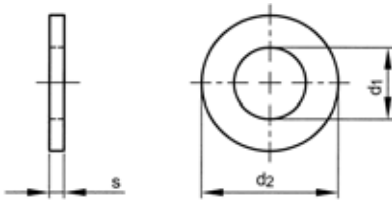
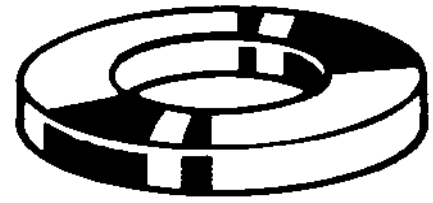


## Plain washer



ISO 7091  
 DIN 126  
 NEN 2268  
 NF E25-513



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M5	5,5	10	1
M6	6,6	12	1,6
M8	9	16	1,6
M10	11	20	2
M12	13,5	24	2,5
M14	15,5	27	3
M16	17,5	30	3
M18	19,8	34	3
M20	22	37	3
M22	24	39	3
M24	26	44	4
M27	30	50	4
M30	33	56	4
M33	36	60	5
M36	39	66	5
M39	42	72	6
M42	45	78	7
M45	48	85	7
M48	52	92	8
M52	56	98	8
M56	62	105	9
M60	66	110	9
M64	70	115	9
M72	78	125	10
M80	86	140	12
M90	96	160	12

### Article groups

Material	Surface treatment	Packaging	Code	Page
St		Standard	38200	7-9
St	Zipl	Standard	38205	7-10
St	Hot d.g.	Standard	38740	7-10

7

#### 38200 Plain washer

L07G

Material Steel  
 Packaging Standard



For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number
M5	1000	<a href="#">38200.050.001</a>	M24	100	<a href="#">38200.240.001</a>	M48	25	<a href="#">38200.480.001</a>
M6	1000	<a href="#">38200.060.001</a>	M27	100	<a href="#">38200.270.001</a>	M52	25	<a href="#">38200.520.001</a>
M8	1000	<a href="#">38200.080.001</a>	M30	100	<a href="#">38200.300.001</a>	M56	25	<a href="#">38200.560.001</a>
M10	1000	<a href="#">38200.100.001</a>	M33	100	<a href="#">38200.330.001</a>	M60	10	<a href="#">38200.600.001</a>
M12	500	<a href="#">38200.120.001</a>	M36	100	<a href="#">38200.360.001</a>	M64	10	<a href="#">38200.640.001</a>
M16	250	<a href="#">38200.160.001</a>	M39	50	<a href="#">38200.390.001</a>	M72	10	<a href="#">38200.720.001</a>
M20	200	<a href="#">38200.200.001</a>	M42	50	<a href="#">38200.420.001</a>	M80	5	<a href="#">38200.800.001</a>
M22	100	<a href="#">38200.220.001</a>	M45	25	<a href="#">38200.450.001</a>	M90	5	<a href="#">38200.900.001</a>

## Retaining ring for hexagon bolt and nut



### Technical data

For nom.size	Type no.	d	D	H	V1 (min.)
M3	98/198	3,2	8	2,2	5
M4	99/199	4,15	9,5	2,6	6
M5	100/200	5,15	10,6	3	7
M6	101/201	6,2	12,7	3,5	8,5
M7	202	7,1	14,5	3,8	9
M8	102/203	8,1	16,2	4	10,5
3/8	103	9,7	19,6	4,5	12,5
M10	205	10,2	19,6	4,5	12,5
M12	207	12,2	23,6	5	14,5
1/2	105	12,8	25,4	5	16
M14	208	14,2	25,4	5,5	16,5
5/8	107	16	31,2	6	19
M16	211	16,2	29,4	6	19
M18	213	18,2	35,1	6,5	21,5
3/4	109	19,2	36,9	7	23
M20	215	20,3	35,7	7	23
M22	111/217	22,5	41,6	7,5	24,5
M24	219	24,3	41,6	8	26
1.IN.	113	25,6	47,3	8	28
M27	114/222	27,3	47,3	8,5	28,5
M30	115/225	30,2	53,1	8,5	30,5
M33	117/228	33,2	57,7	9	34
M36	119/231	36,2	63,5	10	38
M39	121/234	39,2	69,3	11	41
M45	125/240	45,2	80,8	16	51

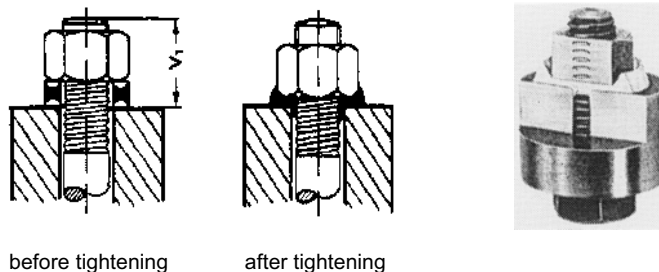
7

Special features DUBO retaining rings:

- locks, because the retaining ring forms itself around the hexagon
- seals, because the ring is pressed into the thread and bolt hole
- reduces noise, because the plastic-elastic behaviour absorbs vibrations
- insulates against electrolytic contact corrosion by connection of different metals
- temperature resistant from -60°C to +120°C with static load and from -60°C to +80°C with dynamic load
- hexagon nuts and bolts from class 8.8 resp. 8 and above, DUBO retaining rings have to be used together with a steel DUBO toothed collar ring

Assembly date / Example of application

without toothed collar ring



before tightening

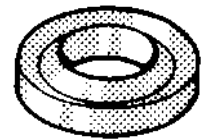
after tightening

### Article groups

Material	Class	Colour	Packaging	Code	Page
Plastic PA	6	White	Standard	37900	7-93
Plastic PA	6	White	Large	37910	7-93

**37900 DUBO Retaining ring for hexagon bolt and nut W05C**

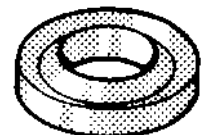
**Material** Plastic Polyamide (nylon)  
**Class** 6  
**Colour** White  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	100	<a href="#">37900.030.001</a>	1/2	50	<a href="#">37900.127.001</a>	1.IN.	10	<a href="#">37900.254.001</a>
M4	100	<a href="#">37900.040.001</a>	M14	50	<a href="#">37900.140.001</a>	M27	10	<a href="#">37900.270.001</a>
M5	100	<a href="#">37900.050.001</a>	5/8	50	<a href="#">37900.158.001</a>	M30	5	<a href="#">37900.300.001</a>
M6	100	<a href="#">37900.060.001</a>	M16	50	<a href="#">37900.160.001</a>	M33	5	<a href="#">37900.330.001</a>
M7	100	<a href="#">37900.070.001</a>	M18	25	<a href="#">37900.180.001</a>	M36	5	<a href="#">37900.360.001</a>
M8	100	<a href="#">37900.080.001</a>	3/4	25	<a href="#">37900.191.001</a>	M39	5	<a href="#">37900.390.001</a>
3/8	100	<a href="#">37900.096.001</a>	M20	25	<a href="#">37900.200.001</a>	M45	5	<a href="#">37900.450.001</a>
M10	100	<a href="#">37900.100.001</a>	M22	10	<a href="#">37900.220.001</a>			
M12	50	<a href="#">37900.120.001</a>	M24	10	<a href="#">37900.240.001</a>			

**37910 DUBO Retaining ring for hexagon bolt and nut W05C**

**Material** Plastic Polyamide (nylon)  
**Class** 6  
**Colour** White  
**Packaging** Large



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4	1000	<a href="#">37910.040.001</a>	M8	1000	<a href="#">37910.080.001</a>	M16	250	<a href="#">37910.160.001</a>
M5	1000	<a href="#">37910.050.001</a>	M10	1000	<a href="#">37910.100.001</a>			
M6	1000	<a href="#">37910.060.001</a>	M12	500	<a href="#">37910.120.001</a>			

## Retaining ring for hexagon socket head cap screw



### Technical data

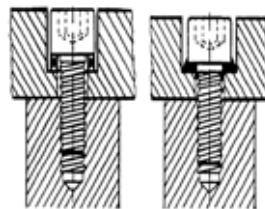
For nom.size	Type no.	d	D	H
M4	-	4,1	7,7	2
M5	-	5,15	9,8	3
M6	301	6,5	10,5	2,5
M8	303	8,1	14	3,3
M10	305	10,2	17	3,8
M12	307	12,2	19	4,4
M14	309	14,2	23	5,2
M16	311	16,2	25	5,6
M20	315	20,2	31,5	6,5

#### Special features DUBO retaining rings:

- locks, because the retaining ring forms itself around the socket head
- seals, because the ring is pressed into the thread and bolt hole
- reduces noise, because the plastic-elastic behaviour absorbs vibrations
- insulates against electrolytic contactcorrosion by connection of different metals
- temperature resistant from -60°C to +120°C with static load and from -60°C to +80°C with dynamic load
- **overhead** hexagon socket head cap screws from class 8.8 and above, DUBO retaining rings have to be used together with a steel DUBO toothed collar ring

#### Assembly date / Example of application

without toothed collar ring



before  
tightening
after  
tightening

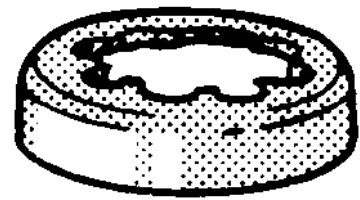
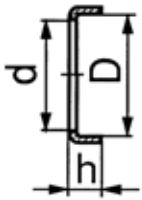


7

<b>37901</b>	<b>DUBO Retaining ring for hexagon socket head cap screw</b>	<b>W05C</b>
<b>Material</b>	Plastic Polyamide (nylon)	
<b>Class</b>	6	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4	100	<a href="#">37901.040.001</a>	M8	100	<a href="#">37901.080.001</a>	M14	50	<a href="#">37901.140.001</a>
M5	100	<a href="#">37901.050.001</a>	M10	100	<a href="#">37901.100.001</a>	M16	50	<a href="#">37901.160.001</a>
M6	100	<a href="#">37901.060.001</a>	M12	50	<a href="#">37901.120.001</a>	M20	25	<a href="#">37901.200.001</a>

## Toothed collar ring



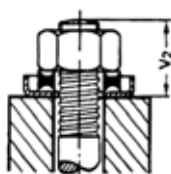
### Technical data

For nom.size	M4-M5	M6	M8	M10	M12	M16	M18-M20	3/4	M22-M24	M27	M30	M33	M36
Type no.	404	406	408	410	412	416	418	419	422	427	430	433	436
d	6,8	9	12	13,5	15,5	21	26	27	30,5	35	40	45	50
D	11,2	13,2	17,2	21,3	24,5	31,25	37,5	39,5	44	50,5	56	61	67
h	3,15	4,15	4,8	5,7	6	6,75	7,25	7,25	8	9	10	10,5	11,05
<b>Assembly data</b>													
V2	3,15	9,25	11,5	13,5	16	20,75	23,25-24,75	24,75	26,5-28	30,5	-	-	-

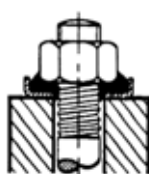
### Assembly data

Hexagon bolts, - nuts and overhead hexagon socket head cap screws from class 8.8 resp. 8 and above, DUBO retaining rings have to be used together with a steel DUBO internal toothed collar ring.

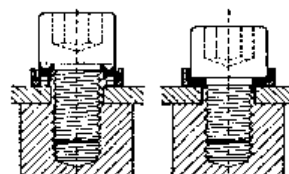
Article number	Application with			
	Hexagon bolts and - nuts		Overhead hexagon socket head cap screws	
	Metric	Non metric	Metric	Non metric
37920.040.001	M4 - M5	5/32 - 3/16	M6	1/4
37920.060.001	M6	1/4	-	-
37920.080.001	M8	5/16	M10	3/8
37920.100.001	M10	3/8	M12	1/2
37920.120.001	M12	7/16	M14	-
37920.160.001	M16	-	M18	-
37920.180.001	M18 - M20	-	M22	7/8
37920.191.001	-	3/4	M24	-
37920.220.001	M22 - M24	7/8	-	-
37920.270.001	M27	1. IN. - 1.1/16	-	-
37920.300.001	M30	1.1/8	-	-
37920.330.001	M33	1.1/4	-	-
37920.360.001	M36	1.1/2	-	-



before tightening



after tightening



before tightening after tightening

### 37920 DUBO Toothed collar ring

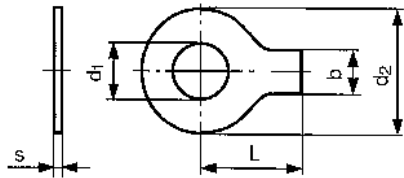
W05C

**Material** Steel  
**Surface treatment** Zinc plated  
**Packaging** Standard

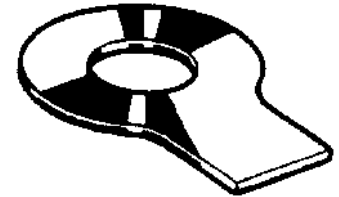


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4/5	100	<a href="#">37920.040.001</a>	M16	50	<a href="#">37920.160.001</a>	M30	5	<a href="#">37920.300.001</a>
M6	100	<a href="#">37920.060.001</a>	M18/20	25	<a href="#">37920.180.001</a>	M33	5	<a href="#">37920.330.001</a>
M8	100	<a href="#">37920.080.001</a>	3/4	25	<a href="#">37920.191.001</a>	M36	5	<a href="#">37920.360.001</a>
M10	100	<a href="#">37920.100.001</a>	M22/24	25	<a href="#">37920.220.001</a>			
M12	50	<a href="#">37920.120.001</a>	M27	10	<a href="#">37920.270.001</a>			

## Tab washer with long tab



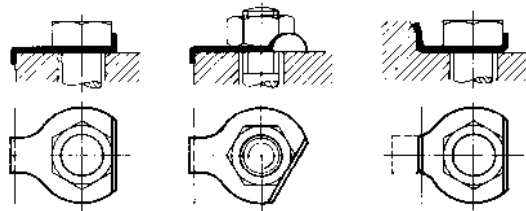
DIN 93  
NEN 2277



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s	b	L
M4	4,3	14	0,38	5	14
M5	5,3	17	0,5	6	16
M6	6,4	19	0,5	7	18
M8	8,4	22	0,75	8	20
M10	10,5	26	0,75	10	22
M12	13	30	1	12	28
M14	15	33	1	12	28
M16	17	36	1	15	32
M18	19	40	1	18	36
M20	21	42	1	18	36
M22	23	50	1	20	42
M24	25	50	1	20	42
M27	28	58	1,6	23	48
M30	31	63	1,6	26	52
M33	34	68	1,6	28	56
M36	37	75	1,6	30	60
M39	40	82	1,6	32	64
M42	43	88	1,6	35	70
M45	46	95	1,6	38	75
M48	50	100	1,6	40	80
M52	54	108	1,6	44	85

### Example of application



7

### Article groups

Material	Packaging	Code	Page
St	Standard	38650	7-96
St.St. A2	Standard	51540	7-97
St.St. A4	Standard	55540	7-97

### 38650 Tab washer with long tab

L07J

Material Steel  
Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6	100	<a href="#">38650.060.001</a>	M20	50	<a href="#">38650.200.001</a>	M39	10	<a href="#">38650.390.001</a>
M8	100	<a href="#">38650.080.001</a>	M22	50	<a href="#">38650.220.001</a>	M42	10	<a href="#">38650.420.001</a>
M10	100	<a href="#">38650.100.001</a>	M24	25	<a href="#">38650.240.001</a>	M45	10	<a href="#">38650.450.001</a>
M12	100	<a href="#">38650.120.001</a>	M27	25	<a href="#">38650.270.001</a>	M48	10	<a href="#">38650.480.001</a>
M14	100	<a href="#">38650.140.001</a>	M30	10	<a href="#">38650.300.001</a>	M52	10	<a href="#">38650.520.001</a>
M16	100	<a href="#">38650.160.001</a>	M33	10	<a href="#">38650.330.001</a>			
M18	50	<a href="#">38650.180.001</a>	M36	10	<a href="#">38650.360.001</a>			

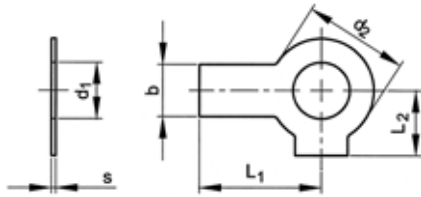
<b>51540 Tab washer with long tab</b>		<b>R09A</b>
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	
		

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5 *	500	<a href="#">51540.050.001</a>	M14	100	<a href="#">51540.140.001</a>	M24	25	<a href="#">51540.240.001</a>
M6	100	<a href="#">51540.060.001</a>	M16	100	<a href="#">51540.160.001</a>	M27	25	<a href="#">51540.270.001</a>
M8	100	<a href="#">51540.080.001</a>	M18 *	200	<a href="#">51540.180.001</a>	M30	10	<a href="#">51540.300.001</a>
M10	100	<a href="#">51540.100.001</a>	M20	50	<a href="#">51540.200.001</a>	M36 *	50	<a href="#">51540.360.001</a>
M12	100	<a href="#">51540.120.001</a>	M22 *	100	<a href="#">51540.220.001</a>	M39 *	25	<a href="#">51540.390.001</a>

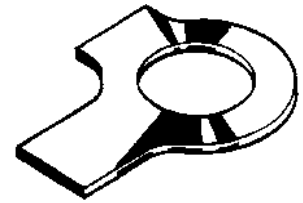
<b>55540 Tab washer with long tab</b>		<b>R49A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	
		

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4 *	500	<a href="#">55540.040.001</a>	M14	100	<a href="#">55540.140.001</a>	M27	25	<a href="#">55540.270.001</a>
M6	100	<a href="#">55540.060.001</a>	M16	100	<a href="#">55540.160.001</a>	M30	10	<a href="#">55540.300.001</a>
M8	100	<a href="#">55540.080.001</a>	M20	50	<a href="#">55540.200.001</a>	M33	10	<a href="#">55540.330.001</a>
M10	100	<a href="#">55540.100.001</a>	M22	25	<a href="#">55540.220.001</a>			
M12	100	<a href="#">55540.120.001</a>	M24	25	<a href="#">55540.240.001</a>			

## Tab washer with long tab and wing



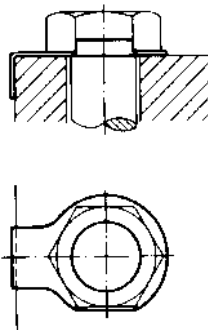
DIN 463  
NEN 2278



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s	b	L <sub>1</sub>	L <sub>2</sub>
M4	4,3	9	0,38	5	14	6,5
M5	5,3	10	0,5	6	16	8
M6	6,4	12,5	0,5	7	18	9
M8	8,4	17	0,75	8	20	11
M10	10,5	21	0,75	10	22	13
M12	13	24	1	12	28	15
M14	15	28	1	12	28	16
M16	17	30	1	15	32	18
M18	19	34	1	18	36	20
M20	21	37	1	18	36	21
M22	23	39	1	20	42	23
M24	25	44	1	20	42	25
M27	28	50	1,6	23	48	29
M30	31	56	1,6	26	52	32
M33	34	60	1,6	28	56	34
M36	37	66	1,6	30	60	38
M39	40	72	1,6	32	64	41
M42	43	78	1,6	35	70	44

### Example of application



7

### Article groups

Material	Packaging	Code	Page
St	Standard	38690	7-98
St.St. A2	Standard	51910	7-99
St.St. A4	Standard	55910	7-99

### 38690 Tab washer with long tab and wing

L07J

Material Steel  
Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6	100	<a href="#">38690.060.001</a>	M18	50	<a href="#">38690.180.001</a>	M33	10	<a href="#">38690.330.001</a>
M8	100	<a href="#">38690.080.001</a>	M20	50	<a href="#">38690.200.001</a>	M36	10	<a href="#">38690.360.001</a>
M10	100	<a href="#">38690.100.001</a>	M22	25	<a href="#">38690.220.001</a>	M39	10	<a href="#">38690.390.001</a>
M12	100	<a href="#">38690.120.001</a>	M24	25	<a href="#">38690.240.001</a>	M42	10	<a href="#">38690.420.001</a>
M14	100	<a href="#">38690.140.001</a>	M27	25	<a href="#">38690.270.001</a>			
M16	100	<a href="#">38690.160.001</a>	M30	10	<a href="#">38690.300.001</a>			



<b>51910</b>	<b>Tab washer with long tab and wing</b>	<b>R09A</b>
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	

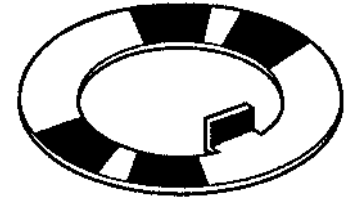
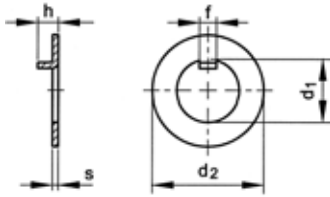
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6	100	<a href="#">51910.060.001</a>	M16	50	<a href="#">51910.160.001</a>	M27	25	<a href="#">51910.270.001</a>
M8	50	<a href="#">51910.080.001</a>	M18 *	50	<a href="#">51910.180.001</a>	M30	10	<a href="#">51910.300.001</a>
M10	50	<a href="#">51910.100.001</a>	M20	50	<a href="#">51910.200.001</a>	M33	10	<a href="#">51910.330.001</a>
M12	50	<a href="#">51910.120.001</a>	M22 *	25	<a href="#">51910.220.001</a>	M36 *	10	<a href="#">51910.360.001</a>
M14	50	<a href="#">51910.140.001</a>	M24	25	<a href="#">51910.240.001</a>	M39 *	10	<a href="#">51910.390.001</a>

<b>55910</b>	<b>Tab washer with long tab and wing</b>	<b>R49A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4 *	100	<a href="#">55910.040.001</a>	M14	50	<a href="#">55910.140.001</a>	M30	10	<a href="#">55910.300.001</a>
M5 *	100	<a href="#">55910.050.001</a>	M16	50	<a href="#">55910.160.001</a>	M33	10	<a href="#">55910.330.001</a>
M6	100	<a href="#">55910.060.001</a>	M18 *	50	<a href="#">55910.180.001</a>	M36 *	10	<a href="#">55910.360.001</a>
M8	50	<a href="#">55910.080.001</a>	M20	50	<a href="#">55910.200.001</a>	M39 *	10	<a href="#">55910.390.001</a>
M10	50	<a href="#">55910.100.001</a>	M24	25	<a href="#">55910.240.001</a>			
M12	50	<a href="#">55910.120.001</a>	M27	25	<a href="#">55910.270.001</a>			

## Internal tab washer

DIN 462

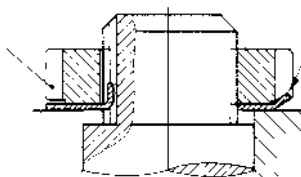
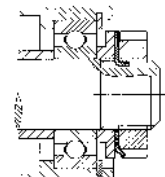
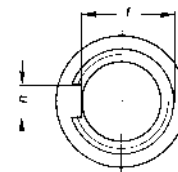


### Technical data

d1 (H11)	d2 (h11)	s	f (C11)	h	n (H11)	t (max.)
10	25	0,8	4	3	4	7,3
12	28	0,8	5	3	5	9,2
14	30	0,8	5	3	5	11,3
16	32	1	5	3	5	13,4
18	34	1	6	4	6	15,3
20	36	1	6	4	6	17,4
22	40	1	6	4	6	19,4
24	42	1	6	4	6	21,5
26	45	1	7	5	7	23,4
28	50	1	7	5	7	25,4
30	50	1,2	7	5	7	27,4
32	52	1,2	7	5	7	29,5
35	55	1,2	7	5	7	32,5
38	58	1,2	8	5	8	35,2
40	62	1,2	8	5	8	37,2
42	62	1,2	8	5	8	39,2
45	68	1,2	8	5	8	42,2
48	75	1,2	8	5	8	45,2
50	75	1,2	8	5	8	47,2
55	80	1,2	10	6	10	52,1
58	90	1,5	10	6	10	55,1
60	90	1,5	10	6	10	57,1
62	95	1,5	10	6	10	59,1
65	95	1,5	10	6	10	62,2
68	100	1,5	10	6	10	65,2
70	100	1,5	10	6	10	67,2
72	110	1,5	10	7	10	68,7
75	110	1,5	10	7	10	71,7
80	115	1,5	10	7	10	76,7
85	120	1,5	10	7	10	81,7
90	130	1,5	10	7	10	86,7
95	135	1,5	12	8	12	91,6
100	145	1,5	12	8	12	96,7

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### Example of application / Assembly data

 slotted round nut for  
 hookspanners acc.  
 to DIN 1804W

 internal tab washer  
 acc. to DIN 462


### 38684 Internal tab washer

L07J

**Material** Steel  
**Surface treatment** Zinc plated  
**Packaging** Standard

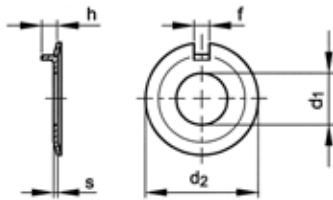


d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
10MM	100	<a href="#">38684.100.001</a>	20MM	50	<a href="#">38684.200.001</a>	30MM	25	<a href="#">38684.300.001</a>
12MM	100	<a href="#">38684.120.001</a>	22MM	50	<a href="#">38684.220.001</a>	32MM	25	<a href="#">38684.320.001</a>
14MM	50	<a href="#">38684.140.001</a>	24MM	25	<a href="#">38684.240.001</a>	35MM	25	<a href="#">38684.350.001</a>
16MM	50	<a href="#">38684.160.001</a>	26MM	25	<a href="#">38684.260.001</a>	38MM	25	<a href="#">38684.380.001</a>
18MM	50	<a href="#">38684.180.001</a>	28MM	25	<a href="#">38684.280.001</a>	40MM	25	<a href="#">38684.400.001</a>

**38684 Internal tab washer**

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
42MM	25	<a href="#">38684.420.001</a>	60MM	5	<a href="#">38684.600.001</a>	75MM	5	<a href="#">38684.750.001</a>
45MM	25	<a href="#">38684.450.001</a>	62MM	5	<a href="#">38684.620.001</a>	80MM	5	<a href="#">38684.800.001</a>
48MM	25	<a href="#">38684.480.001</a>	65MM	5	<a href="#">38684.650.001</a>	85MM	5	<a href="#">38684.850.001</a>
50MM	25	<a href="#">38684.500.001</a>	68MM	5	<a href="#">38684.680.001</a>	90MM	5	<a href="#">38684.900.001</a>
55MM	25	<a href="#">38684.550.001</a>	70MM	5	<a href="#">38684.700.001</a>	95MM	5	<a href="#">38684.950.001</a>
58MM	25	<a href="#">38684.580.001</a>	72MM	5	<a href="#">38684.720.001</a>	100MM	5	<a href="#">38684.982.001</a>

## External tab washer



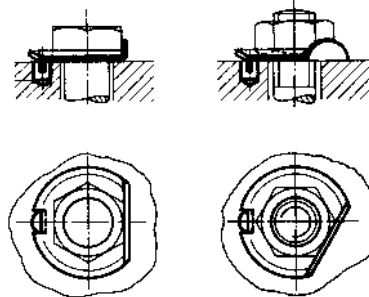
DIN 432  
NEN 2279



### Technical data

Nom.size shaft d1	d <sub>1</sub>	d <sub>2</sub>	s	f	h ≈
M6	6,4	19	0,75	3,5	3
M8	8,4	22	1	3,5	4
M10	10,5	26	1	4,5	4
M12	13	30	1,2	4,5	4,5
M14	15	33	1,2	4,5	4,5
M16	17	36	1,2	5,5	4,5
M18	19	40	1,2	6,5	4,5
M20	21	42	1,6	6,5	4,5
M22	23	50	1,6	7,5	6,5
M24	25	50	1,6	7,5	6,5
M27	28	58	1,6	8,5	9,5
M30	31	63	1,6	8,5	9,5
M33	34	68	1,6	9,5	9,5
M36	37	75	2	11	9,5
M39	40	82	2	11	11
M42	43	88	2	11	11
M45	46	95	2	13	12
M48	50	100	2	13	13
M52	54	105	2	13	13
M56	58	112	2,5	16	14
M60	62	118	2,5	16	13,5
M64	66	125	2,5	18	13,5

### Example of application



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### 38670 External tab washer

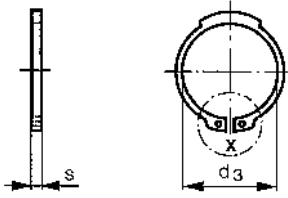
L07J

Material Steel  
Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6	100	<a href="#">38670.060.001</a>	M22	50	<a href="#">38670.220.001</a>	M45	10	<a href="#">38670.450.001</a>
M8	100	<a href="#">38670.080.001</a>	M24	25	<a href="#">38670.240.001</a>	M48	10	<a href="#">38670.480.001</a>
M10	100	<a href="#">38670.100.001</a>	M27	25	<a href="#">38670.270.001</a>	M52	10	<a href="#">38670.520.001</a>
M12	100	<a href="#">38670.120.001</a>	M30	10	<a href="#">38670.300.001</a>	M56	5	<a href="#">38670.560.001</a>
M14	100	<a href="#">38670.140.001</a>	M33	10	<a href="#">38670.330.001</a>	M60	5	<a href="#">38670.600.001</a>
M16	100	<a href="#">38670.160.001</a>	M36	10	<a href="#">38670.360.001</a>	M64	5	<a href="#">38670.640.001</a>
M18	50	<a href="#">38670.180.001</a>	M39	10	<a href="#">38670.390.001</a>			
M20	50	<a href="#">38670.200.001</a>	M42	10	<a href="#">38670.420.001</a>			

## Retaining ring for shaft - normal type



DIN 471  
NF E22-163  
BS 3673-4

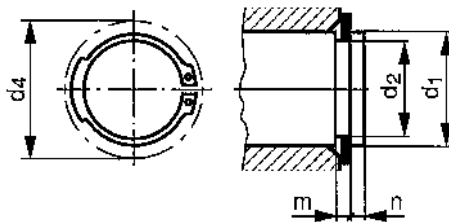





### Technical data

Nom.size shaft d1	Ring s	Ring d <sub>3</sub>	Ring d <sub>4</sub>	Groove d <sub>2</sub>	Groove m (H13)	Groove n (min.)
3	0,4	2,7	7	2,8	0,5	0,3
4	0,4	3,7	8,6	3,8	0,5	0,3
5	0,6	4,7	10,3	4,8	0,7	0,3
6	0,7	5,6	11,7	5,7	0,8	0,5
7	0,8	6,5	13,5	6,7	0,9	0,5
8	0,8	7,4	14,7	7,6	0,9	0,6
9	1	8,4	16	8,6	1,1	0,6
10	1	9,3	17	9,6	1,1	0,6
11	1	10,2	18	10,5	1,1	0,8
12	1	11	19	11,5	1,1	0,8
13	1	11,9	20,2	12,4	1,1	0,9
14	1	12,9	21,4	13,4	1,1	0,9
15	1	13,8	22,6	14,3	1,1	1,1
16	1	14,7	23,8	15,2	1,1	1,2
17	1	15,7	25	16,2	1,1	1,2
18	1,2	16,5	26,2	17	1,3	1,5
19	1,2	17,5	27,2	18	1,3	1,5
20	1,2	18,5	28,4	19	1,3	1,5
21	1,2	19,5	29,6	20	1,3	1,5
22	1,2	20,5	30,8	21	1,3	1,5
23 (#DIN)	1,2	21,5	31	22	1,3	1,5
24	1,2	22,2	33,2	22,9	1,3	1,7
25	1,2	23,2	34,2	23,9	1,3	1,7
26	1,2	24,2	35,5	24,6	1,3	1,7
27 (#DIN)	1,2	24,9	35,4	25,9	1,3	2,1
28	1,5	25,9	37,9	26,6	1,6	2,1
29	1,5	26,9	39,1	27,6	1,6	2,1
30	1,5	27,9	40,5	28,6	1,6	2,1
31 (#DIN)	1,5	28,6	40,3	29,3	1,6	2,6
32	1,5	29,6	43	30,3	1,6	2,6
33 (#DIN)	1,5	30,5	43,4	31,3	1,6	2,6
34	1,5	31,5	45,4	32,3	1,6	2,6
35	1,5	32,2	46,8	33	1,6	3
36	1,75	33,2	47,8	34	1,85	3
37 (#DIN)	1,75	34,2	48	35	1,85	3
38	1,75	35,2	50,2	36	1,85	3
39 (#DIN)	1,75	36	50,2	37	1,85	3
40	1,75	36,5	52,6	37,5	1,85	3,8
42	1,75	38,5	55,7	39,5	1,85	3,8
44 (#DIN)	1,75	40,5	56	41,5	1,85	3,8
45	1,75	41,5	59,1	42,5	1,85	3,8
46	1,75	42,5	60,2	43,5	1,85	3,8
47 (#DIN)	1,75	43,5	61,3	44,5	1,85	3,8
48	1,75	44,5	62,5	45,5	1,85	3,8
50	2	45,8	64,5	47	2,15	4,5
52	2	47,8	66,7	49	2,15	4,5
54 (#DIN)	2	49,8	67	51	2,15	4,5
55	2	50,8	70,2	52	2,15	4,5
56	2	51,8	71,6	53	2,15	4,5
57 (#DIN)	2	52,8	70	54	2,15	4,5
58	2	53,8	73,6	55	2,15	4,5
60	2	55,8	75,6	57	2,15	4,5
62	2	57,8	77,8	59	2,15	4,5
63	2	58,8	79	60	2,15	4,5
65	2,5	60,8	81,4	62	2,65	4,5
67 (#DIN)	2,5	62,5	82	64	2,65	4,5
68	2,5	63,5	84,8	65	2,65	4,5
70	2,5	65,5	87	67	2,65	4,5
72	2,5	67,5	89,2	69	2,65	4,5

Nom.size shaft d1	Ring s	Ring d <sub>3</sub>	Ring d <sub>4</sub>	Groove d <sub>2</sub>	Groove m (H13)	Groove n (min.)
75	2,5	70,5	92,7	72	2,65	4,5
77 (#DIN)	2,5	72,5	94	74	2,65	4,5
78	2,5	73,5	96,1	75	2,65	4,5
80	2,5	74,5	98,1	76,5	2,65	5,3
82	2,5	76,5	100,3	78,5	2,65	5,3
85	3	79,5	103,3	81,5	3,15	5,3
87 (#DIN)	3	81,5	104	83,5	3,15	5,3
88	3	82,5	106,5	84,5	3,15	5,3
90	3	84,5	108,5	86,5	3,15	5,3
92 (#DIN)	3	86,5	111	88,5	3,15	5,3
95	3	89,5	114,8	91,5	3,15	5,3
97 (#DIN)	3	91,5	116	93,5	3,15	5,3
98 (#DIN)	3	92,5	117	94,5	3,15	5,3
100	3	94,5	120,2	96,5	3,15	5,3
105	4	98	125,8	101	4,15	6
110	4	103	131,2	106	4,15	6
115	4	108	137,3	111	4,15	6
120	4	113	143,1	116	4,15	6
125	4	118	149	121	4,15	6
130	4	123	154,4	126	4,15	6
135	4	128	159,8	131	4,15	6
140	4	133	165,2	136	4,15	6
145	4	138	170,6	141	4,15	6
150	4	142	177,3	145	4,15	7,5
155	4	146	182,3	150	4,15	7,5
160	4	151	188	155	4,15	7,5
165	4	155,5	193,4	160	4,15	7,5
170	4	160,5	198,4	165	4,15	7,5
175	4	165,5	203,4	170	4,15	7,5
180	4	170,5	210	175	4,15	7,5
185	4	175,5	215	180	4,15	7,5
190	4	180,5	220	185	4,15	7,5
195	4	185,5	225	190	4,15	7,5
200	4	190,5	230	195	4,15	7,5
210	5	198	240	204	5,15	9
220	5	208	250	214	5,15	9
230	5	218	260	224	5,15	9
240	5	228	270	234	5,15	9
250	5	238	280	244	5,15	9
260	5	245	294	252	5,15	12
270	5	255	304	262	5,15	12
280	5	265	314	272	5,15	12
290	5	275	324	282	5,15	12
300	5	285	334	292	5,15	12

- Depending on availability the phosphated type can be supplied. The heavy type is only available on request.
- Warning: electro-galvanizing of these products may cause hydrogen embrittlement.



DETAIL X		
d <sub>1</sub> ≤ 9 mm.	d <sub>1</sub> > 9 ≤ 300 mm. ①	d <sub>1</sub> ≥ 170 mm. ①
		

① At the manufacturer's discretion

### Article groups

Material	Packaging	Code	Page
Spring steel DIN17222	Standard	36000	7-105
St.St.	Standard	51435	7-105

<b>36000 Retaining ring for shaft - normal type</b>		<b>L07A</b>
<b>Material</b>	Spring steel DIN17222	
<b>Packaging</b>	Standard	

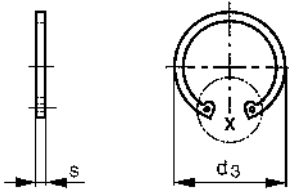
Nom. size shaft d1	☒	Art.number	Nom. size shaft d1	☒	Art.number	Nom. size shaft d1	☒	Art.number
3MM	500	<a href="#">36000.003.001</a>	38MM	100	<a href="#">36000.038.001</a>	97MM	5	<a href="#">36000.097.001</a>
4MM	500	<a href="#">36000.004.001</a>	39MM	100	<a href="#">36000.039.001</a>	98MM	5	<a href="#">36000.098.001</a>
5MM	500	<a href="#">36000.005.001</a>	40MM	50	<a href="#">36000.040.001</a>	100MM	5	<a href="#">36000.100.001</a>
6MM	500	<a href="#">36000.006.001</a>	42MM	50	<a href="#">36000.042.001</a>	105MM	5	<a href="#">36000.105.001</a>
7MM	500	<a href="#">36000.007.001</a>	44MM	50	<a href="#">36000.044.001</a>	110MM	5	<a href="#">36000.110.001</a>
8MM	250	<a href="#">36000.008.001</a>	45MM	50	<a href="#">36000.045.001</a>	115MM	5	<a href="#">36000.115.001</a>
9MM	250	<a href="#">36000.009.001</a>	46MM	50	<a href="#">36000.046.001</a>	120MM	5	<a href="#">36000.120.001</a>
10MM	250	<a href="#">36000.010.001</a>	47MM	50	<a href="#">36000.047.001</a>	125MM	5	<a href="#">36000.125.001</a>
11MM	250	<a href="#">36000.011.001</a>	48MM	50	<a href="#">36000.048.001</a>	130MM	5	<a href="#">36000.130.001</a>
12MM	250	<a href="#">36000.012.001</a>	50MM	50	<a href="#">36000.050.001</a>	135MM	5	<a href="#">36000.135.001</a>
13MM	100	<a href="#">36000.013.001</a>	52MM	50	<a href="#">36000.052.001</a>	140MM	5	<a href="#">36000.140.001</a>
14MM	100	<a href="#">36000.014.001</a>	54MM	25	<a href="#">36000.054.001</a>	145MM	5	<a href="#">36000.145.001</a>
15MM	100	<a href="#">36000.015.001</a>	55MM	25	<a href="#">36000.055.001</a>	150MM	3	<a href="#">36000.150.001</a>
16MM	100	<a href="#">36000.016.001</a>	56MM	25	<a href="#">36000.056.001</a>	155MM	3	<a href="#">36000.155.001</a>
17MM	100	<a href="#">36000.017.001</a>	57MM	25	<a href="#">36000.057.001</a>	160MM	3	<a href="#">36000.160.001</a>
18MM	100	<a href="#">36000.018.001</a>	58MM	25	<a href="#">36000.058.001</a>	165MM	3	<a href="#">36000.165.001</a>
19MM	100	<a href="#">36000.019.001</a>	60MM	25	<a href="#">36000.060.001</a>	170MM	3	<a href="#">36000.170.001</a>
20MM	100	<a href="#">36000.020.001</a>	62MM	25	<a href="#">36000.062.001</a>	175MM	2	<a href="#">36000.175.001</a>
21MM	100	<a href="#">36000.021.001</a>	63MM	25	<a href="#">36000.063.001</a>	180MM	2	<a href="#">36000.180.001</a>
22MM	100	<a href="#">36000.022.001</a>	65MM	10	<a href="#">36000.065.001</a>	185MM	2	<a href="#">36000.185.001</a>
23MM	100	<a href="#">36000.023.001</a>	67MM	10	<a href="#">36000.067.001</a>	190MM	2	<a href="#">36000.190.001</a>
24MM	100	<a href="#">36000.024.001</a>	68MM	10	<a href="#">36000.068.001</a>	195MM	2	<a href="#">36000.195.001</a>
25MM	100	<a href="#">36000.025.001</a>	70MM	10	<a href="#">36000.070.001</a>	200MM	2	<a href="#">36000.200.001</a>
26MM	100	<a href="#">36000.026.001</a>	72MM	10	<a href="#">36000.072.001</a>	210MM	2	<a href="#">36000.210.001</a>
27MM	100	<a href="#">36000.027.001</a>	75MM	10	<a href="#">36000.075.001</a>	220MM	2	<a href="#">36000.220.001</a>
28MM	100	<a href="#">36000.028.001</a>	77MM	10	<a href="#">36000.077.001</a>	230MM	2	<a href="#">36000.230.001</a>
29MM	100	<a href="#">36000.029.001</a>	78MM	10	<a href="#">36000.078.001</a>	240MM	2	<a href="#">36000.240.001</a>
30MM	100	<a href="#">36000.030.001</a>	80MM	10	<a href="#">36000.080.001</a>	250MM	2	<a href="#">36000.250.001</a>
31MM	100	<a href="#">36000.031.001</a>	82MM	10	<a href="#">36000.082.001</a>	260MM	2	<a href="#">36000.260.001</a>
32MM	100	<a href="#">36000.032.001</a>	85MM	5	<a href="#">36000.085.001</a>	270MM	2	<a href="#">36000.270.001</a>
33MM	100	<a href="#">36000.033.001</a>	87MM	5	<a href="#">36000.087.001</a>	280MM	2	<a href="#">36000.280.001</a>
34MM	100	<a href="#">36000.034.001</a>	88MM	5	<a href="#">36000.088.001</a>	290MM	2	<a href="#">36000.290.001</a>
35MM	100	<a href="#">36000.035.001</a>	90MM	5	<a href="#">36000.090.001</a>	300MM	2	<a href="#">36000.300.001</a>
36MM	100	<a href="#">36000.036.001</a>	92MM	5	<a href="#">36000.092.001</a>			
37MM	100	<a href="#">36000.037.001</a>	95MM	5	<a href="#">36000.095.001</a>			

<b>51435 Retaining ring for shaft - normal type</b>		<b>R09A</b>
<b>Material</b>	Stainless steel	
<b>Packaging</b>	Standard DIN ≈471	

Nom. size shaft d1	☒	Art.number	Nom. size shaft d1	☒	Art.number	Nom. size shaft d1	☒	Art.number
4MM	200	<a href="#">51435.004.001</a>	20MM	50	<a href="#">51435.020.001</a>	42MM	10	<a href="#">51435.042.001</a>
5MM	200	<a href="#">51435.005.001</a>	21MM	50	<a href="#">51435.021.001</a>	45MM	10	<a href="#">51435.045.001</a>
6MM	200	<a href="#">51435.006.001</a>	22MM	50	<a href="#">51435.022.001</a>	47MM	10	<a href="#">51435.047.001</a>
7MM	200	<a href="#">51435.007.001</a>	23MM	50	<a href="#">51435.023.001</a>	48MM	10	<a href="#">51435.048.001</a>
8MM	100	<a href="#">51435.008.001</a>	24MM	50	<a href="#">51435.024.001</a>	50MM	5	<a href="#">51435.050.001</a>
9MM	100	<a href="#">51435.009.001</a>	25MM	25	<a href="#">51435.025.001</a>	52MM	5	<a href="#">51435.052.001</a>
10MM	100	<a href="#">51435.010.001</a>	26MM	25	<a href="#">51435.026.001</a>	55MM	5	<a href="#">51435.055.001</a>
11MM	100	<a href="#">51435.011.001</a>	27MM	25	<a href="#">51435.027.001</a>	60MM	5	<a href="#">51435.060.001</a>
12MM	100	<a href="#">51435.012.001</a>	28MM	25	<a href="#">51435.028.001</a>	65MM	5	<a href="#">51435.065.001</a>
13MM	50	<a href="#">51435.013.001</a>	30MM	25	<a href="#">51435.030.001</a>	70MM	5	<a href="#">51435.070.001</a>
14MM	50	<a href="#">51435.014.001</a>	32MM	25	<a href="#">51435.032.001</a>	75MM	5	<a href="#">51435.075.001</a>
15MM	50	<a href="#">51435.015.001</a>	34MM	25	<a href="#">51435.034.001</a>	80MM	5	<a href="#">51435.080.001</a>
16MM	50	<a href="#">51435.016.001</a>	35MM	25	<a href="#">51435.035.001</a>	85MM	1	<a href="#">51435.085.001</a>
17MM	50	<a href="#">51435.017.001</a>	36MM	25	<a href="#">51435.036.001</a>	90MM	1	<a href="#">51435.090.001</a>
18MM	50	<a href="#">51435.018.001</a>	38MM	25	<a href="#">51435.038.001</a>	95MM	1	<a href="#">51435.095.001</a>
19MM	50	<a href="#">51435.019.001</a>	40MM	10	<a href="#">51435.040.001</a>	100MM	1	<a href="#">51435.100.001</a>

- Stainless steel circlips are made of martensitic stainless steel.
- In assemblies it is essential to use assembly pliers with a screw for limitation the opening-closing of the ring.
- Furthermore it is advisable to apply a minimum on clamping on the shaft or housing if the application permits it.
- Also avoid contact with chloride containing liquids (cleaning) to reduce the risk of 'stress corrosion cracking'.

## Retaining ring for bores - normal type



DIN 472  
 NF E22-165  
 BS 3673-4

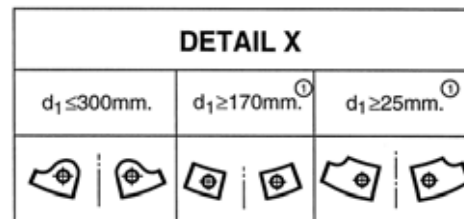
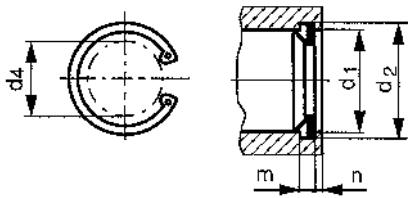


### Technical data

Nom.size bore d1	Ring s	Ring d <sub>3</sub>	Ring d <sub>4</sub>	Groove d <sub>2</sub>	Groove m (H13)	Groove n (min.)
8	0,8	8,7	3	8,4	0,9	0,6
9	0,8	9,8	3,7	9,4	0,9	0,6
10	1	10,8	3,3	10,4	1,1	0,6
11	1	11,8	4,1	11,4	1,1	0,6
12	1	13	4,9	12,5	1,1	0,8
13	1	14,1	5,4	13,6	1,1	0,9
14	1	15,1	6,2	14,6	1,1	0,9
15	1	16,2	7,2	15,7	1,1	1,1
16	1	17,3	8	16,8	1,1	1,2
17	1	18,3	8,8	17,8	1,1	1,2
18	1	19,5	9,4	19	1,1	1,5
19	1	20,5	10,4	20	1,1	1,5
20	1	21,5	11,2	21	1,1	1,5
21	1	22,5	12,2	22	1,1	1,5
22	1	23,5	13,2	23	1,1	1,5
23 (#DIN)	1,2	24,6	15,4	24,1	1,3	1,7
24	1,2	25,9	14,8	25,2	1,3	1,8
25	1,2	26,9	15,5	26,2	1,3	1,8
26	1,2	27,9	16,1	27,2	1,3	1,8
27 (#DIN)	1,2	29,1	18,2	28,4	1,3	2,1
28	1,2	30,1	17,9	29,4	1,3	2,1
29 (#DIN)	1,2	31,1	19,6	30,4	1,3	2,1
30	1,2	32,1	19,9	31,4	1,3	2,1
31	1,2	33,4	20	32,7	1,3	2,6
32	1,2	34,4	20,6	33,7	1,3	2,6
33 (#DIN)	1,2	35,5	22,2	34,7	1,3	2,6
34	1,5	36,5	22,6	35,7	1,6	2,6
35	1,5	37,8	23,6	37	1,6	3
36	1,5	38,8	24,6	38	1,6	3
37	1,5	39,8	25,4	39	1,6	3
38	1,5	40,8	26,4	40	1,6	3
39 (#DIN)	1,5	42	28,6	41	1,6	3
40	1,75	43,5	27,8	42,5	1,85	3,8
41 (#DIN)	1,75	44,5	29	43,5	1,85	3,8
42	1,75	45,5	29,6	44,5	1,85	3,8
43 (#DIN)	1,75	46,5	-	45,5	1,85	3,8
44 (#DIN)	1,75	47,5	32	46,5	1,85	3,8
45	1,75	48,5	32	47,5	1,85	3,8
46 (#DIN)	1,75	49,5	34,6	48,5	1,85	3,8
47	1,75	50,5	33,5	49,5	1,85	3,8
48	1,75	51,5	34,5	50,5	1,85	3,8
50	2	54,2	36,3	53	2,15	4,5
52	2	56,2	37,9	55	2,15	4,5
53 (#DIN)	2	57,2	40	56	2,15	4,5
54	2	58,2	41	57	2,15	4,5
55	2	59,2	40,7	58	2,15	4,5
56	2	60,2	41,7	59	2,15	4,5
57 (#DIN)	2	61,2	44	60	2,15	4,5
58	2	62,2	43,5	61	2,15	4,5
60	2	64,2	44,7	63	2,15	4,5
62	2	66,2	46,7	65	2,15	4,5
63	2	67,2	47,7	66	2,15	4,5
64 (#DIN)	2	68,2	48,7	67	2,65	4,5
65	2,5	69,2	49	68	2,65	4,5
67 (#DIN)	2,5	71,5	52	70	2,65	4,5
68	2,5	72,5	51,6	71	2,65	4,5
70	2,5	74,5	53,6	73	2,65	4,5
72	2,5	76,5	55,6	75	2,65	4,5
75	2,5	79,5	58,6	78	2,65	4,5



Nom.size bore d1	Ring s	Ring d <sub>3</sub>	Ring d <sub>4</sub>	Groove d <sub>2</sub>	Groove m (H13)	Groove n (min.)
77 (#DIN)	2,5	81,5	62	80	2,65	4,5
78	2,5	82,5	60,1	81	2,65	4,5
80	2,5	85,5	62,1	83,5	2,65	5,3
82	2,5	87,5	64,1	85,5	2,65	5,3
85	3	90,5	66,9	88,5	3,15	5,3
87 (#DIN)	3	92,5	69,8	90,5	3,15	5,3
88	3	93,5	69,9	91,5	3,15	5,3
90	3	95,5	71,9	93,5	3,15	5,3
92	3	97,5	73,3	95,5	3,15	5,3
95	3	100,5	76,5	98,5	3,15	5,3
97 (#DIN)	3	102,5	79,4	100,5	3,15	5,3
98	3	103,5	79	101,5	3,15	5,3
100	3	105,5	80,6	103,5	3,15	5,3
102	4	108	82	106	4,15	6
105	4	112	85	109	4,15	6
108	4	115	88	112	4,15	6
110	4	117	88,2	114	4,15	6
112	4	119	90	116	4,15	6
115	4	122	93	119	4,15	6
117 (#DIN)	4	124	97	121	4,15	6
120	4	127	96,9	124	4,15	6
125	4	132	101,9	129	4,15	6
130	4	137	106,9	134	4,15	6
135	4	142	111,5	139	4,15	6
140	4	147	116,5	144	4,15	6
145	4	152	121	149	4,15	6
150	4	158	124,8	155	4,15	7,5
155	4	164	129,8	160	4,15	7,5
160	4	169	132,7	165	4,15	7,5
165	4	174,5	137,7	170	4,15	7,5
170	4	179,5	141,6	175	4,15	7,5
172 (#DIN)	4	181,5	-	177	4,15	7,5
175	4	184,5	146,6	180	4,15	7,5
180	4	189,5	150,2	185	4,15	7,5
185	4	194,5	155,2	190	4,15	7,5
188 (#DIN)	4	197,5	-	193	4,15	7,5
190	4	199,5	160,2	195	4,15	7,5
195	4	204,5	165,2	200	4,15	7,5
200	4	209,5	170,2	205	4,15	7,5
210	5	222	180,2	216	5,15	9
215 (#DIN)	5	227	-	221	5,15	9
220	5	232	190,2	226	5,15	9
225 (#DIN)	5	237	-	231	5,15	9
230	5	242	200,2	236	5,15	9
240	5	252	210,2	246	5,15	9
250	5	262	220,2	256	5,15	9
260	5	275	226	268	5,15	12
270 (#DIN)	5	285	-	278	5,15	12
275 (#DIN)	5	290	241	283	5,15	12
280	5	295	246	288	5,15	12
290	5	305	256	298	5,15	12
300	5	315	266	308	5,15	12



① At the manufacturer's discretion

### Article groups

Material	Packaging	Code	Page
Spring steel DIN17222	Standard	36050	7-108
St.St.	Standard	51437	7-108

36050 Retaining ring for bores - normal type		L07A
<b>Material</b>	Spring steel DIN17222	
<b>Packaging</b>	Standard	

Nom. size bore d1	☒	Art.number	Nom. size bore d1	☒	Art.number	Nom. size bore d1	☒	Art.number
8MM	250	<a href="#">36050.008.001</a>	45MM	50	<a href="#">36050.045.001</a>	108MM	5	<a href="#">36050.108.001</a>
9MM	250	<a href="#">36050.009.001</a>	46MM	50	<a href="#">36050.046.001</a>	110MM	5	<a href="#">36050.110.001</a>
10MM	250	<a href="#">36050.010.001</a>	47MM	50	<a href="#">36050.047.001</a>	112MM	5	<a href="#">36050.112.001</a>
11MM	250	<a href="#">36050.011.001</a>	48MM	50	<a href="#">36050.048.001</a>	115MM	5	<a href="#">36050.115.001</a>
12MM	250	<a href="#">36050.012.001</a>	50MM	50	<a href="#">36050.050.001</a>	117MM	5	<a href="#">36050.117.001</a>
13MM	100	<a href="#">36050.013.001</a>	52MM	50	<a href="#">36050.052.001</a>	120MM	5	<a href="#">36050.120.001</a>
14MM	100	<a href="#">36050.014.001</a>	53MM	25	<a href="#">36050.053.001</a>	125MM	5	<a href="#">36050.125.001</a>
15MM	100	<a href="#">36050.015.001</a>	54MM	25	<a href="#">36050.054.001</a>	130MM	5	<a href="#">36050.130.001</a>
16MM	100	<a href="#">36050.016.001</a>	55MM	25	<a href="#">36050.055.001</a>	135MM	5	<a href="#">36050.135.001</a>
17MM	100	<a href="#">36050.017.001</a>	56MM	25	<a href="#">36050.056.001</a>	140MM	5	<a href="#">36050.140.001</a>
18MM	100	<a href="#">36050.018.001</a>	57MM	25	<a href="#">36050.057.001</a>	145MM	5	<a href="#">36050.145.001</a>
19MM	100	<a href="#">36050.019.001</a>	58MM	25	<a href="#">36050.058.001</a>	150MM	3	<a href="#">36050.150.001</a>
20MM	100	<a href="#">36050.020.001</a>	60MM	25	<a href="#">36050.060.001</a>	155MM	3	<a href="#">36050.155.001</a>
21MM	100	<a href="#">36050.021.001</a>	62MM	25	<a href="#">36050.062.001</a>	160MM	3	<a href="#">36050.160.001</a>
22MM	100	<a href="#">36050.022.001</a>	63MM	25	<a href="#">36050.063.001</a>	165MM	3	<a href="#">36050.165.001</a>
23MM	100	<a href="#">36050.023.001</a>	64MM	25	<a href="#">36050.064.001</a>	170MM	3	<a href="#">36050.170.001</a>
24MM	100	<a href="#">36050.024.001</a>	65MM	10	<a href="#">36050.065.001</a>	172MM	3	<a href="#">36050.172.001</a>
25MM	100	<a href="#">36050.025.001</a>	67MM	10	<a href="#">36050.067.001</a>	175MM	2	<a href="#">36050.175.001</a>
26MM	100	<a href="#">36050.026.001</a>	68MM	10	<a href="#">36050.068.001</a>	180MM	2	<a href="#">36050.180.001</a>
27MM	100	<a href="#">36050.027.001</a>	70MM	10	<a href="#">36050.070.001</a>	185MM	2	<a href="#">36050.185.001</a>
28MM	100	<a href="#">36050.028.001</a>	72MM	10	<a href="#">36050.072.001</a>	190MM	2	<a href="#">36050.190.001</a>
29MM	100	<a href="#">36050.029.001</a>	75MM	10	<a href="#">36050.075.001</a>	195MM	2	<a href="#">36050.195.001</a>
30MM	100	<a href="#">36050.030.001</a>	77MM	10	<a href="#">36050.077.001</a>	200MM	2	<a href="#">36050.200.001</a>
31MM	100	<a href="#">36050.031.001</a>	78MM	10	<a href="#">36050.078.001</a>	210MM	2	<a href="#">36050.210.001</a>
32MM	100	<a href="#">36050.032.001</a>	80MM	10	<a href="#">36050.080.001</a>	215MM	2	<a href="#">36050.215.001</a>
33MM	100	<a href="#">36050.033.001</a>	82MM	10	<a href="#">36050.082.001</a>	220MM	2	<a href="#">36050.220.001</a>
34MM	100	<a href="#">36050.034.001</a>	85MM	5	<a href="#">36050.085.001</a>	225MM	2	<a href="#">36050.225.001</a>
35MM	100	<a href="#">36050.035.001</a>	87MM	5	<a href="#">36050.087.001</a>	230MM	2	<a href="#">36050.230.001</a>
36MM	100	<a href="#">36050.036.001</a>	88MM	5	<a href="#">36050.088.001</a>	240MM	2	<a href="#">36050.240.001</a>
37MM	100	<a href="#">36050.037.001</a>	90MM	5	<a href="#">36050.090.001</a>	250MM	2	<a href="#">36050.250.001</a>
38MM	100	<a href="#">36050.038.001</a>	92MM	5	<a href="#">36050.092.001</a>	260MM	2	<a href="#">36050.260.001</a>
39MM	100	<a href="#">36050.039.001</a>	95MM	5	<a href="#">36050.095.001</a>	270MM	2	<a href="#">36050.270.001</a>
40MM	50	<a href="#">36050.040.001</a>	97MM	5	<a href="#">36050.097.001</a>	275MM	2	<a href="#">36050.275.001</a>
41MM	50	<a href="#">36050.041.001</a>	98MM	5	<a href="#">36050.098.001</a>	280MM	2	<a href="#">36050.280.001</a>
42MM	50	<a href="#">36050.042.001</a>	100MM	5	<a href="#">36050.100.001</a>	290MM	2	<a href="#">36050.290.001</a>
43MM	50	<a href="#">36050.043.001</a>	102MM	5	<a href="#">36050.102.001</a>	300MM	2	<a href="#">36050.300.001</a>
44MM	50	<a href="#">36050.044.001</a>	105MM	5	<a href="#">36050.105.001</a>			

- Depending on availability the phosphated type can be supplied. The heavy type is only available on request.
- **Warning:** electro-galvanizing of these products may cause hydrogen embrittlement.

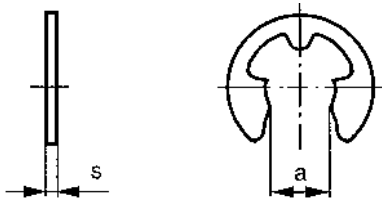
7

51437 Retaining ring for bores - normal type		R09A
<b>Material</b>	Stainless steel	
<b>Packaging</b>	Standard DIN ≈472	

Nom. size bore d1	☒	Art.number	Nom. size bore d1	☒	Art.number	Nom. size bore d1	☒	Art.number
8MM	100	<a href="#">51437.008.001</a>	26MM	25	<a href="#">51437.026.001</a>	50MM	5	<a href="#">51437.050.001</a>
9MM	100	<a href="#">51437.009.001</a>	27MM	25	<a href="#">51437.027.001</a>	52MM	5	<a href="#">51437.052.001</a>
10MM	100	<a href="#">51437.010.001</a>	28MM	25	<a href="#">51437.028.001</a>	55MM	5	<a href="#">51437.055.001</a>
11MM	100	<a href="#">51437.011.001</a>	29MM	25	<a href="#">51437.029.001</a>	58MM	5	<a href="#">51437.058.001</a>
12MM	100	<a href="#">51437.012.001</a>	30MM	25	<a href="#">51437.030.001</a>	60MM	5	<a href="#">51437.060.001</a>
13MM	50	<a href="#">51437.013.001</a>	32MM	25	<a href="#">51437.032.001</a>	62MM	5	<a href="#">51437.062.001</a>
14MM	50	<a href="#">51437.014.001</a>	33MM	25	<a href="#">51437.033.001</a>	65MM	5	<a href="#">51437.065.001</a>
15MM	50	<a href="#">51437.015.001</a>	34MM	25	<a href="#">51437.034.001</a>	68MM	5	<a href="#">51437.068.001</a>
16MM	50	<a href="#">51437.016.001</a>	35MM	25	<a href="#">51437.035.001</a>	70MM	5	<a href="#">51437.070.001</a>
17MM	50	<a href="#">51437.017.001</a>	36MM	25	<a href="#">51437.036.001</a>	72MM	5	<a href="#">51437.072.001</a>
18MM	50	<a href="#">51437.018.001</a>	37MM	25	<a href="#">51437.037.001</a>	75MM	5	<a href="#">51437.075.001</a>
19MM	50	<a href="#">51437.019.001</a>	38MM	25	<a href="#">51437.038.001</a>	80MM	5	<a href="#">51437.080.001</a>
20MM	50	<a href="#">51437.020.001</a>	39MM	25	<a href="#">51437.039.001</a>	85MM	1	<a href="#">51437.085.001</a>
21MM	50	<a href="#">51437.021.001</a>	40MM	10	<a href="#">51437.040.001</a>	90MM	1	<a href="#">51437.090.001</a>
22MM	50	<a href="#">51437.022.001</a>	42MM	10	<a href="#">51437.042.001</a>	95MM	1	<a href="#">51437.095.001</a>
23MM	50	<a href="#">51437.023.001</a>	45MM	10	<a href="#">51437.045.001</a>	100MM	1	<a href="#">51437.100.001</a>
24MM	50	<a href="#">51437.024.001</a>	47MM	10	<a href="#">51437.047.001</a>			
25MM	25	<a href="#">51437.025.001</a>	48MM	10	<a href="#">51437.048.001</a>			

- Stainless steel circlips are made of martensitic stainless steel.
- In assemblies it is essential to use assembly pliers with a screw for limitation the opening-closing of the ring.
- Furthermore it is advisable to apply a minimum on clamping on the shaft or housing if the application permits it.
- Also avoid contact with chloride containing liquids (cleaning) to reduce the risk of 'stress corrosion cracking'.

## Retaining washer for shafts

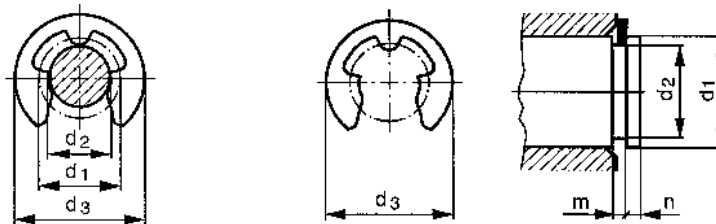

 DIN 6799  
 BS 3673-2


### Technical data

Nom.size groove d2 (h11)	Range d <sub>1</sub>	Ring s	Ring a	Ring d <sub>3</sub> (max.)	Groove m	Groove n (min.)
1,2	1,4-2	0,3	1,01	3,25	0,34	0,6
1,5	2-2,5	0,4	1,28	4,25	0,44	0,8
1,9	2,5-3	0,5	1,61	4,8	0,54	1
2,3	3-4	0,6	1,94	6,3	0,64	1
3,2	4-5	0,6	2,7	7,3	0,64	1
4	5-7	0,7	3,34	9,3	0,74	1,2
5	6-8	0,7	4,11	11,3	0,74	1,2
6	7-9	0,7	5,26	12,3	0,74	1,2
7	8-11	0,9	5,84	14,3	0,94	1,5
8	9-12	1	6,52	16,3	1,05	1,8
9	10-14	1,1	7,63	18,8	1,15	2
10	11-15	1,2	8,32	20,4	1,25	2
12	13-18	1,3	10,45	23,4	1,35	2,5
15	16-24	1,5	12,61	29,4	1,55	3
19	20-31	1,75	15,92	37,6	1,8	3,5
24	25-38	2	21,88	44,6	2,05	4

- Depending on availability the phosphated type can be supplied.

### Assembly data



### Article groups

Material	Packaging	Code	Page
Spring steel 460-580 HV	Standard	36200	7-109
St.St.	Standard	51440	7-110

### 36200 Retaining washer for shafts

L07A

**Material** Spring steel 460-580 HV  
**Packaging** Standard



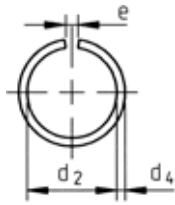
Nom. size groove d2 (h11)	☒	Art.number	Nom. size groove d2 (h11)	☒	Art.number	Nom. size groove d2 (h11)	☒	Art.number
1,2MM	500	<a href="#">36200.012.001</a>	5MM	500	<a href="#">36200.050.001</a>	12MM	100	<a href="#">36200.120.001</a>
1,5MM	500	<a href="#">36200.015.001</a>	6MM	500	<a href="#">36200.060.001</a>	15MM	100	<a href="#">36200.150.001</a>
1,9MM	500	<a href="#">36200.019.001</a>	7MM	250	<a href="#">36200.070.001</a>	19MM	100	<a href="#">36200.190.001</a>
2,3MM	500	<a href="#">36200.023.001</a>	8MM	250	<a href="#">36200.080.001</a>	24MM	100	<a href="#">36200.240.001</a>
3,2MM	500	<a href="#">36200.032.001</a>	9MM	250	<a href="#">36200.090.001</a>			
4MM	500	<a href="#">36200.040.001</a>	10MM	250	<a href="#">36200.100.001</a>			

- Warning: electro-galvanizing of these products may cause hydrogen embrittlement.

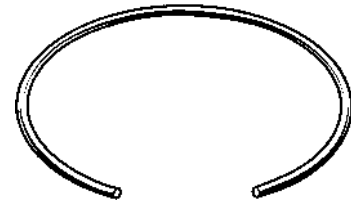
<b>51440 Retaining washer for shafts</b>		<b>R09A</b>
<b>Material</b>	Stainless steel	
<b>Packaging</b>	Standard	
		

Nom. size groove d2 (h11)	☒	Art.number	Nom. size groove d2 (h11)	☒	Art.number	Nom. size groove d2 (h11)	☒	Art.number
1,2MM	500	<a href="#">51440.012.001</a>	5MM	250	<a href="#">51440.050.001</a>	12MM	100	<a href="#">51440.120.001</a>
1,5MM	500	<a href="#">51440.015.001</a>	6MM	250	<a href="#">51440.060.001</a>	15MM	100	<a href="#">51440.150.001</a>
1,9MM	500	<a href="#">51440.019.001</a>	7MM	250	<a href="#">51440.070.001</a>	19MM	100	<a href="#">51440.190.001</a>
2,3MM	250	<a href="#">51440.023.001</a>	8MM	250	<a href="#">51440.080.001</a>	24MM	100	<a href="#">51440.240.001</a>
3,2MM	250	<a href="#">51440.032.001</a>	9MM	100	<a href="#">51440.090.001</a>			
4MM	250	<a href="#">51440.040.001</a>	10MM	100	<a href="#">51440.100.001</a>			

## Snap ring for shafts



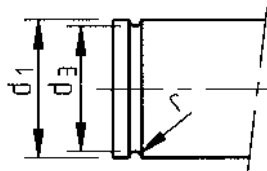
DIN 7993 A



### Technical data

Nom. size shaft d1	d <sub>2</sub>	d <sub>4</sub>	e ≈	d <sub>3</sub>	r
6	5,1	0,8	1	5,2	0,5
8	7,1	0,8	2	7,2	0,5
10	9,1	0,8	2	9,2	0,5
12	10,8	1	3	11	0,6
14	12,8	1	3	13	0,6
16	14,2	1,6	3	14,4	0,9
20	17,7	2	3	18	1,1
22	19,7	2	3	20	1,1
24	21,7	2	3	22	1,1
25	22,7	2	3	23	1,1
26	23,7	2	3	24	1,1
28	25,7	2	3	26	1,1
30	27,7	2	3	28	1,1
32	29,1	2,5	4	29,5	1,4
35	32,1	2,5	4	32,5	1,4
38	35,1	2,5	4	35,5	1,4
40	37,1	2,5	4	37,5	1,4
45	42	2,5	4	42,5	1,4
48	45	2,5	4	45,5	1,4
50	47	2,5	4	47,5	1,4
55	51,1	3,2	4	51,8	1,8
60	56,1	3,2	4	56,8	1,8
65	61,1	3,2	4	61,8	1,8
70	66	3,2	5	66,8	1,8
75	71	3,2	5	71,8	1,8
80	76	3,2	5	76,8	1,8
85	81	3,2	5	81,8	1,8
90	86	3,2	5	86,8	1,8
105	100,8	3,2	5	101,8	1,8
110	105,8	3,2	5	106,8	1,8
120	115,8	3,2	5	116,8	1,8

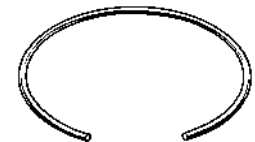
### Assembly data



### 36215 Snap ring for shafts

L07A

Material Spring steel 17223-1  
 Packaging Standard

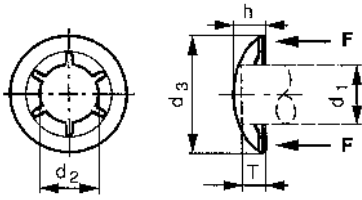


Nom. size shaft d1	☒	Art.number	Nom. size shaft d1	☒	Art.number	Nom. size shaft d1	☒	Art.number
6MM	250	<a href="#">36215.006.001</a>	26MM	100	<a href="#">36215.026.001</a>	55MM	25	<a href="#">36215.055.001</a>
8MM	100	<a href="#">36215.008.001</a>	28MM	100	<a href="#">36215.028.001</a>	60MM	25	<a href="#">36215.060.001</a>
10MM	250	<a href="#">36215.010.001</a>	30MM	100	<a href="#">36215.030.001</a>	65MM	10	<a href="#">36215.065.001</a>
12MM	250	<a href="#">36215.012.001</a>	32MM	100	<a href="#">36215.032.001</a>	70MM	10	<a href="#">36215.070.001</a>
14MM	100	<a href="#">36215.014.001</a>	35MM	100	<a href="#">36215.035.001</a>	75MM	10	<a href="#">36215.075.001</a>
16MM	100	<a href="#">36215.016.001</a>	38MM	100	<a href="#">36215.038.001</a>	80MM	10	<a href="#">36215.080.001</a>
20MM	100	<a href="#">36215.020.001</a>	40MM	50	<a href="#">36215.040.001</a>	85MM	5	<a href="#">36215.085.001</a>
22MM	100	<a href="#">36215.022.001</a>	45MM	50	<a href="#">36215.045.001</a>	90MM	5	<a href="#">36215.090.001</a>
24MM	100	<a href="#">36215.024.001</a>	48MM	50	<a href="#">36215.048.001</a>	105MM	5	<a href="#">36215.105.001</a>
25MM	100	<a href="#">36215.025.001</a>	50MM	50	<a href="#">36215.050.001</a>	110MM	5	<a href="#">36215.110.001</a>

36215 Snap ring for shafts									
Nom. size shaft d1	Art.number	Nom. size shaft d1	Art.number	Nom. size shaft d1	Art.number	Nom. size shaft d1	Art.number	Nom. size shaft d1	Art.number
120MM	5		<a href="#">36215.120.001</a>						

- Warning: electro-galvanizing of these products may cause hydrogen embrittlement.

## Fixing washer for shafts with stainless steel cap type A



### Technical data

For shaft d1 (h11)	d <sub>2</sub> (max.)	d <sub>3</sub>	h	T (max.)	F-1	F-2
2	1,84	10,6	3	2,5	200	-
3	2,81	10,6	3	2,5	200	180
4	3,8	12,4	3,8	3	400	360
5	4,74	12,4	3,8	3	400	360
6	5,7	16,2	5	4	800	720
8	7,66	16,2	5	4	800	720
10	9,74	19,7	5,9	4,5	1000	900
12	11,62	26	7,5	6	2500	2250
13	12,64	26	7,5	6	2500	-
14	13,65	29,4	9	7	2500	2250
15	14,68	39,4	9	7	2500	-
16	15,53	29,4	9	7	2500	-
17	16,78	29,4	9	7	2500	-
19	18,68	38,2	11,7	8,7	3500	-
20	19,63	38,2	11,7	8,7	3500	-
25	24,63	43,4	13,75	9,5	3850	-

- F-1 = allowable load in Newton (shaft St 37).
- F-2 = allowable load in Newton (shaft St.st.).

### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel	Bronze plated and varnished	Standard	36233	7-113
St.St.		Standard	51446	7-113

#### 36233 Fixing washer for shafts with stainless steel cap type A

L07B

<b>Material</b>	Spring steel
<b>Surface treatment</b>	Bronze plated and varnished
<b>Packaging</b>	Standard



For shaft d1	☒	Art.number	For shaft d1	☒	Art.number	For shaft d1	☒	Art.number
3MM	250	<a href="#">36233.030.001</a>	6MM	250	<a href="#">36233.060.001</a>	12MM	250	<a href="#">36233.120.001</a>
4MM	250	<a href="#">36233.040.001</a>	8MM	250	<a href="#">36233.080.001</a>	16MM	100	<a href="#">36233.160.001</a>
5MM	250	<a href="#">36233.050.001</a>	10MM	250	<a href="#">36233.100.001</a>	20MM	100	<a href="#">36233.200.001</a>

#### 51446 Fixing washer for shafts with stainless steel cap type A

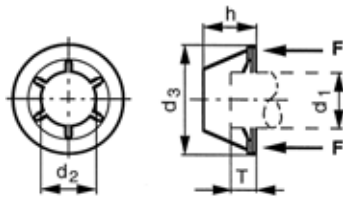
R09A

<b>Material</b>	Stainless steel
<b>Packaging</b>	Standard



For shaft d1	☒	Art.number	For shaft d1	☒	Art.number	For shaft d1	☒	Art.number
3MM	100	<a href="#">51446.030.001</a>	6MM	100	<a href="#">51446.060.001</a>	12MM	100	<a href="#">51446.120.001</a>
4MM	100	<a href="#">51446.040.001</a>	8MM	100	<a href="#">51446.080.001</a>	14MM	100	<a href="#">51446.140.001</a>
5MM	100	<a href="#">51446.050.001</a>	10MM	100	<a href="#">51446.100.001</a>			

## Fixing washer for shafts with steel zinc plated cap type 4A



### Technical data

For shaft d1 (h11)	4	5	6	8	10
d <sub>2</sub> (max.)	3,8	4,74	5,7	7,66	9,74
d <sub>3</sub>	12,3	12,3	16,2	16,2	19,7
h	5,7	5,7	7,2	7,2	8,1
T (max.)	5,3	5,3	6,7	6,7	7,8
F-1	400	400	800	800	1000

- F-1 = allowable load in Newton (shaft St 37).

### 36239 Fixing washer for shafts with steel zinc plated cap type 4A

L07B

<b>Material</b>	Spring steel
<b>Surface treatment</b>	Bronze plated and varnished
<b>Packaging</b>	Standard



For shaft d1	☒	Art.number	For shaft d1	☒	Art.number	For shaft d1	☒	Art.number
4MM	250	<a href="#">36239.040.001</a>	6MM	250	<a href="#">36239.060.001</a>	10MM	250	<a href="#">36239.100.001</a>
5MM	250	<a href="#">36239.050.001</a>	8MM	250	<a href="#">36239.080.001</a>			

- Warning: electro-galvanizing of these products may cause hydrogen embrittlement.

## Fixing washer installation tool

7



- Application with magnetic ferrules, article groups 36251 and 36252.

### 36250 Fixing washer universal handle

L07B

<b>Packaging</b>	Standard
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Type	☒	Art.number	Type	☒	Art.number	Type	☒	Art.number
HANDLE	1	<a href="#">36250.001.770</a>						



**Handle, magnetic ferrule and plastic holder**

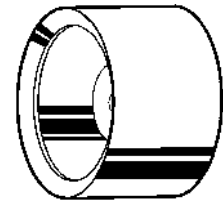


- Suitable for the installation of fixing washers for shafts without cap, made of spring steel and stainless steel.

<b>36253</b>	<b>Handle, magnetic ferrule and plastic holder</b>	<b>L07B</b>
<b>Packaging</b>	Standard	

Type	☒	Art.number	Type	☒	Art.number	Type	☒	Art.number
1,6-3,2MM	1	<a href="#">36253.016.032</a>	6,0-8,0MM	1	<a href="#">36253.060.080</a>	12,0-13,0MM	1	<a href="#">36253.120.130</a>
4,0-5,0MM	1	<a href="#">36253.040.050</a>	9,0-11,0MM	1	<a href="#">36253.090.110</a>			

## Magnetic ferrule

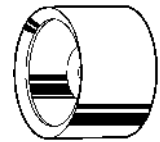


### Article groups

	Packaging	Code	Page
-	Standard	36251	7-116
-	Standard	36252	7-116

#### 36251 Magnetic ferrule L07B

**Packaging** Standard



Type	☒	Art.number	Type	☒	Art.number	Type	☒	Art.number
1,6-3,2MM	1	<a href="#">36251.016.032</a>	9,0-11,0MM	1	<a href="#">36251.090.110</a>	18,0-23,0MM	1	<a href="#">36251.180.230</a>
4,0-5,0MM	1	<a href="#">36251.040.050</a>	12,0-13,0MM	1	<a href="#">36251.120.130</a>	24,0-25,0MM	1	<a href="#">36251.240.250</a>
6,0-8,0MM	1	<a href="#">36251.060.080</a>	14,0-17,0MM	1	<a href="#">36251.140.170</a>			

- Suitable for the installation of fixing washers for shafts without cap, made of spring steel.
- Application with handle, article group 36250.
- Shaft 6,0-8,0MM: Also suitable for fixing washers for shafts with cap type 4A, made of spring steel and stainless steel: 4,0 mm - 5,0 mm.
- Shaft 9,0-11,0MM: Also suitable for fixing washers for shafts with cap type 4A, made of spring steel and stainless steel: 6,0 mm - 9,0 mm.
- Shaft 12,0-13,0MM: Also suitable for fixing washers for shafts with cap type 4A, made of spring steel and stainless steel: 10,0 mm - 11,0 mm.

#### 36252 Magnetic ferrule L07B

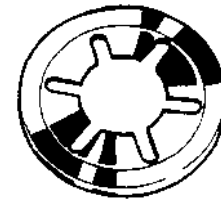
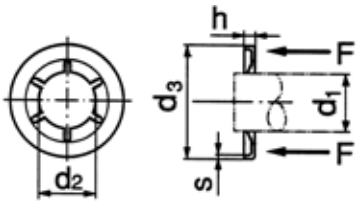
**Packaging** Standard



Type	☒	Art.number	Type	☒	Art.number	Type	☒	Art.number
1,6-3,2MM	1	<a href="#">36252.016.032</a>	9,0-11,0MM	1	<a href="#">36252.090.110</a>	18,0-22,0MM	1	<a href="#">36252.180.220</a>
4,0-5,0MM	1	<a href="#">36252.040.050</a>	12,0-13,0MM	1	<a href="#">36252.120.130</a>			
6,0-8,0MM	1	<a href="#">36252.060.080</a>	14,0-17,0MM	1	<a href="#">36252.140.170</a>			

- Suitable for the installation of fixing washers for shafts with cap type A, made of spring steel and/or stainless steel.
- Application with handle, article group 36250.

## Fixing washer for shafts (without cap)



### Technical data

For shaft d1 (h11)	d <sub>2</sub> (max.)	d <sub>3</sub>	h	s	F-1	F-2
2	1,84	9,7	1,3	0,2	200	-
3	2,81	9,7	1,3	0,2	200	200
4	3,8	11,5	1,3	0,2	400	300
5	4,74	11,5	1,3	0,2	400	200
6	5,7	15,3	1,3	0,25	800	600
6,35	6,08	15,3	1,3	0,25	800	-
7	6,72	15,3	1,3	0,25	800	-
8	7,66	15,3	1,3	0,25	800	800
9	8,75	18,4	1,9	0,3	1000	-
10	9,74	18,4	1,9	0,3	1000	800
11	10,76	18,4	1,9	0,3	1000	-
12	11,62	25	2,3	0,4	2500	2000
13	12,64	25	2,3	0,4	2500	-
14	13,66	28,2	2,3	0,4	2500	-
15	14,68	28,2	2,3	0,4	2500	-
16	15,53	28,2	2,3	0,4	2500	-
17	16,68	28,2	2,3	0,4	2500	-
18	17,62	36,6	3	0,4	3500	-
19	18,69	36,6	3	0,4	3850	-
20	19,63	36,6	3	0,4	3850	-
24	23,66	41,4	3,2	0,5	3850	-
25	24,63	41,4	3,2	0,5	3850	-

- F-1 = allowable load in Newton (shaft St 37).
- F-2 = allowable load in Newton (shaft St.st.).

### Article groups

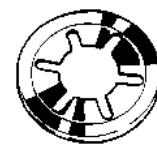
Material	Surface treatment	Packaging	Code	Page
Spring steel	Bronze plated and varnished	Standard	36230	7-117
St.St.		Standard	51445	7-118

7

#### 36230 Fixing washer for shafts (without cap)

L07B

**Material** Spring steel  
**Surface treatment** Bronze plated and varnished  
**Packaging** Standard



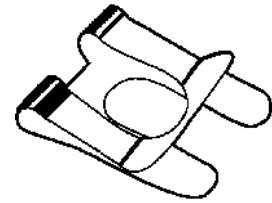
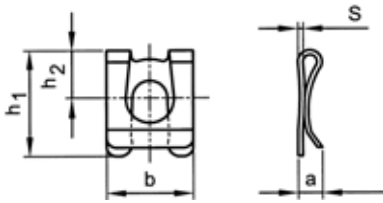
For shaft d1	☒	Art.number	For shaft d1	☒	Art.number	For shaft d1	☒	Art.number
2MM	500	<a href="#">36230.020.001</a>	9MM	250	<a href="#">36230.090.001</a>	17MM	100	<a href="#">36230.170.001</a>
3MM	500	<a href="#">36230.030.001</a>	10MM	250	<a href="#">36230.100.001</a>	18MM	100	<a href="#">36230.180.001</a>
4MM	500	<a href="#">36230.040.001</a>	11MM	250	<a href="#">36230.110.001</a>	19MM	100	<a href="#">36230.190.001</a>
5MM	500	<a href="#">36230.050.001</a>	12MM	250	<a href="#">36230.120.001</a>	20MM	100	<a href="#">36230.200.001</a>
6MM	500	<a href="#">36230.060.001</a>	13MM	100	<a href="#">36230.130.001</a>	24MM	50	<a href="#">36230.240.001</a>
6,35MM	500	<a href="#">36230.063.501</a>	14MM	100	<a href="#">36230.140.001</a>	25MM	50	<a href="#">36230.250.001</a>
7MM	250	<a href="#">36230.070.001</a>	15MM	100	<a href="#">36230.150.001</a>			
8MM	250	<a href="#">36230.080.001</a>	16MM	100	<a href="#">36230.160.001</a>			

- Warning: electro-galvanizing of these products may cause hydrogen embrittlement.

<b>51445 Fixing washer for shafts (without cap)</b>		<b>R09A</b>
<b>Material</b>	Stainless steel	
<b>Packaging</b>	Standard	

For shaft d1	☒	Art.number	For shaft d1	☒	Art.number	For shaft d1	☒	Art.number
3MM	100	<a href="#">51445.030.001</a>	6MM	100	<a href="#">51445.060.001</a>	12MM	100	<a href="#">51445.120.001</a>
4MM	100	<a href="#">51445.040.001</a>	8MM	100	<a href="#">51445.080.001</a>			
5MM	100	<a href="#">51445.050.001</a>	10MM	100	<a href="#">51445.100.001</a>			

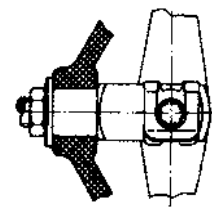
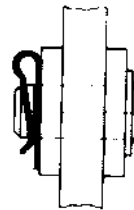
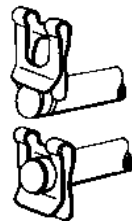
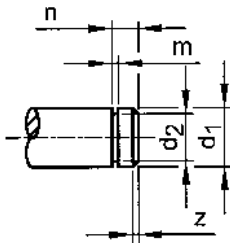
## SL Clip for bolts and shafts



### Technical data

Nom.size shaft d1	4	5	6	8	10	12	14	16
b	7	9	11	14	18	22	25	28
h <sub>1</sub>	8,5	10,8	14	17,5	22	26	30	34,5
h <sub>2</sub>	4	5	6	8	10	12	13,5	16
a	2,2	2,7	3,2	3,7	4,7	5,5	5,7	6,8
s	0,3	0,35	0,4	0,45	0,5	0,5	0,6	0,6
<b>Assembly data</b>								
d <sub>2</sub> (h11)	3,2	4	5	6	8	9	10	12
m	0,64	0,74	0,74	0,94	1,05	11,5	1,25	1,35
n	2	2,5	3	3,5	4,5	5	5,5	6
z	0.5	0,5	0,75	1	1	1,25	1,5	1,5

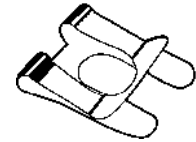
### Assembly data / Application data



### 36265 SL Clip for bolts and shafts

L07A

**Material** Spring steel  
**Surface treatment** Zinc plated  
**Packaging** Standard



7

Nom. size shaft d1	☒	Art.number	Nom. size shaft d1	☒	Art.number	Nom. size shaft d1	☒	Art.number
4MM	500	<a href="#">36265.040.001</a>	8MM	200	<a href="#">36265.080.001</a>	14MM	100	<a href="#">36265.140.001</a>
5MM	500	<a href="#">36265.050.001</a>	10MM	200	<a href="#">36265.100.001</a>	16MM	100	<a href="#">36265.160.001</a>
6MM	500	<a href="#">36265.060.001</a>	12MM	200	<a href="#">36265.120.001</a>			

38205 Plain washer		L07G
<b>Material</b>	Steel	
<b>Surface treatment</b>	Zinc plated	
<b>Packaging</b>	Standard	

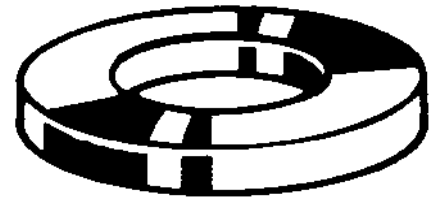
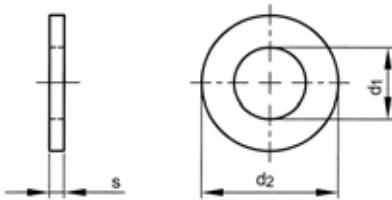
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6	1000	<a href="#">38205.060.001</a>	M16	250	<a href="#">38205.160.001</a>	M27	100	<a href="#">38205.270.001</a>
M8	1000	<a href="#">38205.080.001</a>	M18	200	<a href="#">38205.180.001</a>	M30	100	<a href="#">38205.300.001</a>
M10	1000	<a href="#">38205.100.001</a>	M20	200	<a href="#">38205.200.001</a>	M33	100	<a href="#">38205.330.001</a>
M12	500	<a href="#">38205.120.001</a>	M22	200	<a href="#">38205.220.001</a>	M36	100	<a href="#">38205.360.001</a>
M14	100	<a href="#">38205.140.001</a>	M24	100	<a href="#">38205.240.001</a>	M39	50	<a href="#">38205.390.001</a>

38740 Plain washer		L07G
<b>Material</b>	Steel	
<b>Surface treatment</b>	Hot dip galvanized	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6	1000	<a href="#">38740.060.001</a>	M22	100	<a href="#">38740.220.001</a>	M45	25	<a href="#">38740.450.001</a>
M8	1000	<a href="#">38740.080.001</a>	M24	100	<a href="#">38740.240.001</a>	M48	25	<a href="#">38740.480.001</a>
M10	1000	<a href="#">38740.100.001</a>	M27	100	<a href="#">38740.270.001</a>	M52	25	<a href="#">38740.520.001</a>
M12	500	<a href="#">38740.120.001</a>	M30	100	<a href="#">38740.300.001</a>	M56	25	<a href="#">38740.560.001</a>
M14	100	<a href="#">38740.140.001</a>	M33	100	<a href="#">38740.330.001</a>	M60	10	<a href="#">38740.600.001</a>
M16	250	<a href="#">38740.160.001</a>	M36	100	<a href="#">38740.360.001</a>	M64	10	<a href="#">38740.640.001</a>
M18	250	<a href="#">38740.180.001</a>	M39	50	<a href="#">38740.390.001</a>			
M20	200	<a href="#">38740.200.001</a>	M42	50	<a href="#">38740.420.001</a>			

## Plain washer type L

NF E25-513



### Technical data

For nom.size	d <sub>1</sub> (min.)	d <sub>2</sub> (max.)	s
M3	3,2	12	0,8
M4	4,3	14	0,8
M5	5,3	16	1
M6	6,4	18	1,2
M7	7,4	20	1,5
M8	8,4	22	1,5
M10	10,5	27	2
M12	13	32	2,5
M14	15	36	2,5
M16	17	40	3
M18	19	45	3
M20	21	50	3
M22	23	55	3
M24	25	60	4
M27	28	65	4
M30	31	70	4

### Article groups

Material	Surface treatment	Packaging	Code	Page
St		Standard	38063	7-11
St	Zipl	Standard	38065	7-11
St	Zipl yell.p.	Standard	38067	7-12
St.St. A2		Standard	51418	7-12
St.St. A4		Standard	55418	7-12

#### 38063 Plain washer type L

L07G

Material Steel  
 Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">38063.030.001</a>	M10	200	<a href="#">38063.100.001</a>	M22	100	<a href="#">38063.220.001</a>
M4	500	<a href="#">38063.040.001</a>	M12	200	<a href="#">38063.120.001</a>	M24	100	<a href="#">38063.240.001</a>
M5	500	<a href="#">38063.050.001</a>	M14	200	<a href="#">38063.140.001</a>	M27	100	<a href="#">38063.270.001</a>
M6	500	<a href="#">38063.060.001</a>	M16	100	<a href="#">38063.160.001</a>	M30	100	<a href="#">38063.300.001</a>
M7	250	<a href="#">38063.070.001</a>	M18	100	<a href="#">38063.180.001</a>			
M8	250	<a href="#">38063.080.001</a>	M20	100	<a href="#">38063.200.001</a>			

#### 38065 Plain washer type L

L07G

Material Steel  
 Surface treatment Zinc plated  
 Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">38065.030.001</a>	M10	200	<a href="#">38065.100.001</a>	M22	100	<a href="#">38065.220.001</a>
M4	500	<a href="#">38065.040.001</a>	M12	200	<a href="#">38065.120.001</a>	M24	100	<a href="#">38065.240.001</a>
M5	500	<a href="#">38065.050.001</a>	M14	200	<a href="#">38065.140.001</a>	M27	100	<a href="#">38065.270.001</a>
M6	500	<a href="#">38065.060.001</a>	M16	100	<a href="#">38065.160.001</a>	M30	100	<a href="#">38065.300.001</a>
M7	250	<a href="#">38065.070.001</a>	M18	100	<a href="#">38065.180.001</a>			
M8	250	<a href="#">38065.080.001</a>	M20	100	<a href="#">38065.200.001</a>			

<b>38067 Plain washer type L</b>		<b>L07G</b>
<b>Material</b>	Steel	
<b>Surface treatment</b>	Zinc plated yellow passivated	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">38067.030.001</a>	M10	200	<a href="#">38067.100.001</a>	M22	100	<a href="#">38067.220.001</a>
M4	500	<a href="#">38067.040.001</a>	M12	200	<a href="#">38067.120.001</a>	M24	100	<a href="#">38067.240.001</a>
M5	500	<a href="#">38067.050.001</a>	M14	100	<a href="#">38067.140.001</a>	M27	100	<a href="#">38067.270.001</a>
M6	500	<a href="#">38067.060.001</a>	M16	100	<a href="#">38067.160.001</a>	M30	100	<a href="#">38067.300.001</a>
M7	250	<a href="#">38067.070.001</a>	M18	100	<a href="#">38067.180.001</a>			
M8	250	<a href="#">38067.080.001</a>	M20	100	<a href="#">38067.200.001</a>			

<b>51418 Plain washer type L</b>		<b>R05A</b>
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	
	NF ≈E25-513	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">51418.030.001</a>	M10	250	<a href="#">51418.100.001</a>	M20	100	<a href="#">51418.200.001</a>
M4	250	<a href="#">51418.040.001</a>	M12	200	<a href="#">51418.120.001</a>	M24	50	<a href="#">51418.240.001</a>
M5	250	<a href="#">51418.050.001</a>	M14	200	<a href="#">51418.140.001</a>	M27	50	<a href="#">51418.270.001</a>
M6	250	<a href="#">51418.060.001</a>	M16	100	<a href="#">51418.160.001</a>			
M8	250	<a href="#">51418.080.001</a>	M18	100	<a href="#">51418.180.001</a>			

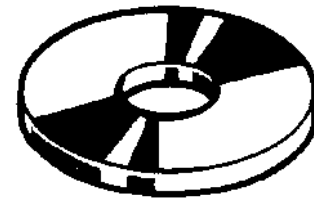
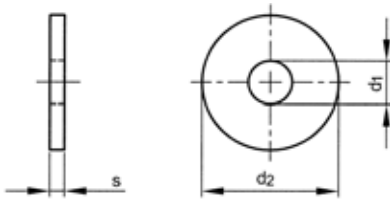
<b>55418 Plain washer type L</b>		<b>R45A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	
	NF ≈E25-513	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">55418.030.001</a>	M10	250	<a href="#">55418.100.001</a>	M20	100	<a href="#">55418.200.001</a>
M4	250	<a href="#">55418.040.001</a>	M12	200	<a href="#">55418.120.001</a>	M24	50	<a href="#">55418.240.001</a>
M5	250	<a href="#">55418.050.001</a>	M14	200	<a href="#">55418.140.001</a>	M27	50	<a href="#">55418.270.001</a>
M6	250	<a href="#">55418.060.001</a>	M16	100	<a href="#">55418.160.001</a>	M30	25	<a href="#">55418.300.001</a>
M8	250	<a href="#">55418.080.001</a>	M18	100	<a href="#">55418.180.001</a>			



## Plain washer type LL

NF E25-513



### Technical data

For nom.size	d <sub>1</sub> (min.)	d <sub>2</sub> (max.)	s
M3	3,2	14	0,8
M4	4,3	16	0,8
M5	5,3	20	1
M6	6,4	24	1,2
M7	7,4	27	1,5
M8	8,4	30	1,5
M10	10,5	36	2
M12	13	40	2,5
M14	15	45	2,5
M16	17	50	3
M18	19	55	3
M20	21	60	3
M22 (#NF)	23	65	3
M24 (#NF)	25	70	4
M27 (#NF)	28	78	4
M30 (#NF)	31	80	4

### Article groups

Material	Surface treatment	Packaging	Code	Page
St		Standard	38073	7-13
St	Zipl	Standard	38075	7-13
St	Zipl yell.p.	Standard	38077	7-14
St.St. A2		Standard	51419	7-14
St.St. A4		Standard	55419	7-14

#### 38073 Plain washer type LL

L07G

Material Steel  
 Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	1000	<a href="#">38073.030.001</a>	M10	200	<a href="#">38073.100.001</a>	M22	100	<a href="#">38073.220.001</a>
M4	500	<a href="#">38073.040.001</a>	M12	200	<a href="#">38073.120.001</a>	M24	100	<a href="#">38073.240.001</a>
M5	500	<a href="#">38073.050.001</a>	M14	100	<a href="#">38073.140.001</a>	M27	100	<a href="#">38073.270.001</a>
M6	250	<a href="#">38073.060.001</a>	M16	100	<a href="#">38073.160.001</a>	M30	100	<a href="#">38073.300.001</a>
M7	250	<a href="#">38073.070.001</a>	M18	100	<a href="#">38073.180.001</a>			
M8	250	<a href="#">38073.080.001</a>	M20	100	<a href="#">38073.200.001</a>			

#### 38075 Plain washer type LL

L07G

Material Steel  
 Surface treatment Zinc plated  
 Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	1000	<a href="#">38075.030.001</a>	M10	200	<a href="#">38075.100.001</a>	M22	100	<a href="#">38075.220.001</a>
M4	500	<a href="#">38075.040.001</a>	M12	200	<a href="#">38075.120.001</a>	M24	100	<a href="#">38075.240.001</a>
M5	500	<a href="#">38075.050.001</a>	M14	100	<a href="#">38075.140.001</a>	M27	100	<a href="#">38075.270.001</a>
M6	250	<a href="#">38075.060.001</a>	M16	100	<a href="#">38075.160.001</a>	M30	100	<a href="#">38075.300.001</a>
M7	250	<a href="#">38075.070.001</a>	M18	100	<a href="#">38075.180.001</a>			
M8	250	<a href="#">38075.080.001</a>	M20	100	<a href="#">38075.200.001</a>			

38077 Plain washer type LL		L07G
<b>Material</b>	Steel	
<b>Surface treatment</b>	Zinc plated yellow passivated	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3		<a href="#">38077.030.001</a>	M10		<a href="#">38077.100.001</a>	M22		<a href="#">38077.220.001</a>
M4		<a href="#">38077.040.001</a>	M12		<a href="#">38077.120.001</a>	M24		<a href="#">38077.240.001</a>
M5		<a href="#">38077.050.001</a>	M14		<a href="#">38077.140.001</a>	M27		<a href="#">38077.270.001</a>
M6		<a href="#">38077.060.001</a>	M16		<a href="#">38077.160.001</a>	M30		<a href="#">38077.300.001</a>
M7		<a href="#">38077.070.001</a>	M18		<a href="#">38077.180.001</a>			
M8		<a href="#">38077.080.001</a>	M20		<a href="#">38077.200.001</a>			

51419 Plain washer type LL		R05A
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	
	NF ≈E25-513	

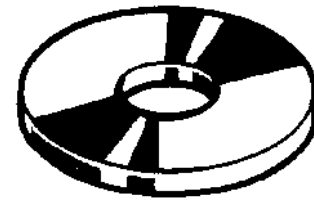
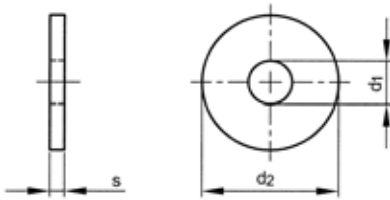
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4		<a href="#">51419.040.001</a>	M8		<a href="#">51419.080.001</a>	M14		<a href="#">51419.140.001</a>
M5		<a href="#">51419.050.001</a>	M10		<a href="#">51419.100.001</a>	M16		<a href="#">51419.160.001</a>
M6		<a href="#">51419.060.001</a>	M12		<a href="#">51419.120.001</a>			

55419 Plain washer type LL		R45A
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	
	NF ≈E25-513	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6		<a href="#">55419.060.001</a>	M10		<a href="#">55419.100.001</a>			
M8		<a href="#">55419.080.001</a>	M12		<a href="#">55419.120.001</a>			

## Plain washer type M

NF E25-513



### Technical data

For nom.size	d <sub>1</sub> (min.)	d <sub>2</sub> (max.)	s
M2,5	2,7	7	0,5
M3	3,2	8	0,8
M4	4,3	10	0,8
M5	5,3	12	1
M6	6,4	14	1,2
M7	7,4	16	1,5
M8	8,4	18	1,5
M10	10,5	22	2
M12	13	27	2,5
M14	15	30	2,5
M16	17	32	3
M18	19	36	3
M20	21	40	3
M22	23	45	3
M24	25	50	4
M27	28	55	4
M30	31	60	4
M33	34	65	5
M36	37	70	5
M39	40	75	6
M42	43	80	6
M45	46	85	7
M48	50	90	7
M52	54	100	8
M56 (#NF)	60	105	9

### Article groups

Material	Surface treatment	Packaging	Code	Page
St		Standard	38053	7-15
St	Zipl	Standard	38055	7-16
St	Zipl yell.p.	Standard	38057	7-16
St.St. A2		Standard	51417	7-16
St.St. A4		Standard	55417	7-16

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### 38053 Plain washer type M

L07G

Material Steel  
 Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">38053.030.001</a>	M14	200	<a href="#">38053.140.001</a>	M33	100	<a href="#">38053.330.001</a>
M4	500	<a href="#">38053.040.001</a>	M16	100	<a href="#">38053.160.001</a>	M36	100	<a href="#">38053.360.001</a>
M5	500	<a href="#">38053.050.001</a>	M18	100	<a href="#">38053.180.001</a>	M39	100	<a href="#">38053.390.001</a>
M6	500	<a href="#">38053.060.001</a>	M20	100	<a href="#">38053.200.001</a>	M42	100	<a href="#">38053.420.001</a>
M7	250	<a href="#">38053.070.001</a>	M22	100	<a href="#">38053.220.001</a>	M45	100	<a href="#">38053.450.001</a>
M8	250	<a href="#">38053.080.001</a>	M24	100	<a href="#">38053.240.001</a>	M48	25	<a href="#">38053.480.001</a>
M10	200	<a href="#">38053.100.001</a>	M27	100	<a href="#">38053.270.001</a>	M52	25	<a href="#">38053.520.001</a>
M12	200	<a href="#">38053.120.001</a>	M30	100	<a href="#">38053.300.001</a>	M56	25	<a href="#">38053.560.001</a>

<b>38055</b>	<b>Plain washer type M</b>	<b>L07G</b>
<b>Material</b>	Steel	
<b>Surface treatment</b>	Zinc plated	
<b>Packaging</b>	Standard	


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">38055.030.001</a>	M12	200	<a href="#">38055.120.001</a>	M27	100	<a href="#">38055.270.001</a>
M4	500	<a href="#">38055.040.001</a>	M14	200	<a href="#">38055.140.001</a>	M30	100	<a href="#">38055.300.001</a>
M5	500	<a href="#">38055.050.001</a>	M16	100	<a href="#">38055.160.001</a>	M33	100	<a href="#">38055.330.001</a>
M6	500	<a href="#">38055.060.001</a>	M18	100	<a href="#">38055.180.001</a>	M36	100	<a href="#">38055.360.001</a>
M7	250	<a href="#">38055.070.001</a>	M20	100	<a href="#">38055.200.001</a>	M39	100	<a href="#">38055.390.001</a>
M8	250	<a href="#">38055.080.001</a>	M22	100	<a href="#">38055.220.001</a>	M42	100	<a href="#">38055.420.001</a>
M10	200	<a href="#">38055.100.001</a>	M24	100	<a href="#">38055.240.001</a>	M45	100	<a href="#">38055.450.001</a>

<b>38057</b>	<b>Plain washer type M</b>	<b>L07G</b>
<b>Material</b>	Steel	
<b>Surface treatment</b>	Zinc plated yellow passivated	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">38057.030.001</a>	M14	200	<a href="#">38057.140.001</a>	M33	100	<a href="#">38057.330.001</a>
M4	500	<a href="#">38057.040.001</a>	M16	100	<a href="#">38057.160.001</a>	M36	100	<a href="#">38057.360.001</a>
M5	500	<a href="#">38057.050.001</a>	M18	100	<a href="#">38057.180.001</a>	M39	100	<a href="#">38057.390.001</a>
M6	500	<a href="#">38057.060.001</a>	M20	100	<a href="#">38057.200.001</a>	M42	100	<a href="#">38057.420.001</a>
M7	250	<a href="#">38057.070.001</a>	M22	100	<a href="#">38057.220.001</a>	M45	100	<a href="#">38057.450.001</a>
M8	250	<a href="#">38057.080.001</a>	M24	100	<a href="#">38057.240.001</a>	M48	50	<a href="#">38057.480.001</a>
M10	200	<a href="#">38057.100.001</a>	M27	100	<a href="#">38057.270.001</a>			
M12	200	<a href="#">38057.120.001</a>	M30	100	<a href="#">38057.300.001</a>			

<b>51417</b>	<b>Plain washer type M</b>	<b>R05A</b>
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	
	NF ≈E25-513	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2,5	250	<a href="#">51417.025.001</a>	M10	250	<a href="#">51417.100.001</a>	M22	50	<a href="#">51417.220.001</a>
M3	250	<a href="#">51417.030.001</a>	M12	200	<a href="#">51417.120.001</a>	M24	50	<a href="#">51417.240.001</a>
M4	250	<a href="#">51417.040.001</a>	M14	100	<a href="#">51417.140.001</a>	M27	25	<a href="#">51417.270.001</a>
M5	250	<a href="#">51417.050.001</a>	M16	100	<a href="#">51417.160.001</a>	M30	25	<a href="#">51417.300.001</a>
M6	250	<a href="#">51417.060.001</a>	M18	100	<a href="#">51417.180.001</a>	M33	25	<a href="#">51417.330.001</a>
M8	250	<a href="#">51417.080.001</a>	M20	100	<a href="#">51417.200.001</a>	M36	25	<a href="#">51417.360.001</a>

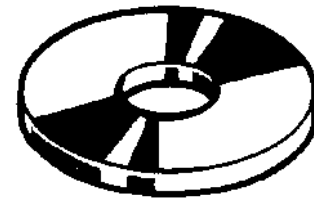
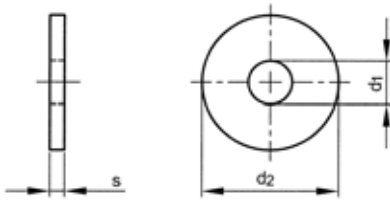
<b>55417</b>	<b>Plain washer type M</b>	<b>R45A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	
	NF ≈E25-513	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">55417.030.001</a>	M12	200	<a href="#">55417.120.001</a>	M24	50	<a href="#">55417.240.001</a>
M4	250	<a href="#">55417.040.001</a>	M14	100	<a href="#">55417.140.001</a>	M27	25	<a href="#">55417.270.001</a>
M5	250	<a href="#">55417.050.001</a>	M16	100	<a href="#">55417.160.001</a>	M30	25	<a href="#">55417.300.001</a>
M6	250	<a href="#">55417.060.001</a>	M18	100	<a href="#">55417.180.001</a>	M33	25	<a href="#">55417.330.001</a>
M8	250	<a href="#">55417.080.001</a>	M20	100	<a href="#">55417.200.001</a>	M36	25	<a href="#">55417.360.001</a>
M10	250	<a href="#">55417.100.001</a>	M22	50	<a href="#">55417.220.001</a>			

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## Plain washer type Z

NF E25-513



### Technical data

For nom.size	d <sub>1</sub> (min.)	d <sub>2</sub> (max.)	s
M3	3,2	6	0,8
M4	4,3	8	0,8
M5	5,3	10	1
M6	6,4	12	1,2
M7	7,4	14	1,5
M8	8,4	16	1,5
M10	10,5	20	2
M12	13	24	2,5
M14	15	27	2,5
M16	17	30	3
M18	19	32	3
M20	21	36	3
M22	23	40	3
M24	25	45	4
M27	28	48	4
M30	31	52	4

### Article groups

Material	Surface treatment	Packaging	Code	Page
St		Standard	38043	7-17
St	Zipl	Standard	38045	7-17
St	Zipl yell.p.	Standard	38047	7-18
St.St. A2		Standard	51416	7-18
St.St. A4		Standard	55416	7-18

#### 38043 Plain washer type Z

L07G

Material Steel  
 Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">38043.030.001</a>	M10	200	<a href="#">38043.100.001</a>	M20	100	<a href="#">38043.200.001</a>
M4	500	<a href="#">38043.040.001</a>	M12	150	<a href="#">38043.120.001</a>	M22	100	<a href="#">38043.220.001</a>
M5	500	<a href="#">38043.050.001</a>	M14	100	<a href="#">38043.140.001</a>	M24	100	<a href="#">38043.240.001</a>
M6	250	<a href="#">38043.060.001</a>	M16	100	<a href="#">38043.160.001</a>	M27	100	<a href="#">38043.270.001</a>
M8	250	<a href="#">38043.080.001</a>	M18	100	<a href="#">38043.180.001</a>	M30	100	<a href="#">38043.300.001</a>

#### 38045 Plain washer type Z

L07G

Material Steel  
 Surface treatment Zinc plated  
 Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">38045.030.001</a>	M10	200	<a href="#">38045.100.001</a>	M20	100	<a href="#">38045.200.001</a>
M4	500	<a href="#">38045.040.001</a>	M12	150	<a href="#">38045.120.001</a>	M22	100	<a href="#">38045.220.001</a>
M5	500	<a href="#">38045.050.001</a>	M14	100	<a href="#">38045.140.001</a>	M24	100	<a href="#">38045.240.001</a>
M6	250	<a href="#">38045.060.001</a>	M16	100	<a href="#">38045.160.001</a>	M27	100	<a href="#">38045.270.001</a>
M8	250	<a href="#">38045.080.001</a>	M18	100	<a href="#">38045.180.001</a>	M30	100	<a href="#">38045.300.001</a>

<b>38047</b>	<b>Plain washer type Z</b>	<b>L07G</b>
<b>Material</b>	Steel	
<b>Surface treatment</b>	Zinc plated yellow passivated	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">38047.030.001</a>	M10	200	<a href="#">38047.100.001</a>	M22	100	<a href="#">38047.220.001</a>
M4	500	<a href="#">38047.040.001</a>	M12	150	<a href="#">38047.120.001</a>	M24	100	<a href="#">38047.240.001</a>
M5	500	<a href="#">38047.050.001</a>	M14	100	<a href="#">38047.140.001</a>	M27	100	<a href="#">38047.270.001</a>
M6	250	<a href="#">38047.060.001</a>	M16	100	<a href="#">38047.160.001</a>	M30	100	<a href="#">38047.300.001</a>
M7	250	<a href="#">38047.070.001</a>	M18	100	<a href="#">38047.180.001</a>			
M8	250	<a href="#">38047.080.001</a>	M20	100	<a href="#">38047.200.001</a>			

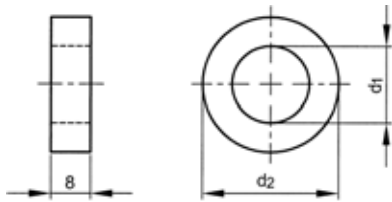
<b>51416</b>	<b>Plain washer type Z</b>	<b>R05A</b>
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard NF ≈E25-513	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">51416.030.001</a>	M8	250	<a href="#">51416.080.001</a>	M20	100	<a href="#">51416.200.001</a>
M4	250	<a href="#">51416.040.001</a>	M10	200	<a href="#">51416.100.001</a>	M24	50	<a href="#">51416.240.001</a>
M5	250	<a href="#">51416.050.001</a>	M12	200	<a href="#">51416.120.001</a>	M27	25	<a href="#">51416.270.001</a>
M6	250	<a href="#">51416.060.001</a>	M16	100	<a href="#">51416.160.001</a>	M30	25	<a href="#">51416.300.001</a>

<b>55416</b>	<b>Plain washer type Z</b>	<b>R45A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard NF ≈E25-513	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">55416.030.001</a>	M8	250	<a href="#">55416.080.001</a>	M20	100	<a href="#">55416.200.001</a>
M4	250	<a href="#">55416.040.001</a>	M10	200	<a href="#">55416.100.001</a>	M24	50	<a href="#">55416.240.001</a>
M5	250	<a href="#">55416.050.001</a>	M12	200	<a href="#">55416.120.001</a>	M30	25	<a href="#">55416.300.001</a>
M6	250	<a href="#">55416.060.001</a>	M16	100	<a href="#">55416.160.001</a>			

## Washer for steel structures



DIN 7989 A



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	For nom.size	d <sub>1</sub>	d <sub>2</sub>	For nom.size	d <sub>1</sub>	d <sub>2</sub>
M10	11	20	M20	22	37	M30	33	56
M12	13,5	24	M24	26	44	M33 (#DIN)	35	60
M16	17,5	30	M27	30	50	M36 (#DIN)	38	66


- Thickness 8 mm, specially applicable for hexagon head bolts, for steel structures, acc. to DIN 7990.

### Article groups

Material	Surface treatment	Packaging	Code	Page
St	Zipl	Standard	38280	7-19
St	Hot d.g.	Standard	38270	7-19

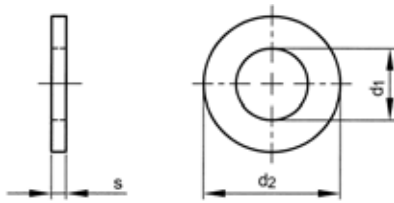
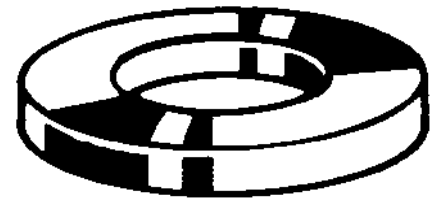
38280 Washer for steel structures				L07G
<b>Material</b>	Steel			
<b>Surface treatment</b>	Zinc plated			
<b>Packaging</b>	Standard			

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M10	500	<a href="#">38280.100.001</a>	M20	100	<a href="#">38280.200.001</a>	M30	50	<a href="#">38280.300.001</a>
M12	500	<a href="#">38280.120.001</a>	M24	100	<a href="#">38280.240.001</a>	M33	25	<a href="#">38280.330.001</a>
M16	250	<a href="#">38280.160.001</a>	M27	50	<a href="#">38280.270.001</a>	M36	25	<a href="#">38280.360.001</a>

38270 Washer for steel structures				L07G
<b>Material</b>	Steel			
<b>Surface treatment</b>	Hot dip galvanized			
<b>Packaging</b>	Standard			

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M10	500	<a href="#">38270.100.001</a>	M20	100	<a href="#">38270.200.001</a>	M30	50	<a href="#">38270.300.001</a>
M12	500	<a href="#">38270.120.001</a>	M24	100	<a href="#">38270.240.001</a>			
M16	250	<a href="#">38270.160.001</a>	M27	50	<a href="#">38270.270.001</a>			

## Washer for bolts with heavy type spring pins


 DIN 7349  
 NEN 2274


### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M3	3,2	9	1
M4	4,3	12	1,6
M5	5,3	15	2
M6	6,4	17	3
M8	8,4	21	4
M10	10,5	25	4
M12	13	30	6
M14	15	36	6
M16	17	40	6
M18	19	44	8
M20	21	44	8
M22	23	50	8
M24	25	50	10
M27	28	60	10
M30	31	68	10

- These washers are applied in combination with spring type straight pins slotted acc. to DIN 1481 (ISO 8752).

### Article groups

Material	Surface treatment	Packaging	Code	Page
St		Standard	38420	7-20
St	Zipl	Standard	38430	7-20
St	Zipl yell.p.	Standard	38435	7-21
St	Hot d.g.	Standard	38438	7-21
St.St. A2		Standard	51532	7-21
St.St. A4		Standard	55532	7-21

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#### 38420 Washer for bolts with heavy type spring pins

L07G

Material	Steel
Packaging	Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">38420.030.001</a>	M10	100	<a href="#">38420.100.001</a>	M20	50	<a href="#">38420.200.001</a>
M4	250	<a href="#">38420.040.001</a>	M12	100	<a href="#">38420.120.001</a>	M22	100	<a href="#">38420.220.001</a>
M5	250	<a href="#">38420.050.001</a>	M14	50	<a href="#">38420.140.001</a>	M24	25	<a href="#">38420.240.001</a>
M6	100	<a href="#">38420.060.001</a>	M16	50	<a href="#">38420.160.001</a>	M30	25	<a href="#">38420.300.001</a>
M8	100	<a href="#">38420.080.001</a>	M18	100	<a href="#">38420.180.001</a>			

#### 38430 Washer for bolts with heavy type spring pins

L07G

Material	Steel
Surface treatment	Zinc plated
Packaging	Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">38430.030.001</a>	M10	200	<a href="#">38430.100.001</a>	M22	50	<a href="#">38430.220.001</a>
M4	250	<a href="#">38430.040.001</a>	M12	150	<a href="#">38430.120.001</a>	M24	50	<a href="#">38430.240.001</a>
M5	250	<a href="#">38430.050.001</a>	M16	100	<a href="#">38430.160.001</a>	M27	25	<a href="#">38430.270.001</a>
M6	250	<a href="#">38430.060.001</a>	M18	100	<a href="#">38430.180.001</a>	M30	25	<a href="#">38430.300.001</a>
M8	250	<a href="#">38430.080.001</a>	M20	100	<a href="#">38430.200.001</a>			



<b>38435</b>	<b>Washer for bolts with heavy type spring pins</b>	<b>L07G</b>
<b>Material</b>	Steel	
<b>Surface treatment</b>	Zinc plated yellow passivated	
<b>Packaging</b>	Standard	


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5	250	<a href="#">38435.050.001</a>	M10	200	<a href="#">38435.100.001</a>	M20	100	<a href="#">38435.200.001</a>
M6	250	<a href="#">38435.060.001</a>	M12	150	<a href="#">38435.120.001</a>	M24	50	<a href="#">38435.240.001</a>
M8	250	<a href="#">38435.080.001</a>	M16	100	<a href="#">38435.160.001</a>			

<b>38438</b>	<b>Washer for bolts with heavy type spring pins</b>	<b>L07G</b>
<b>Material</b>	Steel	
<b>Surface treatment</b>	Hot dip galvanized	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5	250	<a href="#">38438.050.001</a>	M12	150	<a href="#">38438.120.001</a>	M22	50	<a href="#">38438.220.001</a>
M6	250	<a href="#">38438.060.001</a>	M16	100	<a href="#">38438.160.001</a>	M24	50	<a href="#">38438.240.001</a>
M8	250	<a href="#">38438.080.001</a>	M18	100	<a href="#">38438.180.001</a>			
M10	200	<a href="#">38438.100.001</a>	M20	100	<a href="#">38438.200.001</a>			

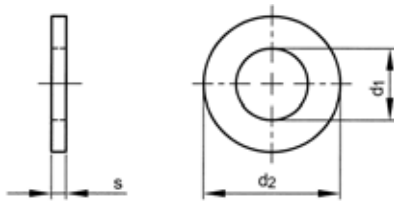
<b>51532</b>	<b>Washer for bolts with heavy type spring pins</b>	<b>R09A</b>
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	100	<a href="#">51532.030.001</a>	M10	100	<a href="#">51532.100.001</a>	M20	50	<a href="#">51532.200.001</a>
M4	100	<a href="#">51532.040.001</a>	M12	50	<a href="#">51532.120.001</a>	M22 *	50	<a href="#">51532.220.001</a>
M5	100	<a href="#">51532.050.001</a>	M14 *	100	<a href="#">51532.140.001</a>	M24 *	50	<a href="#">51532.240.001</a>
M6	100	<a href="#">51532.060.001</a>	M16	50	<a href="#">51532.160.001</a>			
M8	100	<a href="#">51532.080.001</a>	M18 *	50	<a href="#">51532.180.001</a>			

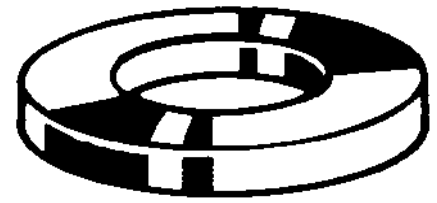
<b>55532</b>	<b>Washer for bolts with heavy type spring pins</b>	<b>R49A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	100	<a href="#">55532.030.001</a>	M8	100	<a href="#">55532.080.001</a>	M16	50	<a href="#">55532.160.001</a>
M4	100	<a href="#">55532.040.001</a>	M10	100	<a href="#">55532.100.001</a>	M20	50	<a href="#">55532.200.001</a>
M5	100	<a href="#">55532.050.001</a>	M12	50	<a href="#">55532.120.001</a>	M22 *	50	<a href="#">55532.220.001</a>
M6	100	<a href="#">55532.060.001</a>	M14 *	100	<a href="#">55532.140.001</a>	M24	50	<a href="#">55532.240.001</a>

## Plain washer for cheese head screws



ISO 7092  
 DIN 433  
 NEN 2270



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M2	2,2	4,5	0,3
M2,5	2,7	5,0	0,5
M2,6 (#DIN)	2,7	5,5	0,5
M3	3,2	6	0,5
M3,5	3,7	7	0,5
M4	4,3	8	0,5
M5	5,3	9	1
M6	6,4	11	1,6
M8	8,4	15	1,6
M10	10,5	18	1,6
M12	13	20	2
M14	15	24	2,5
M16	17	28	2,5
M18	19	30	2,5
M20	21	34	3

### Article groups

Material	Class	Surface treatment	Colour	Packaging	Code	Page
St		Zipl		Standard	38250	7-22
Br		Ni.pl.		Standard	50100	7-22
St.St. A2				Standard	51930	7-23
St.St. A4				Standard	55930	7-23
Plastic PA	PA 6.6		White	Standard	56320	7-23

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**38250 Plain washer for cheese head screws** L07G

<b>Material</b>	Steel
<b>Surface treatment</b>	Zinc plated
<b>Packaging</b>	Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2	500	<a href="#">38250.020.001</a>	M6	250	<a href="#">38250.060.001</a>	M16	100	<a href="#">38250.160.001</a>
M2,6	500	<a href="#">38250.026.001</a>	M8	200	<a href="#">38250.080.001</a>	M18	100	<a href="#">38250.180.001</a>
M3	250	<a href="#">38250.030.001</a>	M10	200	<a href="#">38250.100.001</a>	M20	100	<a href="#">38250.200.001</a>
M4	250	<a href="#">38250.040.001</a>	M12	100	<a href="#">38250.120.001</a>			
M5	250	<a href="#">38250.050.001</a>	M14	100	<a href="#">38250.140.001</a>			

**50100 Plain washer for cheese head screws** M11F


<b>Material</b>	Brass
<b>Surface treatment</b>	Nickel plated
<b>Packaging</b>	Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2	500	<a href="#">50100.020.001</a>	M5	250	<a href="#">50100.050.001</a>	M12	100	<a href="#">50100.120.001</a>
M2,6	500	<a href="#">50100.026.001</a>	M6	250	<a href="#">50100.060.001</a>	M14	100	<a href="#">50100.140.001</a>
M3	250	<a href="#">50100.030.001</a>	M8	200	<a href="#">50100.080.001</a>	M16	100	<a href="#">50100.160.001</a>
M4	250	<a href="#">50100.040.001</a>	M10	200	<a href="#">50100.100.001</a>			

<b>51930 Plain washer for cheese head screws</b>		<b>R09A</b>
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	

For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number
M2,5	500	<a href="#">51930.025.001</a>	M6	500	<a href="#">51930.060.001</a>	M16	100	<a href="#">51930.160.001</a>
M3	500	<a href="#">51930.030.001</a>	M8	200	<a href="#">51930.080.001</a>	M18	100	<a href="#">51930.180.001</a>
M3,5 *	1000	<a href="#">51930.035.001</a>	M10	200	<a href="#">51930.100.001</a>	M20	100	<a href="#">51930.200.001</a>
M4	500	<a href="#">51930.040.001</a>	M12	100	<a href="#">51930.120.001</a>			
M5	500	<a href="#">51930.050.001</a>	M14	100	<a href="#">51930.140.001</a>			

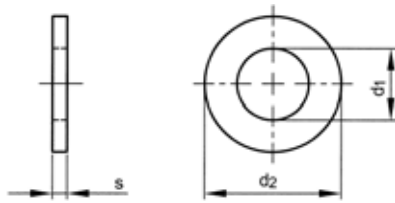
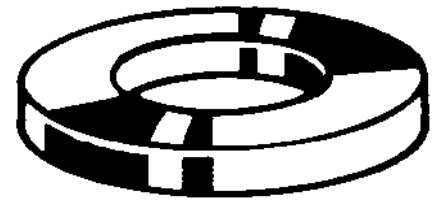
<b>55930 Plain washer for cheese head screws</b>		<b>R49A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	

For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number
M2	100	<a href="#">55930.020.001</a>	M5	500	<a href="#">55930.050.001</a>	M14	100	<a href="#">55930.140.001</a>
M2,5	100	<a href="#">55930.025.001</a>	M6	500	<a href="#">55930.060.001</a>	M16	100	<a href="#">55930.160.001</a>
M3	500	<a href="#">55930.030.001</a>	M8	200	<a href="#">55930.080.001</a>	M18	100	<a href="#">55930.180.001</a>
M3,5 *	1000	<a href="#">55930.035.001</a>	M10	200	<a href="#">55930.100.001</a>	M20	100	<a href="#">55930.200.001</a>
M4	500	<a href="#">55930.040.001</a>	M12	100	<a href="#">55930.120.001</a>			

<b>56320 Plain washer for cheese head screws</b>		<b>W02A</b>
<b>Material</b>	Plastic Polyamide (nylon)	
<b>Class</b>	PA 6.6	
<b>Colour</b>	White	
<b>Packaging</b>	Standard	
	ISO ≈7092	
	DIN ≈433 NEN ≈2270	

For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number
M3	200	<a href="#">56320.030.001</a>	M5	200	<a href="#">56320.050.001</a>	M8	200	<a href="#">56320.080.001</a>
M4	200	<a href="#">56320.040.001</a>	M6	200	<a href="#">56320.060.001</a>	M10	100	<a href="#">56320.100.001</a>

## Plain washer for clevis pins


 ISO (8738)  
 DIN 1440


### Technical data

For pin $\varnothing$	$d_1$ (H11)	$d_2$	s
3	3	6	0,8
4	4	8	0,8
5	5	10	0,8 (1)
6	6	12	1,6
7	7	14	1,6
8	8	16 (15)	2
10	10	20 (18)	2,5
12	12	25 (20)	3
13	13	25	3
14	14	28 (22)	3
16	16	28 (24)	3
18	18	30	4
20	20	32	4
22	22	34	4
23	23	36	4
24	24	38	4
25	25	40	4
26	26	40	5
27	27	40	5
28	28	42	5
30	30	45	5
32	32	50	5
40	40	58	6

• Depending on availability can be supplied acc. to ISO 8738 with the appropriate values stated between brackets.

### Article groups

Material	Surface treatment	Packaging	Code	Page
St	Zipl	Standard	38760	7-24
St.St. A2		Standard	51534	7-24

7

#### 38760 Plain washer for clevis pins

L07G

Material Steel  
 Surface treatment Zinc plated  
 Packaging Standard



For pin $\varnothing$	☒	Art.number	For pin $\varnothing$	☒	Art.number	For pin $\varnothing$	☒	Art.number
4MM	250	<a href="#">38760.040.001</a>	14MM	150	<a href="#">38760.140.001</a>	25MM	25	<a href="#">38760.250.001</a>
5MM	250	<a href="#">38760.050.001</a>	16MM	100	<a href="#">38760.160.001</a>	26MM	25	<a href="#">38760.260.001</a>
6MM	250	<a href="#">38760.060.001</a>	18MM	100	<a href="#">38760.180.001</a>	28MM	25	<a href="#">38760.280.001</a>
8MM	250	<a href="#">38760.080.001</a>	20MM	100	<a href="#">38760.200.001</a>	30MM	25	<a href="#">38760.300.001</a>
10MM	200	<a href="#">38760.100.001</a>	22MM	50	<a href="#">38760.220.001</a>			
12MM	150	<a href="#">38760.120.001</a>	23MM	25	<a href="#">38760.230.001</a>			

#### 51534 Plain washer for clevis pins

R09A

Material Stainless steel A2  
 Packaging Standard



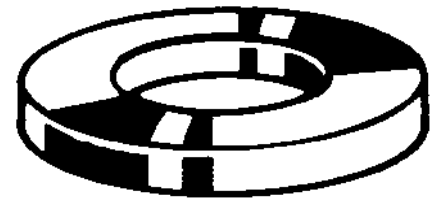
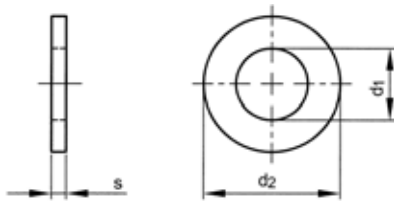
For pin $\varnothing$	☒	Art.number	For pin $\varnothing$	☒	Art.number	For pin $\varnothing$	☒	Art.number
3MM *	500	<a href="#">51534.030.001</a>	6MM	100	<a href="#">51534.060.001</a>	10MM	100	<a href="#">51534.100.001</a>
4MM	100	<a href="#">51534.040.001</a>	7MM *	500	<a href="#">51534.070.001</a>	12MM	100	<a href="#">51534.120.001</a>
5MM	100	<a href="#">51534.050.001</a>	8MM	100	<a href="#">51534.080.001</a>	13MM *	100	<a href="#">51534.130.001</a>

**51534 Plain washer for clevis pins** ←

For pin ø	☒	Art.number	For pin ø	☒	Art.number	For pin ø	☒	Art.number
14MM	50	<a href="#">51534.140.001</a>	23MM *	50	<a href="#">51534.230.001</a>	28MM *	50	<a href="#">51534.280.001</a>
16MM	50	<a href="#">51534.160.001</a>	24MM *	50	<a href="#">51534.240.001</a>	30MM *	50	<a href="#">51534.300.001</a>
18MM *	100	<a href="#">51534.180.001</a>	25MM *	50	<a href="#">51534.250.001</a>	32MM *	50	<a href="#">51534.320.001</a>
20MM *	100	<a href="#">51534.200.001</a>	26MM *	50	<a href="#">51534.260.001</a>	40MM *	25	<a href="#">51534.400.001</a>
22MM *	100	<a href="#">51534.220.001</a>	27MM *	50	<a href="#">51534.270.001</a>			

## Plain washer for clevis pins

DIN 1441



### Technical data

For pin ø	d <sub>1</sub>	d <sub>2</sub>	s	For pin ø	d <sub>1</sub>	d <sub>2</sub>	s	For pin ø	d <sub>1</sub>	d <sub>2</sub>	s
5	5,5	10	0,8	20	21	32	4	36	37	52	6
6	7	12	1,6	22	23	34	4	40	41	58	6
7	8	14	1,6	23	24	36	4	50	51	68	8
8	9	16	2	24	25	38	4	60	62	80	9
10	11	20	2,5	25	26	40	4	70	72	95	10
12	13	25	3	26	27	40	5	75	78	100	10
14	15	28	3	28	29	42	5	80	82	110	12
16	17	28	3	30	31	45	5				
18	19	30	4	33	34	50	5				

### 38958 Plain washer for clevis pins

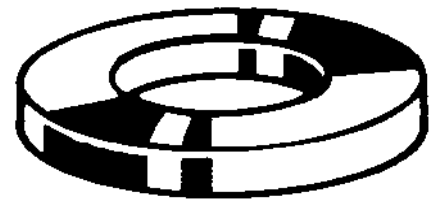
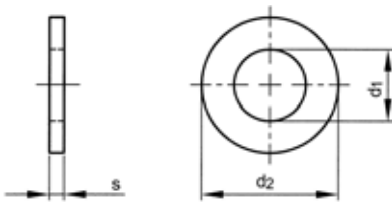
L07G

**Material** Steel  
**Packaging** Standard



For pin ø	☒	Art.number	For pin ø	☒	Art.number	For pin ø	☒	Art.number
12MM	500	<a href="#">38958.120.001</a>	23MM	100	<a href="#">38958.230.001</a>	40MM	100	<a href="#">38958.400.001</a>
14MM	500	<a href="#">38958.140.001</a>	25MM	100	<a href="#">38958.250.001</a>	50MM	100	<a href="#">38958.500.001</a>
16MM	500	<a href="#">38958.160.001</a>	28MM	100	<a href="#">38958.280.001</a>	60MM	25	<a href="#">38958.600.001</a>
18MM	100	<a href="#">38958.180.001</a>	30MM	100	<a href="#">38958.300.001</a>	70MM	25	<a href="#">38958.700.001</a>
20MM	100	<a href="#">38958.200.001</a>	33MM	100	<a href="#">38958.330.001</a>	75MM	25	<a href="#">38958.750.001</a>
22MM	100	<a href="#">38958.220.001</a>	36MM	100	<a href="#">38958.360.001</a>	80MM	25	<a href="#">38958.800.001</a>

## Plain washer



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M2	2,2	5,5	0,3
M2,6	2,8	7	0,5
M3	3,5	8	0,5
M3,5	3,7	8	0,5
M4	4,2	9	0,6
M5	5,2	12	0,7
M6	6,5	14	0,8
M8	8,5	18	1,5
M10	10,3	22	1,5
M12	13,2	28	2
M14	14,8	31	2
M16	16,5	34	2
M20	21	40	2,5
M22	22,8	46	2,5
M24	26,5	52	3

### Article groups

Material	Surface treatment	Packaging	Code	Page
Al		Standard	45180	7-27
Br	Ni.pl.	Standard	50020	7-27
Br	Ni.pl.	Large	50030	7-28

#### 45180 Plain washer

**W01A**

**Material** Aluminium  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4	1000	<a href="#">45180.040.001</a>	M8	250	<a href="#">45180.080.001</a>	M16	100	<a href="#">45180.160.001</a>
M5	1000	<a href="#">45180.050.001</a>	M10	250	<a href="#">45180.100.001</a>	M20	50	<a href="#">45180.200.001</a>
M6	1000	<a href="#">45180.060.001</a>	M12	100	<a href="#">45180.120.001</a>			


#### 50020 Plain washer

**M11F**

**Material** Brass  
**Surface treatment** Nickel plated  
**Packaging** Standard



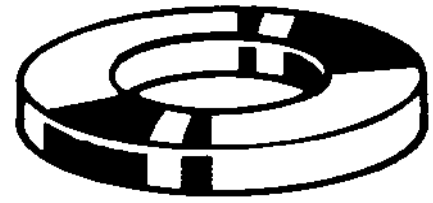
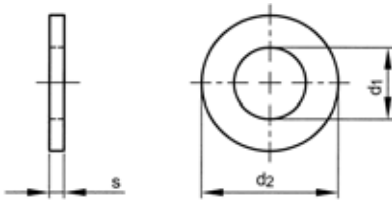
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2	500	<a href="#">50020.020.001</a>	M3,5	250	<a href="#">50020.035.001</a>	M6	250	<a href="#">50020.060.001</a>
M2,6	500	<a href="#">50020.026.001</a>	M4	250	<a href="#">50020.040.001</a>			
M3	250	<a href="#">50020.030.001</a>	M5	250	<a href="#">50020.050.001</a>			

<b>50030 Plain washer</b>		<b>M11F</b>
<b>Material</b>	Brass	
<b>Surface treatment</b>	Nickel plated	
<b>Packaging</b>	Large	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M8	250	<a href="#">50030.080.001</a>	M14	100	<a href="#">50030.140.001</a>	M22	50	<a href="#">50030.220.001</a>
M10	250	<a href="#">50030.100.001</a>	M16	100	<a href="#">50030.160.001</a>	M24	50	<a href="#">50030.240.001</a>
M12	100	<a href="#">50030.120.001</a>	M20	50	<a href="#">50030.200.001</a>			



## Plain washer AG3



### Technical data

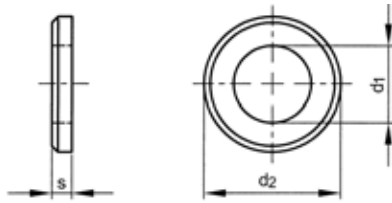
For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M3	3,5	8	0,8
M4	4,5	10	0,8
M5	5,5	12	1
M6	6,25	14	1,2
M8	8,25	18	1,5
M10	10,25	22	2
M12	12,5	27	2,5
M16	16,5	32	3
M20	21	40	3
M24	25	50	4

- SOPRAL AG3 washers are pickled and greased, and recommended for use with SOPRAL P60 hexagon head screws, see article group 45210.

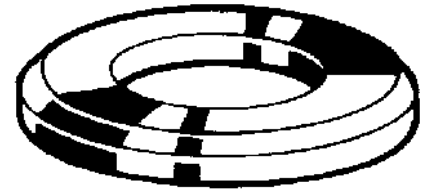
45150 Plain washer AG3		W01A
<b>Material</b>	Aluminium A-G3	
<b>Surface treatment</b>	Anodized	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">45150.030.001</a>	M5	500	<a href="#">45150.050.001</a>	M8	250	<a href="#">45150.080.001</a>
M4	500	<a href="#">45150.040.001</a>	M6	500	<a href="#">45150.060.001</a>	M10	200	<a href="#">45150.100.001</a>

## Single chamfer plain washer



ISO 7090  
 DIN 125-1B  
 NEN 2269 B



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M2,5	2,7	6	0,5
M3	3,2	7	0,5
M4	4,3	9	0,8
M5	5,3	10	1
M6	6,4	12	1,6
M7	7,4	14	1,6
M8	8,4	16	1,6
M10	10,5	20	2
M12	13	24	2,5
M14	15	28	2,5
M16	17	30	3
M18	19	34	3
M20	21	37	3
M22	23	39	3
M24	25	44	4
M27	28	50	4
M30	31	56	4
M33	34	60	5
M36	37	66	5
M39	40	72	6
M42	43	78	7
M45	46	85	7
M48	50	92	8
M52	54	98	8
M56	58	105	9
M60	62	110	9
M64	66	115	9

7

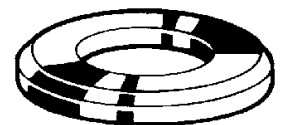
### Article groups

Material	Surface treatment	Packaging	Code	Page
St 140HV		Standard	38160	7-30
St 140HV	Zipl	Standard	38180	7-31
St 140HV	Zipl	Large	38190	7-31
St.St. A4		Standard	55426	7-31
Br		Standard	50040	7-31
Br	Ni.pl.	Standard	50150	7-31

### 38160 Single chamfer plain washer

L07G

**Material** Steel 140HV  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4	250	<a href="#">38160.040.001</a>	M18	100	<a href="#">38160.180.001</a>	M42	10	<a href="#">38160.420.001</a>
M5	250	<a href="#">38160.050.001</a>	M20	100	<a href="#">38160.200.001</a>	M45	10	<a href="#">38160.450.001</a>
M6	250	<a href="#">38160.060.001</a>	M22	50	<a href="#">38160.220.001</a>	M48	10	<a href="#">38160.480.001</a>
M7	250	<a href="#">38160.070.001</a>	M24	50	<a href="#">38160.240.001</a>	M52	5	<a href="#">38160.520.001</a>
M8	250	<a href="#">38160.080.001</a>	M27	25	<a href="#">38160.270.001</a>	M56	5	<a href="#">38160.560.001</a>
M10	200	<a href="#">38160.100.001</a>	M30	25	<a href="#">38160.300.001</a>	M60	5	<a href="#">38160.600.001</a>
M12	150	<a href="#">38160.120.001</a>	M33	25	<a href="#">38160.330.001</a>	M64	5	<a href="#">38160.640.001</a>
M14	100	<a href="#">38160.140.001</a>	M36	25	<a href="#">38160.360.001</a>			
M16	100	<a href="#">38160.160.001</a>	M39	10	<a href="#">38160.390.001</a>			

<b>38180</b>	<b>Single chamfer plain washer</b>						<b>L07G</b>	
<b>Material</b>	Steel 140HV							
<b>Surface treatment</b>	Zinc plated							
<b>Packaging</b>	Standard							

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4	250	<a href="#">38180.040.001</a>	M18	100	<a href="#">38180.180.001</a>	M42	10	<a href="#">38180.420.001</a>
M5	250	<a href="#">38180.050.001</a>	M20	100	<a href="#">38180.200.001</a>	M45	10	<a href="#">38180.450.001</a>
M6	250	<a href="#">38180.060.001</a>	M22	50	<a href="#">38180.220.001</a>	M48	10	<a href="#">38180.480.001</a>
M7	250	<a href="#">38180.070.001</a>	M24	50	<a href="#">38180.240.001</a>	M52	5	<a href="#">38180.520.001</a>
M8	250	<a href="#">38180.080.001</a>	M27	25	<a href="#">38180.270.001</a>	M56	5	<a href="#">38180.560.001</a>
M10	200	<a href="#">38180.100.001</a>	M30	25	<a href="#">38180.300.001</a>	M60	5	<a href="#">38180.600.001</a>
M12	150	<a href="#">38180.120.001</a>	M33	25	<a href="#">38180.330.001</a>	M64	5	<a href="#">38180.640.001</a>
M14	100	<a href="#">38180.140.001</a>	M36	25	<a href="#">38180.360.001</a>			
M16	100	<a href="#">38180.160.001</a>	M39	10	<a href="#">38180.390.001</a>			

<b>38190</b>	<b>Single chamfer plain washer</b>						<b>L07G</b>	
<b>Material</b>	Steel 140HV							
<b>Surface treatment</b>	Zinc plated							
<b>Packaging</b>	Large							

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5	2500	<a href="#">38190.050.001</a>	M8	2000	<a href="#">38190.080.001</a>	M12	500	<a href="#">38190.120.001</a>
M6	2000	<a href="#">38190.060.001</a>	M10	1000	<a href="#">38190.100.001</a>	M16	400	<a href="#">38190.160.001</a>

<b>55426</b>	<b>Single chamfer plain washer</b>						<b>R45A</b>	
<b>Material</b>	Stainless steel A4							
<b>Packaging</b>	Standard							

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5	250	<a href="#">55426.050.001</a>	M12	200	<a href="#">55426.120.001</a>	M27	25	<a href="#">55426.270.001</a>
M6	250	<a href="#">55426.060.001</a>	M16	100	<a href="#">55426.160.001</a>	M30	25	<a href="#">55426.300.001</a>
M8	250	<a href="#">55426.080.001</a>	M20	100	<a href="#">55426.200.001</a>			
M10	200	<a href="#">55426.100.001</a>	M24	50	<a href="#">55426.240.001</a>			

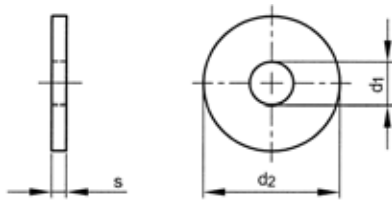
<b>50040</b>	<b>Single chamfer plain washer</b>						<b>M11F</b>	
<b>Material</b>	Brass							
<b>Packaging</b>	Standard							

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">50040.030.001</a>	M10	100	<a href="#">50040.100.001</a>	M22	50	<a href="#">50040.220.001</a>
M4	250	<a href="#">50040.040.001</a>	M12	100	<a href="#">50040.120.001</a>	M24	50	<a href="#">50040.240.001</a>
M5	250	<a href="#">50040.050.001</a>	M14	100	<a href="#">50040.140.001</a>	M27-11N	50	<a href="#">50040.270.001</a>
M6	250	<a href="#">50040.060.001</a>	M16	100	<a href="#">50040.160.001</a>	M30	25	<a href="#">50040.300.001</a>
M7	250	<a href="#">50040.070.001</a>	M18	100	<a href="#">50040.180.001</a>			
M8	250	<a href="#">50040.080.001</a>	M20	50	<a href="#">50040.200.001</a>			

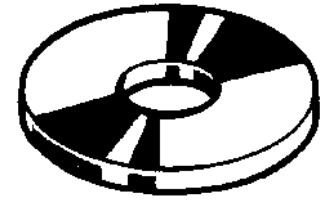
<b>50150</b>	<b>Single chamfer plain washer</b>						<b>M11F</b>	
<b>Material</b>	Brass							
<b>Surface treatment</b>	Nickel plated							
<b>Packaging</b>	Standard							

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2,5	250	<a href="#">50150.025.001</a>	M5	250	<a href="#">50150.050.001</a>	M10	100	<a href="#">50150.100.001</a>
M3	250	<a href="#">50150.030.001</a>	M6	250	<a href="#">50150.060.001</a>	M12	100	<a href="#">50150.120.001</a>
M4	250	<a href="#">50150.040.001</a>	M8	250	<a href="#">50150.080.001</a>	M16	100	<a href="#">50150.160.001</a>

## Plain washer $d_2 \approx 3 \times d_1$



ISO 7093  
 DIN 9021  
 NEN 2276  
 NF E25-513



### Technical data

For nom.size	$d_1$ (min.)	$d_2$ (max.)	s
M2 (#DIN)	2,2	7	0,8
M2,5	2,7	8	0,8
M3	3,2	9	0,8
M3,5	3,7	11	0,8
M4	4,3	12	1
M5	5,3	15	1,2
M6	6,4	18	1,6
M7	7,4	22	2
M8	8,4	24	2
M10	10,5	30	2,5
M12	13	37	3
M14	15	44	3
M16	17	50	3
M18	20	56	4
M20	22	60	4
M24	26	72	5
M30	33	92	6
M36	39	110	8

### Article groups

Material	Class	Surface treatment	Colour	Packaging	Code	Page
St		Zipl		Standard	38210	7-32
St		Zipl		Large	38220	7-32
St		Zipl yell.p.		Standard	38211	7-33
St.St. A2				Standard	51530	7-33
St.St. A4				Standard	55530	7-33
Plastic PA	PA 6.6		Black	Standard	56332	7-33
Plastic PA	PA 6.6		White	Standard	56330	7-33

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#### 38210 Plain washer $d_2 \approx 3 \times d_1$

L01A

**Material** Steel  
**Surface treatment** Zinc plated  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">38210.030.001</a>	M7	250	<a href="#">38210.070.001</a>	M16	100	<a href="#">38210.160.001</a>
M3,5	250	<a href="#">38210.035.001</a>	M8	250	<a href="#">38210.080.001</a>	M18	100	<a href="#">38210.180.001</a>
M4	250	<a href="#">38210.040.001</a>	M10	200	<a href="#">38210.100.001</a>	M20	100	<a href="#">38210.200.001</a>
M5	250	<a href="#">38210.050.001</a>	M12	200	<a href="#">38210.120.001</a>	M24	100	<a href="#">38210.240.001</a>
M6	250	<a href="#">38210.060.001</a>	M14	100	<a href="#">38210.140.001</a>			

#### 38220 Plain washer $d_2 \approx 3 \times d_1$

L01A

**Material** Steel  
**Surface treatment** Zinc plated  
**Packaging** Large



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4	2500	<a href="#">38220.040.001</a>	M7	2000	<a href="#">38220.070.001</a>	M12	500	<a href="#">38220.120.001</a>
M5	2500	<a href="#">38220.050.001</a>	M8	1000	<a href="#">38220.080.001</a>			
M6	2000	<a href="#">38220.060.001</a>	M10	750	<a href="#">38220.100.001</a>			

<b>38211</b>	<b>Plain washer <math>d_2 \approx 3 \times d_1</math></b>							<b>L01A</b>
<b>Material</b>	Steel							
<b>Surface treatment</b>	Zinc plated yellow passivated							
<b>Packaging</b>	Standard							

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">38211.030.001</a>	M7	250	<a href="#">38211.070.001</a>	M14	100	<a href="#">38211.140.001</a>
M4	250	<a href="#">38211.040.001</a>	M8	250	<a href="#">38211.080.001</a>	M16	100	<a href="#">38211.160.001</a>
M5	250	<a href="#">38211.050.001</a>	M10	200	<a href="#">38211.100.001</a>	M20	100	<a href="#">38211.200.001</a>
M6	250	<a href="#">38211.060.001</a>	M12	200	<a href="#">38211.120.001</a>	M24	100	<a href="#">38211.240.001</a>

<b>51530</b>	<b>Plain washer <math>d_2 \approx 3 \times d_1</math></b>							<b>R05A</b>
<b>Material</b>	Stainless steel A2							
<b>Packaging</b>	Standard							

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2 *	1000	<a href="#">51530.020.001</a>	M6	200	<a href="#">51530.060.001</a>	M16	200	<a href="#">51530.160.001</a>
M2,5	1000	<a href="#">51530.025.001</a>	M8	200	<a href="#">51530.080.001</a>	M20	200	<a href="#">51530.200.001</a>
M3	200	<a href="#">51530.030.001</a>	M10	200	<a href="#">51530.100.001</a>	M24 *	25	<a href="#">51530.240.001</a>
M4	200	<a href="#">51530.040.001</a>	M12	200	<a href="#">51530.120.001</a>	M30 *	25	<a href="#">51530.300.001</a>
M5	200	<a href="#">51530.050.001</a>	M14	200	<a href="#">51530.140.001</a>	M36 *	10	<a href="#">51530.360.001</a>

<b>55530</b>	<b>Plain washer <math>d_2 \approx 3 \times d_1</math></b>							<b>R45A</b>
<b>Material</b>	Stainless steel A4							
<b>Packaging</b>	Standard							

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2 *	1000	<a href="#">55530.020.001</a>	M6	200	<a href="#">55530.060.001</a>	M18 *	50	<a href="#">55530.180.001</a>
M2,5	1000	<a href="#">55530.025.001</a>	M8	200	<a href="#">55530.080.001</a>	M20	200	<a href="#">55530.200.001</a>
M3	200	<a href="#">55530.030.001</a>	M10	200	<a href="#">55530.100.001</a>	M24 *	25	<a href="#">55530.240.001</a>
M3,5	1000	<a href="#">55530.035.001</a>	M12	200	<a href="#">55530.120.001</a>	M30 *	25	<a href="#">55530.300.001</a>
M4	200	<a href="#">55530.040.001</a>	M14	200	<a href="#">55530.140.001</a>			
M5	200	<a href="#">55530.050.001</a>	M16	200	<a href="#">55530.160.001</a>			

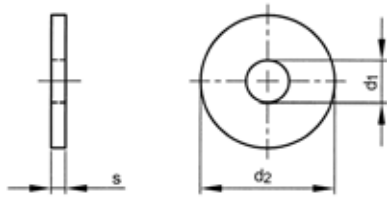
<b>56332</b>	<b>Plain washer <math>d_2 \approx 3 \times d_1</math></b>							<b>W02A</b>
<b>Material</b>	Plastic Polyamide (nylon)							
<b>Class</b>	PA 6.6							
<b>Colour</b>	Black							
<b>Packaging</b>	Standard							

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	200	<a href="#">56332.030.001</a>	M6	200	<a href="#">56332.060.001</a>	M12	100	<a href="#">56332.120.001</a>
M4	200	<a href="#">56332.040.001</a>	M8	200	<a href="#">56332.080.001</a>			
M5	200	<a href="#">56332.050.001</a>	M10	100	<a href="#">56332.100.001</a>			

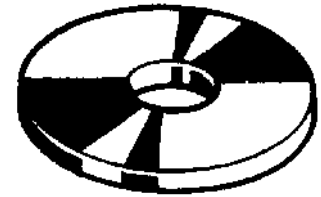
<b>56330</b>	<b>Plain washer <math>d_2 \approx 3 \times d_1</math></b>							<b>W02A</b>
<b>Material</b>	Plastic Polyamide (nylon)							
<b>Class</b>	PA 6.6							
<b>Colour</b>	White							
<b>Packaging</b>	Standard							

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	200	<a href="#">56330.030.009</a>	M6	200	<a href="#">56330.060.017</a>	M10	100	<a href="#">56330.100.030</a>
M4	200	<a href="#">56330.040.012</a>	M6 (s=2)	200	<a href="#">56330.060.018</a>	M12 (d <sub>2</sub> =40)	100	<a href="#">56330.120.040</a>
M5	200	<a href="#">56330.050.015</a>	M8	200	<a href="#">56330.080.025</a>	M16	100	<a href="#">56330.160.050</a>

## Washer for wood construction



ISO 7094  
 DIN 440 R  
 NEN 2275  
 NF E25-513



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M5	5,5	18	2
M6	6,6	22	2
M8	9	28	3
M10	11	34	3
M12	13,5	44	4
M14	15,5	50	4
M16	17,5	56	5
M20	22	72	6
M22	24	80	6
M24	26	85	6
M27	30	98	6
M30	33	105	6

### Article groups

Material	Surface treatment	Packaging	Code	Page
St	Zipl	Standard	38240	7-34
St	Hot d.g.	Standard	38230	7-34
St.St. A2		Standard	51590	7-34
St.St. A4		Standard	55590	7-35

#### 38240 Washer for wood construction

L07G

**Material** Steel  
**Surface treatment** Zinc plated  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5	100	<a href="#">38240.050.001</a>	M10	100	<a href="#">38240.100.001</a>	M20	50	<a href="#">38240.200.001</a>
M6	100	<a href="#">38240.060.001</a>	M12	100	<a href="#">38240.120.001</a>	M24	25	<a href="#">38240.240.001</a>
M8	100	<a href="#">38240.080.001</a>	M16	100	<a href="#">38240.160.001</a>	M27	25	<a href="#">38240.270.001</a>

#### 38230 Washer for wood construction

L07G

**Material** Steel  
**Surface treatment** Hot dip galvanized  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5	100	<a href="#">38230.050.001</a>	M12	100	<a href="#">38230.120.001</a>	M27	25	<a href="#">38230.270.001</a>
M6	100	<a href="#">38230.060.001</a>	M16	100	<a href="#">38230.160.001</a>	M30	25	<a href="#">38230.300.001</a>
M8	100	<a href="#">38230.080.001</a>	M20	50	<a href="#">38230.200.001</a>			
M10	100	<a href="#">38230.100.001</a>	M24	25	<a href="#">38230.240.001</a>			

#### 51590 Washer for wood construction

R09A

**Material** Stainless steel A2  
**Packaging** Standard  
 ISO ≈7094  
 DIN ≈440R  
 NEN ≈2275  
 NF ≈E25-513



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5	50	<a href="#">51590.050.001</a>	M8	50	<a href="#">51590.080.001</a>	M12	50	<a href="#">51590.120.001</a>
M6	50	<a href="#">51590.060.001</a>	M10	50	<a href="#">51590.100.001</a>	M14 *	50	<a href="#">51590.140.001</a>

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51590 Washer for wood construction								
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M16	50	<a href="#">51590.160.001</a>	M22 *	25	<a href="#">51590.220.001</a>			
M20	25	<a href="#">51590.200.001</a>	M24	10	<a href="#">51590.240.001</a>			

55590 Washer for wood construction								R49A
<b>Material</b>	Stainless steel A4							
<b>Packaging</b>	Standard							
	ISO ≈7094							
	DIN ≈440R							
	NEN ≈2275							
	NF ≈E25-513							

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5	50	<a href="#">55590.050.001</a>	M10	50	<a href="#">55590.100.001</a>	M20	25	<a href="#">55590.200.001</a>
M6	50	<a href="#">55590.060.001</a>	M12	50	<a href="#">55590.120.001</a>	M22 *	25	<a href="#">55590.220.001</a>
M8	50	<a href="#">55590.080.001</a>	M16	50	<a href="#">55590.160.001</a>	M24	10	<a href="#">55590.240.001</a>