3.0     5.0     209.5       SB 210     210     214.5       3.0     5.0     214.5       SB 220     220     3.0     5.0     219.5       SB 220     220     3.0     5.0     224.5       SB 225     225     229.5       3.0     5.0     234.5       SB 240     240     3.0     5.0     234.5       SB 240     240     3.0     5.0     244.5       SB 250     250     254.5       SB 260     260     4.0     7.5     267.0       SB 270     270     4.0     7.5     277.0	OD 470	470			470.0			4.0	7.5	
SB 180     180     183.6       SB 183     183     3.0     5.0     186.6       SB 190     190     3.0     5.0     194.5       SB 195     195     199.5       SB 200     200     3.0     5.0     204.5       SB 205     205     3.0     5.0     209.5       SB 210     210     214.5       SB 225     229.5       SB 220     220     3.0     5.0     224.5       SB 230     230     3.0     5.0     234.5       SB 240     240     3.0     5.0     234.5       SB 250     250     254.5       SB 260     260     4.0     7.5     267.0       SB 270     270     4.0     7.5     277.0						SB 440	440		7.5	447.0
SB 183			2.5	4.0						
SB 183       183       3.0       5.0       186.6         SB 190       190       3.0       5.0       194.5         SB 195       195       199.5         3.0       5.0       204.5         SB 205       205       3.0       5.0       209.5         SB 210       210       214.5         SB 215       215       3.0       5.0       219.5         SB 220       220       3.0       5.0       224.5         SB 225       225       229.5         SB 240       240       3.0       5.0       234.5         SB 250       250       254.5         4.0       7.5         SB 260       260       4.0       7.5       267.0         SB 270       270       4.0       7.5       277.0	35 100	100	2.5	4.0	103.0					
SB 190     190     3.0     5.0     194.5       SB 195     195     3.0     5.0       SB 200     200     3.0     5.0     204.5       SB 205     205     3.0     5.0     209.5       SB 210     210     214.5       SB 215     215     3.0     5.0     219.5       SB 220     220     3.0     5.0     224.5       SB 225     225     229.5       SB 230     230     3.0     5.0     234.5       SB 240     240     3.0     5.0     244.5       SB 250     250     254.5       SB 260     260     4.0     7.5     267.0       SB 270     270     4.0     7.5     277.0	CD 102	102			106.6					
SB 195     195       SB 200     200     3.0     5.0       SB 205     205     3.0     5.0     209.5       SB 210     210     214.5       SB 215     215     3.0     5.0     219.5       SB 220     220     3.0     5.0     224.5       SB 225     225     229.5       SB 230     230     3.0     5.0     234.5       SB 240     240     3.0     5.0     244.5       SB 250     250     254.5       SB 260     260     4.0     7.5     267.0       SB 270     270     4.0     7.5     277.0										
\$\begin{array}{cccccccccccccccccccccccccccccccccccc			3.0	5.0						
SB 200       200       3.0       5.0       204.5         SB 205       205       3.0       5.0       209.5         SB 210       210       214.5         SB 215       215       3.0       5.0         SB 220       220       3.0       5.0       224.5         SB 225       225       229.5         SB 230       230       3.0       5.0       234.5         SB 240       240       3.0       5.0       244.5         SB 250       250       254.5         SB 260       260       4.0       7.5       267.0         SB 270       270       4.0       7.5       277.0	36 193	190	3.0	5.0	199.5					
SB 205     205     3.0     5.0     209.5       SB 210     210     214.5       3.0     5.0       SB 215     215     3.0     5.0     219.5       SB 220     220     3.0     5.0     224.5       SB 225     225     229.5       SB 230     230     3.0     5.0     234.5       SB 240     240     3.0     5.0     244.5       SB 250     250     254.5       SB 260     260     4.0     7.5     267.0       SB 270     270     4.0     7.5     277.0	SB 200	200			204.5					
SB 210     210       SB 215     215     3.0     5.0     219.5       SB 220     220     3.0     5.0     224.5       SB 225     225     229.5       SB 230     230     3.0     5.0     234.5       SB 240     240     3.0     5.0     244.5       SB 250     250     254.5       SB 260     260     4.0     7.5     267.0       SB 270     270     4.0     7.5     277.0										
3.0 5.0  SB 215 215 3.0 5.0 219.5  SB 220 220 3.0 5.0 224.5  SB 225 225 229.5  SB 230 230 3.0 5.0 234.5  SB 240 240 3.0 5.0 244.5  SB 250 250 254.5  SB 260 260 4.0 7.5  SB 260 260 4.0 7.5 267.0  SB 270 270 4.0 7.5 277.0			5.0	5.0		1				
SB 215     215     3.0     5.0     219.5       SB 220     220     3.0     5.0     224.5       SB 225     225     229.5       SB 230     230     3.0     5.0     234.5       SB 240     240     3.0     5.0     244.5       SB 250     250     254.5       SB 260     260     4.0     7.5     267.0       SB 270     270     4.0     7.5     277.0	1 35210	210	3.0	5.0	217.0	1				
SB 220     220     3.0     5.0     224.5       SB 225     225     229.5       3.0     5.0       SB 230     230     3.0     5.0     234.5       SB 240     240     3.0     5.0     244.5       SB 250     250     254.5       SB 260     260     4.0     7.5     267.0       SB 270     270     4.0     7.5     277.0	SB 215	215			219.5	1				
SB 225     229.5       SB 230     230     3.0     5.0     234.5       SB 240     240     3.0     5.0     244.5       SB 250     250     254.5       SB 260     260     4.0     7.5     267.0       SB 270     270     4.0     7.5     277.0				5.0		1				
3.0 5.0 SB 230 230 3.0 5.0 234.5 SB 240 240 3.0 5.0 244.5 SB 250 250 254.5 4.0 7.5 SB 260 260 4.0 7.5 267.0 SB 270 270 4.0 7.5 277.0			0.0	0.0						
SB 230     230     3.0     5.0     234.5       SB 240     240     3.0     5.0     244.5       SB 250     250     254.5       SB 260     260     4.0     7.5     267.0       SB 270     270     4.0     7.5     277.0	1 35 223	220	3.0	5.0	220.0					
SB 240     240     3.0     5.0     244.5       SB 250     250     254.5       4.0     7.5       SB 260     260     4.0     7.5     267.0       SB 270     270     4.0     7.5     277.0	SB 230	230			234 5					
SB 250     254.5       4.0     7.5       SB 260     260     4.0     7.5     267.0       SB 270     270     4.0     7.5     277.0						1				
4.0 7.5 <b>SB 260</b> 260 4.0 7.5 267.0 <b>SB 270</b> 270 4.0 7.5 277.0			0.0	0.0						
SB 260     260     4.0     7.5     267.0       SB 270     270     4.0     7.5     277.0	l		4.0	7.5	200					
<b>SB 270</b> 270 4.0 7.5 277.0	SB 260	260			267.0					
						1				
4 <b>3D 20U</b>	SB 280	280	***		287.0					
40 75			4.0	7.5		<u> </u>				

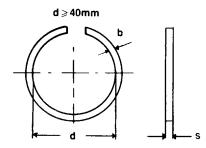
**American Metric® Corporation** 



#### SP Type Snap Ring (DIN 5417)

Part No.	Shaft Ø mm	s -0.1	b -0.15	d min.	Part No.	Shaft Ø mm	s -0.1	b -0.15	d min.
SP 30	30	1.12	3.25	27.4	SP 115	115	2.46	4.85	110.2
SP 32	32	1.12	3.25	29.4	SP 120	120	2.82	7.21	113.6
SP 35	35	1.12	3.25	32.4	SP 125	125	2.82	7.21	118.6
SP 37	37	1.12	3.25	34.0	SP 130	130	2.82	7.21	123.6
SP 40	40	1.12	3.25	37.3	SP 140	140	2.82	7.21	133.0
SP 42	42	1.12	3.25	38.9	SP 145	145	2.82	7.21	138.0
SP 44	44	1.12	3.25	40.9	SP 150	150	2.82	7.21	142.9
SP 47	47	1.12	4.04	43.7	SP 160	160	2.82	7.21	152.9
SP 50	50	1.12	4.04	46.7	SP 170	170	3.10	9.60	161.3
SP 52	52	1.12	4.04	48.8	SP 180	180	3.10	9.60	171.2
SP 62	62	1.70	4.04	58.2	SP 200	200	3.10	9.60	191.0
SP 65	65	1.70	4.04	61.2	SP 210	210	3.10	9.60	200.9
SP 68	68	1.70	4.85	63.4	SP 215	215	3.10	9.60	205.9
SP 72	72	1.70	4.85	67.4	SP 225	225	3.50	10.00	214.3
SP 75	75	1.70	4.85	70.4	SP 230	230	3.50	10.00	219.2
SP 80	80	1.70	4.85	75.4					
SP 85	85	1.70	4.85	80.4					
SP 90	90	2.46	4.85	85.4					
SP 95	95	2.46	4.85	90.4					
SP 100	100	2.46	4.85	95.2					
SP 110	110	2.46	4.85	105.2					



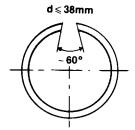


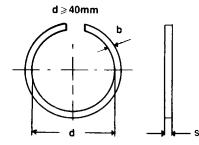
#### **SW Type Snap Ring**

Part No.	Shaft Ø mm	s -0.1	b -0.15	d min.	Part No.	Shaft Ø mm	s -0.1	b -0.15	d min.
SW 4	4	0.5	0.80	3.7	SW 11	11	1.0	1.30	10.2
SW 5	5	0.5	1.00	4.7	SW 12	12	1.0	1.30	11.2
SW 6	6	0.7	1.10	5.6	SW 13	13	1.0	1.30	12.2
SW 7	7	0.7	1.20	6.5	SW 14	14	1.2	1.50	13.1
SW 8	8	1.0	1.30	7.4	SW 15	15	1.2	1.75	14.0
SW 9	9	1.0	1.30	8.4	SW 16	16	1.2	1.75	15.0
SW 10	10	1.0	1.30	9.4	SW 17	17	1.2	1.75	16.0



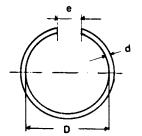
**American Metric® Corporation** 



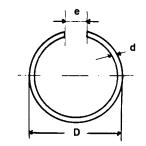


#### SW Type Snap Ring

Part No.	Shaft Ø mm	s -0.1	b -0.1	d min.	Part No.	Shaft Ø mm	s -0.1	b -0.1	d min.
SW 18	18	1.2	1.75	17.0	SW 150	150	2.5	4.00	146.6
SW 19	19	1.2	1.75	17.9					
SW 20	20	1.2	1.75	18.7	SW 155	155	2.5	4.00	151.6
					SW 160	160	2.5	4.00	156.6
SW 21	21	1.2	1.75	19.7	SW 165	165	2.5	4.00	161.6
SW 22	22	1.2	1.75	20.7					
SW 24	24	1.2	1.75	22.5	SW 170	170	2.5	4.00	166.6
					SW 175	175	2.5	4.00	171.6
SW 25	25	1.2	1.75	23.5	SW 180	180	3.0	5.00	175.6
SW 26	26	1.2	1.75	24.5					
SW 27	27	1.5	2.30	25.5	SW 185	185	3.0	5.00	180.6
					SW 190	190	3.0	5.00	185.6
SW 28	28	1.5	2.30	26.5	SW 195	195	3.0	5.00	190.6
SW 30	30	1.5	2.30	28.5					
SW 32	32	1.5	2.30	30.2	SW 200	200	3.0	5.00	195.6
					SW 210	210	3.0	5.00	205.6
SW 35	35	1.5	2.30	33.2	SW 220	220	3.0	5.00	215.6
SW 37	37	1.5	2.30	35.2	I				
SW 38	38	1.5	2.30	36.2	SW 230	230	3.0	5.00	225.6
					SW 240	240	3.0	5.00	235.6
SW 40	40	1.5	2.30	37.8	SW 250	250	3.0	5.00	245.6
SW 42	42	1.5	2.30	39.8					
SW 43	43	1.5	2.30	40.8	SW 260	260	4.0	7.50	253.0
					SW 265	265	4.0	7.50	258.0
SW 45	45	1.5	2.30	42.8	SW 270	270	4.0	7.50	263.0
SW 47	47	1.5	2.30	44.8		=			
SW 48	48	1.5	2.30	45.8	SW 280	280	4.0	7.50	273.0
""			2.00		SW 285	285	4.0	7.50	278.0
SW 50	50	1.5	2.30	47.8	SW 290	290	4.0	7.50	283.0
SW 52	52	1.5	2.30	49.8	0.1.200	200		1.00	200.0
SW 55	55	1.5	2.30	52.6	SW 300	300	4.0	7.50	293.0
					SW 305	305	4.0	7.50	298.0
SW 58	58	1.5	2.30	55.6	SW 310	310	4.0	7.50	303.0
SW 60	60	1.5	2.30	57.6					
SW 63	63	1.5	2.30	60.6	SW 320	320	4.0	7.50	313.0
					SW 330	330	4.0	7.50	332.0
SW 65	65	1.5	2.30	62.6	SW 340	340	4.0	7.50	333.0
SW 68	68	2.0	2.80	65.4	1	0.0		1.00	000.0
SW 70	70	2.0	2.80	67.4	SW 350	350	4.0	7.50	343.0
					SW 360	360	4.0	7.50	353.0
SW 72	72	2.0	2.80	69.4	SW 370	370	4.0	7.50	363.0
SW 73	73	2.0	2.80	70.4					
SW 75	75	2.0	2.80	72.4	SW 380	380	4.0	7.50	373.0
I	-	· <del>-</del>			SW 390	390	4.0	7.50	383.0
SW 80	80	2.0	2.80	77.4	SW 400	400	4.0	7.50	393.0
SW 85	85	2.5	3.40	82.0	1				
SW 90	90	2.5	3.40	87.0					
					1				
SW 95	95	2.5	3.40	92.0	I				
SW 100	100	2.5	3.40	97.0	I				
SW 105	105	2.5	3.40	101.7	I				
SW 110	110	2.5	3.40	106.7	I				
SW 115	115	2.5	3.40	111.7	I				
SW 120	120	2.5	3.40	116.7					
SW 125	125	2.5	3.40	121.7	1				
SW 130	130	2.5	3.40	126.7	I				
SW 135	135	2.5	4.00	131.6	I				
014/4/2	440	0.5	4.00	400.0					
SW 140	140	2.5	4.00	136.6	1				
SW 145	145	2.5	4.00	141.6					









#### RW (External) Type Snap Ring (DIN 7993)

#### RB (Internal) Type Snap Ring (DIN 7993)

Part No.	Shaft Ø mm	d	D	е	Part No.	Shaft Ø mm	d	D	е
RW 20	20	2.0	17.7	3	RB 20	20	2.0	22.3	10
RW 22	22	2.0	19.7	3	RB 22	22	2.0	24.3	10
RW 24	24	2.0	21.7	3	RB 25	25	2.0	27.3	10
RW 25	25	2.0	22.7	3	RB 26	26	2.0	28.3	10
RW 26	26	2.0	23.7	3	RB 28	28	2.0	30.3	10
RW 28	28	2.0	25.7	3	RB 30	30	2.0	32.3	10
RW 30	30	2.0	27.7	3	RB 32	32	2.5	34.9	12
RW 32	32	2.5	29.1	4	RB 35	35	2.5	37.9	12
RW 35	35	2.5	32.1	4	RB 38	38	2.5	40.9	12
RW 38	38	2.5	35.1	4	RB 40	40	2.5	42.9	12
RW 40	40	2.5	37.1	4	RB 42	42	2.5	45.0	16
RW 45	45	2.5	42.0	4	RB 48	48	2.5	51.0	16
RW 50	50	2.5	47.0	4	RB 60	60	3.2	63.9	20
RW 55	55	3.2	51.5	4	RB 65	65	3.2	68.9	20
RW 60	60	3.2	56.1	4	RB 70	70	3.2	74.0	25
RW 65	65	3.2	61.1	4	RB 75	75	3.2	79.0	25
RW 70	70	3.2	66.0	5	RB 80	80	3.2	84.0	25
RW 75	75	3.2	71.0	5	RB 85	85	3.2	89.0	25
RW 80	80	3.2	76.0	5	RB 90	90	3.2	94.0	25
RW 85	85	3.2	81.0	5	RB 100	100	3.2	104.2	32
RW 90	90	3.2	86.0	5	RB 105	105	3.2	109.2	32
RW 95	95	3.2	91.0	5	RB 110	110	3.2	114.2	32
RW 105	105	3.2	100.8	5				· · · · <del>-</del>	
RW 110	110	3.2	105.8	5					
RW 120	12	3.2	115.8	5					

## Retaining Ring And E-Ring Kits



**RETAINING RINGS** 

E-RINGS







	ORES 472		SHAFTS I 471
Size	Quantity	Size	Quantity
15 mm	20	8 mm	20
16 mm	20	10 mm	20
18 mm	15	12 mm	15
20 mm	15	14 mm	15
22 mm	15	15 mm	15
24 mm	15	16 mm	15
25 mm	10	17 mm	10
26 mm	10	18 mm	10
28 mm	10	20 mm	10
30 mm	10	22 mm	10
32 mm	10	24 mm	10
34 mm	10	25 mm	10
35 mm	10	28 mm	10
38 mm	10	30 mm	10
40 mm	10	32 mm	10
		35 mm	10
		40 mm	10

E-RINGS DIN 6799						
Size	Quantity					
1.2 mm	500					
1.5 mm	500					
1.9 mm	500					
2.3 mm	500					
3.2 mm	500					
4 mm	500					
5 mm	300					
6 mm	200					
7 mm	100					
8 mm	100					
9 mm	50					
10 mm	50					