

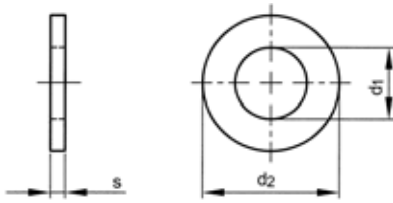
# Washers/o-rings 7

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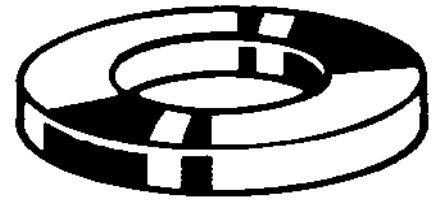
# Washers/o-rings 7

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## Plain washer



ISO 7089  
 DIN 125-1A  
 NEN 2269 A



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M1 (#DIN)	1,1	3,2	0,3
M1,2 (#DIN)	1,3	3,8	0,3
M1,4 (#DIN)	1,5	3,8	0,3
M1,6	1,7	4	0,3
M1,7	1,8	4,5	0,3
M2-5/64	2,2	5	0,3
M2,5	2,7	6	0,5
M2,6	2,8	7	0,5
M3	3,2	7	0,5
M3,5-1/8	3,7	8	0,5
M4-5/32	4,3	9	0,8
M5-3/16	5,3	10	1
M6	6,4	12	1,6
1/4	6,7	12,6	1,6
M7-9/32	7,4	14	1,6
M8-5/16	8,4	16	1,6
M10-3/8	10,5	20	2
M11-7/16 (#DIN)	12	24	2,5
M12-1/2	13	24	2,5
M14-9/16	15	28	2,5
M14,5	14,5	22	2,2
M16-5/8	17	30	3
M18-11/16	19	34	3
M20-3/4	21	37	3
M22-7/8	23	39	3
M24	25	44	4
M26 (#DIN)	27,3	49,5	3,8
M27-1.IN.	28	50	4
M30-1.1/8	31	56	4
M33-1.1/4	34	60	5
M36-1.3/8	37	66	5
M39-1.1/2	40	72	6
M42-1.5/8	43	78	7
M45-1.3/4	46	85	7
M48	50	92	8
M50	52	92	8
M52-2.IN.	54	98	8
M56-2.1/4	58	105	9
M58 (#DIN)	60	110	9
M60	62	110	9
M64-2.1/2	66	115	9
M72 (#DIN)	74,3	123,7	9,75

- Plain washers without chamfer acc. to DIN 125-1 A with a minimum hardness of 140HV.
- Because of the low compression strength these plain washers are exclusively appropriate in combination with bolts with property class < 8.8 c.q. with nuts with property class < 8.

### Article groups

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38100 Plain washer			L01A		
<b>Material</b>	Steel 140HV				
<b>Packaging</b>	Standard				

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6	250	<a href="#">38100.060.001</a>	M20	100	<a href="#">38100.200.001</a>	M42	10	<a href="#">38100.420.001</a>
M8	250	<a href="#">38100.080.001</a>	M22	50	<a href="#">38100.220.001</a>	M45	10	<a href="#">38100.450.001</a>
M10	200	<a href="#">38100.100.001</a>	M24	50	<a href="#">38100.240.001</a>	M48	10	<a href="#">38100.480.001</a>
M11	150	<a href="#">38100.110.001</a>	M27	100	<a href="#">38100.270.001</a>	M52	5	<a href="#">38100.520.001</a>
M12	150	<a href="#">38100.120.001</a>	M30	25	<a href="#">38100.300.001</a>	M56	5	<a href="#">38100.560.001</a>
M14	100	<a href="#">38100.140.001</a>	M33	25	<a href="#">38100.330.001</a>	M58	1	<a href="#">38100.580.001</a>
M16	100	<a href="#">38100.160.001</a>	M36	25	<a href="#">38100.360.001</a>	M64	1	<a href="#">38100.640.001</a>
M18	100	<a href="#">38100.180.001</a>	M39	10	<a href="#">38100.390.001</a>	M72	1	<a href="#">38100.720.001</a>

38031 Plain washer without chamfer flatpunched			L01A		
<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
M3	250	<a href="#">38031.030.001</a>	M11	150	<a href="#">38031.110.001</a>	M22	50	<a href="#">38031.220.001</a>
M4	250	<a href="#">38031.040.001</a>	M12	150	<a href="#">38031.120.001</a>	M24	25	<a href="#">38031.240.001</a>
M5	250	<a href="#">38031.050.001</a>	M14	100	<a href="#">38031.140.001</a>	M27	10	<a href="#">38031.270.001</a>
M6	250	<a href="#">38031.060.001</a>	M16	100	<a href="#">38031.160.001</a>	M30	10	<a href="#">38031.300.001</a>
M8	250	<a href="#">38031.080.001</a>	M18	100	<a href="#">38031.180.001</a>			
M10	200	<a href="#">38031.100.001</a>	M20	100	<a href="#">38031.200.001</a>			

38081 Plain washer			L95A		
<b>Material</b>	Steel 140HV				
<b>Surface treatment</b>	Galvanized thick Cr3+ passivated				
<b>Packaging</b>	Standard				

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">38081.030.001</a>	M8	250	<a href="#">38081.080.001</a>	M20	100	<a href="#">38081.200.001</a>
M4	250	<a href="#">38081.040.001</a>	M10	200	<a href="#">38081.100.001</a>	M22	50	<a href="#">38081.220.001</a>
M5	250	<a href="#">38081.050.001</a>	M12	150	<a href="#">38081.120.001</a>	M24	50	<a href="#">38081.240.001</a>
M6	250	<a href="#">38081.060.001</a>	M14	100	<a href="#">38081.140.001</a>	M27	25	<a href="#">38081.270.001</a>
M6,4X12,5X1,5	250	<a href="#">38081.064.125</a>	M16	100	<a href="#">38081.160.001</a>	M30	25	<a href="#">38081.300.001</a>
M7	250	<a href="#">38081.070.001</a>	M18	100	<a href="#">38081.180.001</a>			

- Technical brochure available on request.


38130 Plain washer			L01A		
<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
M1,6	500	<a href="#">38130.016.001</a>	M2,5	500	<a href="#">38130.025.001</a>	M3	250	<a href="#">38130.030.001</a>
M2	500	<a href="#">38130.020.001</a>	M2,6	500	<a href="#">38130.026.001</a>	M4	250	<a href="#">38130.040.001</a>

38130 Plain washer								
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5		250 <a href="#">38130.050.001</a>	M18		100 <a href="#">38130.180.001</a>	M39		10 <a href="#">38130.390.001</a>
M6		250 <a href="#">38130.060.001</a>	M20		100 <a href="#">38130.200.001</a>	M42		10 <a href="#">38130.420.001</a>
M7		250 <a href="#">38130.070.001</a>	M22		50 <a href="#">38130.220.001</a>	M45		10 <a href="#">38130.450.001</a>
M8		250 <a href="#">38130.080.001</a>	M24		50 <a href="#">38130.240.001</a>	M48		10 <a href="#">38130.480.001</a>
M10		200 <a href="#">38130.100.001</a>	M26		50 <a href="#">38130.260.001</a>	M52		5 <a href="#">38130.520.001</a>
M11		150 <a href="#">38130.110.001</a>	M27		25 <a href="#">38130.270.001</a>	M56		5 <a href="#">38130.560.001</a>
M12		150 <a href="#">38130.120.001</a>	M30		25 <a href="#">38130.300.001</a>	M60		5 <a href="#">38130.600.001</a>
M14		100 <a href="#">38130.140.001</a>	M33		25 <a href="#">38130.330.001</a>	M64		5 <a href="#">38130.640.001</a>
M16		100 <a href="#">38130.160.001</a>	M36		25 <a href="#">38130.360.001</a>			

38140 Plain washer		L01A
<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
M3		2500 <a href="#">38140.030.001</a>	M8		2000 <a href="#">38140.080.001</a>	M16		400 <a href="#">38140.160.001</a>
M3,5		2500 <a href="#">38140.035.001</a>	M10		1000 <a href="#">38140.100.001</a>	M20		250 <a href="#">38140.200.001</a>
M4		2500 <a href="#">38140.040.001</a>	M11		500 <a href="#">38140.110.001</a>	M24		250 <a href="#">38140.240.001</a>
M5		2500 <a href="#">38140.050.001</a>	M12		500 <a href="#">38140.120.001</a>			
M6		2000 <a href="#">38140.060.001</a>	M14		400 <a href="#">38140.140.001</a>			

38080 Plain washer		L01A
<b>Material</b>	Steel 140HV	
<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="#">38080.030.001</a>	M10		200 <a href="#">38080.100.001</a>	M20		100 <a href="#">38080.200.001</a>
M4		250 <a href="#">38080.040.001</a>	M11		150 <a href="#">38080.110.001</a>	M22		50 <a href="#">38080.220.001</a>
M5		250 <a href="#">38080.050.001</a>	M12		150 <a href="#">38080.120.001</a>	M24		50 <a href="#">38080.240.001</a>
M6		250 <a href="#">38080.060.001</a>	M14		100 <a href="#">38080.140.001</a>	M27		25 <a href="#">38080.270.001</a>
M7		250 <a href="#">38080.070.001</a>	M16		100 <a href="#">38080.160.001</a>	M30		25 <a href="#">38080.300.001</a>
M8		250 <a href="#">38080.080.001</a>	M18		100 <a href="#">38080.180.001</a>	M33		25 <a href="#">38080.330.001</a>

38143 Plain washer		L01A
<b>Material</b>	Steel 140HV	
<b>Surface treatment</b>	Zinc plated black passivated	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3		250 <a href="#">38143.030.001</a>	M8		250 <a href="#">38143.080.001</a>	M16		100 <a href="#">38143.160.001</a>
M4		250 <a href="#">38143.040.001</a>	M10		200 <a href="#">38143.100.001</a>	M20		100 <a href="#">38143.200.001</a>
M5		250 <a href="#">38143.050.001</a>	M12		150 <a href="#">38143.120.001</a>			
M6		250 <a href="#">38143.060.001</a>	M14		100 <a href="#">38143.140.001</a>			

38157 Plain washer		L01A
<b>Material</b>	Steel 140HV	
<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		200 <a href="#">38157.100.001</a>	M16		100 <a href="#">38157.160.001</a>	M20		100 <a href="#">38157.200.001</a>
M12		150 <a href="#">38157.120.001</a>	M18		100 <a href="#">38157.180.001</a>	M24		100 <a href="#">38157.240.001</a>

<b>38152</b>	<b>Plain washer</b>							<b>L01A</b>
<b>Material</b>		Steel 140HV						
<b>Surface treatment</b>		Zinc flake Cr6+ free - ISO 10683 flZnnc						
<b>Packaging</b>		Standard						

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6		250 <a href="#">38152.060.001</a>	M14		100 <a href="#">38152.140.001</a>	M27		50 <a href="#">38152.270.001</a>
M8		250 <a href="#">38152.080.001</a>	M16		100 <a href="#">38152.160.001</a>	M30		25 <a href="#">38152.300.001</a>
M10		200 <a href="#">38152.100.001</a>	M20		100 <a href="#">38152.200.001</a>			
M12		150 <a href="#">38152.120.001</a>	M24		50 <a href="#">38152.240.001</a>			

<b>38093</b>	<b>Plain washer</b>							<b>L01A</b>
<b>Material</b>		Steel 200HV						
<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		250 <a href="#">38093.060.001</a>	M16		100 <a href="#">38093.160.001</a>	M30		25 <a href="#">38093.300.001</a>
M8		250 <a href="#">38093.080.001</a>	M18		100 <a href="#">38093.180.001</a>	M33		25 <a href="#">38093.330.001</a>
M10		200 <a href="#">38093.100.001</a>	M20		100 <a href="#">38093.200.001</a>	M36		25 <a href="#">38093.360.001</a>
M12		150 <a href="#">38093.120.001</a>	M24		50 <a href="#">38093.240.001</a>			
M14		100 <a href="#">38093.140.001</a>	M27		25 <a href="#">38093.270.001</a>			

<b>38125</b>	<b>Plain washer</b>							<b>L01A</b>
<b>Material</b>		Steel 200HV						
<b>Surface treatment</b>		Zinc flake Cr6+ free - ISO 10683 flZnnc						
<b>Packaging</b>		Standard						

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6		250 <a href="#">38125.060.001</a>	M12		150 <a href="#">38125.120.001</a>	M24		50 <a href="#">38125.240.001</a>
M8		250 <a href="#">38125.080.001</a>	M16		100 <a href="#">38125.160.001</a>	M30		25 <a href="#">38125.300.001</a>
M10		200 <a href="#">38125.100.001</a>	M20		100 <a href="#">38125.200.001</a>			

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<b>51420</b>	<b>Plain washer</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
M1,2		200 <a href="#">51420.012.001</a>	M8		500 <a href="#">51420.080.001</a>	M20		200 <a href="#">51420.200.001</a>
M1,6		200 <a href="#">51420.016.001</a>	3/8		200 <a href="#">51420.096.001</a>	M22		100 <a href="#">51420.220.001</a>
M2		200 <a href="#">51420.020.001</a>	M10		500 <a href="#">51420.100.001</a>	7/8		50 <a href="#">51420.222.001</a>
M2,5		200 <a href="#">51420.025.001</a>	7/16		200 <a href="#">51420.111.001</a>	M24		100 <a href="#">51420.240.001</a>
M3		500 <a href="#">51420.030.001</a>	M12		500 <a href="#">51420.120.001</a>	1.IN.		25 <a href="#">51420.254.001</a>
M3,5		500 <a href="#">51420.035.001</a>	1/2		200 <a href="#">51420.127.001</a>	M27		50 <a href="#">51420.270.001</a>
M4		500 <a href="#">51420.040.001</a>	M14		200 <a href="#">51420.140.001</a>	M30		50 <a href="#">51420.300.001</a>
M5		500 <a href="#">51420.050.001</a>	9/16		100 <a href="#">51420.142.001</a>	1.1/4		25 <a href="#">51420.317.001</a>
M6		500 <a href="#">51420.060.001</a>	5/8		100 <a href="#">51420.158.001</a>	M33		50 <a href="#">51420.330.001</a>
1/4		250 <a href="#">51420.063.001</a>	M16		200 <a href="#">51420.160.001</a>	M36		50 <a href="#">51420.360.001</a>
M7		500 <a href="#">51420.070.001</a>	M18		200 <a href="#">51420.180.001</a>	1.1/2		25 <a href="#">51420.381.001</a>
5/16		250 <a href="#">51420.079.001</a>	3/4		100 <a href="#">51420.191.001</a>	M42		20 <a href="#">51420.420.001</a>

<b>55420</b>	<b>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
M1,6		200 <a href="#">55420.016.001</a>	M2		200 <a href="#">55420.020.001</a>	M3		500 <a href="#">55420.030.001</a>
M1,7 *		2000 <a href="#">55420.017.001</a>	M2,5		200 <a href="#">55420.025.001</a>	M3,5 *		1000 <a href="#">55420.035.001</a>


55420 Plain washer								
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4	500	<a href="#">55420.040.001</a>	M14	200	<a href="#">55420.140.001</a>	1.1/8	25	<a href="#">55420.285.001</a>
M5	500	<a href="#">55420.050.001</a>	5/8	100	<a href="#">55420.158.001</a>	M30	50	<a href="#">55420.300.001</a>
M6	500	<a href="#">55420.060.001</a>	M16	200	<a href="#">55420.160.001</a>	1.1/4	25	<a href="#">55420.317.001</a>
1/4	250	<a href="#">55420.063.001</a>	M18	200	<a href="#">55420.180.001</a>	M33	50	<a href="#">55420.330.001</a>
M7	500	<a href="#">55420.070.001</a>	3/4	100	<a href="#">55420.191.001</a>	M36	50	<a href="#">55420.360.001</a>
5/16	250	<a href="#">55420.079.001</a>	M20	200	<a href="#">55420.200.001</a>	M39 *	25	<a href="#">55420.390.001</a>
M8	500	<a href="#">55420.080.001</a>	M22	100	<a href="#">55420.220.001</a>	M42 *	25	<a href="#">55420.420.001</a>
3/8	200	<a href="#">55420.096.001</a>	7/8	50	<a href="#">55420.222.001</a>	M45 *	10	<a href="#">55420.450.001</a>
M10	500	<a href="#">55420.100.001</a>	M24	100	<a href="#">55420.240.001</a>	M50 *	10	<a href="#">55420.500.001</a>
M12	500	<a href="#">55420.120.001</a>	1.IN.	50	<a href="#">55420.254.001</a>	M52 *	10	<a href="#">55420.520.001</a>
1/2	100	<a href="#">55420.127.001</a>	M27	50	<a href="#">55420.270.001</a>			

45184 Plain washer		W010	
<b>Material</b>	Aluminium		
<b>Packaging</b>	Standard		
	ISO ≈7089		
	DIN ≈125-1A		
	NEN ≈2269 A		



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">45184.030.001</a>	M6	250	<a href="#">45184.060.001</a>	M12	150	<a href="#">45184.120.001</a>
M4	250	<a href="#">45184.040.001</a>	M8	250	<a href="#">45184.080.001</a>	M16	100	<a href="#">45184.160.001</a>
M5	250	<a href="#">45184.050.001</a>	M10	200	<a href="#">45184.100.001</a>			

50060 Plain washer		M11F	
<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="#">50060.030.001</a>	M8	250	<a href="#">50060.080.001</a>	M18	50	<a href="#">50060.180.001</a>
M4	250	<a href="#">50060.040.001</a>	M10	100	<a href="#">50060.100.001</a>	M20	50	<a href="#">50060.200.001</a>
M5	250	<a href="#">50060.050.001</a>	M12	100	<a href="#">50060.120.001</a>	M24	50	<a href="#">50060.240.001</a>
M6	250	<a href="#">50060.060.001</a>	M14	100	<a href="#">50060.140.001</a>			
M7	250	<a href="#">50060.070.001</a>	M16	100	<a href="#">50060.160.001</a>			

50065 Plain washer		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
M3	250	<a href="#">50065.030.001</a>	M8	250	<a href="#">50065.080.001</a>	M20	50	<a href="#">50065.200.001</a>
M4	250	<a href="#">50065.040.001</a>	M10	100	<a href="#">50065.100.001</a>	M24	50	<a href="#">50065.240.001</a>
M5	250	<a href="#">50065.050.001</a>	M12	100	<a href="#">50065.120.001</a>			
M6	250	<a href="#">50065.060.001</a>	M16	100	<a href="#">50065.160.001</a>			

56300 Plain washer		W02A	
<b>Material</b>	Plastic Polyamide (nylon)		
<b>Class</b>	PA 6.6		
<b>Packaging</b>	Standard		



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2	200	<a href="#">56300.020.001</a>	M10	100	<a href="#">56300.100.001</a>	M24	50	<a href="#">56300.240.001</a>
M2,5	200	<a href="#">56300.025.001</a>	M12	100	<a href="#">56300.120.001</a>	M27	50	<a href="#">56300.270.001</a>
M3	200	<a href="#">56300.030.001</a>	M14	100	<a href="#">56300.140.001</a>	M30	50	<a href="#">56300.300.001</a>
M4	200	<a href="#">56300.040.001</a>	M14,5	100	<a href="#">56300.145.001</a>	M33	50	<a href="#">56300.330.001</a>
M5	200	<a href="#">56300.050.001</a>	M16	50	<a href="#">56300.160.001</a>	M36	50	<a href="#">56300.360.001</a>
M6	200	<a href="#">56300.060.001</a>	M20	50	<a href="#">56300.200.001</a>			
M8	200	<a href="#">56300.080.001</a>	M22	50	<a href="#">56300.220.001</a>			

56310 Plain washer		W02A
<b>Material</b>	Plastic Polyamide (nylon)	
<b>Class</b>	PA 6.6	
<b>Packaging</b>	Large	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	1000	<a href="#">56310.030.001</a>	M8	1000	<a href="#">56310.080.001</a>	M16	500	<a href="#">56310.160.001</a>
M4	1000	<a href="#">56310.040.001</a>	M10	500	<a href="#">56310.100.001</a>	M20	500	<a href="#">56310.200.001</a>
M5	1000	<a href="#">56310.050.001</a>	M12	500	<a href="#">56310.120.001</a>			
M6	1000	<a href="#">56310.060.001</a>	M14	500	<a href="#">56310.140.001</a>			

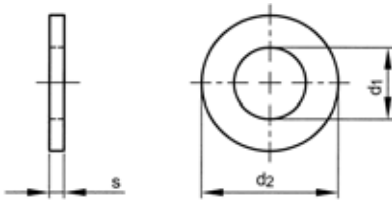
45930 Plain washer		W01A
<b>Material</b>	Titanium ASTM	
<b>Packaging</b>	Standard	
	ISO ≈7089	
	DIN ≈125-1A NEN ≈2269 A	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6	25	<a href="#">45930.060.001</a>	M8	25	<a href="#">45930.080.001</a>	M10	25	<a href="#">45930.100.001</a>

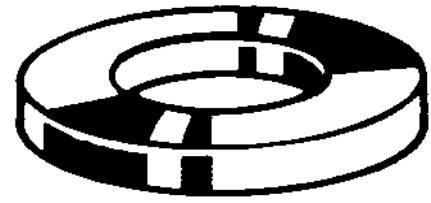
- Titanium ASTM Grade 2 (materialnumber 3.7035) with a high percentage of pure titanium, ensures product stability and -suitability in extremely corrosive environments where other materials i.e. stainless steel fail.
- Titanium Grade 2 is also suitable for other light loaded applications.



## 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>

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

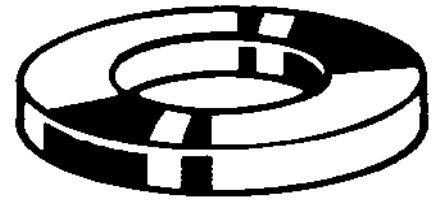
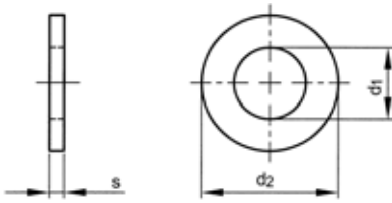
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6	1000	<a href="#">38205.060.001</a>	M16	250	<a href="#">38205.160.001</a>	M27	100	<a href="#">38205.270.001</a>
M8	1000	<a href="#">38205.080.001</a>	M18	200	<a href="#">38205.180.001</a>	M30	100	<a href="#">38205.300.001</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>

<b>38740 Plain washer</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
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	

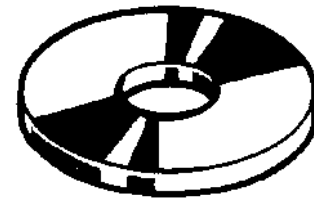
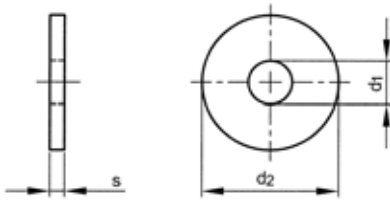
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">51418.030.001</a>	M10	250	<a href="#">51418.100.001</a>	M20	100	<a href="#">51418.200.001</a>
M4	250	<a href="#">51418.040.001</a>	M12	200	<a href="#">51418.120.001</a>	M24	50	<a href="#">51418.240.001</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	

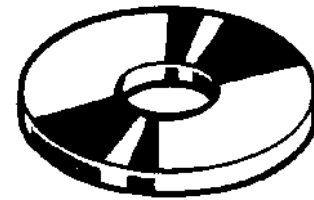
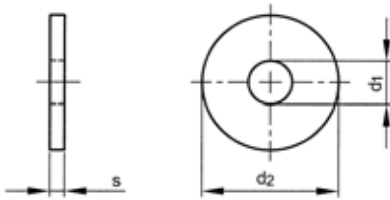
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4		<a href="#">51419.040.001</a>	M8		<a href="#">51419.080.001</a>	M14		<a href="#">51419.140.001</a>
M5		<a href="#">51419.050.001</a>	M10		<a href="#">51419.100.001</a>	M16		<a href="#">51419.160.001</a>
M6		<a href="#">51419.060.001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

38055 Plain washer type M		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
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>

38057 Plain washer type M		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	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>			

51417 Plain washer type M		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
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>

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

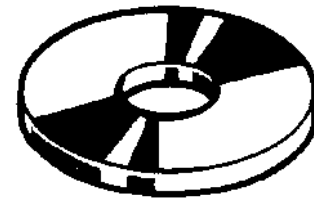
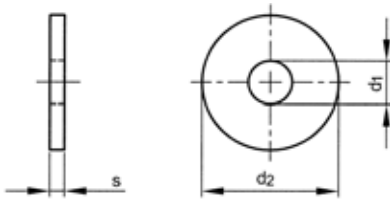
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">55417.030.001</a>	M12	200	<a href="#">55417.120.001</a>	M24	50	<a href="#">55417.240.001</a>
M4	250	<a href="#">55417.040.001</a>	M14	100	<a href="#">55417.140.001</a>	M27	25	<a href="#">55417.270.001</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>			

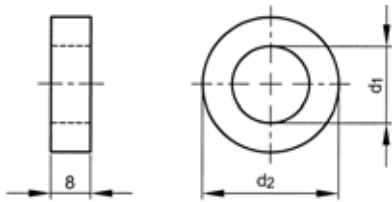
<b>51416</b>	<b>Plain washer type Z</b>	<b>R05A</b>
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	
	NF ≈E25-513	

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>

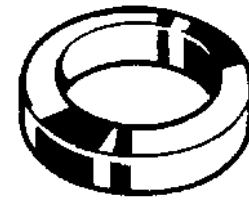
<b>55416</b>	<b>Plain washer type Z</b>	<b>R45A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	
	NF ≈E25-513	

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

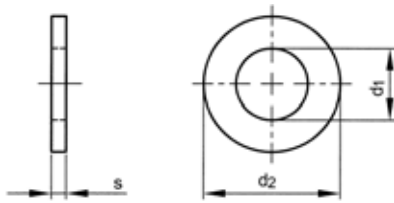
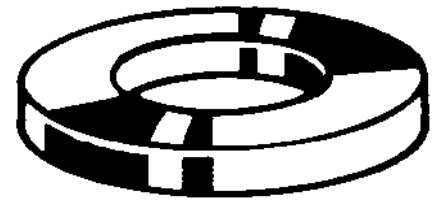
38280 Washer for steel structures				L07G
<b>Material</b>	Steel			
<b>Surface treatment</b>	Zinc plated			
<b>Packaging</b>	Standard			

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

7

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>			

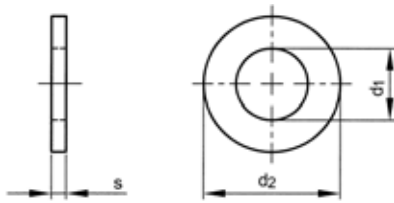
<b>51532</b>	<b>Washer for bolts with heavy type spring pins</b>	<b>R09A</b>
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	

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>			

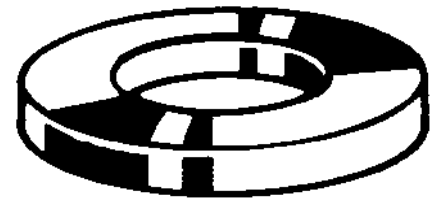
<b>55532</b>	<b>Washer for bolts with heavy type spring pins</b>	<b>R49A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	

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

7

#### 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>			

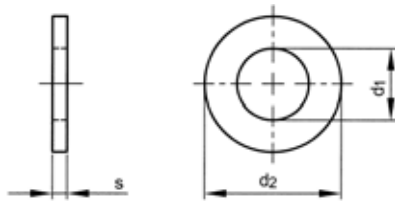
<b>55930 Plain washer for cheese head screws</b>		<b>R49A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	

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>			

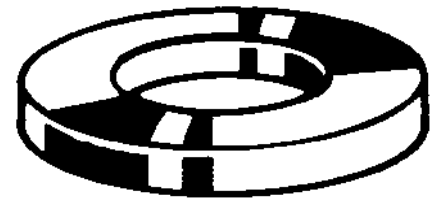
<b>56320 Plain washer for cheese head screws</b>		<b>W02A</b>
<b>Material</b>	Plastic Polyamide (nylon)	
<b>Class</b>	PA 6.6	
<b>Colour</b>	White	
<b>Packaging</b>	Standard	
	ISO ≈7092 DIN ≈433 NEN ≈2270	

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>

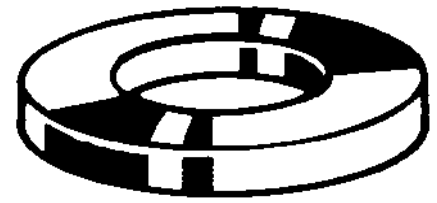
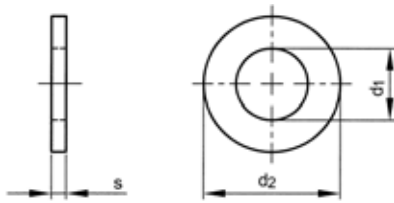


**51534 Plain washer for clevis pins** ←

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

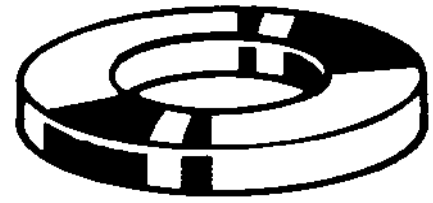
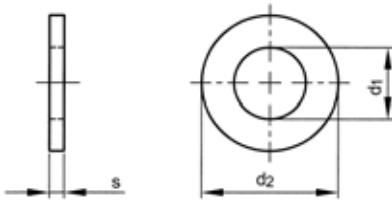
L07G

**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

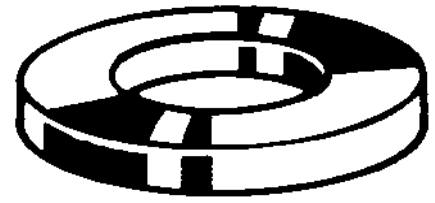
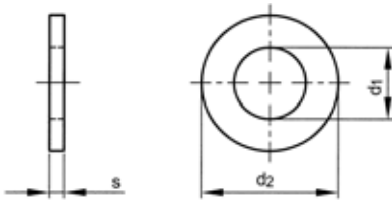


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2	500	<a href="#">50020.020.001</a>	M3,5	250	<a href="#">50020.035.001</a>	M6	250	<a href="#">50020.060.001</a>
M2,6	500	<a href="#">50020.026.001</a>	M4	250	<a href="#">50020.040.001</a>			
M3	250	<a href="#">50020.030.001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

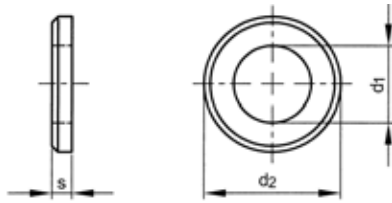
For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M3	3,5	8	0,8
M4	4,5	10	0,8
M5	5,5	12	1
M6	6,25	14	1,2
M8	8,25	18	1,5
M10	10,25	22	2
M12	12,5	27	2,5
M16	16,5	32	3
M20	21	40	3
M24	25	50	4

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

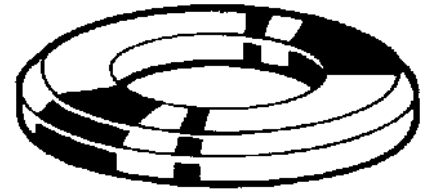
45150 Plain washer AG3		W01A
<b>Material</b>	Aluminium A-G3	
<b>Surface treatment</b>	Anodized	
<b>Packaging</b>	Standard	

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

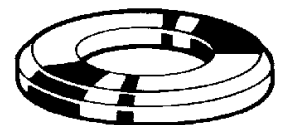
### Article groups

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>			

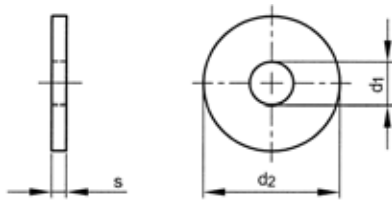
<b>50040</b>	<b>Single chamfer plain washer</b>						<b>M11F</b>	
<b>Material</b>	Brass							
<b>Packaging</b>	Standard							

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>			

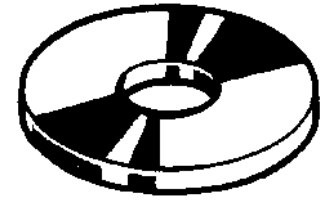
<b>50150</b>	<b>Single chamfer plain washer</b>						<b>M11F</b>	
<b>Material</b>	Brass							
<b>Surface treatment</b>	Nickel plated							
<b>Packaging</b>	Standard							

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>			

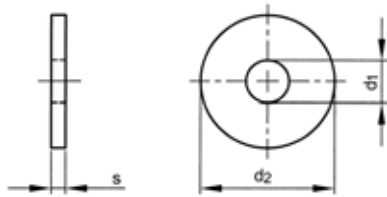
<b>56332</b>	<b>Plain washer <math>d_2 \approx 3 \times d_1</math></b>	<b>W02A</b>
<b>Material</b>	Plastic Polyamide (nylon)	
<b>Class</b>	PA 6.6	
<b>Colour</b>	Black	
<b>Packaging</b>	Standard	

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>			

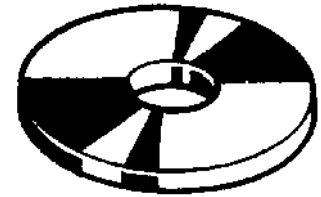
<b>56330</b>	<b>Plain washer <math>d_2 \approx 3 \times d_1</math></b>	<b>W02A</b>
<b>Material</b>	Plastic Polyamide (nylon)	
<b>Class</b>	PA 6.6	
<b>Colour</b>	White	
<b>Packaging</b>	Standard	

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>

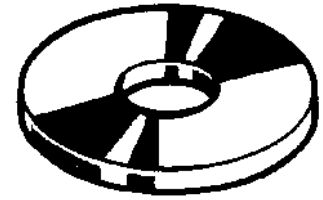
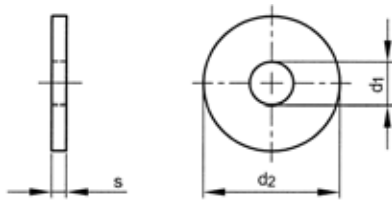
7

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>

## Mudwing repair washer



### Technical data

For nom.size	d <sub>1</sub>	s	For nom.size	d <sub>1</sub>	s	For nom.size	d <sub>1</sub>	s
M3	3,3	0,8	M10	10,5	1,5/3	M20	20,2	2,5
M4	4,2	1,2	M11	11,5	1,5	M22	24	4
M5	5,2	1,3	M12	12,5	2	M24	25	4
M6	6,5	1,5	M14	14,5	2	M27	28	4
M7	7,4	1,5	M16	16,5	2,5	M30	32	4
M8	8,4	1,5	M17	17,2	2,5			

### Article groups

Material	Surface treatment	Packaging	Code	Page
St	Zipl	Standard	38400	7-36
St	Zipl	Large	38410	7-36
St	Zipl yell.p.	Standard	38401	7-37
St.St. A2		Standard	51410	7-37
St.St. A4		Standard	55410	7-37

#### 38400 Mudwing repair washer

L01A

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



For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number
M3X10	100	<a href="#">38400.030.010</a>	M8X30	100	<a href="#">38400.080.030</a>	M12X60	100	<a href="#">38400.120.060</a>
M4X20	100	<a href="#">38400.040.020</a>	M8X35	100	<a href="#">38400.080.035</a>	M14X36	100	<a href="#">38400.140.036</a>
M5X20	100	<a href="#">38400.050.020</a>	M8X38	100	<a href="#">38400.080.038</a>	M14X40	100	<a href="#">38400.140.040</a>
M5X25	100	<a href="#">38400.050.025</a>	M8X40	100	<a href="#">38400.080.040</a>	M14X45	100	<a href="#">38400.140.045</a>
M5X30	100	<a href="#">38400.050.030</a>	M8X45	100	<a href="#">38400.080.045</a>	M16X40	100	<a href="#">38400.160.040</a>
M6X14	100	<a href="#">38400.060.014</a>	M8X50	100	<a href="#">38400.080.050</a>	M16X45	100	<a href="#">38400.160.045</a>
M6X20	100	<a href="#">38400.060.020</a>	M10X30	100	<a href="#">38400.100.030</a>	M16X50	100	<a href="#">38400.160.050</a>
M6X25	100	<a href="#">38400.060.025</a>	M10X35	100	<a href="#">38400.100.035</a>	M17X40	100	<a href="#">38400.170.040</a>
M6X27	100	<a href="#">38400.060.027</a>	M10X38	100	<a href="#">38400.100.038</a>	M17X45	100	<a href="#">38400.170.045</a>
M6X30	100	<a href="#">38400.060.030</a>	M10X40	100	<a href="#">38400.100.040</a>	M20X50	100	<a href="#">38400.200.050</a>
M6X35	100	<a href="#">38400.060.035</a>	M10X50	100	<a href="#">38400.100.050</a>	M20X55	100	<a href="#">38400.200.055</a>
M6X38	100	<a href="#">38400.060.038</a>	M10X50X3	100	<a href="#">38400.100.051</a>	M22X75	50	<a href="#">38400.220.075</a>
M6X40	100	<a href="#">38400.060.040</a>	M10X60	100	<a href="#">38400.100.060</a>	M24X80	50	<a href="#">38400.240.080</a>
M7X20	100	<a href="#">38400.070.020</a>	M11X35	100	<a href="#">38400.110.035</a>	M24X85	50	<a href="#">38400.240.085</a>
M7X25	100	<a href="#">38400.070.025</a>	M12X30	100	<a href="#">38400.120.030</a>	M27X85	25	<a href="#">38400.270.085</a>
M7X30	100	<a href="#">38400.070.030</a>	M12X36	100	<a href="#">38400.120.036</a>	M30X95	25	<a href="#">38400.300.095</a>
M8X25	100	<a href="#">38400.080.025</a>	M12X40	100	<a href="#">38400.120.040</a>			

#### 38410 Mudwing repair washer

L01A

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



For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number
M4X20	2000	<a href="#">38410.040.020</a>	M6X25	700	<a href="#">38410.060.025</a>	M8X30	700	<a href="#">38410.080.030</a>
M5X20	1000	<a href="#">38410.050.020</a>	M6X30	700	<a href="#">38410.060.030</a>	M10X30	700	<a href="#">38410.100.030</a>
M5X30	1000	<a href="#">38410.050.030</a>	M8X25	700	<a href="#">38410.080.025</a>			

<b>38401</b>	<b>Mudwing repair washer</b>	<b>L01A</b>
<b>Material</b>	Steel	
<b>Surface treatment</b>	Zinc plated yellow passivated	
<b>Packaging</b>	Standard	

For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number
M3X10	100	<a href="#">38401.030.010</a>	M6X30	100	<a href="#">38401.060.030</a>	M10X30	100	<a href="#">38401.100.030</a>
M4X20	100	<a href="#">38401.040.020</a>	M6X40	100	<a href="#">38401.060.040</a>	M12X36	100	<a href="#">38401.120.036</a>
M5X20	100	<a href="#">38401.050.020</a>	M7X25	100	<a href="#">38401.070.025</a>	M14X36	100	<a href="#">38401.140.036</a>
M5X25	100	<a href="#">38401.050.025</a>	M8X25	100	<a href="#">38401.080.025</a>	M16X50	100	<a href="#">38401.160.050</a>
M5X30	100	<a href="#">38401.050.030</a>	M8X30	100	<a href="#">38401.080.030</a>	M20X55	100	<a href="#">38401.200.055</a>
M6X25	100	<a href="#">38401.060.025</a>	M8X40	100	<a href="#">38401.080.040</a>	M24X85	50	<a href="#">38401.240.085</a>

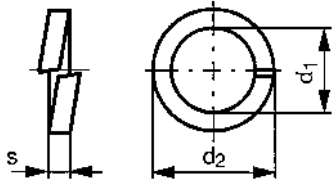
<b>51410</b>	<b>Mudwing repair washer</b>	<b>R05A</b>
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	

For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number
M4X20X1,2	200	<a href="#">51410.040.020</a>	M6X30X1,5	200	<a href="#">51410.060.030</a>	M10X35X1,5/3	200	<a href="#">51410.100.035</a>
M5X20X1,3	200	<a href="#">51410.050.020</a>	M8X25X1,5	200	<a href="#">51410.080.025</a>	M12X36X2	200	<a href="#">51410.120.036</a>
M6X18X1,5	200	<a href="#">51410.060.018</a>	M8X30X1,5	200	<a href="#">51410.080.030</a>	M16X50X2,5	200	<a href="#">51410.160.050</a>
M6X20X1,5	200	<a href="#">51410.060.020</a>	M10X25X1,5/3	200	<a href="#">51410.100.025</a>			
M6X25X1,5	200	<a href="#">51410.060.025</a>	M10X30X1,5/3	200	<a href="#">51410.100.030</a>			

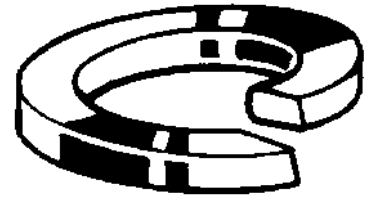
<b>55410</b>	<b>Mudwing repair washer</b>	<b>R45A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	

For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number
M4X20X1,2	200	<a href="#">55410.040.020</a>	M6X25X1,5	200	<a href="#">55410.060.025</a>	M10X30X1,5/3	200	<a href="#">55410.100.030</a>
M5X20X1,3	200	<a href="#">55410.050.020</a>	M8X30X1,5	200	<a href="#">55410.080.030</a>	M12X36X2	200	<a href="#">55410.120.036</a>

## Spring lock washer with square ends



DIN 127 B  
 NEN 1197 B  
 NF E25-515  
 BS 4464 B



### Technical data

For nom.size	d <sub>1</sub> (min.)	d <sub>2</sub> (max.)	s
M2	2,1	4,4	0,5
M2,3 (#DIN)	2,4	4,9	0,6
M2,5	2,6	5,1	0,6
M2,6 (#DIN)	2,7	5,2	0,6
M3	3,1	6,2	0,8
M3,5	3,6	6,7	0,8
M4	4,1	7,6	0,9
M5	5,1	9,2	1,2
M6	6,1	11,8	1,6
1/4 (#DIN)	6,4	12,1	1,6
M7	7,1	12,8	1,6
M8	8,1	14,8	2
3/8 (#DIN)	9,7	17,6	2,2
M10	10,2	18,1	2,2
M11 (#DIN)	11,2	18,2	2,2
M12	12,2	21,1	2,5
1/2 (#DIN)	13	21,8	2,5
M14	14,2	24,1	3
M16	16,2	27,4	3,5
M18	18,2	29,4	3,5
M20	20,2	33,6	4
M22	22,5	35,9	4
M24	24,5	40	5
1.IN. (#DIN)	26,5	42,5	5
M27	27,5	43	5
M30	30,5	48,2	6
M33 (#DIN)	33,5	55,2	6
M36	36,5	58,2	6
M39	39,5	61,2	6
M42	42,5	68,2	7
M45	45,5	71,2	7
M48	49	75	7
M52	53	83	8
M56	57	87	8
M60	61	91	8
M64	65	95	8
M68	69	99	8
M72	73	103	8
M76 (#DIN)	77	107	8

- Spring washers acc. to DIN 127 B should be used in combination with fasteners of property class  $\leq 5.8$ , use under dynamic load is not allowed.
- For locking under dynamic load is referred to locking edge washers, SCHNORR safety washers and NORD-LOCK vibration proof washers.
- Depending on availability these articles can be supplied zinc plated as well as mechanical plated.
- WARNING: electro-galvanizing of these products may cause hydrogen embrittlement

### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel DIN267-26		Standard	37000	7-39
Spring steel DIN267-26	FLZNNC-NC6	Standard	37024	7-39
Spring steel DIN267-26	Zipl	Standard	37020	7-39
Spring steel DIN267-26	Zipl	Large	37030	7-39
Spring steel DIN267-26	Zipl yell.p.	Standard	37060	7-40
Spring steel DIN267-26	Hot d.g.	Standard	37025	7-40
St.St. A2		Standard	51450	7-40
St.St. A4		Standard	55450	7-40


<b>37000</b>	<b>Spring lock washer with square ends</b>		<b>L05A</b>
<b>Material</b>	Spring steel DIN267-26		
<b>Packaging</b>	Standard		

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">37000.030.001</a>	1/2	150	<a href="#">37000.127.001</a>	M39	10	<a href="#">37000.390.001</a>
M3,5	250	<a href="#">37000.035.001</a>	M14	100	<a href="#">37000.140.001</a>	M42	10	<a href="#">37000.420.001</a>
M4	250	<a href="#">37000.040.001</a>	M16	100	<a href="#">37000.160.001</a>	M45	10	<a href="#">37000.450.001</a>
M5	250	<a href="#">37000.050.001</a>	M18	100	<a href="#">37000.180.001</a>	M48	10	<a href="#">37000.480.001</a>
M6	250	<a href="#">37000.060.001</a>	M20	100	<a href="#">37000.200.001</a>	M52	10	<a href="#">37000.520.001</a>
1/4	250	<a href="#">37000.063.001</a>	M22	50	<a href="#">37000.220.001</a>	M56	5	<a href="#">37000.560.001</a>
M7	250	<a href="#">37000.070.001</a>	M24	50	<a href="#">37000.240.001</a>	M60	5	<a href="#">37000.600.001</a>
M8	200	<a href="#">37000.080.001</a>	1.IN.	50	<a href="#">37000.254.001</a>	M64	5	<a href="#">37000.640.001</a>
3/8	200	<a href="#">37000.096.001</a>	M27	25	<a href="#">37000.270.001</a>	M68	5	<a href="#">37000.680.001</a>
M10	200	<a href="#">37000.100.001</a>	M30	25	<a href="#">37000.300.001</a>	M72	5	<a href="#">37000.720.001</a>
M11	150	<a href="#">37000.110.001</a>	M33	25	<a href="#">37000.330.001</a>	M76	5	<a href="#">37000.760.001</a>
M12	150	<a href="#">37000.120.001</a>	M36	25	<a href="#">37000.360.001</a>			

<b>37024</b>	<b>Spring lock washer with square ends</b>		<b>L05A</b>
<b>Material</b>	Spring steel DIN267-26		
<b>Surface treatment</b>	Zinc flake Cr6+ free - ISO 10683 flZnnc		
<b>Packaging</b>	Standard		

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6	250	<a href="#">37024.060.001</a>	M12	150	<a href="#">37024.120.001</a>	M24	50	<a href="#">37024.240.001</a>
M8	200	<a href="#">37024.080.001</a>	M16	100	<a href="#">37024.160.001</a>	M30	25	<a href="#">37024.300.001</a>
M10	200	<a href="#">37024.100.001</a>	M20	100	<a href="#">37024.200.001</a>			

• Technical brochure available on request.

<b>37020</b>	<b>Spring lock washer with square ends</b>		<b>L05A</b>
<b>Material</b>	Spring steel DIN267-26		
<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="#">37020.020.001</a>	M7	250	<a href="#">37020.070.001</a>	M18	100	<a href="#">37020.180.001</a>
M2,3	500	<a href="#">37020.023.001</a>	M8	200	<a href="#">37020.080.001</a>	M20	100	<a href="#">37020.200.001</a>
M2,6	500	<a href="#">37020.026.001</a>	3/8	200	<a href="#">37020.096.001</a>	M22	50	<a href="#">37020.220.001</a>
M3	250	<a href="#">37020.030.001</a>	M10	200	<a href="#">37020.100.001</a>	M24	50	<a href="#">37020.240.001</a>
M3,5	250	<a href="#">37020.035.001</a>	M11	150	<a href="#">37020.110.001</a>	1.IN.	50	<a href="#">37020.254.001</a>
M4	250	<a href="#">37020.040.001</a>	M12	150	<a href="#">37020.120.001</a>	M27	25	<a href="#">37020.270.001</a>
M5	250	<a href="#">37020.050.001</a>	1/2	150	<a href="#">37020.127.001</a>	M30	25	<a href="#">37020.300.001</a>
M6	250	<a href="#">37020.060.001</a>	M14	100	<a href="#">37020.140.001</a>	M33	25	<a href="#">37020.330.001</a>
1/4	250	<a href="#">37020.063.001</a>	M16	100	<a href="#">37020.160.001</a>	M36	25	<a href="#">37020.360.001</a>

<b>37030</b>	<b>Spring lock washer with square ends</b>		<b>L05A</b>
<b>Material</b>	Spring steel DIN267-26		
<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
M3	2500	<a href="#">37030.030.001</a>	M8	2000	<a href="#">37030.080.001</a>	M16	500	<a href="#">37030.160.001</a>
M4	2500	<a href="#">37030.040.001</a>	M10	1500	<a href="#">37030.100.001</a>	M20	250	<a href="#">37030.200.001</a>
M5	2500	<a href="#">37030.050.001</a>	M12	1000	<a href="#">37030.120.001</a>	M22	250	<a href="#">37030.220.001</a>
M6	2000	<a href="#">37030.060.001</a>	M14	500	<a href="#">37030.140.001</a>	M24	250	<a href="#">37030.240.001</a>

37060 Spring lock washer with square ends		L05A
<b>Material</b>	Spring steel DIN267-26	
<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="#">37060.030.001</a>	M8	200	<a href="#">37060.080.001</a>	M18	100	<a href="#">37060.180.001</a>
M4	250	<a href="#">37060.040.001</a>	M10	200	<a href="#">37060.100.001</a>	M20	100	<a href="#">37060.200.001</a>
M5	250	<a href="#">37060.050.001</a>	M12	150	<a href="#">37060.120.001</a>	M22	50	<a href="#">37060.220.001</a>
M6	250	<a href="#">37060.060.001</a>	M14	100	<a href="#">37060.140.001</a>	M24	50	<a href="#">37060.240.001</a>
M7	250	<a href="#">37060.070.001</a>	M16	100	<a href="#">37060.160.001</a>			

37025 Spring lock washer with square ends		L05A
<b>Material</b>	Spring steel DIN267-26	
<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	250	<a href="#">37025.060.001</a>	M14	150	<a href="#">37025.140.001</a>	M22	50	<a href="#">37025.220.001</a>
M8	200	<a href="#">37025.080.001</a>	M16	100	<a href="#">37025.160.001</a>	M24	50	<a href="#">37025.240.001</a>
M10	200	<a href="#">37025.100.001</a>	M18	100	<a href="#">37025.180.001</a>	M27	25	<a href="#">37025.270.001</a>
M12	150	<a href="#">37025.120.001</a>	M20	100	<a href="#">37025.200.001</a>	M30	25	<a href="#">37025.300.001</a>

51450 Spring lock washer with square ends		R07A
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	
	DIN ≈127 B	
	NEN ≈1197 B	
	NF ≈E25-515	
	BS ≈4464 B	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2	200	<a href="#">51450.020.001</a>	M7	500	<a href="#">51450.070.001</a>	M20	200	<a href="#">51450.200.001</a>
M2,3	200	<a href="#">51450.023.001</a>	M8	500	<a href="#">51450.080.001</a>	M22	100	<a href="#">51450.220.001</a>
M2,5	200	<a href="#">51450.025.001</a>	3/8	500	<a href="#">51450.096.001</a>	M24	100	<a href="#">51450.240.001</a>
M2,6	200	<a href="#">51450.026.001</a>	M10	500	<a href="#">51450.100.001</a>	1.IN.	100	<a href="#">51450.254.001</a>
M3	500	<a href="#">51450.030.001</a>	M11	500	<a href="#">51450.110.001</a>	M27	50	<a href="#">51450.270.001</a>
M3,5	500	<a href="#">51450.035.001</a>	M12	500	<a href="#">51450.120.001</a>	M30	50	<a href="#">51450.300.001</a>
M4	500	<a href="#">51450.040.001</a>	1/2	500	<a href="#">51450.127.001</a>	M33	50	<a href="#">51450.330.001</a>
M5	500	<a href="#">51450.050.001</a>	M14	200	<a href="#">51450.140.001</a>	M36	50	<a href="#">51450.360.001</a>
M6	500	<a href="#">51450.060.001</a>	M16	200	<a href="#">51450.160.001</a>			
1/4	500	<a href="#">51450.063.001</a>	M18	200	<a href="#">51450.180.001</a>			

- Technical data is according to DIN with the exception of material type stainless steel.

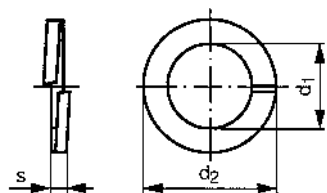
55450 Spring lock washer with square ends		R47A
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	
	DIN ≈127 B	
	NEN ≈1197 B	
	NF ≈E25-515	
	BS ≈4464 B	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2	200	<a href="#">55450.020.001</a>	3/8	500	<a href="#">55450.096.001</a>	M22	100	<a href="#">55450.220.001</a>
M2,5	200	<a href="#">55450.025.001</a>	M10	500	<a href="#">55450.100.001</a>	M24	100	<a href="#">55450.240.001</a>
M3	500	<a href="#">55450.030.001</a>	M12	500	<a href="#">55450.120.001</a>	1.IN.	100	<a href="#">55450.254.001</a>
M4	500	<a href="#">55450.040.001</a>	1/2	500	<a href="#">55450.127.001</a>	M27	50	<a href="#">55450.270.001</a>
M5	500	<a href="#">55450.050.001</a>	M14	200	<a href="#">55450.140.001</a>	M30	50	<a href="#">55450.300.001</a>
M6	500	<a href="#">55450.060.001</a>	M16	200	<a href="#">55450.160.001</a>	M33	50	<a href="#">55450.330.001</a>
1/4	500	<a href="#">55450.063.001</a>	M18	200	<a href="#">55450.180.001</a>	M36	50	<a href="#">55450.360.001</a>
M8	500	<a href="#">55450.080.001</a>	M20	200	<a href="#">55450.200.001</a>			

- Technical data is according to DIN with the exception of material type stainless steel.



## Spring lock washer for screws with cylindrical heads


 DIN 7980  
 BS 4464 A


### Technical data

For nom.size	d <sub>1</sub> (min.)	d <sub>2</sub> (max.)	s
M3	3,1	5,6	1
M4	4,1	7	1,2
M5	5,1	8,8	1,6
M6	6,1	9,9	1,6
1/4 (#DIN)	6,5	11,2	2
M8	8,1	12,7	2
M10	10,2	16	2,5
M12	12,2	18	2,5
1/2 (#DIN)	13	20,2	3
M14	14,2	21,1	3
M16	16,2	24,4	3,5
M18	18,2	26,4	3,5
M20	20,2	30,6	4,5
M22	22,5	32,9	4,5
M24	24,5	35,9	5
1.IN.	25,9	38,4	5
M27	27,5	38,9	5
M30	30,5	44,1	6
M36	36,5	52,2	7

### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel DIN267-26		Standard	37200	7-41
Spring steel DIN267-26	Zipl	Standard	37220	7-42
St.St. A2		Standard	51390	7-42
St.St. A4		Standard	55390	7-42

### 37200 Spring lock washer for screws with cylindrical heads

L07D

Material Spring steel DIN267-26  
 Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">37200.030.001</a>	M12	150	<a href="#">37200.120.001</a>	M24	50	<a href="#">37200.240.001</a>
M4	250	<a href="#">37200.040.001</a>	1/2	150	<a href="#">37200.127.001</a>	1.IN.	50	<a href="#">37200.254.001</a>
M5	250	<a href="#">37200.050.001</a>	M14	100	<a href="#">37200.140.001</a>	M27	50	<a href="#">37200.270.001</a>
M6	250	<a href="#">37200.060.001</a>	M16	100	<a href="#">37200.160.001</a>	M30	50	<a href="#">37200.300.001</a>
1/4	250	<a href="#">37200.063.001</a>	M18	250	<a href="#">37200.180.001</a>	M36	50	<a href="#">37200.360.001</a>
M8	200	<a href="#">37200.080.001</a>	M20	100	<a href="#">37200.200.001</a>			
M10	200	<a href="#">37200.100.001</a>	M22	50	<a href="#">37200.220.001</a>			

- Spring lock washers acc. to DIN 7980 should be used in combination with fasteners of property class < 8.8, use under dynamic load is not allowed.
- For locking under dynamic load is referred to locking edge washers, SCHNORR safety washers and NORD-LOCK vibration proof washers.
- Depending on availability these articles can be supplied zinc plated as well as mechanical plated.
- Warning: electro-galvanizing of these products may cause hydrogen embrittlement.

37220 Spring lock washer for screws with cylindrical heads		L07D
<b>Material</b>	Spring steel DIN267-26	
<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	250	<a href="#">37220.030.001</a>	M10	200	<a href="#">37220.100.001</a>	M22	50	<a href="#">37220.220.001</a>
M4	250	<a href="#">37220.040.001</a>	M12	150	<a href="#">37220.120.001</a>	M24	50	<a href="#">37220.240.001</a>
M5	250	<a href="#">37220.050.001</a>	M14	100	<a href="#">37220.140.001</a>	M27	50	<a href="#">37220.270.001</a>
M6	250	<a href="#">37220.060.001</a>	M16	100	<a href="#">37220.160.001</a>	M30	50	<a href="#">37220.300.001</a>
M8	200	<a href="#">37220.080.001</a>	M20	100	<a href="#">37220.200.001</a>			

- Spring lock washers acc. to DIN 7980 should be used in combination with fasteners of property class < 8.8, use under dynamic load is not allowed.
- For locking under dynamic load is referred to locking edge washers, SCHNORR safety washers and NORD-LOCK vibration proof washers.
- Depending on availability these articles can be supplied zinc plated as well as mechanical plated.

51390 Spring lock washer for screws with cylindrical heads		R09A
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	
	DIN ≈7980 BS ≈4464 A	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">51390.030.001</a>	M10	200	<a href="#">51390.100.001</a>	M20	100	<a href="#">51390.200.001</a>
M4	250	<a href="#">51390.040.001</a>	M12	200	<a href="#">51390.120.001</a>	M24	50	<a href="#">51390.240.001</a>
M5	250	<a href="#">51390.050.001</a>	M14	100	<a href="#">51390.140.001</a>	M27	50	<a href="#">51390.270.001</a>
M6	250	<a href="#">51390.060.001</a>	M16	100	<a href="#">51390.160.001</a>	M30	50	<a href="#">51390.300.001</a>
M8	250	<a href="#">51390.080.001</a>	M18	100	<a href="#">51390.180.001</a>			

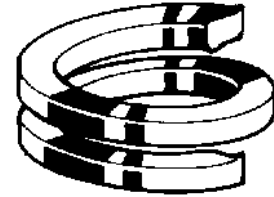
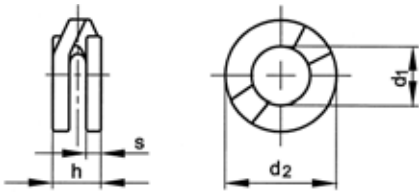
- Use under dynamic load is not allowed.
- For locking under dynamic load is referred to NORD-LOCK vibration proof washers and SCHNORR safety washers.
- The austenetic steel type is at the manufacturer's discretion, and can vary from the steel types stated in DIN 267-11.

55390 Spring lock washer for screws with cylindrical heads		R49A
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	
	DIN ≈7980 BS ≈4464 A	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">55390.030.001</a>	M10	200	<a href="#">55390.100.001</a>	M20	100	<a href="#">55390.200.001</a>
M4	250	<a href="#">55390.040.001</a>	M12	200	<a href="#">55390.120.001</a>	M24	50	<a href="#">55390.240.001</a>
M5	250	<a href="#">55390.050.001</a>	M14	100	<a href="#">55390.140.001</a>	M27	50	<a href="#">55390.270.001</a>
M6	250	<a href="#">55390.060.001</a>	M16	100	<a href="#">55390.160.001</a>	M30	50	<a href="#">55390.300.001</a>
M8	250	<a href="#">55390.080.001</a>	M18	100	<a href="#">55390.180.001</a>			

- Use under dynamic load is not allowed.
- For locking under dynamic load is referred to NORD-LOCK vibration proof washers and SCHNORR safety washers.
- The austenetic steel type is at the manufacturer's discretion, and can vary from the steel types stated in DIN 267-11.

## Double coil spring lock washer



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s	h
M5	5,1	8,7	1,2	4,2
M6	6,1	11,1	1,6	5,6
M8	8,2	14,2	2	7
M10	10,2	17,2	2,2	7,7
M12	12,2	20,2	2,5	8,8
M16	16,2	26,2	3,5	12,3
M20	20,2	32,2	4	14
M22	22,5	34,5	4	14
M26	26,5	40,5	5	17,5

### 37240 Double coil spring lock washer

L07D

**Material** Spring steel  
**Packaging** Standard

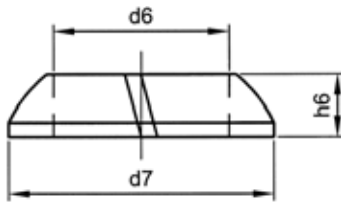


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5	100	<a href="#">37240.050.001</a>	M10	100	<a href="#">37240.100.001</a>	M20	50	<a href="#">37240.200.001</a>
M6	100	<a href="#">37240.060.001</a>	M12	100	<a href="#">37240.120.001</a>	M22	25	<a href="#">37240.220.001</a>
M8	100	<a href="#">37240.080.001</a>	M16	50	<a href="#">37240.160.001</a>	M26	25	<a href="#">37240.260.001</a>

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

## Conical spring washer

DIN 74361 C



### Technical data

d	$d_6$	$d_7$	$h_6$
M12	12,5	23	5
M14	14,5	26	6
M16 (#DIN)	17,5	27	7
M18	18,5	29	7
M20	20,5	34	8
M22	22,5	34	8

### 72030 Conical spring washer

Y92E

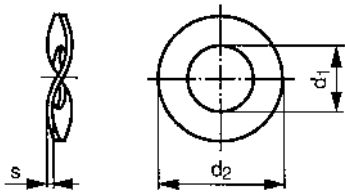
**Material** Spring steel DIN17221  
**Packaging** Standard



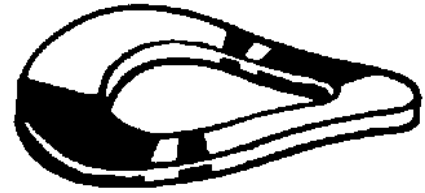
d	☒	Art.number	d	☒	Art.number	d	☒	Art.number
M12	50	<a href="#">72030.120.001</a>	M16	50	<a href="#">72030.160.001</a>	M20	25	<a href="#">72030.200.001</a>
M14	50	<a href="#">72030.140.001</a>	M18	25	<a href="#">72030.180.001</a>	M22	25	<a href="#">72030.220.001</a>

- Usable for wheelbolts

## Wave spring washer



DIN 137 B  
 NEN 2457  
 NF E27-620



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M3	3,2	8	0,5
M3,5	3,7	8	0,5
M4	4,3	9	0,5
M5	5,3	11	0,5
M6	6,4	12	0,5
M7	7,4	14	0,8
M8	8,4	15	0,8
M10	10,5	21	1
M12	13	24	1,2
M14	15	28	1,6
M16	17	30	1,6
M18	19	34	1,6
M20	21	36	1,6
M22	23	40	1,8
M24	25	44	1,8
M27	28	50	2

### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel DIN267-26		Standard	37160	7-45
Spring steel DIN267-26	Zipl yell.p.	Standard	37150	7-45
St.St. A2		Standard	51551	7-46

#### 37160 Wave spring washer

L07D

**Material** Spring steel DIN267-26  
**Packaging** Standard



7

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	1000	<a href="#">37160.030.001</a>	M8	1000	<a href="#">37160.080.001</a>	M20	100	<a href="#">37160.200.001</a>
M4	1000	<a href="#">37160.040.001</a>	M10	500	<a href="#">37160.100.001</a>	M22	100	<a href="#">37160.220.001</a>
M5	1000	<a href="#">37160.050.001</a>	M12	500	<a href="#">37160.120.001</a>	M24	100	<a href="#">37160.240.001</a>
M6	1000	<a href="#">37160.060.001</a>	M14	100	<a href="#">37160.140.001</a>			
M7	1000	<a href="#">37160.070.001</a>	M16	100	<a href="#">37160.160.001</a>			

- Spring washers acc. to DIN 137 should be used in combination with fasteners of property class < 5.8, use under dynamic load is not allowed.
- They are intended to counteract the effect of "play or setting" which results in bolt/nut assemblies working loose (see DIN 267-26).
- They do not effectively prevent loosening of the assembly under varying radial load and are designed for use with short bolts predominantly subject to thrust.
- For locking under dynamic load is referred to locking edge washers, SCHNORR safety washers and NORD-LOCK vibration proof washers.
- **Warning:** electro-galvanizing of these products may cause hydrogen embrittlement.

#### 37150 Wave spring washer

L07D

**Material** Spring steel DIN267-26  
**Surface treatment** Zinc plated yellow passivated  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	1000	<a href="#">37150.030.001</a>	M7	1000	<a href="#">37150.070.001</a>	M14	100	<a href="#">37150.140.001</a>
M4	1000	<a href="#">37150.040.001</a>	M8	1000	<a href="#">37150.080.001</a>	M16	100	<a href="#">37150.160.001</a>
M5	1000	<a href="#">37150.050.001</a>	M10	500	<a href="#">37150.100.001</a>			
M6	1000	<a href="#">37150.060.001</a>	M12	500	<a href="#">37150.120.001</a>			

**37150 Wave spring washer**

For nom. size	Art.number	For nom. size	Art.number	For nom. size	Art.number
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- Spring washers acc. to DIN 137 should be used in combination with fasteners of property class < 5.8, use under dynamic load is not allowed.
- They are intended to counteract the effect of "play or setting" which results in bolt/nut assemblies working loose (see DIN 267-26).
- They do not effectively prevent loosening of the assembly under varying radial load and are designed for use with short bolts predominantly subject to thrust.
- For locking under dynamic load is referred to locking edge washers, SCHNORR safety washers and NORD-LOCK vibration proof washers.
- Warning: electro-galvanizing of these products may cause hydrogen embrittlement.

**51551 Wave spring washer**
**R09A**

<b>Material</b>	Stainless steel A2
<b>Packaging</b>	Standard
	DIN ≈137 B
	NEN ≈2457
	NF ≈E27-620

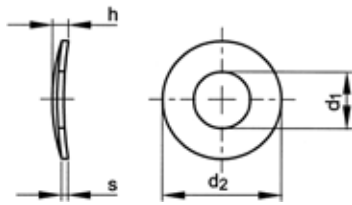


For nom. size	Art.number	For nom. size	Art.number	For nom. size	Art.number
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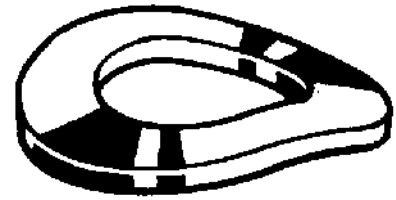
M3	200	<a href="#">51551.030.001</a>	M8	200	<a href="#">51551.080.001</a>	M20	50	<a href="#">51551.200.001</a>
M3,5	1000	<a href="#">51551.035.001</a>	M10	100	<a href="#">51551.100.001</a>	M22 *	100	<a href="#">51551.220.001</a>
M4	200	<a href="#">51551.040.001</a>	M12	100	<a href="#">51551.120.001</a>	M24	50	<a href="#">51551.240.001</a>
M5	200	<a href="#">51551.050.001</a>	M14 *	200	<a href="#">51551.140.001</a>	M27 *	100	<a href="#">51551.270.001</a>
M6	200	<a href="#">51551.060.001</a>	M16	100	<a href="#">51551.160.001</a>			
M7 *	500	<a href="#">51551.070.001</a>	M18 *	200	<a href="#">51551.180.001</a>			

- Use under dynamic load is not allowed.
- For locking under dynamic load is referred to NORD-LOCK vibration proof washers and SCHNORR safety washers.
- The austenetic steel type is at the manufacturer's discretion, and can vary from the steel types stated in DIN 267-11.

## Curved spring washer DIN 137A



DIN 137 A  
NEN 2456



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s	h (max.)
M2	2,2	4,5	0,3	1
M2,3	2,5	5	0,3	1
M2,5 (#DIN)	2,6	5	0,3	1
M2,6	2,8	5,5	0,3	1,1
M3	3,2	6	0,4	1,3
M3,5	3,7	7	0,4	1,4
M4	4,3	8	0,5	1,6
M5	5,3	10	0,5	1,8
M6	6,4	11	0,5	2,2
M7	7,4	12	0,5	2,4
M8	8,4	15	0,5	3,4
M10	10,5	18	0,8	4

- Spring washers acc. to DIN 137 should be used in combination with fasteners of property class < 5.8, use under dynamic load is not allowed.
- They are intended to counteract the effect of "play or setting" which results in bolt/nut assemblies working loose (see DIN 267-26).
- They do not effectively prevent loosening of the assembly under varying radial load and are designed for use with short bolts predominantly subject to thrust.
- For locking under dynamic load is referred to locking edge washers, SCHNORR safety washers and NORD-LOCK vibration proof washers.

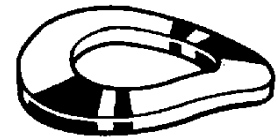
### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel DIN267-26		Standard	37120	7-47
Spring steel DIN267-26	Zipl yell.p.	Standard	37110	7-47

#### 37120 Curved spring washer DIN 137A

L07D

**Material** Spring steel DIN267-26  
**Packaging** Standard



7

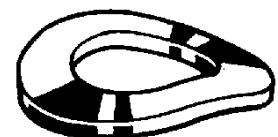
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2	500	<a href="#">37120.020.001</a>	M3,5	500	<a href="#">37120.035.001</a>	M7	500	<a href="#">37120.070.001</a>
M2,3	500	<a href="#">37120.023.001</a>	M4	500	<a href="#">37120.040.001</a>	M8	500	<a href="#">37120.080.001</a>
M2,6	500	<a href="#">37120.026.001</a>	M5	500	<a href="#">37120.050.001</a>	M10	200	<a href="#">37120.100.001</a>
M3	500	<a href="#">37120.030.001</a>	M6	500	<a href="#">37120.060.001</a>			

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

#### 37110 Curved spring washer DIN 137A

L07D

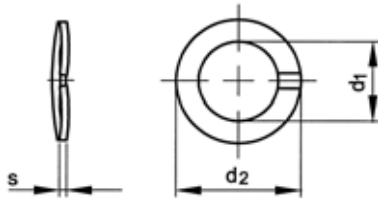
**Material** Spring steel DIN267-26  
**Surface treatment** Zinc plated yellow passivated  
**Packaging** Standard



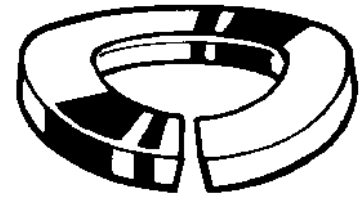
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2	500	<a href="#">37110.020.001</a>	M4	500	<a href="#">37110.040.001</a>	M7	500	<a href="#">37110.070.001</a>
M2,5	500	<a href="#">37110.025.001</a>	M5	500	<a href="#">37110.050.001</a>	M8	500	<a href="#">37110.080.001</a>
M3	500	<a href="#">37110.030.001</a>	M6	500	<a href="#">37110.060.001</a>	M10	200	<a href="#">37110.100.001</a>

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

## Curved spring lock washer DIN 128A



DIN 128 A  
NEN 1570



### Technical data

For nom.size	d <sub>1</sub> (min.)	d <sub>2</sub> (max.)	s
M2	2,1	4,4	0,5
M2,3 (#DIN)	2,4	4,9	0,6
M2,5	2,6	5,1	0,6
M2,6 (#DIN)	2,7	5,2	0,6
M3	3,1	6,2	0,7
M3,5	3,6	6,7	0,7
M4	4,1	7,6	0,8
M5	5,1	9,2	1
M6	6,1	11,8	1,3
1/4 (#DIN)	6,5	12,6	1,3
M7	7,1	12,7	1,3
M8	8,1	14,8	1,6
3/8 (#DIN)	9,7	17,6	1,8
M10	10,2	18,1	1,8
M11 (#DIN)	11,3	19,3	2,1
M12	12,2	21,1	2,1
1/2 (#DIN)	13	22,8	2,4
M14	14,2	24,1	2,4
M16	16,2	27,4	2,8
M18	18,2	29,4	2,8
M20	20,2	33,6	3,2
M22	22,5	35,9	3,2
M24	24,5	40	4
1.IN. (#DIN)	26,5	42,5	4
M27	27,5	43	4
M30	30,5	48,2	6
M33 (#DIN)	34	54,2	6
M36	36,5	58,2	6
M39 (#DIN)	39,5	59,2	6
M42 (#DIN)	42,5	68,2	7
M45 (#DIN)	46,7	70,5	7
M48 (#DIN)	49	75	7

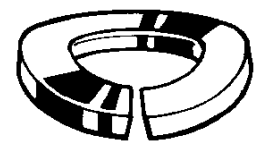
### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel DIN267-26	Mech.zipl.	Standard	37080	7-48
Spring steel DIN267-26	Zipl yell.p.	Standard	37092	7-49
St.St. A2		Standard	51520	7-49
St.St. A4		Standard	55520	7-49
Phosphor bronze Cu4		Standard	50500	7-50

### 37080 Curved spring lock washer DIN 128A

L07D

<b>Material</b>	Spring steel DIN267-26
<b>Surface treatment</b>	Mechanical 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="#">37080.020.001</a>	M7	250	<a href="#">37080.070.001</a>	M18	100	<a href="#">37080.180.001</a>
M2,5	500	<a href="#">37080.025.001</a>	M8	200	<a href="#">37080.080.001</a>	M20	100	<a href="#">37080.200.001</a>
M2,6	500	<a href="#">37080.026.001</a>	3/8	200	<a href="#">37080.096.001</a>	M22	50	<a href="#">37080.220.001</a>
M3	250	<a href="#">37080.030.001</a>	M10	200	<a href="#">37080.100.001</a>	M24	50	<a href="#">37080.240.001</a>
M3,5	250	<a href="#">37080.035.001</a>	M11	150	<a href="#">37080.110.001</a>	1.IN.	50	<a href="#">37080.254.001</a>
M4	250	<a href="#">37080.040.001</a>	M12	150	<a href="#">37080.120.001</a>	M27	25	<a href="#">37080.270.001</a>
M5	250	<a href="#">37080.050.001</a>	1/2	150	<a href="#">37080.127.001</a>	M30	25	<a href="#">37080.300.001</a>
M6	250	<a href="#">37080.060.001</a>	M14	100	<a href="#">37080.140.001</a>	M33	25	<a href="#">37080.330.001</a>
1/4	250	<a href="#">37080.063.001</a>	M16	100	<a href="#">37080.160.001</a>	M36	25	<a href="#">37080.360.001</a>



**37080 Curved spring lock washer DIN 128A** ←

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M39	10	<a href="#">37080.390.001</a>	M45	10	<a href="#">37080.450.001</a>			
M42	10	<a href="#">37080.420.001</a>	M48	10	<a href="#">37080.480.001</a>			

- Curved spring lock washers acc. to DIN 128 A are improved compared to spring lock washers acc. to DIN 127 A and due to the curved form have moreover the advantages: do not damage surfaces of the construction, nut or bolt; also to use with left hand thread; do not disform during tightening and dis-assembly, thus re-useable; do not tangle, so suitable for automatic feeding and should be used in combination with fasteners of property class < 8.8, use under dynamic load is not allowed.
- For locking under dynamic load is referred to locking edge washers, SCHNORR safety washers and NORD-LOCK vibration proof washers, see elsewhere in this section.

**37092 Curved spring lock washer DIN 128A** L07D

<b>Material</b>	Spring steel DIN267-26	
<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
M4	250	<a href="#">37092.040.001</a>	M8	200	<a href="#">37092.080.001</a>	M14	100	<a href="#">37092.140.001</a>
M5	250	<a href="#">37092.050.001</a>	M10	200	<a href="#">37092.100.001</a>			
M6	250	<a href="#">37092.060.001</a>	M12	150	<a href="#">37092.120.001</a>			

- Curved spring lock washers acc. to DIN 128 A are improved compared to spring lock washers acc. to DIN 127 A and due to the curved form have moreover the advantages: do not damage surfaces of the construction, nut or bolt; also to use with left hand thread; do not disform during tightening and dis-assembly, thus re-useable; do not tangle, so suitable for automatic feeding and should be used in combination with fasteners of property class < 8.8, use under dynamic load is not allowed.
- For locking under dynamic load is referred to locking edge washers, SCHNORR safety washers and NORD-LOCK vibration proof washers, see elsewhere in this section.

**51520 Curved spring lock washer DIN 128A** R09A

<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard DIN ≈128 A NEN ≈1570	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2	100	<a href="#">51520.020.001</a>	M6	250	<a href="#">51520.060.001</a>	M20	100	<a href="#">51520.200.001</a>
M2,5	100	<a href="#">51520.025.001</a>	M8	200	<a href="#">51520.080.001</a>	M22	50	<a href="#">51520.220.001</a>
M2,6	100	<a href="#">51520.026.001</a>	M10	200	<a href="#">51520.100.001</a>	M24	50	<a href="#">51520.240.001</a>
M3	250	<a href="#">51520.030.001</a>	M12	150	<a href="#">51520.120.001</a>	M30	25	<a href="#">51520.300.001</a>
M3,5	250	<a href="#">51520.035.001</a>	M14	100	<a href="#">51520.140.001</a>	M36	25	<a href="#">51520.360.001</a>
M4	250	<a href="#">51520.040.001</a>	M16	100	<a href="#">51520.160.001</a>			
M5	250	<a href="#">51520.050.001</a>	M18	100	<a href="#">51520.180.001</a>			

- The measurements deviate slightly from DIN 128 A, these spring lock washers have a deviating "reinforced" thickness resulting in considerably improved spring characteristics.
- Curved spring lock washers acc. to DIN 128 A are improved compared to spring lock washers acc. to DIN 127 A and due to the curved form have moreover the advantages: do not damage surfaces of the construction, nut or bolt; also to use with left hand thread; do not disform during tightening and dis-assembly, thus re-useable; do not tangle, so suitable for automatic feeding. Use under dynamic load is not allowed.
- For locking under dynamic load is referred to NORD-LOCK vibration proof washers and SCHNORR safety washers.
- The austenetic steel type is at the manufacturer's discretion, and can vary from the steel types stated in DIN 267-11.

**55520 Curved spring lock washer DIN 128A** R49A

<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard DIN ≈128 A NEN ≈1570	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	250	<a href="#">55520.030.001</a>	M8	200	<a href="#">55520.080.001</a>	M20	100	<a href="#">55520.200.001</a>
M4	250	<a href="#">55520.040.001</a>	M10	200	<a href="#">55520.100.001</a>	M24 *	100	<a href="#">55520.240.001</a>
M5	250	<a href="#">55520.050.001</a>	M12	150	<a href="#">55520.120.001</a>			
M6	250	<a href="#">55520.060.001</a>	M16	100	<a href="#">55520.160.001</a>			

- The measurements deviate slightly from DIN 128 A, these spring lock washers have a deviating "reinforced" thickness resulting in considerably improved spring characteristics.
- Curved spring lock washers acc. to DIN 128 A are improved compared to spring lock washers acc. to DIN 127 A and due to the curved form have moreover the advantages: do not damage surfaces of the construction, nut or bolt; also to use with left hand thread; do not disform during tightening and dis-assembly, thus re-useable; do not tangle, so suitable for automatic feeding.
- Use under dynamic load is not allowed. For locking under dynamic load is referred to NORD-LOCK vibration proof washers and SCHNORR safety washers.

**55520 Curved spring lock washer DIN 128A** ←

For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number
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- The austenetic steel type is at the manufacturer's discretion, and can vary from the steel types stated in DIN 267-11.

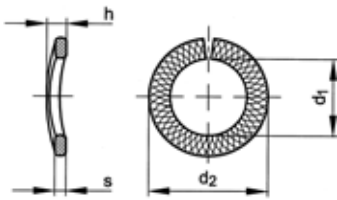
**50500 Curved spring lock washer DIN 128A** M11F

<b>Material</b>	Phosphor bronze Cu4	
<b>Packaging</b>	Standard	
	DIN ≈128 A	
	NEN ≈1570	

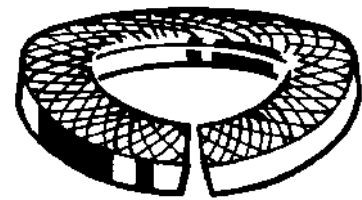
For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number
M2,6	500	<a href="#">50500.026.001</a>	M6	250	<a href="#">50500.060.001</a>	M16	100	<a href="#">50500.160.001</a>
M3	250	<a href="#">50500.030.001</a>	M8	200	<a href="#">50500.080.001</a>	M18	100	<a href="#">50500.180.001</a>
M4	250	<a href="#">50500.040.001</a>	M10	200	<a href="#">50500.100.001</a>	M20	100	<a href="#">50500.200.001</a>
M5	250	<a href="#">50500.050.001</a>	M12	150	<a href="#">50500.120.001</a>			

- The measurements deviate slightly from DIN 128 A, these spring lock washers have a deviating "reinforced" thickness resulting in considerably improved spring characteristics.

## Locking edge washer ≈ DIN 128A



DIN ≈128 A  
NEN ≈1570

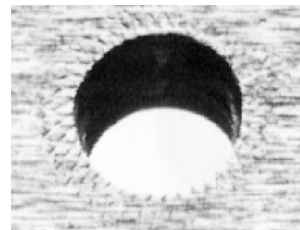
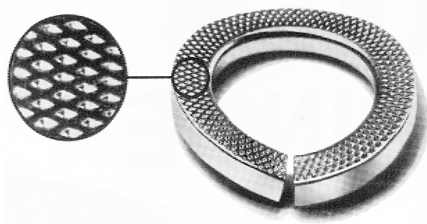


### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub> (max.)	s
M4	4,1	7,6	0,8
M5	5,1	9,2	1
M6	6,1	11,8	1,3
M8	8,1	14,9	1,6
M10	10,2	18,1	1,8
M12	12,2	21,1	2,1
M14	14,2	24,1	2,4
M16	16,2	27,4	2,8
M18	18,2	29,4	2,8
M20	20,2	33,6	3,2
M22	22,5	35,9	3,2
M24	24,5	40	4
M27	27,5	43	4
M30	30,5	48,2	6

Special features of FABORY locking edge washers:

- applicable with hexagon head bolts, hexagon nuts, etc. of property class ≤ 8.8
- the profile surface (patented) ensures good locking against loosening properties and reduces loss of assembly pre-load
- compensation against play or setting of the joint by a long spring deflection
- little damage, so also usable with softer materials and surface coatings
- re-usable
- suited for automatic installation
- insensitive for temperature from -10°C up to +300°C
- sizes and other properties according to DIN 128 A
- simple application together with current standard fasteners
- also applicable for hexagon head bolts, hexagon nuts etc. with left-hand thread



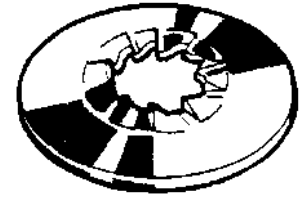
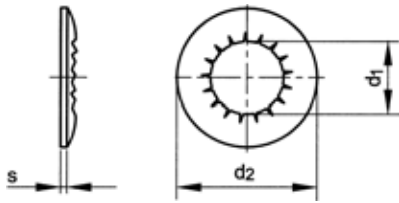
7

<b>37070</b>	<b>Locking edge washer</b>	<b>L07D</b>
<b>Material</b>	Spring steel DIN267-26	
<b>Surface treatment</b>	Mechanical zinc plated yellow passivated	
<b>Packaging</b>	Standard	

For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number
M4	250	<a href="#">37070.040.001</a>	M12	150	<a href="#">37070.120.001</a>	M22	50	<a href="#">37070.220.001</a>
M5	250	<a href="#">37070.050.001</a>	M14	100	<a href="#">37070.140.001</a>	M24	50	<a href="#">37070.240.001</a>
M6	250	<a href="#">37070.060.001</a>	M16	100	<a href="#">37070.160.001</a>	M27	25	<a href="#">37070.270.001</a>
M8	200	<a href="#">37070.080.001</a>	M18	100	<a href="#">37070.180.001</a>	M30	25	<a href="#">37070.300.001</a>
M10	200	<a href="#">37070.100.001</a>	M20	100	<a href="#">37070.200.001</a>			

## Heavy domed internal serrated lock washer type JZC

NF E25-512



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M3	3,2	8,7	0,5
M4	4,3	11,2	0,6
M5	5,1	16,2	1
M6	6,1	18,3	1
M10	10,2	26,3	1,4
M12	12,2	32,4	1,4
M16	16,5	32,4	1,4
M20	20,5	39,4	1,8

- The main purpose of toothed lock washers is to permit the flow of electric current between components coated by varnish, anti-corrosive agents or similar materials, the bend ends of the washers piercing the coating when such components are joined. Where such washers are intended to keep fasteners of a low property class from working loose, their effectiveness shall be checked for the application concerned.
- Internal teeth and extra large outside diameter d<sub>2</sub>, extra resilience because of its domed form.

### 37560 Heavy domed internal serrated lock washer type JZC

L07D

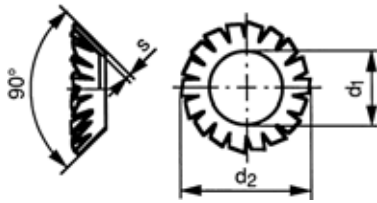
**Material** Spring steel  
**Packaging** Standard



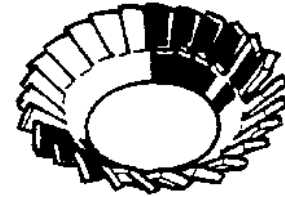
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	1000	<a href="#">37560.030.001</a>	M6	1000	<a href="#">37560.060.001</a>	M16	100	<a href="#">37560.160.001</a>
M4	1000	<a href="#">37560.040.001</a>	M10	100	<a href="#">37560.100.001</a>	M20	100	<a href="#">37560.200.001</a>
M5	1000	<a href="#">37560.050.001</a>	M12	100	<a href="#">37560.120.001</a>			

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

## Countersunk serrated lock washer external teeth



DIN 6798 V  
NF E27-627



### Technical data

For nom.size	$d_1$	$d_2 \approx$	s
M3	3,2	6	0,2
M4	4,3	8	0,25
M5	5,3	9,8	0,3
M6	6,4	11,8	0,4
M8	8,4	15,3	0,4
M10	10,5	19	0,5
M12	13	23	0,5
M14	15	26,2	0,6
M16	17	30,2	0,6

- The main purpose of toothed lock washers is to permit the flow of electric current between components coated by varnish, anti-corrosive agents or similar materials, the bend ends of the washers piercing the coating when such components are joined. Where such washers are intended to keep fasteners of a low property class from working loose, their effectiveness shall be checked for the application concerned.
- Suitable for bolts and nuts with normal widths across flats.

### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel 350-425 HV10		Standard	37500	7-53
Spring steel 350-425 HV10	Zipl	Standard	37520	7-53

#### 37500 Countersunk serrated lock washer external teeth

L07D

**Material** Spring steel 350-425 HV10  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	1000	<a href="#">37500.030.001</a>	M6	1000	<a href="#">37500.060.001</a>	M12	500	<a href="#">37500.120.001</a>
M4	1000	<a href="#">37500.040.001</a>	M8	1000	<a href="#">37500.080.001</a>	M14	100	<a href="#">37500.140.001</a>
M5	1000	<a href="#">37500.050.001</a>	M10	1000	<a href="#">37500.100.001</a>	M16	100	<a href="#">37500.160.001</a>

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

#### 37520 Countersunk serrated lock washer external teeth

L07D

**Material** Spring steel 350-425 HV10  
**Surface treatment** Zinc plated  
**Packaging** Standard

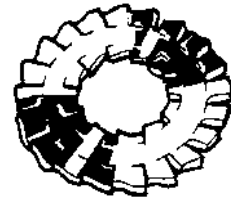
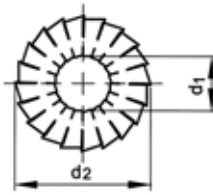


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4	1000	<a href="#">37520.040.001</a>	M6	1000	<a href="#">37520.060.001</a>	M10	1000	<a href="#">37520.100.001</a>
M5	1000	<a href="#">37520.050.001</a>	M8	1000	<a href="#">37520.080.001</a>	M12	500	<a href="#">37520.120.001</a>

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

## Double serrated lock washer type DD

NF E27-626



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M4	4,2	15,6	0,8
M5	5,2	17,9	0,8
M6	6,2	18,2	0,8
M8	8,2	22,3	1
M10	10,3	26,1	1,1
M12	12,3	30,3	1,2
M16	16,5	36,1	1,4

- The main purpose of toothed lock washers is to permit the flow of electric current between components coated by varnish, anti-corrosive agents or similar materials, the bend ends of the washers piercing the coating when such components are joined. Where such washers are intended to keep fasteners of a low property class from working loose, their effectiveness shall be checked for the application concerned.
- Double serrated teeth and extra large outside diameter d<sub>2</sub>. Recommended for oversize and elongated holes, where a larger contact surface is required and between parts to prevent them from moving.

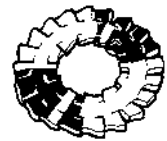
### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel		Standard	37580	7-54
Spring steel	Zipl	Standard	37590	7-54

#### 37580 Double serrated lock washer type DD

L07D

Material Spring steel  
 Packaging Standard



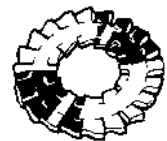
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4	1000	<a href="#">37580.040.001</a>	M8	500	<a href="#">37580.080.001</a>	M16	100	<a href="#">37580.160.001</a>
M5	1000	<a href="#">37580.050.001</a>	M10	500	<a href="#">37580.100.001</a>			
M6	500	<a href="#">37580.060.001</a>	M12	100	<a href="#">37580.120.001</a>			

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

#### 37590 Double serrated lock washer type DD

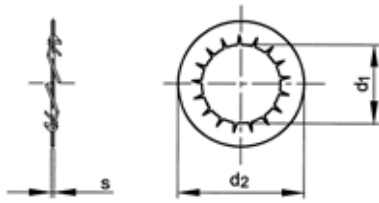
L07D

Material Spring steel  
 Surface treatment Zinc plated  
 Packaging Standard

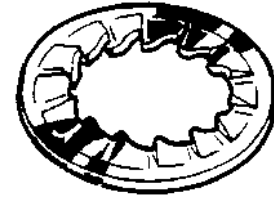


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4	1000	<a href="#">37590.040.001</a>	M8	500	<a href="#">37590.080.001</a>	M16	100	<a href="#">37590.160.001</a>
M5	1000	<a href="#">37590.050.001</a>	M10	500	<a href="#">37590.100.001</a>			
M6	500	<a href="#">37590.060.001</a>	M12	100	<a href="#">37590.120.001</a>			

## Serrated lock washer internal teeth



DIN 6798 J  
 NEN 2454  
 NF E27-625



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M2	2,2	4,5	0,3
M2,3 (#DIN)	2,5	5	0,4
M2,5	2,7	5,5	0,4
M3	3,2	6	0,4
M3,5	3,7	7	0,5
M4	4,3	8	0,5
M5 (#DIN)	5,1	9	0,5
M5	5,3	10	0,6
M6	6,4	11	0,7
M7	7,4	12,5	0,8
M8 (#DIN)	8,2	14	0,8
M8	8,4	15	0,8
M10	10,5	18	0,9
M12	12,5	20,5	1
M14	15	24	1,1
M16	17	26	1,2
M18	19	30	1,4
M20	21	33	1,4
M22	23	36	1,5
M24	25	38	1,5
1.IN.	25	38	1,5
M27	28	44	1,6
M30	31	48	1,6

- The main purpose of toothed lock washers is to permit the flow of electric current between components coated by varnish, anti-corrosive agents or similar materials, the bend ends of the washers piercing the coating when such components are joined. Where such washers are intended to keep fasteners of a low property class from working loose, their effectiveness shall be checked for the application concerned.
- Suitable for bolts and nuts with normal widths across flats.

### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel 350-425 HV10		Standard	37460	7-55
Spring steel 350-425 HV10	Zipl	Standard	37480	7-56
St.St. A2		Standard	51462	7-56
St.St. A4		Standard	55462	7-56

### 37460 Serrated lock washer internal teeth

L07D

**Material** Spring steel 350-425 HV10  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2	1000	<a href="#">37460.020.001</a>	M7	1000	<a href="#">37460.070.001</a>	M18	100	<a href="#">37460.180.001</a>
M3	1000	<a href="#">37460.030.001</a>	M8 (#DIN)	1000	<a href="#">37460.080.001</a>	M20	100	<a href="#">37460.200.001</a>
M3,5	1000	<a href="#">37460.035.001</a>	M8	1000	<a href="#">37460.080.002</a>	M22	100	<a href="#">37460.220.001</a>
M4	1000	<a href="#">37460.040.001</a>	M10	1000	<a href="#">37460.100.001</a>	M24	100	<a href="#">37460.240.001</a>
M5 (#DIN)	1000	<a href="#">37460.050.001</a>	M12	1000	<a href="#">37460.120.001</a>	M27	100	<a href="#">37460.270.001</a>
M5	1000	<a href="#">37460.050.002</a>	M14	500	<a href="#">37460.140.001</a>	M30	100	<a href="#">37460.300.001</a>
M6	1000	<a href="#">37460.060.001</a>	M16	500	<a href="#">37460.160.001</a>			

37480 Serrated lock washer internal teeth		L07D
<b>Material</b>	Spring steel 350-425 HV10	
<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		1000 <a href="#">37480.020.001</a>	M6		1000 <a href="#">37480.060.001</a>	M16		500 <a href="#">37480.160.001</a>
M2,5		1000 <a href="#">37480.025.001</a>	M7		1000 <a href="#">37480.070.001</a>	M18		100 <a href="#">37480.180.001</a>
M3		1000 <a href="#">37480.030.001</a>	M8 (#DIN)		1000 <a href="#">37480.080.001</a>	M20		100 <a href="#">37480.200.001</a>
M3,5		1000 <a href="#">37480.035.001</a>	M8 (8,4MM)		1000 <a href="#">37480.080.002</a>	M22		100 <a href="#">37480.220.001</a>
M4		1000 <a href="#">37480.040.001</a>	M10		1000 <a href="#">37480.100.001</a>	M24		100 <a href="#">37480.240.001</a>
M5 (#DIN)		1000 <a href="#">37480.050.001</a>	M12		1000 <a href="#">37480.120.001</a>			
M5		1000 <a href="#">37480.050.002</a>	M14		500 <a href="#">37480.140.001</a>			

51462 Serrated lock washer internal teeth		R09A
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	
	DIN ≈6798 J	
	NEN ≈2454	
	NF ≈E27-625	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2,5		200 <a href="#">51462.025.001</a>	M10		100 <a href="#">51462.100.001</a>	M22 *		200 <a href="#">51462.220.001</a>
M3		200 <a href="#">51462.030.001</a>	M12		100 <a href="#">51462.120.001</a>	M24		50 <a href="#">51462.240.001</a>
M4		200 <a href="#">51462.040.001</a>	M14		100 <a href="#">51462.140.001</a>	M27		50 <a href="#">51462.270.001</a>
M5		200 <a href="#">51462.050.001</a>	M16		100 <a href="#">51462.160.001</a>	M30 *		100 <a href="#">51462.300.001</a>
M6		200 <a href="#">51462.060.001</a>	M18		100 <a href="#">51462.180.001</a>			
M8		200 <a href="#">51462.080.001</a>	M20		100 <a href="#">51462.200.001</a>			

- The austenetic steel type is at the manufacturer's discretion, and can vary from the steel types stated in DIN 267-11.

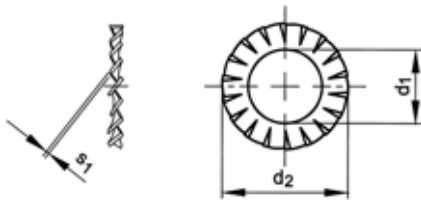
55462 Serrated lock washer internal teeth		R49A
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	
	DIN ≈6798 J	
	NEN ≈2454	
	NF ≈E27-625	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2,3 *		1000 <a href="#">55462.023.001</a>	M8		200 <a href="#">55462.080.001</a>	M18		100 <a href="#">55462.180.001</a>
M3		200 <a href="#">55462.030.001</a>	M10		100 <a href="#">55462.100.001</a>	M20		100 <a href="#">55462.200.001</a>
M4		200 <a href="#">55462.040.001</a>	M12		100 <a href="#">55462.120.001</a>	M24		50 <a href="#">55462.240.001</a>
M5		200 <a href="#">55462.050.001</a>	M14		100 <a href="#">55462.140.001</a>			
M6		200 <a href="#">55462.060.001</a>	M16		100 <a href="#">55462.160.001</a>			

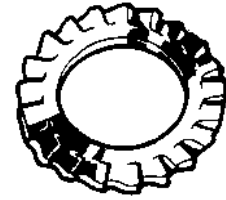
- The austenetic steel type is at the manufacturer's discretion, and can vary from the steel types stated in DIN 267-11.



## Serrated lock washer external teeth



DIN 6798 A  
 NEN 2453  
 NF E27-624



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s <sub>1</sub>
M2	2,2	4,5	0,3
M2,5	2,7	5,5	0,4
M2,6 (#DIN)	2,8	5,5	0,4
M3	3,2	6	0,4
M3,5	3,7	7	0,5
M4	4,3	8	0,5
M5 (#DIN)	5,1	9	0,5
M5	5,3	10	0,6
M6	6,4	11	0,7
M7	7,4	12,5	0,8
M8 (#DIN)	8,2	14	0,8
M8	8,4	15	0,8
M10	10,5	18	0,9
M11 (#DIN)	11,5	19,5	0,9
M12	13	20,5	1
1/2	13,2	22	1
M14	15	24	1
M16	17	26	1,2
M18	19	30	1,4
M20	21	33	1,4
M22	23	36	1,5
M24	25	38	1,5
M27	28	44	1,6
M30	31	48	1,6

- The main purpose of toothed lock washers is to permit the flow of electric current between components coated by varnish, anti-corrosive agents or similar materials, the bend ends of the washers piercing the coating when such components are joined. Where such washers are intended to keep fasteners of a low property class from working loose, their effectiveness shall be checked for the application concerned.
- Suitable for bolts and nuts with normal widths across flats.

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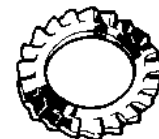
### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel 350-425 HV10		Standard	37400	7-57
Spring steel 350-425 HV10	Zipl	Standard	37420	7-58
Spring steel 350-425 HV10	Zipl	Large	37430	7-58
Spring steel 350-425 HV10	Zipl yell.p.	Standard	37440	7-58
St.St. A2		Standard	51460	7-58
St.St. A4		Standard	55460	7-58
Phosphor bronze Cu4		Standard	50540	7-59

#### 37400 Serrated lock washer external teeth

L07D

**Material** Spring steel 350-425 HV10  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2	1000	<a href="#">37400.020.001</a>	M7	1000	<a href="#">37400.070.001</a>	M18	100	<a href="#">37400.180.001</a>
M3	1000	<a href="#">37400.030.001</a>	M8 (#DIN)	1000	<a href="#">37400.080.001</a>	M20	100	<a href="#">37400.200.001</a>
M3,5	1000	<a href="#">37400.035.001</a>	M8	1000	<a href="#">37400.080.002</a>	M22	100	<a href="#">37400.220.001</a>
M4	1000	<a href="#">37400.040.001</a>	M10	1000	<a href="#">37400.100.001</a>	M24	100	<a href="#">37400.240.001</a>
M5 (#DIN)	1000	<a href="#">37400.050.001</a>	M12	1000	<a href="#">37400.120.001</a>	M27	100	<a href="#">37400.270.001</a>
M5	1000	<a href="#">37400.050.002</a>	M14	500	<a href="#">37400.140.001</a>	M30	100	<a href="#">37400.300.001</a>
M6	1000	<a href="#">37400.060.001</a>	M16	500	<a href="#">37400.160.001</a>			

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

37420 Serrated lock washer external teeth		L07D
<b>Material</b>	Spring steel 350-425 HV10	
<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		200 <a href="#">37420.020.001</a>	M7		200 <a href="#">37420.070.001</a>	M18		100 <a href="#">37420.180.001</a>
M2,5		200 <a href="#">37420.025.001</a>	M8 (#DIN)		200 <a href="#">37420.080.001</a>	M20		100 <a href="#">37420.200.001</a>
M3		200 <a href="#">37420.030.001</a>	M8		200 <a href="#">37420.080.002</a>	M22		100 <a href="#">37420.220.001</a>
M3,5		200 <a href="#">37420.035.001</a>	M10		100 <a href="#">37420.100.001</a>	M24		100 <a href="#">37420.240.001</a>
M4		200 <a href="#">37420.040.001</a>	M11		100 <a href="#">37420.110.001</a>	M27		100 <a href="#">37420.270.001</a>
M5 (#DIN)		200 <a href="#">37420.050.001</a>	M12		100 <a href="#">37420.120.001</a>	M30		50 <a href="#">37420.300.001</a>
M5		200 <a href="#">37420.050.002</a>	M14		100 <a href="#">37420.140.001</a>			
M6		200 <a href="#">37420.060.001</a>	M16		100 <a href="#">37420.160.001</a>			

37430 Serrated lock washer external teeth		L07D
<b>Material</b>	Spring steel 350-425 HV10	
<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
M2,5		10000 <a href="#">37430.025.001</a>	M5 (#DIN)		10000 <a href="#">37430.050.001</a>	M10		2000 <a href="#">37430.100.001</a>
M3		10000 <a href="#">37430.030.001</a>	M6		5000 <a href="#">37430.060.001</a>	M12		2000 <a href="#">37430.120.001</a>
M4		10000 <a href="#">37430.040.001</a>	M8 (#DIN)		5000 <a href="#">37430.080.001</a>			

37440 Serrated lock washer external teeth		L07D
<b>Material</b>	Spring steel 350-425 HV10	
<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		200 <a href="#">37440.030.001</a>	M8 (8,2MM)		200 <a href="#">37440.080.001</a>	M20		100 <a href="#">37440.200.001</a>
M4		200 <a href="#">37440.040.001</a>	M10		100 <a href="#">37440.100.001</a>	M24		100 <a href="#">37440.240.001</a>
M5 (5,1MM)		200 <a href="#">37440.050.001</a>	M12		100 <a href="#">37440.120.001</a>			
M6		200 <a href="#">37440.060.001</a>	M16		100 <a href="#">37440.160.001</a>			

51460 Serrated lock washer external teeth		R09A
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	
	DIN ≈6798 A	
	NEN ≈2453	
	NF ≈E27-624	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2		200 <a href="#">51460.020.001</a>	M6		200 <a href="#">51460.060.001</a>	M16		100 <a href="#">51460.160.001</a>
M2,5		200 <a href="#">51460.025.001</a>	M7		200 <a href="#">51460.070.001</a>	M18		100 <a href="#">51460.180.001</a>
M2,6 (#DIN)		200 <a href="#">51460.026.001</a>	M8		200 <a href="#">51460.080.001</a>	M20		100 <a href="#">51460.200.001</a>
M3		200 <a href="#">51460.030.001</a>	M10		100 <a href="#">51460.100.001</a>	M22		50 <a href="#">51460.220.001</a>
M3,5		200 <a href="#">51460.035.001</a>	M12		100 <a href="#">51460.120.001</a>	M24		50 <a href="#">51460.240.001</a>
M4		200 <a href="#">51460.040.001</a>	1/2		100 <a href="#">51460.127.001</a>	M27		50 <a href="#">51460.270.001</a>
M5		200 <a href="#">51460.050.001</a>	M14		100 <a href="#">51460.140.001</a>	M30		25 <a href="#">51460.300.001</a>

• The austenetic steel type is at the manufacturer's discretion, and can vary from the steel types stated in DIN 267-11.

55460 Serrated lock washer external teeth		R49A
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	
	DIN ≈6798 A	
	NEN ≈2453	
	NF ≈E27-624	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2		200 <a href="#">55460.020.001</a>	M2,6 (#DIN)		200 <a href="#">55460.026.001</a>	M3,5		200 <a href="#">55460.035.001</a>
M2,5		200 <a href="#">55460.025.001</a>	M3		200 <a href="#">55460.030.001</a>	M4		200 <a href="#">55460.040.001</a>

**55460 Serrated lock washer external teeth** ←

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5	200	<a href="#">55460.050.001</a>	M14	100	<a href="#">55460.140.001</a>	M24	50	<a href="#">55460.240.001</a>
M6	200	<a href="#">55460.060.001</a>	M16	100	<a href="#">55460.160.001</a>	M27	50	<a href="#">55460.270.001</a>
M8	200	<a href="#">55460.080.001</a>	M18	100	<a href="#">55460.180.001</a>	M30	25	<a href="#">55460.300.001</a>
M10	100	<a href="#">55460.100.001</a>	M20	100	<a href="#">55460.200.001</a>			
M12	100	<a href="#">55460.120.001</a>	M22	50	<a href="#">55460.220.001</a>			

- The austenetic steel type is at the manufacturer's discretion, and can vary from the steel types stated in DIN 267-11.

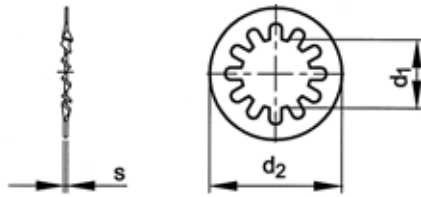
**50540 Serrated lock washer external teeth** M11F

<b>Material</b>	Phosphor bronze Cu4	
<b>Packaging</b>	Standard	
	DIN ≈6798 A	
	NEN ≈2453	
	NF ≈E27-624	

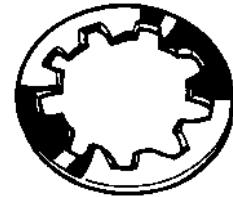
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2	200	<a href="#">50540.020.001</a>	M4	200	<a href="#">50540.040.001</a>	M10	100	<a href="#">50540.100.001</a>
M2,5	200	<a href="#">50540.025.001</a>	M5	200	<a href="#">50540.050.001</a>	M12	100	<a href="#">50540.120.001</a>
M3	200	<a href="#">50540.030.001</a>	M6	200	<a href="#">50540.060.001</a>			
M3,5	200	<a href="#">50540.035.001</a>	M8	200	<a href="#">50540.080.001</a>			

- Suitable for bolts and nuts with normal widths across flats.

## Toothed lock washer internal teeth



DIN 6797 J  
NEN 2451



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M2	2,2	4,5	0,3
M2,3 (#DIN)	2,5	5	0,4
M2,5	2,7	5,5	0,4
M3	3,2	6	0,4
M4	4,3	8	0,5
M5	5,3	10	0,6
M6	6,4	11	0,7
M8	8,4	15	0,8
M10	10,5	18	0,9
M12	13	20,5	1
M14	15	24	1
M16	17	26	1,2
M18	19	30	1,4
M20	21	33	1,4
M22	23	36	1,5
M24	25	38	1,5
M27	28	44	1,6
M30	31	48	1,6

- The main purpose of toothed lock washers is to permit the flow of electric current between components coated by varnish, anti-corrosive agents or similar materials, the bend ends of the washers piercing the coating when such components are joined. Where such washers are intended to keep fasteners of a low property class from working loose, their effectiveness shall be checked for the application concerned.
- Suitable for bolts and nuts with widths across flats smaller than normal and when due to the appearance the teeth are wanted on the internal side.

### Article groups

Material	Packaging	Code	Page
Spring steel 350-425 HV10	Standard	37320	7-60
St.St. A2	Standard	51458	7-60

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37320 Toothed lock washer internal teeth		L07D
<b>Material</b>	Spring steel 350-425 HV10	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">37320.030.001</a>	M6	250	<a href="#">37320.060.001</a>	M12	200	<a href="#">37320.120.001</a>
M4	500	<a href="#">37320.040.001</a>	M8	200	<a href="#">37320.080.001</a>	M16	100	<a href="#">37320.160.001</a>
M5	250	<a href="#">37320.050.001</a>	M10	200	<a href="#">37320.100.001</a>	M20	100	<a href="#">37320.200.001</a>

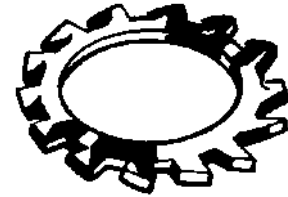
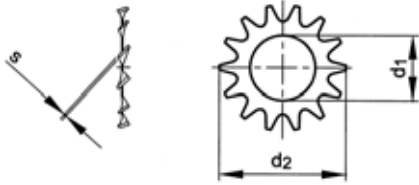
- Warning: electro-galvanizing of these products may cause hydrogen embrittlement.

51458 Toothed lock washer internal teeth		R09A
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	
	DIN ≈6797 J NEN ≈2451	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2 *	1000	<a href="#">51458.020.001</a>	M8	200	<a href="#">51458.080.001</a>	M20	100	<a href="#">51458.200.001</a>
M2,3 *	1000	<a href="#">51458.023.001</a>	M10	200	<a href="#">51458.100.001</a>	M22 *	200	<a href="#">51458.220.001</a>
M3	200	<a href="#">51458.030.001</a>	M12	100	<a href="#">51458.120.001</a>	M24 *	200	<a href="#">51458.240.001</a>
M4	200	<a href="#">51458.040.001</a>	M14	100	<a href="#">51458.140.001</a>	M27 *	100	<a href="#">51458.270.001</a>
M5	200	<a href="#">51458.050.001</a>	M16	100	<a href="#">51458.160.001</a>	M30 *	100	<a href="#">51458.300.001</a>
M6	200	<a href="#">51458.060.001</a>	M18 *	200	<a href="#">51458.180.001</a>			

- The austenetic steel type is at the manufacturer's discretion, and can vary from the steel types stated in DIN 267-11

## Toothed lock washer external teeth

 DIN 6797 A  
 NEN 2450


### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M2	2,2	4,5	0,3
M2,3 (#DIN)	2,5	5	0,4
M2,5	2,7	5,5	0,4
M3	3,2	6	0,4
M3,5	3,7	7	0,5
M4	4,3	8	0,5
M5	5,3	10	0,6
M6	6,4	11	0,7
M7	7,4	12,5	0,8
M8	8,4	15	0,8
M10	10,5	18	0,9
M12	13	20,5	1
M14	15	24	1
M16	17	26	1,2
M18	19	30	1,4
M20	21	33	1,4
M22	23	36	1,5
M24	25	38	1,5
M27	28	44	1,6
M30	31	48	1,6

- The main purpose of toothed lock washers is to permit the flow of electric current between components coated by varnish, anti-corrosive agents or similar materials, the bend ends of the washers piercing the coating when such components are joined. Where such washers are intended to keep fasteners of a low property class from working loose, their effectiveness shall be checked for the application concerned.
- Suitable for bolts and nuts with normal widths across flats.

### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel 350-425 HV10		Standard	37300	7-61
Spring steel 350-425 HV10	Zipl	Standard	37302	7-61
St.St. A2		Standard	51456	7-62

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#### 37300 Toothed lock washer external teeth

L07D

Material Spring steel 350-425 HV10  
 Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">37300.030.001</a>	M8	200	<a href="#">37300.080.001</a>	M16	100	<a href="#">37300.160.001</a>
M4	500	<a href="#">37300.040.001</a>	M10	200	<a href="#">37300.100.001</a>	M20	100	<a href="#">37300.200.001</a>
M5	250	<a href="#">37300.050.001</a>	M12	200	<a href="#">37300.120.001</a>	M24	50	<a href="#">37300.240.001</a>
M6	250	<a href="#">37300.060.001</a>	M14	100	<a href="#">37300.140.001</a>			

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

#### 37302 Toothed lock washer external teeth

L07D

Material Spring steel 350-425 HV10  
 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="#">37302.030.001</a>	M5	250	<a href="#">37302.050.001</a>	M8	200	<a href="#">37302.080.001</a>
M4	500	<a href="#">37302.040.001</a>	M6	250	<a href="#">37302.060.001</a>	M10	200	<a href="#">37302.100.001</a>

**37302 Toothed lock washer external teeth**

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M12		200 <a href="#">37302.120.001</a>	M16		200 <a href="#">37302.160.001</a>	M24		50 <a href="#">37302.240.001</a>
M14		100 <a href="#">37302.140.001</a>	M20		100 <a href="#">37302.200.001</a>			

**51456 Toothed lock washer external teeth** R09A

**Material** Stainless steel A2  
**Packaging** Standard  
**DIN** ≈6797A  
**NEN** ≈2450

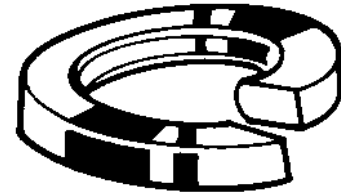
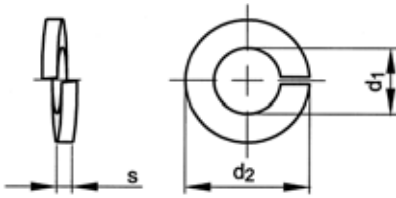


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M2 *		1000 <a href="#">51456.020.001</a>	M6		200 <a href="#">51456.060.001</a>	M18 *		200 <a href="#">51456.180.001</a>
M2.3 *		1000 <a href="#">51456.023.001</a>	M7 *		1000 <a href="#">51456.070.001</a>	M20		100 <a href="#">51456.200.001</a>
NO.3 *		1000 <a href="#">51456.025.001</a>	M8		200 <a href="#">51456.080.001</a>	M22 *		200 <a href="#">51456.220.001</a>
M3		200 <a href="#">51456.030.001</a>	M10		200 <a href="#">51456.100.001</a>	M24 *		200 <a href="#">51456.240.001</a>
NO.6 *		1000 <a href="#">51456.035.001</a>	M12		100 <a href="#">51456.120.001</a>	M27 *		100 <a href="#">51456.270.001</a>
M4		200 <a href="#">51456.040.001</a>	M14 *		500 <a href="#">51456.140.001</a>	M30 *		100 <a href="#">51456.300.001</a>
M5		200 <a href="#">51456.050.001</a>	M16		100 <a href="#">51456.160.001</a>			

- The austenetic steel type is at the manufacturer's discretion, and can vary from the steel types stated in DIN 267-11.

## Contact spring washer for switchgear plants

DIN 43699



### Technical data

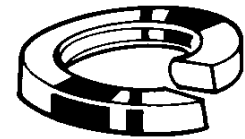
For nom.size	d <sub>1</sub>	d <sub>2</sub>	s
M6 (#DIN)	6,1	12,1	2
M8	8,2	15,2	2,2
M10	10,2	18,2	2,5
M12	12,2	22,2	3,5
M16	16,2	28,2	4
M20	20,2	34,2	5

- Depending on availability these articles can be supplied zinc plated as well as mechanical plated.

### 37260 Contact spring washer for switchgear plants

L07D

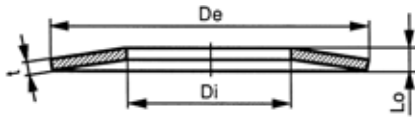
**Material** Spring steel  
**Surface treatment** Zinc plated  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6	250	<a href="#">37260.060.001</a>	M10	200	<a href="#">37260.100.001</a>	M16	100	<a href="#">37260.160.001</a>
M8	200	<a href="#">37260.080.001</a>	M12	150	<a href="#">37260.120.001</a>	M20	100	<a href="#">37260.200.001</a>

## Disc spring for critical applications type B (medium)

DIN 2093 B

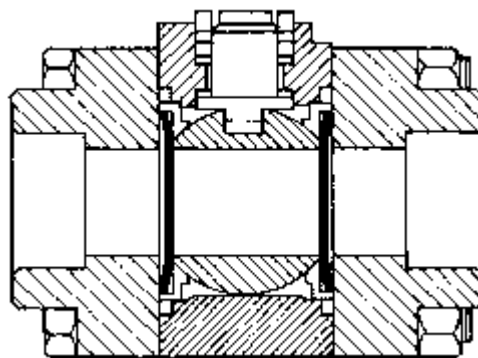


### Technical data

De (h12)	Di (H12)	t	Lo	F
8	4,2	0,3	0,55	119
10	5,2	0,4	0,7	213
12,5	6,2	0,5	0,85	291
14	7,2	0,5	0,9	279
16	8,2	0,6	1,05	412
18	9,2	0,7	1,2	572
20	10,2	0,8	1,35	745
22,5	11,2	0,8	1,45	710
25	12,2	0,9	1,6	868
28	14,2	1	1,8	1110
31,5	16,3	1,25	2,15	1920
35,5	18,3	1,25	2,25	1700
40	20,4	1,5	2,65	2620
45	22,4	1,75	3,05	3660
50	25,4	2	3,4	4760
56	28,5	2	3,6	4440
63	31	2,5	4,25	7180
71	36	2,5	4,5	6730
80	41	3	5,3	10500
90	46	3,5	6	14200
100	51	3,5	6,3	13100
112	57	4	7,2	17800

- Disc springs acc. to DIN 2093 are mostly used in critical applications with safety first. Similar applications can be found in for example safety torque limiter clutches, hinge stiffeners and applications of constant roll pressure. Because of the right combination c.q. stacking of the disc springs the elasticity and/or deflection can be dosed accurately. The technical specifications of the disc springs above meet the highest expectations with reference to the static and dynamic load. They exceed the requirements of DIN 2093.
- Material group 1:  $t < 1,25$  from steel Ck 75.
- Material group 2:  $1,25 \leq t \leq 6,0$  from steel 50 Cr V4 (fatigue fractures can be largely prevented because these disc springs have machined edges).
- $F$  = spring force in Newton at a deflection  $s \approx 0,75 h_0$  ( $h_0 = L_0 - t$ ).
- Nominal thickness. For the calculation of disc springs, see DIN 2092.
- Extensive technical data available on request.

### Example of application



Ball valve



**36302 Disc spring for critical applications type B (medium)**
**L07C**

**Material** Steel Ck 75 Werkstoffnr. 1.1248  
**Surface treatment** Phosphated  
**Packaging** Standard



De x Di x t	✉	Art.number	De x Di x t	✉	Art.number	De x Di x t	✉	Art.number
8X4,2X0,3MM	100	<a href="#">36302.084.003</a>	25X12,2X0,9MM	50	<a href="#">36302.262.009</a>	63X31X2,5MM	5	<a href="#">36302.661.025</a>
10X5,2X0,4MM	100	<a href="#">36302.105.004</a>	28X14,2X1MM	50	<a href="#">36302.294.010</a>	71X36X2,5MM	5	<a href="#">36302.746.025</a>
12,5X6,2X0,5MM	100	<a href="#">36302.131.005</a>	31,5X16,3X1,25MM	50	<a href="#">36302.331.012</a>	80X41X3MM	1	<a href="#">36302.841.030</a>
14X7,2X0,5MM	100	<a href="#">36302.147.005</a>	35,5X18,3X1,25MM	25	<a href="#">36302.373.012</a>	90X46X3,5MM	1	<a href="#">36302.946.035</a>
16X8,2X0,6MM	100	<a href="#">36302.168.006</a>	40X20,4X1,5MM	25	<a href="#">36302.420.015</a>	100X51X3,5MM	1	<a href="#">36302.960.035</a>
18X9,2X0,7MM	100	<a href="#">36302.189.007</a>	45X22,4X1,75MM	10	<a href="#">36302.472.017</a>	112X57X4MM	1	<a href="#">36302.968.040</a>
20X10,2X0,8MM	50	<a href="#">36302.210.008</a>	50X25,4X2MM	10	<a href="#">36302.525.020</a>			
22,5X11,2X0,8MM	50	<a href="#">36302.236.008</a>	56X28,5X2MM	10	<a href="#">36302.588.020</a>			

## Disc spring for critical applications type C (light)

DIN 2093 C

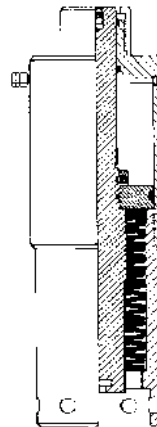


### Technical data

De (h12)	Di (H12)	t	Lo	F
8	4,2	0,2	0,45	39
10	5,2	0,25	0,55	58
12,5	6,2	0,35	0,8	152
14	7,2	0,35	0,8	123
16	8,2	0,4	0,9	155
18	9,2	0,45	1,05	214
20	10,2	0,5	1,15	254
22,5	11,2	0,6	1,4	425
25	12,2	0,7	1,6	601
28	14,2	0,8	1,8	801
31,5	16,3	0,8	1,85	687
35,5	18,3	0,9	2,05	831
40	20,4	1	2,3	1020
45	22,4	1,25	2,85	1890
50	25,4	1,25	2,85	1550
56	28,5	1,5	3,45	2620
63	31	1,8	4,15	4240
71	36	2	4,6	5140
80	41	2,25	5,2	6610
90	46	2,5	5,7	7680
100	51	2,7	6,2	8610
112	57	3	6,9	10500
125	64	3,5	8	15400

- Disc springs acc. to DIN 2093 are mostly used in critical applications with safety first. Similar applications can be found in for example safety torque limiter clutches, hinge stiffeners and applications of constant roll pressure. Because of the right combination c.q. stacking of the disc springs the elasticity and/or deflection can be dosed accurately. The technical specifications of the disc springs above meet the highest expectations with reference to the static and dynamic load. They exceed the requirements of DIN 2093.
- Material group 1:  $t < 1,25$  from steel Ck 75.
- Material group 2:  $1,25 \leq t \leq 6,0$  from steel 50 Cr V4 (fatigue fractures can be largely prevented because these disc springs have machined edges).
- $F$  = spring force in Newton at a deflection  $s \approx 0,75 h_0$  ( $h_0 = L_0 - t$ ).
- For the calculation of disc springs, see DIN 2092.
- Extensive technical data available on request.

### Example of application



**36303 Disc spring for critical applications type C (light)**
**L07C**

**Material** Steel Ck 75 Werkstoffnr. 1.1248  
**Surface treatment** Phosphated  
**Packaging** Standard



De x Di x t	☒	Art.number	De x Di x t	☒	Art.number	De x Di x t	☒	Art.number
8X4,2X0,2MM	100	<a href="#">36303.084.002</a>	25X12,2X0,7MM	50	<a href="#">36303.262.007</a>	63X31X1,8MM	5	<a href="#">36303.661.018</a>
10X5,2X0,25MM	100	<a href="#">36303.105.002</a>	28X14,2X0,8MM	50	<a href="#">36303.294.008</a>	71X36X2MM	5	<a href="#">36303.746.020</a>
12,5X6,2X0,35MM	100	<a href="#">36303.131.003</a>	31,5X16,3X0,8MM	50	<a href="#">36303.331.008</a>	80X41X2,25MM	1	<a href="#">36303.841.022</a>
14X7,2X0,35MM	100	<a href="#">36303.147.003</a>	35,5X18,3X0,9MM	25	<a href="#">36303.373.009</a>	90X46X2,5MM	1	<a href="#">36303.946.025</a>
16X8,2X0,4MM	100	<a href="#">36303.168.004</a>	40X20,4X1MM	25	<a href="#">36303.420.010</a>	100X51X2,7MM	1	<a href="#">36303.960.027</a>
18X9,2X0,45MM	100	<a href="#">36303.189.004</a>	45X22,4X1,25MM	10	<a href="#">36303.472.012</a>	112X57X3MM	1	<a href="#">36303.968.030</a>
20X10,2X0,5MM	50	<a href="#">36303.210.005</a>	50X25,4X1,25MM	10	<a href="#">36303.525.012</a>	125X64X3,5MM	1	<a href="#">36303.970.035</a>
22,5X11,2X0,6MM	50	<a href="#">36303.236.006</a>	56X28,5X1,5MM	10	<a href="#">36303.588.015</a>			

## Disc spring

DIN 2093  
 NF E25-104



### Technical data

De (h12)	Di (H12)	t	Lo	F	Type
6	3,2	0,3	0,45	119	-
8	3,2	0,2	0,4	26	-
8	3,2	0,3	0,55	104	-
8	3,2	0,4	0,6	185	-
8	3,2	0,5	0,7	357	-
8	4,2	0,2	0,45	39	C
8	4,2	0,3	0,55	118	B
8	4,2	0,4	0,6	209	A
10	3,2	0,3	0,65	98	-
10	3,2	0,4	0,7	179	-
10	3,2	0,5	0,75	278	-
10	4,2	0,4	0,7	189	-
10	4,2	0,5	0,75	294	-
10	5,2	0,25	0,55	58	C
10	5,2	0,4	0,7	209	B
10	5,2	0,5	0,75	325	A
12	4,2	0,4	0,8	178	-
12	4,2	0,5	0,85	284	-
12	5,2	0,5	0,9	349	-
12	5,2	0,6	0,95	506	-
12	6,2	0,5	0,85	326	-
12	6,2	0,6	0,95	551	-
12,5	5,2	0,5	0,85	272	-
12,5	6,2	0,35	0,8	151	C
12,5	6,2	0,5	0,85	293	B
12,5	6,2	0,7	1	659	A
14	7,2	0,35	0,8	123	C
14	7,2	0,5	0,9	279	B
14	7,2	0,8	1,1	796	A
15	5,2	0,5	1	278	-
15	5,2	0,6	1,05	407	-
15	5,2	0,7	1,1	555	-
15	6,2	0,5	1	289	-
15	6,2	0,6	1,05	423	-
15	6,2	0,7	1,1	577	-
15	8,2	0,7	1,1	665	-
15	8,2	0,8	1,2	982	-
16	8,2	0,4	0,9	154	C
16	8,2	0,6	1,05	410	B
16	8,2	0,9	1,25	1012	A
18	6,2	0,4	1	139	-
18	6,2	0,5	1,1	245	-
18	6,2	0,6	1,2	400	-
18	6,2	0,7	1,25	552	-
18	6,2	0,8	1,3	725	-
18	8,2	0,5	1,1	265	-
18	8,2	0,7	1,25	596	-
18	8,2	0,8	1,3	782	-
18	8,2	1	1,5	1501	-
18	9,2	0,45	1,05	214	C
18	9,2	0,7	1,2	566	B
18	9,2	1	1,4	1253	A
20	8,2	0,6	1,3	412	-
20	8,2	0,7	1,35	568	-
20	8,2	0,8	1,4	751	-
20	8,2	0,9	1,45	953	-
20	8,2	1	1,55	1294	-
20	10,2	0,5	1,15	254	C
20	10,2	0,8	1,35	748	B

De (h12)	D <sub>i</sub> (H12)	t	Lo	F	Type
20	10,2	0,9	1,45	1049	-
20	10,2	1	1,55	1424	-
20	10,2	1,1	1,55	1520	A
20	10,2	1,25	1,75	2475	-
20-	10,2	1,5	2	4255	-
22,5	11,2	0,6	1,4	425	C
22,5	11,2	0,8	1,45	707	B
22,5	11,2	1,25	1,75	1928	A
23	8,2	0,7	1,5	543	-
23	8,2	0,8	1,55	718	-
23	8,2	0,9	1,6	918	-
23	8,2	1	1,7	1239	-
23	10,2	0,9	1,65	1057	-
23	10,2	1	1,7	1315	-
23	12,2	1,25	1,85	2330	-
23	12,2	1,5	2	3295	-
25	12,2	0,7	1,6	569	C
25	12,2	0,9	1,6	862	B
25	12,2	1	1,8	1358	-
25	12,2	1,25	1,95	2213	-
25	12,2	1,5	2,05	2924	A
28	10,2	0,8	1,75	661	-
28	10,2	1	1,9	1129	-
28	10,2	1,25	2,05	1852	-
28	10,2	1,5	2,2	2721	-
28	12,2	1	1,95	1267	-
28	12,2	1,25	2,1	2081	-
28	12,2	1,5	2,25	3075	-
28	14,2	0,8	1,8	801	C
28	14,2	1	1,8	1107	B
28	14,2	1,25	2,1	2238	-
28	14,2	1,5	2,15	2839	A
31,5	12,2	1	2,1	1170	-
31,5	12,2	1,25	2,2	1805	-
31,5	12,2	1,5	2,35	2690	-
31,5	16,3	0,8	1,85	687	C
31,5	16,3	1,25	2,15	1912	B
31,5	16,3	1,5	2,4	3228	-
31,5	16,3	1,75	2,45	3859	A
31,5	16,3	2	2,75	6170	-
34	12,2	1	2,25	1172	-
34	12,2	1,25	2,35	1814	-
34	12,2	1,5	2,5	2719	-
34	14,2	1,25	2,4	1988	-
34	14,2	1,5	2,55	2982	-
34	16,3	1,5	2,55	3153	-
34	16,3	2	2,85	5779	-
35,5	18,3	0,9	2,05	832	C
35,5	18,3	1,25	2,5	1698	B
35,5-2	18,3	2	2,8	5184	A
40	14,2	1,25	2,65	1779	-
40	14,3	1,5	2,75	2544	-
40	14,2	2	3,05	4766	-
40	16,3	1,5	2,8	2748	-
40	16,3	2	3,1	5166	-
40	20,4	1	2,3	1016	C
40	20,4	1,5	2,65	2620	B
40	20,4	2	3,1	5698	-
40	20,4	2,25	3,15	6497	A
40	20,4	2,5	3,45	9384	-
45	22,4	1,25	2,85	1890	C
45	22,4	1,75	3,05	3644	B
45	22,4	2,5	3,5	7712	A
50	18,4	2	3,5	4564	-
50	20,4	2	3,5	4685	-
50	22,4	2	3,6	5219	-
50-3	22,4	2,5	3,9	8505	-
50	25,4	1,25	2,85	1549	C
50	25,4	2	3,4	4760	B
50	25,4	2,5	3,9	9058	-
50	25,4	3	4,1	11970	A
56	28,5	1,5	3,45	2621	C

De (h12)	D <sub>i</sub> (H12)	t	Lo	F	Type
56	28,5	2	3,6	4436	B
56	28,5	3	4,3	11382	A
60	20,4	2,5	4,3	7293	-
60	20,4	3	4,7	11569	-
60	25,4	2,5	4,4	8159	-
60	25,4	3	4,65	11762	-
60	30,5	2,5	4,5	9430	-
60	30,5	3	4,7	13219	-
60	30,5	3,5	5	18143	-
63	31	1,8	4,15	4236	C
63	31	2,5	4,25	7185	B
63	31	3,5	4,9	15017	A
70	25,5	2	4,5	4435	-
70	30,5	3	5,1	11420	-
70	35,5	3	5,1	12281	-
70	35,5	4	5,8	23923	-
70	40,5	4	5,6	23338	-
70	40,5	5	6,2	33653	-
71	36	2	4,6	5141	C
71	36	2,5	4,5	6722	B
71	36	4	5,6	20524	A
80	31	3	5,5	10346	-
80	36	3	5,7	11912	-
80	36	4	6,2	21388	-
80	41	2,25	5,2	6609	C
80	41	3	5,3	10512	B
80	41	4	6,2	22861	-
80	41	5	6,7	33541	A
90	46	2,5	5,7	7680	C
90	46	3,5	6	14153	B
90	46	5	7	31337	A
100	41	4	7,2	20240	-
100	51	2,7	6,2	8604	C
100	51	3,5	6,3	13063	B
100	51	5	7,8	36319	-
100	51	6	8,2	47995	A
112	57	4	7,2	17743	B
112	57	6	8,5	43683	A

- The disc springs mentioned above acc. to  $\approx$  DIN 2093 are suitable for general use. For more critical applications it is advised to choose disc springs from the article groups 36300, 36302, 36303 and 36450.
- Group 1:  $t < 1,25$  from steel CS70 acc. to BS 1449-1.
- Group 2:  $1,25 \leq t \leq 6,0$  from steel 50 Cr V4 (edges of these disc springs are not machined).
- F = spring force in Newton at a deflection  $s \approx 0,75 h_0$  ( $h_0 = L_0 - t$ ).
- Type A: execution heavy ( $D_e/t \approx 18$ ).
- Type B: execution medium ( $D_e/t \approx 28$ ).
- Type C: execution light ( $D_e/t \approx 40$ ).
- If the type is not mentioned, the concerning dimension is not DIN standardised.
- For the calculation of disc springs, see DIN 2092.

7

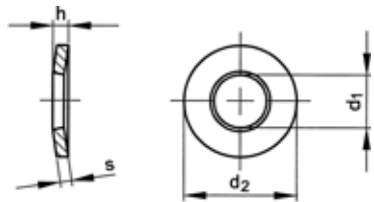
36307 Disc spring		L07C
<b>Material</b>	Steel CS 70 acc. BS 1449-1	
<b>Surface treatment</b>	Phosphated	
<b>Packaging</b>	Standard	

De x Di x t	☒	Art.number	De x Di x t	☒	Art.number	De x Di x t	☒	Art.number
6x3,2x0,3MM	100	<a href="#">36307.063.003</a>	12x4,2x0,4MM	100	<a href="#">36307.124.004</a>	14x7,2x0,8MM	100	<a href="#">36307.147.008</a>
8x3,2x0,2MM	100	<a href="#">36307.083.002</a>	12x4,2x0,5MM	100	<a href="#">36307.124.005</a>	15x5,2x0,5MM	100	<a href="#">36307.155.005</a>
8x3,2x0,3MM	100	<a href="#">36307.083.003</a>	12x5,2x0,5MM	100	<a href="#">36307.125.005</a>	15x5,2x0,6MM	100	<a href="#">36307.155.006</a>
8x3,2x0,4MM	100	<a href="#">36307.083.004</a>	12x5,2x0,6MM	100	<a href="#">36307.125.006</a>	15x5,2x0,7MM	100	<a href="#">36307.155.007</a>
8x3,2x0,5MM	100	<a href="#">36307.083.005</a>	12x6,2x0,5MM	100	<a href="#">36307.126.005</a>	15x6,2x0,5MM	100	<a href="#">36307.156.005</a>
8x4,2x0,2MM	100	<a href="#">36307.084.002</a>	12x6,2x0,6MM	100	<a href="#">36307.126.006</a>	15x6,2x0,6MM	100	<a href="#">36307.156.006</a>
8x4,2x0,3MM	100	<a href="#">36307.084.003</a>				15x6,2x0,7MM	100	<a href="#">36307.156.007</a>
8x4,2x0,4MM	100	<a href="#">36307.084.004</a>	12,5X5,2X0,5	100	<a href="#">36307.130.005</a>	15x8,2x0,7MM	100	<a href="#">36307.158.007</a>
			12,5x6,2x0,35MM	100	<a href="#">36307.131.003</a>	15x8,2x0,8MM	100	<a href="#">36307.158.008</a>
10x3,2x0,4MM	100	<a href="#">36307.103.004</a>	12,5x6,2x0,5MM	100	<a href="#">36307.131.005</a>			
10x3,2x0,5MM	100	<a href="#">36307.103.005</a>	12,5x6,2x0,7MM	100	<a href="#">36307.131.007</a>	16x8,2x0,4MM	100	<a href="#">36307.168.004</a>
10x4,2x0,4MM	100	<a href="#">36307.104.004</a>				16x8,2x0,6MM	100	<a href="#">36307.168.006</a>
10x4,2x0,5MM	100	<a href="#">36307.104.005</a>	14X7,2x0,35MM	100	<a href="#">36307.147.003</a>	16x8,2x0,9MM	100	<a href="#">36307.168.009</a>
10x5,2x0,25MM	100	<a href="#">36307.105.002</a>	14x7,2x0,5MM	100	<a href="#">36307.147.005</a>			
10x5,2x0,4MM	100	<a href="#">36307.105.004</a>						
10x5,2x0,5MM	100	<a href="#">36307.105.005</a>						

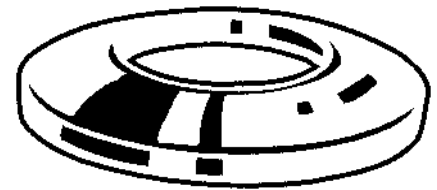
**36307 Disc spring**

De x Di x t	☒	Art.number	De x Di x t	☒	Art.number	De x Di x t	☒	Art.number
18x6,2x0,4MM	100	<a href="#">36307.186.004</a>	28x12,2x1,5MM	50	<a href="#">36307.292.015</a>	50x25,4x3MM	10	<a href="#">36307.525.030</a>
18x6,2x0,5MM	100	<a href="#">36307.186.005</a>	28x14,2x0,8MM	50	<a href="#">36307.294.008</a>			
18x6,2x0,6MM	100	<a href="#">36307.186.006</a>	28x14,2x1MM	50	<a href="#">36307.294.010</a>	56x28,5x1,5MM	10	<a href="#">36307.588.015</a>
18x6,2x0,7MM	100	<a href="#">36307.186.007</a>	28x14,2x1,25MM	50	<a href="#">36307.294.012</a>	56x28,5x2MM	10	<a href="#">36307.588.020</a>
18x6,2x0,8MM	100	<a href="#">36307.186.008</a>	28x14,2x1,5MM	50	<a href="#">36307.294.015</a>	56x28,5x3MM	10	<a href="#">36307.588.030</a>
18x8,2x0,5MM	100	<a href="#">36307.188.005</a>						
18x8,2x0,7MM	100	<a href="#">36307.188.007</a>	31,5x12,2x1MM	50	<a href="#">36307.327.010</a>	60X20,5X2,5	5	<a href="#">36307.620.025</a>
18x8,2x0,8MM	100	<a href="#">36307.188.008</a>	31,5x12,2x1,25MM	50	<a href="#">36307.327.012</a>	60x25,4x2,5MM	5	<a href="#">36307.625.025</a>
18x8,2x1MM	100	<a href="#">36307.188.010</a>	31,5x12,2x1,5MM	50	<a href="#">36307.327.015</a>	60x25,4x3MM	5	<a href="#">36307.625.030</a>
18x9,2x0,45MM	100	<a href="#">36307.189.004</a>	31,5x16,3x0,8MM	50	<a href="#">36307.331.008</a>	60x30,5x2,5MM	5	<a href="#">36307.630.025</a>
18x9,2x0,7MM	100	<a href="#">36307.189.007</a>	31,5x16,3x1,25MM	50	<a href="#">36307.331.012</a>	60x30,5x3MM	5	<a href="#">36307.630.030</a>
18x9,2x1MM	100	<a href="#">36307.189.010</a>	31,5x16,3x1,5MM	50	<a href="#">36307.331.015</a>	60x30,5x3,5MM	5	<a href="#">36307.630.035</a>
			31,5x16,3x1,75MM	50	<a href="#">36307.331.017</a>			
20x8,2x0,6MM	50	<a href="#">36307.208.006</a>	31,5x16,3x2MM	50	<a href="#">36307.331.020</a>	63x31x1,8MM	5	<a href="#">36307.661.018</a>
20x8,2x0,7MM	50	<a href="#">36307.208.007</a>				63x31x2,5MM	5	<a href="#">36307.661.025</a>
20x8,2x0,8MM	50	<a href="#">36307.208.008</a>	34x12,2x1MM	25	<a href="#">36307.352.010</a>	63x31x3,5MM	5	<a href="#">36307.661.035</a>
20x8,2x0,9MM	50	<a href="#">36307.208.009</a>	34x12,2x1,25MM	25	<a href="#">36307.352.012</a>			
20x8,2x1MM	50	<a href="#">36307.208.010</a>	34x12,2x1,5MM	25	<a href="#">36307.352.015</a>			
20x10,2x0,5MM	50	<a href="#">36307.210.005</a>	34x12,2x1,5MM	25	<a href="#">36307.354.012</a>	70x25,5x2MM	5	<a href="#">36307.725.020</a>
20x10,2x0,8MM	50	<a href="#">36307.210.008</a>	34x14,2x1,25MM	25	<a href="#">36307.354.015</a>	70x30,5x3MM	5	<a href="#">36307.730.030</a>
20x10,2x0,9MM	50	<a href="#">36307.210.009</a>	34x14,2x1,5MM	25	<a href="#">36307.354.015</a>	70x35,5x3MM	5	<a href="#">36307.735.030</a>
20x10,2x1MM	50	<a href="#">36307.210.010</a>	34x16,3x1,5MM	25	<a href="#">36307.356.015</a>	70x35,5x4MM	5	<a href="#">36307.735.040</a>
20x10,2x1,1MM	50	<a href="#">36307.210.011</a>	34x16,3x2MM	25	<a href="#">36307.356.020</a>	70x40,5x4MM	5	<a href="#">36307.740.040</a>
20x10,2x1,25MM	50	<a href="#">36307.210.012</a>				70x40,5x5MM	5	<a href="#">36307.740.050</a>
20x10,2x1,5MM	50	<a href="#">36307.210.015</a>						
			35,5x18,3x0,9M	25	<a href="#">36307.373.009</a>	71x36x2MM	5	<a href="#">36307.746.020</a>
22,5x11,2x0,6MM	50	<a href="#">36307.236.006</a>	35,5x18,3x1,25MM	25	<a href="#">36307.373.012</a>	71x36x2,5MM	5	<a href="#">36307.746.025</a>
22,5x11,2x0,8MM	50	<a href="#">36307.236.008</a>	35,5x18,3x2MM	25	<a href="#">36307.373.020</a>	71x36x4MM	5	<a href="#">36307.746.040</a>
22,5x11,2x1,25MM	50	<a href="#">36307.236.012</a>						
			40x14,2x1,25MM	25	<a href="#">36307.414.012</a>	80x31x3MM	1	<a href="#">36307.831.030</a>
23x8,2x0,7MM	50	<a href="#">36307.238.007</a>	40x14,3x1,5MM	25	<a href="#">36307.414.015</a>	80x36x3MM	1	<a href="#">36307.836.030</a>
23x8,2x0,8MM	50	<a href="#">36307.238.008</a>	40x14,3x2MM	25	<a href="#">36307.414.020</a>	80x36x4MM	1	<a href="#">36307.836.040</a>
23x8,2x0,9MM	50	<a href="#">36307.238.009</a>	40x16,3x1,5MM	25	<a href="#">36307.416.015</a>	80x41x2,25MM	1	<a href="#">36307.841.022</a>
23x8,2x1MM	50	<a href="#">36307.238.010</a>	40x16,3x2MM	25	<a href="#">36307.416.020</a>	80x41x3MM	1	<a href="#">36307.841.030</a>
23x10,2x0,9MM	50	<a href="#">36307.240.009</a>	40x20,4x1MM	25	<a href="#">36307.420.010</a>	80x41x4MM	1	<a href="#">36307.841.040</a>
23x10,2x1MM	50	<a href="#">36307.240.010</a>	40x20,4x1,5MM	25	<a href="#">36307.420.015</a>	80x41x5MM	1	<a href="#">36307.841.050</a>
23x12,2x1,25MM	50	<a href="#">36307.242.012</a>	40x20,4x2MM	25	<a href="#">36307.420.020</a>			
23x12,2x1,5MM	50	<a href="#">36307.242.015</a>	40x20,4x2,25MM	25	<a href="#">36307.420.022</a>			
			40x20,4x2,5MM	25	<a href="#">36307.420.025</a>			
			45x22,4x1,25MM	10	<a href="#">36307.472.012</a>	90x46x2,5MM	1	<a href="#">36307.946.025</a>
25x12,2x0,7MM	50	<a href="#">36307.262.007</a>	45x22,4x1,75MM	10	<a href="#">36307.472.017</a>	90x46x3,5MM	1	<a href="#">36307.946.035</a>
25x12,2x0,9MM	50	<a href="#">36307.262.009</a>	45x22,4x2,5MM	10	<a href="#">36307.472.025</a>	90x46x5MM	1	<a href="#">36307.946.050</a>
25x12,2x1,25MM	50	<a href="#">36307.262.012</a>						
25x12,2x1,5MM	50	<a href="#">36307.262.015</a>						
			50x18,4x2MM	10	<a href="#">36307.518.020</a>	100x41x4MM	1	<a href="#">36307.960.004</a>
28x10,2x0,8MM	50	<a href="#">36307.290.008</a>	50x20,4x2MM	10	<a href="#">36307.520.020</a>	100x51x2,7MM	1	<a href="#">36307.960.027</a>
28x10,2x1MM	50	<a href="#">36307.290.010</a>	50x22,4x2MM	10	<a href="#">36307.522.020</a>	100x51x3,5MM	1	<a href="#">36307.960.035</a>
28x10,2x1,25MM	50	<a href="#">36307.290.012</a>	50x22,4x2,5MM	10	<a href="#">36307.522.025</a>	100x51x5MM	1	<a href="#">36307.960.050</a>
28x10,2x1,5MM	50	<a href="#">36307.290.015</a>	50x25,4x1,25MM	10	<a href="#">36307.525.012</a>	100x51x6MM	1	<a href="#">36307.960.060</a>
28x12,2x1MM	50	<a href="#">36307.292.010</a>	50x25,4x2MM	10	<a href="#">36307.525.015</a>			
28x12,2x1,25MM	50	<a href="#">36307.292.012</a>	50x25,4x2,5MM	10	<a href="#">36307.525.020</a>	112x57x4MM	1	<a href="#">36307.968.040</a>
					<a href="#">36307.525.025</a>	112x57x6MM	1	<a href="#">36307.968.060</a>

## Conical spring washer for bolted connections



DIN 6796



### Technical data

For nom.size	d <sub>1</sub> (H14)	d <sub>2</sub> (h14)	s	h (max.)
M3	3,2	7	0,6	0,85
M4	4,3	9	1	1,3
M5	5,3	11	1,2	1,55
M6	6,4	14	1,5	2
M8	8,4	18	2	2,6
M10	10,5	23	2,5	3,2
M12	13	29	3	3,95
M14	15	35	3,5	4,65
M16	17	39	4	5,25
M20	21	45	5	6,4
M22	23	49	5,5	7,05
M24	25	56	6	7,75

- Conical spring washers acc. to DIN 6796 should be used in combination with fasteners of property class 8.8 and 10.9, use under dynamic load is not allowed.
- For locking under dynamic load is referred to locking edge washers, SCHNORR safety washers and NORD-LOCK vibration proof washers.

### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel DIN267-26		Standard	36270	7-72
Spring steel DIN267-26	Mech.zipl. yell.p.	Standard	36273	7-72

#### 36270 Conical spring washer for bolted connections

L07C

**Material** Spring steel DIN267-26  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4	100	<a href="#">36270.040.001</a>	M10	100	<a href="#">36270.100.001</a>	M20	50	<a href="#">36270.200.001</a>
M5	100	<a href="#">36270.050.001</a>	M12	100	<a href="#">36270.120.001</a>	M22	25	<a href="#">36270.220.001</a>
M6	100	<a href="#">36270.060.001</a>	M14	50	<a href="#">36270.140.001</a>	M24	25	<a href="#">36270.240.001</a>
M8	100	<a href="#">36270.080.001</a>	M16	50	<a href="#">36270.160.001</a>			

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

#### 36273 Conical spring washer for bolted connections

L07C

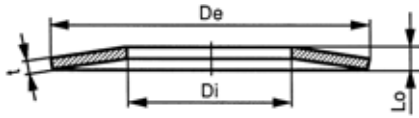
**Material** Spring steel DIN267-26  
**Surface treatment** Mechanical zinc plated yellow passivated  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	100	<a href="#">36273.030.001</a>	M8	100	<a href="#">36273.080.001</a>	M16	50	<a href="#">36273.160.001</a>
M4	100	<a href="#">36273.040.001</a>	M10	100	<a href="#">36273.100.001</a>	M20	50	<a href="#">36273.200.001</a>
M5	100	<a href="#">36273.050.001</a>	M12	100	<a href="#">36273.120.001</a>	M24	25	<a href="#">36273.240.001</a>
M6	100	<a href="#">36273.060.001</a>	M14	50	<a href="#">36273.140.001</a>			



## Disc spring for critical applications



### Technical data

De (h12)	Di (H12)	t	Lo	F
8	3,2	0,3	0,55	104
8	3,2	0,4	0,6	186
8	3,2	0,5	0,7	357
10	3,2	0,3	0,65	98
10	3,2	0,4	0,7	179
10	3,2	0,5	0,75	279
10	4,2	0,4	0,7	189
10	4,2	0,5	0,75	294
12	4,2	0,4	0,8	178
12	4,2	0,5	0,85	284
12	5,2	0,5	0,9	350
12	5,2	0,6	0,95	506
12	6,2	0,5	0,85	326
12	6,2	0,6	0,95	552
12	5,2	0,5	0,85	272
15	5,2	0,4	0,95	176
15	5,2	0,5	1	278
15	5,2	0,6	1,05	407
15	5,2	0,7	1,1	555
15	6,2	0,5	1	289
15	6,2	0,6	1,05	424
15	6,2	0,7	1,1	578
15	8,2	0,7	1,1	666
15	8,2	0,8	1,2	982
18	6,2	0,4	1	139
18	6,2	0,5	1,1	245
18	6,2	0,6	1,2	400
18	6,2	0,7	1,25	553
18	6,2	0,8	1,3	726
18	8,2	0,5	1,1	265
18	8,2	0,7	1,25	596
18	8,2	0,8	1,3	783
18	8,2	1	1,4	1181
20	8,2	0,6	1,3	412
20	8,2	0,7	1,35	569
20	8,2	0,8	1,4	751
20	8,2	0,9	1,45	954
20	8,2	1	1,55	1294
20	10,2	0,9	1,45	1050
20	10,2	1	1,55	1425
20	10,2	1,25	1,75	2477
20	10,2	1,5	1,8	2521
23	8,2	0,7	1,5	544
23	8,2	0,8	1,55	719
23	8,2	0,9	1,6	919
23	10,2	0,9	1,65	1058
23	10,2	1	1,7	1315
23	12,2	1,25	1,85	2331
23	12,2	1,5	2	3297
25	12,2	1,25	1,95	2214
28	10,2	0,8	1,75	662
28	10,2	1	1,9	1130
28	10,2	1,25	2,05	1853
28	10,2	1,5	2,2	2723
28	12,2	1,5	2,25	3077
28	14,2	1,25	2,1	2240
31,5	12,2	1	2,1	1170
31,5	12,2	1,25	2,2	1800
31,5	12,2	1,5	2,35	2697

De (h12)	D <sub>i</sub> (H12)	t	L <sub>o</sub>	F
31,5	16,3	1,5	2,4	3230
31,5	16,3	2	2,75	6173
34	12,2	1	2,25	1172
34	12,2	1,25	2,35	1815
34	12,2	1,5	2,5	2721
34	14,2	1,25	2,4	1989
34	14,2	1,5	2,55	2984
34	16,3	2	2,85	5783
40	14,2	1,25	2,65	1778
40	14,2	1,5	2,75	2542
40	14,2	2	3,05	4763
40	16,3	1,5	2,8	2749
40	16,3	2	3,1	5169
40	18,3	2	3,15	5956
40	20,4	2	3,1	5701
40	20,4	2,5	3,45	9390
50	18,4	1,5	3,5	2603
50	18,3	2	3,5	4567
50	20,4	2	3,5	4687
50	22,4	2	3,6	5222
50	22,4	2,5	3,85	7919
50	25,4	1,5	3,1	2512
50	25,4	2,5	3,9	9063
60	20,4	2,5	4,3	7297
60	25,4	2,5	4,4	8164
60	25,4	3	4,65	11768
60	30,5	2,5	4,5	9430
60	30,5	3	4,7	13226
60	30,5	3,5	5	18153
70	25,5	2	4,5	4437
70	30,5	3	5,1	11426
70	35,5	3	5,1	12287
70	40,5	4	5,6	23351
70	40,5	5	6,2	33672
80	31	3	5,5	10352
80	36	3	5,7	11919
80	36	4	6,2	21400
80	41	4	6,2	22874
100	41	4	7,2	20251
100	51	5	7,8	36339
125	51	6	9,4	44307
125	61	6	9,6	50722
150	61	6	10,8	45456
150	81	8	11,7	89532
200	92	10	15,6	137688
200	112	12	16,2	195830
250	127	16	21,8	383017

- Disc springs are mostly used in critical applications with safety first. Similar applications can be found in for example safety torque limiter clutches, hinge stiffeners and applications of constant roll pressure. Because of the right combination c.q. stacking of the disc springs the elasticity and/or deflection can be dosed accurately. The technical specifications of these disc springs meet the highest expectations with reference to the static and dynamic load. They exceed the requirements of DIN 2093.
- Material group 1:  $t < 1,25$  from steel Ck 67.
- Material group 2:  $1,25 \leq t \leq 6,0$  from steel 50 Cr V4.
- Material group 3:  $6,0 > t \leq 14,0$  from steel 50 Cr V4.
- Fatigue fractures can be largely prevented because the disc springs of material group 2 and 3 have machined edges.
- $F$  = spring force in Newton at a deflection  $s \approx 0,75 h_0$  ( $h_0 = L_0 - t$ ).
- For the calculation of disc springs, see DIN 2092.
- Extensive technical data available on request.

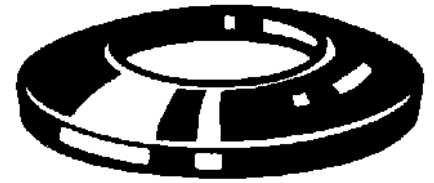
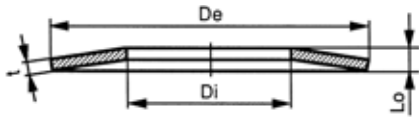
36450 Disc spring for critical applications		L07C
<b>Material</b>	Steel Ck 67 Werkstoffnr. 1.1231	
<b>Surface treatment</b>	Phosphated	
<b>Packaging</b>	Standard	

De x Di x t	☒	Art.number	De x Di x t	☒	Art.number	De x Di x t	☒	Art.number
8X3,2X0,3MM	100	<a href="#">36450.083.003</a>	10X3,2X0,3MM	100	<a href="#">36450.103.003</a>	10X3,2X0,5MM	100	<a href="#">36450.103.005</a>
8X3,2X0,4MM	100	<a href="#">36450.083.004</a>	10X3,2X0,4MM	100	<a href="#">36450.103.004</a>	10X4,2X0,4MM	100	<a href="#">36450.104.004</a>
8X3,2X0,5MM	100	<a href="#">36450.083.005</a>				10X4,2X0,5MM	100	<a href="#">36450.104.005</a>

**36450 Disc spring for critical applications**

De x Di x t	✉	Art.number	De x Di x t	✉	Art.number	De x Di x t	✉	Art.number
12X4,2X0,4MM	100	<a href="#">36450.124.004</a>	23X8,2X0,7MM	50	<a href="#">36450.238.007</a>	50X18,3X2,0MM	10	<a href="#">36450.518.020</a>
12X4,2X0,5MM	100	<a href="#">36450.124.005</a>	23x8,2x0,8MM	50	<a href="#">36450.238.008</a>	50X20,4X2,0MM	10	<a href="#">36450.520.020</a>
12X5,2X0,5MM	100	<a href="#">36450.125.005</a>	23X8,2X0,9MM	50	<a href="#">36450.238.009</a>	50X22,4X2,0MM	10	<a href="#">36450.522.020</a>
12X5,2X0,6MM	100	<a href="#">36450.125.006</a>	23X10,2X0,9MM	50	<a href="#">36450.240.009</a>	50X22,4X2,5MM	10	<a href="#">36450.522.025</a>
12X6,2X0,5MM	100	<a href="#">36450.126.005</a>	23X10,2X1,0MM	50	<a href="#">36450.240.010</a>	50X25,4X1,5MM	10	<a href="#">36450.525.015</a>
12X6,2X0,6MM	100	<a href="#">36450.126.006</a>	23X12,2X1,25MM	50	<a href="#">36450.242.012</a>	50X25,4X2,5MM	10	<a href="#">36450.525.025</a>
			23X12,2X1,5MM	50	<a href="#">36450.242.015</a>			
12,5X5,2X0,5MM	100	<a href="#">36450.130.005</a>	25X12,2X1,25MM	50	<a href="#">36450.262.012</a>	60X20,4X2,5MM	5	<a href="#">36450.620.025</a>
15X5,2X0,4MM	100	<a href="#">36450.155.004</a>	28X10,2X0,8MM	50	<a href="#">36450.290.008</a>	60X25,4X2,5MM	5	<a href="#">36450.625.025</a>
15X5,2X0,5MM	100	<a href="#">36450.155.005</a>	28X10,2X1,0MM	50	<a href="#">36450.290.010</a>	60X25,4X3,0MM	5	<a href="#">36450.625.030</a>
15X5,2X0,6MM	100	<a href="#">36450.155.006</a>	28X10,2X1,25MM	50	<a href="#">36450.290.012</a>	60X30,5X2,5MM	5	<a href="#">36450.630.025</a>
15X5,2X0,7MM	100	<a href="#">36450.155.007</a>	28X10,2X1,5MM	50	<a href="#">36450.290.015</a>	60X30,5X3,0MM	5	<a href="#">36450.630.030</a>
15X6,2X0,5MM	100	<a href="#">36450.156.005</a>	28X12,2X1,5MM	50	<a href="#">36450.292.015</a>	60X30,5X3,5MM	5	<a href="#">36450.630.035</a>
15X6,2X0,6MM	100	<a href="#">36450.156.006</a>	28X14,2X1,25MM	50	<a href="#">36450.294.012</a>			
15X6,2X0,7MM	100	<a href="#">36450.156.007</a>				70X25,5X2,0MM	5	<a href="#">36450.725.020</a>
15X8,2X0,7MM	100	<a href="#">36450.158.007</a>	31,5X12,2X1,0MM	50	<a href="#">36450.327.010</a>	70X30,5X3,0MM	5	<a href="#">36450.730.030</a>
15X8,2X0,8MM	100	<a href="#">36450.158.008</a>	31,5X12,2X1,25MM	50	<a href="#">36450.327.012</a>	70X35,5X3,0MM	5	<a href="#">36450.735.030</a>
			31,5X12,2X1,5MM	50	<a href="#">36450.327.015</a>	70X40,5X4,0MM	5	<a href="#">36450.740.040</a>
18X6,2X0,4MM	100	<a href="#">36450.186.004</a>	31,5X16,3X1,5MM	50	<a href="#">36450.331.015</a>	70X40,5X5,0MM	5	<a href="#">36450.740.050</a>
18X6,2X0,5MM	100	<a href="#">36450.186.005</a>	31,5X16,3X2,0MM	50	<a href="#">36450.331.020</a>			
18X6,2X0,6MM	100	<a href="#">36450.186.006</a>				80X31,0X3,0MM	1	<a href="#">36450.831.030</a>
18X6,2X0,7MM	100	<a href="#">36450.186.007</a>	34X12,2X1,0MM	25	<a href="#">36450.352.010</a>	80X36,0X3,0MM	1	<a href="#">36450.836.030</a>
18X6,2X0,8MM	100	<a href="#">36450.186.008</a>	34X12,2X1,25MM	25	<a href="#">36450.352.012</a>	80x36x4MM	1	<a href="#">36450.836.040</a>
18X8,2X0,5MM	100	<a href="#">36450.188.005</a>	34X12,2X1,5MM	25	<a href="#">36450.352.015</a>	80X41,0X4,0MM	1	<a href="#">36450.841.040</a>
18X8,2X0,7MM	100	<a href="#">36450.188.007</a>	34X14,2X1,25MM	25	<a href="#">36450.354.012</a>			
18X8,2X0,8MM	100	<a href="#">36450.188.008</a>	34X14,2X1,5MM	25	<a href="#">36450.354.015</a>	100X41,0X4,0MM	1	<a href="#">36450.960.040</a>
18X8,2X1,0MM	100	<a href="#">36450.188.010</a>	34X16,3X2,0MM	25	<a href="#">36450.356.020</a>	100X51,0X5,0MM	1	<a href="#">36450.982.050</a>
20X8,2X0,6MM	50	<a href="#">36450.208.006</a>	40X14,2X1,25MM	25	<a href="#">36450.414.012</a>	125X51,0X6,0MM	1	<a href="#">36450.987.060</a>
20X8,2X0,7MM	50	<a href="#">36450.208.007</a>	40X14,2X1,5MM	25	<a href="#">36450.414.015</a>	125X61,0X6,0MM	1	<a href="#">36450.987.065</a>
20X8,2X0,8MM	50	<a href="#">36450.208.008</a>	40x14,2x2MM	25	<a href="#">36450.414.020</a>			
20X8,2X0,9MM	50	<a href="#">36450.208.009</a>	40X16,3X1,5MM	25	<a href="#">36450.416.015</a>	150X61,0X6,0MM	1	<a href="#">36450.992.060</a>
20X8,2X1,0MM	50	<a href="#">36450.208.010</a>	40X16,3X2,0MM	25	<a href="#">36450.416.020</a>	150X81,0X8,0MM	1	<a href="#">36450.992.080</a>
20X10,2X0,9MM	50	<a href="#">36450.210.009</a>	40X18,3X2,0MM	25	<a href="#">36450.418.020</a>			
20X10,2X1,0MM	50	<a href="#">36450.210.010</a>	40X20,4X2,0MM	25	<a href="#">36450.420.020</a>	200X92,0X10,0MM	1	<a href="#">36450.997.100</a>
20X10,2X1,25MM	50	<a href="#">36450.210.012</a>	40X20,4X2,5MM	25	<a href="#">36450.420.025</a>	200X112,0X12,0MM	1	<a href="#">36450.997.120</a>
20X10,2X1,5MM	50	<a href="#">36450.210.015</a>						
			50X18,4X1,5MM	25	<a href="#">36450.518.015</a>	250X127,0X16,0MM	1	<a href="#">36450.999.160</a>

## Ball bearing location disc spring

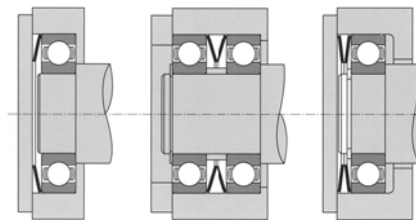


### Technical data

De (h12)	Di (H12)	t	Lo	F
9,8	6,2	0,2	0,4	23
12,8	7,2	0,25	0,5	29
15,8	8,2	0,25	0,55	23
18,8	10,2	0,35	0,7	51
21,8	12,3	0,35	0,75	46
23,7	14,3	0,4	0,9	81
25,7	14,3	0,4	0,9	63
27,7	17,3	0,4	1	80
29,7	17,3	0,4	1,1	83
31,7	20,4	0,4	1,1	81
34,6	22,4	0,5	1,2	118
36,6	20,4	0,5	1,3	110
39,6	25,5	0,5	1,3	110
41,6	25,5	0,5	1,4	113
46,5	30,5	0,6	1,4	153
51,5	35,5	0,6	1,5	135
54,5	40,5	0,6	1,5	141
61,5	40,5	0,7	1,8	176

- F = spring force in Newton at a deflection  $s \approx 0,75 h_0$  ( $h_0 = L_0 - t$ ).
- Extensive technical data available on request.

### Example of application



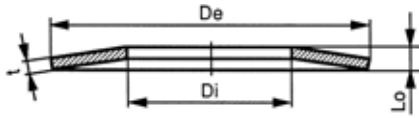
7

36460 Ball bearing location disc spring		L07C
<b>Material</b>	Steel	
<b>Surface treatment</b>	Phosphated	
<b>Packaging</b>	Standard	

De x Di x t	☒	Art.number	De x Di x t	☒	Art.number	De x Di x t	☒	Art.number
9,8X6,2X0,2MM	100	<a href="#">36460.104.002</a>	25,7X14,3X0,4MM	50	<a href="#">36460.271.004</a>	39,6X25,5X0,5MM	25	<a href="#">36460.421.005</a>
12,8X7,2X0,25MM	100	<a href="#">36460.135.002</a>	27,7X17,3X0,4MM	50	<a href="#">36460.294.004</a>	41,6X25,5X0,5MM	25	<a href="#">36460.441.005</a>
15,8X8,2X0,25MM	100	<a href="#">36460.166.002</a>	29,7X17,3X0,4MM	50	<a href="#">36460.314.004</a>	46,5X30,5X0,6MM	25	<a href="#">36460.495.006</a>
18,8X10,2X0,35MM	50	<a href="#">36460.198.003</a>	31,7X20,4X0,4MM	25	<a href="#">36460.337.004</a>	51,5X35,5X0,6MM	10	<a href="#">36460.550.006</a>
21,8X12,3X0,35MM	50	<a href="#">36460.230.003</a>	34,6X22,4X0,5MM	25	<a href="#">36460.368.005</a>	54,5X40,5X0,6MM	10	<a href="#">36460.585.006</a>
23,7X14,3X0,4MM	50	<a href="#">36460.251.004</a>	36,6X20,4X0,5MM	25	<a href="#">36460.386.005</a>	61,5X40,5X0,7MM	10	<a href="#">36460.655.007</a>

## Disc springs for critical applications type A (heavy)

DIN 2093 A



### Technical data

De (h12)	Di (H12)	t	Lo	F
8	4,2	0,4	0,6	210
10	5,2	0,5	0,75	329
12,5	6,2	0,7	1	673
14	7,2	0,8	1,1	813
16	8,2	0,9	1,25	1000
18	9,2	1	1,4	1250
20	10,2	1,1	1,55	1530
22,5	11,2	1,25	1,75	1950
25	12,2	1,5	2,05	2910
28	14,2	1,5	2,15	2850
31,5	16,3	1,75	2,45	3900
35,5	18,3	2	2,8	5190
40	20,4	2,25	3,15	6450
45	22,4	2,5	3,5	7720
50	25,4	3	4,1	12000
56	28,5	3	4,3	11400
63	31	3,5	4,9	15000
71	36	4	5,6	20500
80	41	5	6,7	33700
90	46	5	7	31400
100	51	6	8,2	48000
112	57	6	8,5	43800

- Disc springs acc. to DIN 2093 are mostly used in critical applications with safety first. Similar applications can be found in for example safety torque limiter clutches, hinge stiffeners and applications of constant roll pressure. Because of the right combination c.q. stacking of the disc springs the elasticity and/or deflection can be dosed accurately. The technical specifications of the disc springs above meet the highest expectations with reference to the static and dynamic load. They exceed the requirements of DIN 2093.
- Material group 1:  $t < 1,25$  from steel Ck 75.
- Material group 2:  $1,25 \leq t \leq 6,0$  from steel 50 Cr V4 (fatigue fractures can be largely prevented because these disc springs have machined edges).
- $F$  = spring force in Newton at a deflection  $s \approx 0,75 h_0$  ( $h_0 = L_0 - t$ ).
- For the calculation of disc springs, see DIN 2092.
- Extensive technical data available on request.

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### 36300 Disc springs for critical applications type A (heavy)

L07C

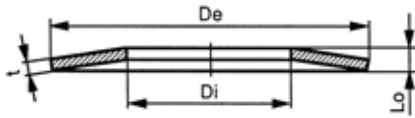
**Material** Steel Ck 75 Werkstoffnr. 1.1248  
**Surface treatment** Phosphated  
**Packaging** Standard



De x Di x t	☒	Art.number	De x Di x t	☒	Art.number	De x Di x t	☒	Art.number
8X4,2X0,4MM	100	<a href="#">36300.084.004</a>	25X12,2X1,5MM	50	<a href="#">36300.262.015</a>	63X31X3,5MM	5	<a href="#">36300.661.035</a>
10X5,2X0,5MM	100	<a href="#">36300.105.005</a>	28X14,2X1,5MM	50	<a href="#">36300.294.015</a>	71X36X4MM	5	<a href="#">36300.746.040</a>
12,5X6,2X0,7MM	100	<a href="#">36300.131.007</a>	31,5X16,3X1,75MM	50	<a href="#">36300.331.017</a>	80X41X5MM	1	<a href="#">36300.841.050</a>
14X7,2X0,8MM	100	<a href="#">36300.147.008</a>	35,5X18,3X2MM	25	<a href="#">36300.373.020</a>	90X46X5MM	1	<a href="#">36300.946.050</a>
16X8,2X0,9MM	100	<a href="#">36300.168.009</a>	40X20,4X2,25MM	25	<a href="#">36300.420.022</a>	100X51X6MM	1	<a href="#">36300.960.060</a>
18X9,2X1MM	100	<a href="#">36300.189.010</a>	45X22,4X2,5MM	10	<a href="#">36300.472.025</a>	112X57X6MM	1	<a href="#">36300.968.060</a>
20X10,2X1,1MM	50	<a href="#">36300.210.011</a>	50X25,4X3MM	10	<a href="#">36300.525.030</a>			
22,5X11,2X1,25MM	50	<a href="#">36300.236.012</a>	56X28,5X3MM	10	<a href="#">36300.588.030</a>			

## Disc spring type A (heavy)

DIN ≈2093 A/C

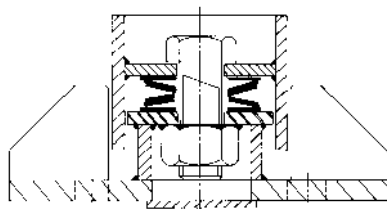


### Technical data

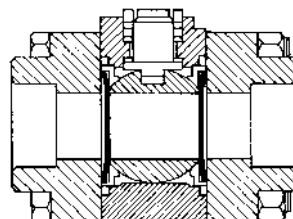
De (h12)	Di (H12)	t	Lo	F
8	4,2	0,4	0,6	192
10	5,2	0,5	0,75	298
12	5,2	0,5	0,9	350
12-1	6,2	0,6	0,95	547
12,5	6,2	0,7	0,95	499
14	7,2	0,8	1,1	730
16	8,2	0,9	1,25	928
18	9,2	1	1,4	1149
20	10,2	1,1	1,55	1394
22,5	11,2	1,25	1,75	1402
25	12,2	1,5	1,9	1931
28	14,2	1,5	2,15	2004
31,5	16,3	1,75	2,3	2745
35,5	18,3	2	2,65	4200
40	20,4	1	2,3	932
40	20,4	2,25	2,95	4630
45	22,4	2,5	3,3	5719
50	25,4	3	3,85	9212
56	28,5	3	4,05	9134
71	36	4	5,6	16626
80	41	5	6,7	25845
100	51	6	8,2	37336

- Disc springs acc. to » DIN 2093 A are mostly used in critical applications with safety first. Similar applications can be found in for example safety torque limiter clutches, hinge stiffeners and applications of constant roll pressure. Because of the right combination c.q. stacking of the disc springs the elasticity and/or deflection can be dosed accurately. The technical specifications of the disc springs above meet the highest expectations with reference to the static and dynamic load. Heat treatment gives a copper-bronze colour to this disc springs.
- $D_e$  (h12) 8-10-12,5-14-16-18-20-22,5-25-28-31,5-40 X 12 CrNi 17 7 (Werkstoffnr. 1.4310).
- $D_e$  (h12) 35,5-50-56-71 X 35 CrMo 17 (Werkstoffno. 1.4122).
- $D_e$  (h12) 45 X 7 CrNiAl 17 7 (Werkstoffno. 1.4568).
- $D_e$  (h12) 80-100 X 22 CrMoV 12 1 (Werkstoffno. 1.4923).
- F = spring force in Newton at a deflection  $s = 0,75 h_0$  ( $h_0 = L_0 - t$ ).
- $D_e$  (h12)=40, t=1 ATTENTION: acc. to ≈ DIN 2993 C standardised: execution "light".
- For the calculation of disc springs, see DIN 2092.
- Extensive technical data available on request.

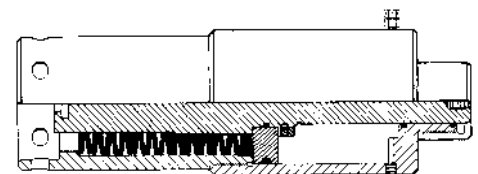
### Examples of application



Shock absorption



Ball valve

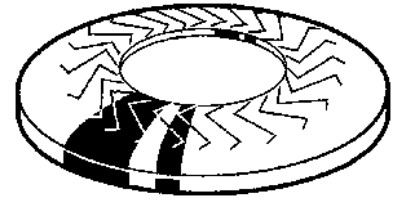
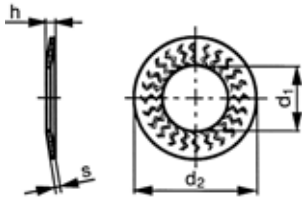


Power switch

<b>51448 Disc spring type A (heavy)</b>		<b>R09A</b>
<b>Material</b>	Stainless steel	
<b>Packaging</b>	Standard	

De x Di x t	☒	Art.number	De x Di x t	☒	Art.number	De x Di x t	☒	Art.number
8X4,2X0,4MM	50	<a href="#">51448.084.004</a>	20X10,2X1,1MM	25	<a href="#">51448.210.011</a>	40X20,4X2,25MM	10	<a href="#">51448.420.022</a>
10X5,2X0,5MM	50	<a href="#">51448.105.005</a>	22,5X11,2X1,25MM	25	<a href="#">51448.236.012</a>			
12X5,2X0,5MM	50	<a href="#">51448.125.005</a>	25X12,2X1,5MM	25	<a href="#">51448.262.015</a>	45X22,4X2,5MM	5	<a href="#">51448.472.025</a>
12,5X6,2X0,7MM	50	<a href="#">51448.131.007</a>	28X14,2X1,5MM	25	<a href="#">51448.294.015</a>	50X25,4X3MM	5	<a href="#">51448.520.030</a>
14X7,2X0,8MM	50	<a href="#">51448.147.008</a>	31,5X16,3X1,75MM	25	<a href="#">51448.331.017</a>	56X28,5X3MM	5	<a href="#">51448.588.030</a>
16X8,2X0,9MM	50	<a href="#">51448.168.009</a>	35,5X18,3X2MM	10	<a href="#">51448.373.020</a>	71X36X4MM	1	<a href="#">51448.746.040</a>
18X9,2X1MM	50	<a href="#">51448.189.010</a>	40X20,4X1,0MM	10	<a href="#">51448.420.010</a>			

## Locking disc spring type M



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	h	s
M4	4,1	10,2	1,5	1
M5	5,1	12,2	1,8	1,2
M6	6,1	14,2	2,2	1,4
M8	8,2	18,2	2,4	1,4
M10	10,2	22,25	2,75	1,6
M12	12,4	27,25	3,05	1,8
M14	14,4	30,25	3,5	2,4
M16	16,4	32,5	3,95	2,5

### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel 420-510 HV10	FLZNNC-NC6	Standard	36325	7-80
St.St. A4		Standard	55443	7-80

#### 36325 SK Locking disc spring type M

**L07C**

<b>Material</b>	Spring steel 420-510 HV10
<b>Surface treatment</b>	Zinc flake Cr6+ free - ISO 10683 flZnnc
<b>Packaging</b>	Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5	250	<a href="#">36325.050.001</a>	M10	200	<a href="#">36325.100.001</a>	M16	100	<a href="#">36325.160.001</a>
M6	250	<a href="#">36325.060.001</a>	M12	150	<a href="#">36325.120.001</a>			
M8	200	<a href="#">36325.080.001</a>	M14	100	<a href="#">36325.140.001</a>			

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- A ISO 10683 Zinc Flake surface coating eliminates the possibilities of damage which can arise due to hydrogen embrittlement.
- SK-locking disc springs, type M, can be used with fasteners class ≤ 10.9.

#### 55443 SK Locking disc spring type M

**R49A**

<b>Material</b>	Stainless steel A4
<b>Packaging</b>	Standard

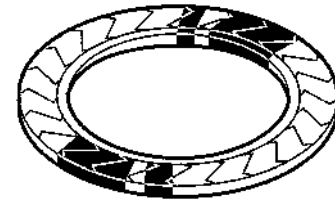
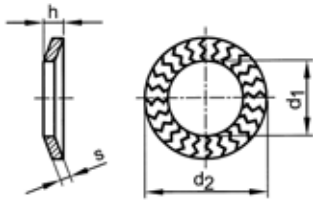


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4	250	<a href="#">55443.040.001</a>	M8	200	<a href="#">55443.080.001</a>	M16	100	<a href="#">55443.160.001</a>
M5	250	<a href="#">55443.050.001</a>	M10	200	<a href="#">55443.100.001</a>			
M6	250	<a href="#">55443.060.001</a>	M12	100	<a href="#">55443.120.001</a>			

- SK-locking disc springs, type M, can be used with stainless steel A2/A4 fasteners, up to and including class 80.



## Locking disc spring type Z



### Technical data

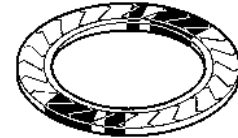
For nom.size	d <sub>1</sub>	d <sub>2</sub>	h	s
M6	6,1	9,9	1,6	1,4
M8	8,2	12,7	1,7	1,4
M10	10,2	16,1	2	1,6
M12	12,4	18,3	2,2	1,8
M16	16,4	24,6	3,1	2,5

- SK locking disc springs, type Z, can be used with hexagon socket head cap screws or cheese head screws, class ≤ 10.9.

### 36326 SK Locking disc spring type Z

L07C

<b>Material</b>	Spring steel 420-510 HV10
<b>Surface treatment</b>	Zinc flake Cr6+ free - ISO 10683 flZnnc
<b>Packaging</b>	Standard



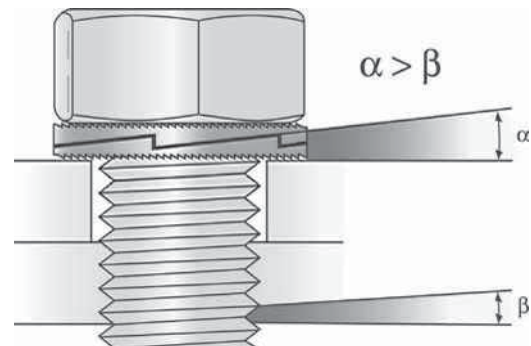
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6	250	<a href="#">36326.060.001</a>	M10	200	<a href="#">36326.100.001</a>	M16	100	<a href="#">36326.160.001</a>
M8	200	<a href="#">36326.080.001</a>	M12	150	<a href="#">36326.120.001</a>			

- A ISO 10683 Zinc Flake surface coating eliminates the possibilities of damage which can arise due to hydrogen embrittlement.

# NORD-LOCK®

**NORD-LOCK is a superior bolt securing system that provides safe locking for bolted joints even when exposed to severe vibration and dynamic load.**

- Makes the bolt self-locking
- Facilitates maintenance work
- Controllable preload
- No special tools required
- Reusable



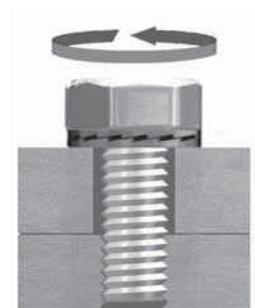
NORD-LOCK consists of a pair of washers with a wedge-locking action meeting DIN 25201 which is a unique method using tension instead of friction. The rise of the cams between the NORD-LOCK washers is greater than the pitch of the bolt. In addition, there are radial teeth on the opposite side. The washers are installed in pairs, cam face to cam face.

7

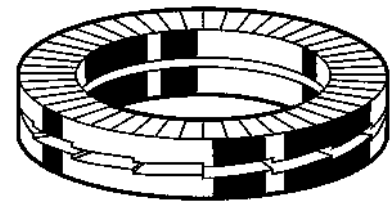
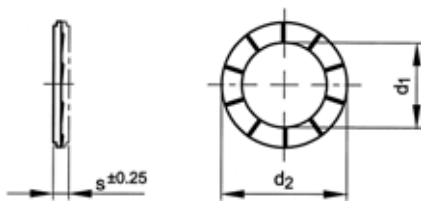
When the bolt and/or nut is tightened the teeth grip and seat the mating surfaces. The NORD-LOCK washer is locked in place, allowing movement only across the face of the cams. Any attempt from the bolt/nut to rotate loose is blocked by the wedge effect of the cams.



Here you see what happens when a bolt is untightened with a wrench. The pair of washers expand more than the corresponding pitch of the thread allows the bolt/nut to rise.



## Vibration proof washer



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s (Set)
M3	3,4	7	1,8
M4	4,4	7,6	1,8
M5	5,4	9	1,8
M6	6,5	10,8	1,8
M8	8,7	13,5	2,5
M10	10,7	16,6	2,5
M12	13	19,5	2,5
M14	15,2	23	3,4
M16	17	25,4	3,4
M18	19,5	29	3,4
M20	21,4	30,7	3,4
M22	23,4	34,5	3,4
M24	25,3	39	3,4
M27	28,4	42	6,6
M30	31,4	47	6,6
M33	34,4	48,5	6,6
M36	37,4	55	6,6
M42	43,2	63	6,6

- For general information concerning NORD-LOCK vibration proof fasteners, see INFO-page.

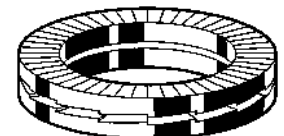
### Article groups

Material	Surface treatment	Packaging	Code	Page
St	Del pro	Standard	37980	7-83
St	Del pro	Self service	37985	7-83

#### 37980 NORD-LOCK Vibration proof washer 2 pieces

L07A

Material	Steel
Surface treatment	Deltaprotekt
Packaging	Standard



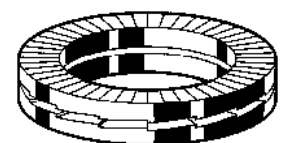
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	200	<a href="#">37980.030.001</a>	M12	200	<a href="#">37980.120.001</a>	M24	100	<a href="#">37980.240.001</a>
M4	200	<a href="#">37980.040.001</a>	M14	100	<a href="#">37980.140.001</a>	M27	50	<a href="#">37980.270.001</a>
M5	200	<a href="#">37980.050.001</a>	M16	100	<a href="#">37980.160.001</a>	M30	50	<a href="#">37980.300.001</a>
M6	200	<a href="#">37980.060.001</a>	M18	100	<a href="#">37980.180.001</a>	M33	25	<a href="#">37980.330.001</a>
M8	200	<a href="#">37980.080.001</a>	M20	100	<a href="#">37980.200.001</a>	M36	25	<a href="#">37980.360.001</a>
M10	200	<a href="#">37980.100.001</a>	M22	100	<a href="#">37980.220.001</a>	M42	25	<a href="#">37980.420.001</a>

- Technical brochure available on request.

#### 37985 NORD-LOCK Vibration proof washer 2 pieces

Y09A

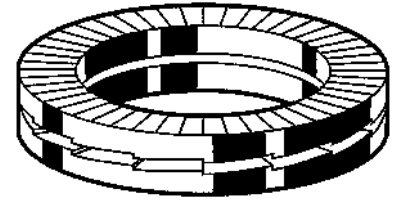
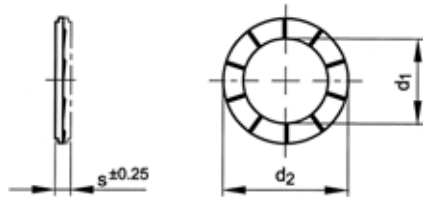
Material	Steel
Surface treatment	Deltaprotekt
Packaging	Self service



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6(25PC)	1	<a href="#">37985.060.001</a>	M10(25PC)	1	<a href="#">37985.100.001</a>	M16(10PC)	1	<a href="#">37985.160.001</a>
M8(25PC)	1	<a href="#">37985.080.001</a>	M12(10PC)	1	<a href="#">37985.120.001</a>	M20(10PC)	1	<a href="#">37985.200.001</a>

- Technical brochure available on request.

## Vibration proof washer St.st.



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s (Set)
M3	3,4	7	2,2
M4	4,4	7,6	2,2
M5	5,4	9	2,2
M6	6,5	10,8	2,2
M8	8,7	13,5	2,2
M10	10,7	16,6	2,2
M12	13	19,5	2,2
M16	17	25,4	3,2
M18	19,5	29	3,2
M20	21,4	30,7	3,2
M22	23,4	34,5	3,2
M24	25,3	39	3,2
M27	28,4	42	6,8
M30	31,4	47	6,8
M33	34,4	48,5	6,8
M36	37,4	55	6,8
M39	40,4	58,5	6,8
M42	43,2	63	6,8

- For general information concerning NORD-LOCK vibration proof fasteners, see INFO-page.
- Technical brochure available on request.

### Article groups

Material	Packaging	Code	Page
St.St. A4	Standard	55437	7-84
St.St. A4	Self service	55436	7-84

7

**55437 NORD-LOCK Vibration proof washer** R47A

**Material** Stainless steel A4  
**Packaging** Standard




For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	200	<a href="#">55437.030.001</a>	M12	200	<a href="#">55437.120.001</a>	M27	50	<a href="#">55437.270.001</a>
M4	200	<a href="#">55437.040.001</a>	M16	100	<a href="#">55437.160.001</a>	M30	50	<a href="#">55437.300.001</a>
M5	200	<a href="#">55437.050.001</a>	M18	100	<a href="#">55437.180.001</a>	M33	25	<a href="#">55437.330.001</a>
M6	200	<a href="#">55437.060.001</a>	M20	100	<a href="#">55437.200.001</a>	M36	25	<a href="#">55437.360.001</a>
M8	200	<a href="#">55437.080.001</a>	M22	100	<a href="#">55437.220.001</a>	M39	25	<a href="#">55437.390.001</a>
M10	200	<a href="#">55437.100.001</a>	M24	100	<a href="#">55437.240.001</a>	M42	25	<a href="#">55437.420.001</a>

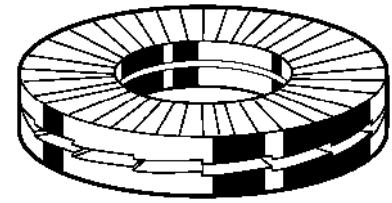
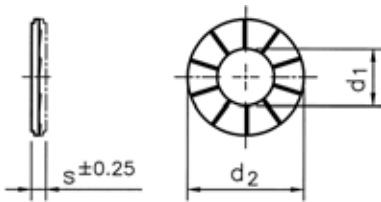
**55436 NORD-LOCK Vibration proof washer** Y09A

**Material** Stainless steel A4  
**Packaging** Self service




For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6(10PC)	1	<a href="#">55436.060.001</a>	M10(10PC)	1	<a href="#">55436.100.001</a>	M16(5PC)	1	<a href="#">55436.160.001</a>
M8(10PC)	1	<a href="#">55436.080.001</a>	M12(5PC)	1	<a href="#">55436.120.001</a>	M20(5PC)	1	<a href="#">55436.200.001</a>

## Vibration proof washer large outside diameter



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s (Set)
M4	4,4	9	1,8
M5	5,4	10,8	1,8
M6	6,5	13,5	2,5
M8	8,7	16,6	2,5
M10	10,7	21	2,5
M12	13	25,4	3,4
M14	15,2	30,7	3,4
M16	17	30,7	3,4
M18	19,5	34,5	3,4
M20	21,4	39	3,4
M22	23,4	42	4,6
M24	25,3	48,5	4,6
M27	28,4	48,5	6,6
M30	31,4	58,5	6,6
M33	34,4	58,5	6,6
M36	37,4	63	6,6

- For general information concerning NORD-LOCK vibration proof fasteners, see INFO-page.
- Vibration proof washers with large outside diameter are recommended for oversize and elongated holes, where a larger contact surface is required.
- Technical brochure available on request.

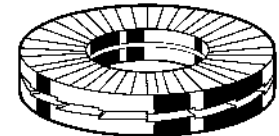
### Article groups

Material	Surface treatment	Packaging	Code	Page
St	Del pro	Standard	37982	7-85
St	Del pro	Self service	37986	7-85

#### 37982 NORD-LOCK Vibration proof washers large outside diameter

**L07A**

Material Steel  
 Surface treatment Deltaprotekt  
 Packaging Standard



For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number
M4X9	200	<a href="#">37982.040.009</a>	M14X30,7	100	<a href="#">37982.140.030</a>	M27X48,5	25	<a href="#">37982.270.048</a>
M5X10,8	200	<a href="#">37982.050.010</a>	M16X30,7	100	<a href="#">37982.160.030</a>	M30X58,5	25	<a href="#">37982.300.058</a>
M6X13,5	200	<a href="#">37982.060.013</a>	M18X34,5	100	<a href="#">37982.180.034</a>	M33X58,5	25	<a href="#">37982.330.058</a>
M8X16,6	200	<a href="#">37982.080.016</a>	M20X39	100	<a href="#">37982.200.039</a>	M36X63	25	<a href="#">37982.360.630</a>
M10X21	200	<a href="#">37982.100.021</a>	M22X42	50	<a href="#">37982.220.042</a>			
M12X25,4	100	<a href="#">37982.120.025</a>	M24X48,5	50	<a href="#">37982.240.048</a>			

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

#### 37986 NORD-LOCK Vibration proof washers large outside diameter

**Y09A**

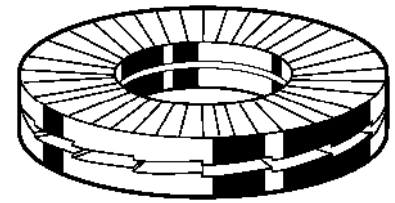
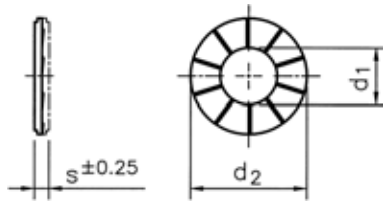
Material Steel  
 Surface treatment Deltaprotekt  
 Packaging Self service



Z	☒	Art.number	Z	☒	Art.number	Z	☒	Art.number
M6X13,5(25PC)	1	<a href="#">37986.060.001</a>	M10X21(25PC)	1	<a href="#">37986.100.001</a>	M16X30,7(10PC)	1	<a href="#">37986.160.001</a>
M8X16,6(25PC)	1	<a href="#">37986.080.001</a>	M12X25,4(10PC)	1	<a href="#">37986.120.001</a>	M20X39(10PC)	1	<a href="#">37986.200.001</a>

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

## Vibration proof washer large outside diameter Stainless steel



### Technical data

For nom.size	d <sub>1</sub>	d <sub>2</sub>	s (Set)
M4	4,4	9	2,2
M5	5,4	10,8	2,2
M6	6,5	13,5	2,2
M8	8,7	16,6	2,2
M10	10,7	21	2,2
M12	13	25,4	3,2
M14	15,4	30,7	3,2
M16	17	30,7	3,2
M18	19,5	34,5	3,2
M20	21,4	39	3,2
M22	23,4	42	3,2
M24	25,3	48,5	3,2
M27	28,4	48,5	6,8
M30	31,4	58,5	6,8

- For general information concerning NORD-LOCK vibration proof fasteners, see INFO-page.
- Technical brochure available on request.


### Article groups

Material	Packaging	Code	Page
St.St. A4	Standard	55453	7-86
St.St. A4	Self service	55456	7-86

7

**55453 NORD-LOCK Vibration proof washer large outside diameter** R47A

**Material** Stainless steel A4  
**Packaging** Standard




For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number
M4X9	200	<a href="#">55453.040.009</a>	M12X25,4	100	<a href="#">55453.120.025</a>	M22X42	50	<a href="#">55453.220.042</a>
M5X10,8	200	<a href="#">55453.050.010</a>	M14X30,7	100	<a href="#">55453.140.030</a>	M24X48,5	50	<a href="#">55453.240.048</a>
M6X13,5	200	<a href="#">55453.060.013</a>	M16X30,7	100	<a href="#">55453.160.030</a>	M27X48,5	25	<a href="#">55453.270.048</a>
M8X16,6	200	<a href="#">55453.080.016</a>	M18X34,5	100	<a href="#">55453.180.034</a>	M30X58,5	25	<a href="#">55453.300.058</a>
M10X21,0	200	<a href="#">55453.100.021</a>	M20X39	100	<a href="#">55453.200.039</a>			

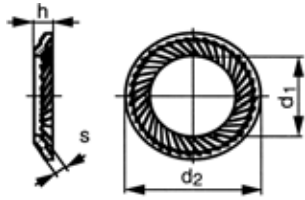
**55456 NORD-LOCK Vibration proof washer large outside diameter** Y09A

**Material** Stainless steel A4  
**Packaging** Self service




For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number	For nom. size x d2	☒	Art.number
M6X13,5(10PC)	1	<a href="#">55456.060.001</a>	M10X21(10PC)	1	<a href="#">55456.100.001</a>	M16X30,7(5PC)	1	<a href="#">55456.160.001</a>
M8X16,6(10PC)	1	<a href="#">55456.080.001</a>	M12X25,4(5PC)	1	<a href="#">55456.120.001</a>	M20X39(5PC)	1	<a href="#">55456.200.001</a>

## Locking disc spring type S

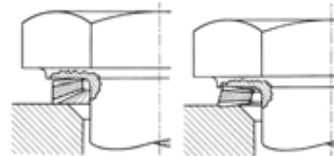


### Technical data

For nom.size	d <sub>1</sub> (H14)	d <sub>2</sub> (h14)	h (max.)	s
M2,5	2,7	4,8	0,9	0,45
M3	3,2	5,5	0,9	0,4 (0,45)
M4	4,3	7	1	0,5
M5	5,3	8,5 (9)	1,1	0,6
M6	6,4	10	1,2	0,7
M8	8,4	13	1,4	0,8
M10	10,5	16	1,6	1
M12	13	18	1,7	1 (1,1)
M14	15	21 (22)	2	1,2
M16	17	24	2,1	1,2 (1,3)
M18	19	27	2,3	1,5
M20	21	30	2,5	1,5
M22	23	33	2,7	1,5
M24	25,6	36	2,9	1,8
M27	28,6	39	3,1	2
M30	31,6	45	3,6	2

Special features of SCHNORR safety washers:

- contact first on the outside diameter, resulting in maximum leverage
- high vibration security due to the rib contact
- can be used with screws of property class  $\leq 8,8$  and  $\leq 8,0$



### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel DIN17222		Standard	36390	7-87
Spring steel DIN17222		Standard	36395	7-88
Spring steel DIN17222		Large	36396	7-88
Spring steel DIN17222	ZNTHP-NC6	Standard	36397	7-88
Spring steel DIN17222	ZNTHP-NC6	Standard	36411	7-88
St.St. A2		Standard	51468	7-88

7

#### 36390 SCHNORR Safety washer type S

L07A

**Material** Spring steel DIN17222  
**Packaging** Standard

 **SCHNORR**



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M18	100	<a href="#">36390.180.001</a>	M22	50	<a href="#">36390.220.001</a>	M27	50	<a href="#">36390.270.001</a>
M20	100	<a href="#">36390.200.001</a>	M24	50	<a href="#">36390.240.001</a>	M30	50	<a href="#">36390.300.001</a>

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

<b>36395</b>	<b>Locking disc spring type S</b>	<b>L07A</b>
<b>Material</b>	Spring steel DIN17222	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">36395.030.001</a>	M6	500	<a href="#">36395.060.001</a>	M12	250	<a href="#">36395.120.001</a>
M4	500	<a href="#">36395.040.001</a>	M8	250	<a href="#">36395.080.001</a>	M14	100	<a href="#">36395.140.001</a>
M5	500	<a href="#">36395.050.001</a>	M10	250	<a href="#">36395.100.001</a>	M16	100	<a href="#">36395.160.001</a>

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

<b>36396</b>	<b>Locking disc spring type S</b>	<b>L07A</b>
<b>Material</b>	Spring steel DIN17222	
<b>Packaging</b>	Large	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	2000	<a href="#">36396.030.001</a>	M6	1000	<a href="#">36396.060.001</a>	M12	500	<a href="#">36396.120.001</a>
M4	1000	<a href="#">36396.040.001</a>	M8	1000	<a href="#">36396.080.001</a>	M14	500	<a href="#">36396.140.001</a>
M5	1000	<a href="#">36396.050.001</a>	M10	1000	<a href="#">36396.100.001</a>	M16	500	<a href="#">36396.160.001</a>

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

<b>36397</b>	<b>Locking disc spring type S</b>	<b>L07A</b>
<b>Material</b>	Spring steel DIN17222	
<b>Surface treatment</b>	Galvanized thick Cr3+ passivated	
<b>Packaging</b>	Standard	

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	500	<a href="#">36397.030.001</a>	M6	500	<a href="#">36397.060.001</a>	M12	250	<a href="#">36397.120.001</a>
M4	500	<a href="#">36397.040.001</a>	M8	250	<a href="#">36397.080.001</a>	M14	100	<a href="#">36397.140.001</a>
M5	500	<a href="#">36397.050.001</a>	M10	250	<a href="#">36397.100.001</a>	M16	100	<a href="#">36397.160.001</a>

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

7

<b>36411</b>	<b>SCHNORR Safety washer type S</b>	<b>L07A</b>
<b>Material</b>	Spring steel DIN17222	
<b>Surface treatment</b>	Galvanized thick Cr3+ passivated	
<b>Packaging</b>	Standard	
		

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M18	100	<a href="#">36411.180.001</a>	M22	50	<a href="#">36411.220.001</a>	M27	50	<a href="#">36411.270.001</a>
M20	100	<a href="#">36411.200.001</a>	M24	50	<a href="#">36411.240.001</a>	M30	50	<a href="#">36411.300.001</a>

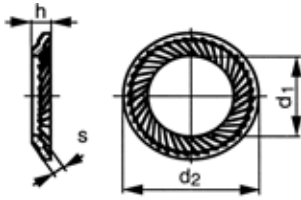
- Technical brochure available on request.

<b>51468</b>	<b>SCHNORR Safety washer type S</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="#">51468.025.001</a>	M8	250	<a href="#">51468.080.001</a>	M20	50	<a href="#">51468.200.001</a>
M3	500	<a href="#">51468.030.001</a>	M10	250	<a href="#">51468.100.001</a>	M24	50	<a href="#">51468.240.001</a>
M4	500	<a href="#">51468.040.001</a>	M12	250	<a href="#">51468.120.001</a>	M30	50	<a href="#">51468.300.001</a>
M5	500	<a href="#">51468.050.001</a>	M14	100	<a href="#">51468.140.001</a>			
M6	500	<a href="#">51468.060.001</a>	M16	100	<a href="#">51468.160.001</a>			



## Locking disc spring type VS

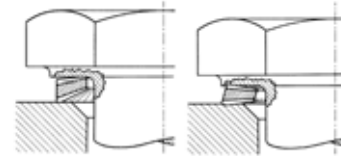


### Technical data

For nom.size	d <sub>1</sub> (H14)	d <sub>2</sub> (h14)	h (max.)	s
M5	5,3	9	1,3	1
M6	6,4	10	1,4	1
M8	8,4	13	1,7	1,2
M10	10,5	16	2	1,5
M12	13	18	2,1	1,5
M14	15	22	2,2	1,5
M16	17	24	2,6	2
M20	21	30	2,8	2
M24	25,6	36	3,4	2,5
M30	31,6	45	3,8	2,5

Special features of SCHNORR safety washers type VS:

- reinforced execution (increased metal thickness) resulting in considerably improved spring characteristics
- contact first on the outside diameter, resulting in maximum leverage
- high vibration security due to the rib contact
- can be used with screws of property class  $\leq 10,9$  and on hardened surface



### Article groups

Material	Surface treatment	Packaging	Code	Page
Spring steel DIN17222		Standard	36420	7-89
Spring steel DIN17222	ZNTHP-NC6	Standard	36425	7-89

#### 36420 SCHNORR Safety washer type VS

L07A

**Material** Spring steel DIN17222  
**Packaging** Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5	500	<a href="#">36420.050.001</a>	M12	250	<a href="#">36420.120.001</a>	M24	50	<a href="#">36420.240.001</a>
M6	500	<a href="#">36420.060.001</a>	M14	100	<a href="#">36420.140.001</a>	M30	50	<a href="#">36420.300.001</a>
M8	250	<a href="#">36420.080.001</a>	M16	100	<a href="#">36420.160.001</a>			
M10	250	<a href="#">36420.100.001</a>	M20	100	<a href="#">36420.200.001</a>			

#### 36425 SCHNORR Safety washer type VS

L07A

**Material** Spring steel DIN17222  
**Surface treatment** Galvanized thick Cr3+ passivated  
**Packaging** Standard

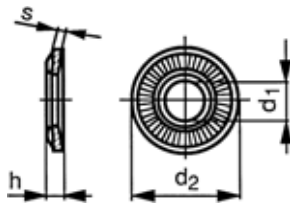


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M5	500	<a href="#">36425.050.001</a>	M12	250	<a href="#">36425.120.001</a>	M24	50	<a href="#">36425.240.001</a>
M6	500	<a href="#">36425.060.001</a>	M14	100	<a href="#">36425.140.001</a>	M30	50	<a href="#">36425.300.001</a>
M8	250	<a href="#">36425.080.001</a>	M16	100	<a href="#">36425.160.001</a>			
M10	250	<a href="#">36425.100.001</a>	M20	100	<a href="#">36425.200.001</a>			

- Technical brochure available on request.

**Contact-lock washer**

NF E25-511

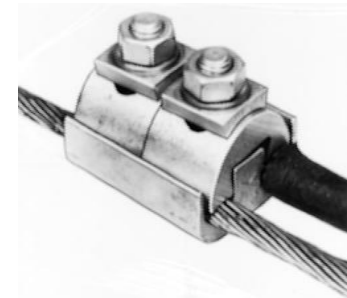


**Technical data**

For nom.size	d <sub>1</sub> (H14)	d <sub>2</sub> (js 15)	s	h (max.)
M3	3,1	8	0,6	1
M4	4,1	10	0,9	1,4
M5	5,1	12	1,1	1,8
M6	6,1	14	1,3	2,1
M7 (#NF)	7,2	18	1,4	2,4
M8	8,2	18	1,4	2,35
M10	10,2	22	1,6	2,75
M12	12,4	27	1,8	3,1
M16	16,4	32	2,8	4,1
M20	20,5	40	3,2	4,9

Special features *FABORY* contact-lock washers type medium:

- suitable for use simultaneously as lock washer and plain washer with oversize or elongated holes
- no damage to surface, exceptional locking action and high elasticity to compensate play or setting
- excellent contact in electrical appliances avoiding overheating
- applicable for bolts with a property class ≤ 10.9



7

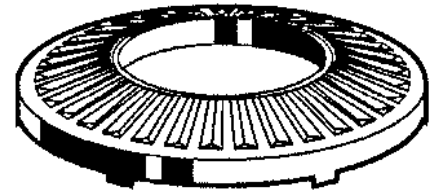
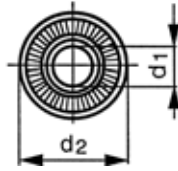
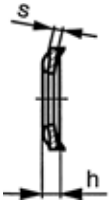
<b>37282</b>	<b>Contact-lock washer type medium</b>	<b>L07D</b>
<b>Material</b>	Spring steel DIN267-26	
<b>Surface treatment</b>	Galvanized thick Cr3+ passivated	
<b>Packaging</b>	Standard	



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M3	200	<a href="#">37282.030.001</a>	M6	100	<a href="#">37282.060.001</a>	M12	100	<a href="#">37282.120.001</a>
M4	200	<a href="#">37282.040.001</a>	M8	100	<a href="#">37282.080.001</a>	M16	100	<a href="#">37282.160.001</a>
M5	100	<a href="#">37282.050.001</a>	M10	100	<a href="#">37282.100.001</a>	M20	100	<a href="#">37282.200.001</a>

- Technical brochure available on request.

## Contact-lock washer



### Technical data

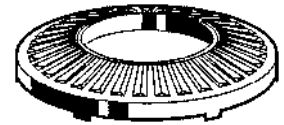
For nom.size	d <sub>1</sub> (H14)	d <sub>2</sub> (js 15)	s	h (max.)
M4	4,1	8	0,8	1,15
M5	5,1	10	1	1,5
M6	6,1	12	1,2	1,8
M8	8,2	16	1,4	2,4
M10	10,2	20	1,6	2,6
M12	12,4	24	1,6	2,6

- Special features of contact-lock washers type P:
- Suitable for use simultaneously as lock washer and plain washer with oversize or elongated holes
- No damage to surface, exceptional locking action and high elasticity to compensate play or setting
- Excellent contact in electrical appliances avoiding overheating
- Provided with six sharp points (height 0,3 mm), they penetrate the possible coat of laquer and will provide an excellent earthing
- Applicable for bolts with a property class ≤ 10.9

#### 37265 Contact-lock washer type P

L07D

<b>Material</b>	Spring steel
<b>Surface treatment</b>	Galvanized thick Cr3+ passivated
<b>Packaging</b>	Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M4	200	<a href="#">37265.040.001</a>	M6	100	<a href="#">37265.060.001</a>	M10	100	<a href="#">37265.100.001</a>
M5	100	<a href="#">37265.050.001</a>	M8	100	<a href="#">37265.080.001</a>	M12	100	<a href="#">37265.120.001</a>

- Technical brochure available on request.

## 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

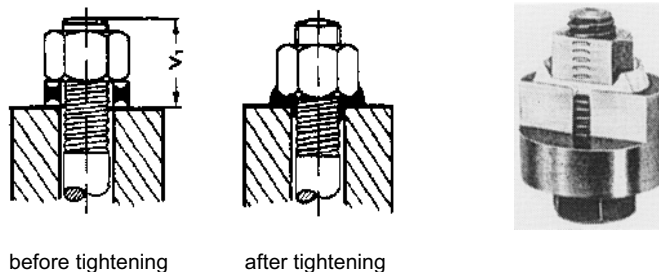
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Special features DUBO retaining rings:

- 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

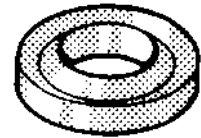
after tightening

### 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**

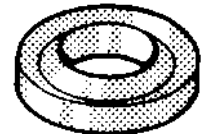
**Material** Plastic Polyamide (nylon)  
**Class** 6  
**Colour** White  
**Packaging** Standard



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

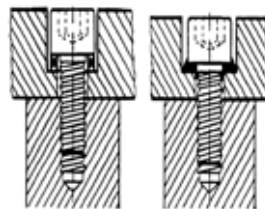
For nom.size	Type no.	d	D	H
M4	-	4,1	7,7	2
M5	-	5,15	9,8	3
M6	301	6,5	10,5	2,5
M8	303	8,1	14	3,3
M10	305	10,2	17	3,8
M12	307	12,2	19	4,4
M14	309	14,2	23	5,2
M16	311	16,2	25	5,6
M20	315	20,2	31,5	6,5

#### 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

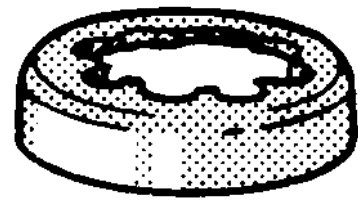
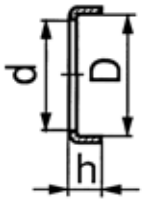


7

<b>37901 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



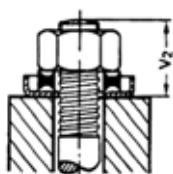
### Technical data

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	-	-	-

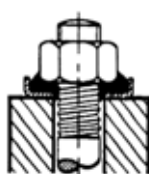
### Assembly data

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.

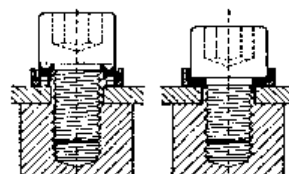
Article number	Application with			
	Hexagon bolts and - nuts		Overhead hexagon socket head cap screws	
	Metric	Non metric	Metric	Non metric
37920.040.001	M4 - M5	5/32 - 3/16	M6	1/4
37920.060.001	M6	1/4	-	-
37920.080.001	M8	5/16	M10	3/8
37920.100.001	M10	3/8	M12	1/2
37920.120.001	M12	7/16	M14	-
37920.160.001	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

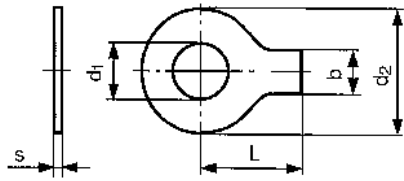
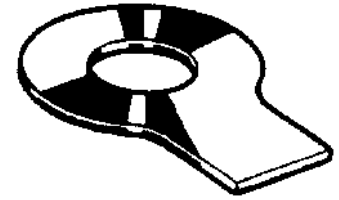
W05C

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>			

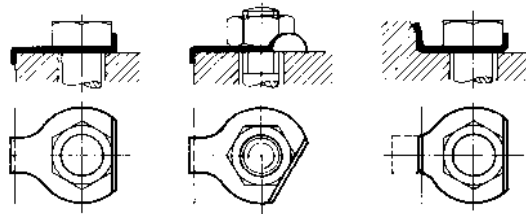
## Tab washer with long tab


 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>			



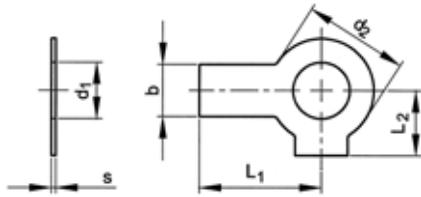
<b>51540 Tab washer with long tab</b>		<b>R09A</b>
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard	
		

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>

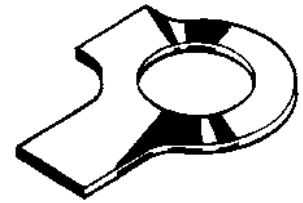
<b>55540 Tab washer with long tab</b>		<b>R49A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	
		

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



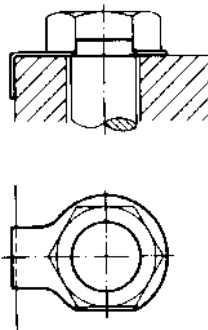
DIN 463  
NEN 2278



### 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



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

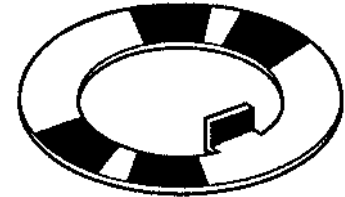
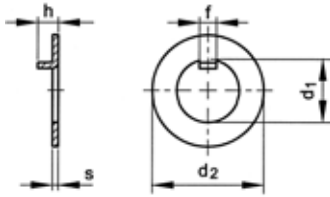
For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M6	100	<a href="#">51910.060.001</a>	M16	50	<a href="#">51910.160.001</a>	M27	25	<a href="#">51910.270.001</a>
M8	50	<a href="#">51910.080.001</a>	M18 *	50	<a href="#">51910.180.001</a>	M30	10	<a href="#">51910.300.001</a>
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 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

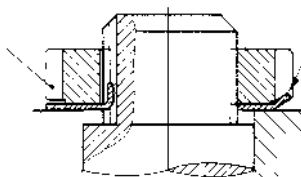
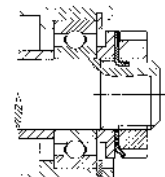
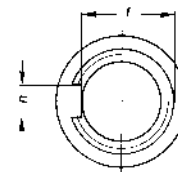


### Technical data

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

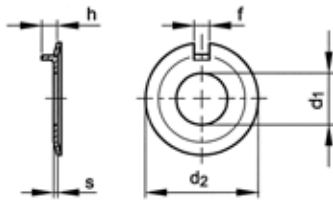


d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
10MM	100	<a href="#">38684.100.001</a>	20MM	50	<a href="#">38684.200.001</a>	30MM	25	<a href="#">38684.300.001</a>
12MM	100	<a href="#">38684.120.001</a>	22MM	50	<a href="#">38684.220.001</a>	32MM	25	<a href="#">38684.320.001</a>
14MM	50	<a href="#">38684.140.001</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



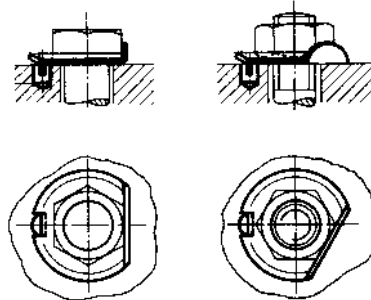
DIN 432  
NEN 2279



### 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

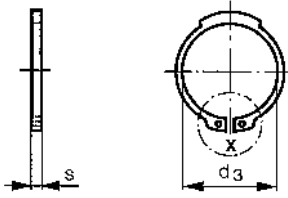
L07J

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



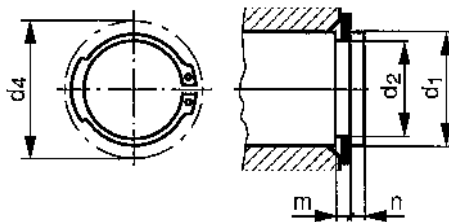
### Technical data

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

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- 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



**36000 Retaining ring for shaft - normal type** L07A

**Material** Spring steel DIN17222  
**Packaging** 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>			

**51435 Retaining ring for shaft - normal type** R09A

**Material** Stainless steel  
**Packaging** Standard  
 DIN ≈471

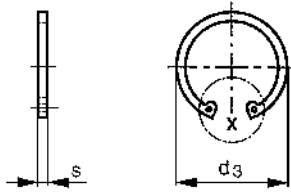


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Nom. size shaft d1	☒	Art.number	Nom. size shaft d1	☒	Art.number	Nom. size shaft d1	☒	Art.number
4MM	200	<a href="#">51435.004.001</a>	20MM	50	<a href="#">51435.020.001</a>	42MM	10	<a href="#">51435.042.001</a>
5MM	200	<a href="#">51435.005.001</a>	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

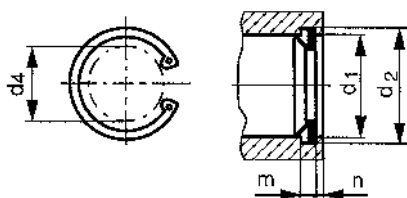


### Technical data

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

7



DETAIL X		
d <sub>1</sub> ≤ 300mm.	d <sub>1</sub> ≥ 170mm. ①	d <sub>1</sub> ≥ 25mm. ①

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

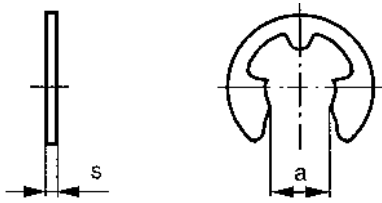
**51437 Retaining ring for bores - normal type** R09A

<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

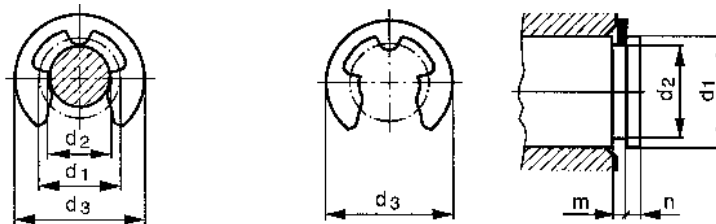

 DIN 6799  
 BS 3673-2


### 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



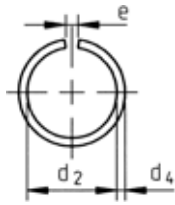
Nom. size groove d2 (h11)	☒	Art.number	Nom. size groove d2 (h11)	☒	Art.number	Nom. size groove d2 (h11)	☒	Art.number
1,2MM	500	<a href="#">36200.012.001</a>	5MM	500	<a href="#">36200.050.001</a>	12MM	100	<a href="#">36200.120.001</a>
1,5MM	500	<a href="#">36200.015.001</a>	6MM	500	<a href="#">36200.060.001</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.

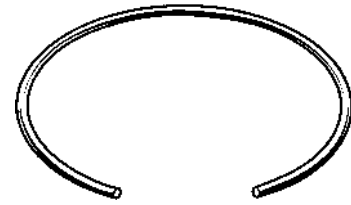
<b>51440 Retaining washer for shafts</b>		<b>R09A</b>
<b>Material</b>	Stainless steel	
<b>Packaging</b>	Standard	
		

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



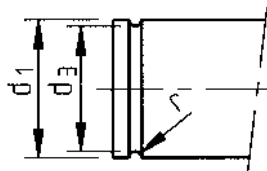
DIN 7993 A



### 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

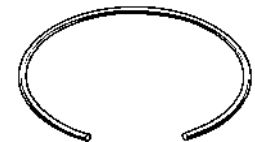
### Assembly data



### 36215 Snap ring for shafts

L07A

**Material** Spring steel 17223-1  
**Packaging** Standard



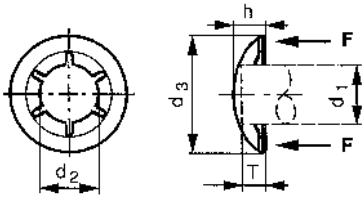
Nom. size shaft d1	☒	Art.number	Nom. size shaft d1	☒	Art.number	Nom. size shaft d1	☒	Art.number
6MM	250	<a href="#">36215.006.001</a>	26MM	100	<a href="#">36215.026.001</a>	55MM	25	<a href="#">36215.055.001</a>
8MM	100	<a href="#">36215.008.001</a>	28MM	100	<a href="#">36215.028.001</a>	60MM	25	<a href="#">36215.060.001</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
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

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



7

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

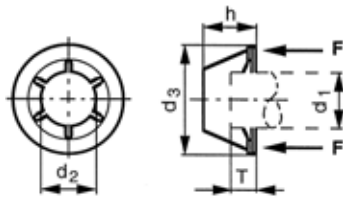
R09A

**Material** Stainless steel  
**Packaging** 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



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

### 36250 Fixing washer universal handle

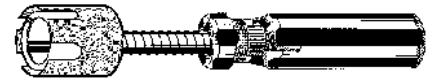
L07B

<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**

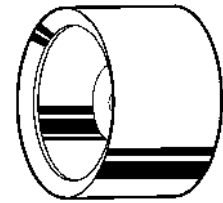


- Suitable for the installation of fixing washers for shafts without cap, made of spring steel and stainless steel.

<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>			

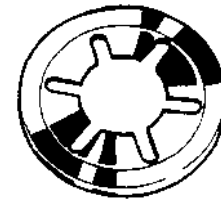
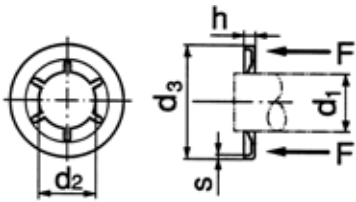
- Suitable for the installation of fixing washers for shafts without cap, made of spring steel.
- Application with handle, article group 36250.
- Shaft 6,0-8,0MM: Also suitable for fixing washers for shafts with cap type 4A, made of spring steel and stainless steel: 4,0 mm - 5,0 mm.
- Shaft 9,0-11,0MM: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

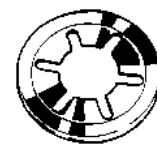
Material	Surface treatment	Packaging	Code	Page
Spring steel	Bronze plated and varnished	Standard	36230	7-117
St.St.		Standard	51445	7-118

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

L07B

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



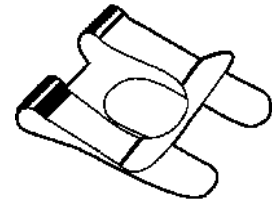
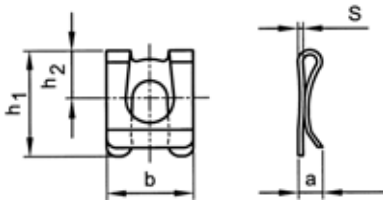
For shaft d1	☒	Art.number	For shaft d1	☒	Art.number	For shaft d1	☒	Art.number
2MM	500	<a href="#">36230.020.001</a>	9MM	250	<a href="#">36230.090.001</a>	17MM	100	<a href="#">36230.170.001</a>
3MM	500	<a href="#">36230.030.001</a>	10MM	250	<a href="#">36230.100.001</a>	18MM	100	<a href="#">36230.180.001</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>			

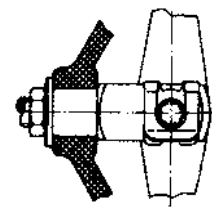
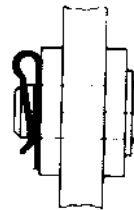
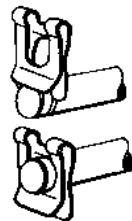
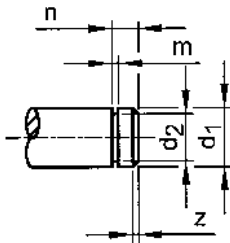
## SL Clip for bolts and shafts



### 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

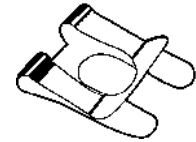
### Assembly data / Application data



### 36265 SL Clip for bolts and shafts

L07A

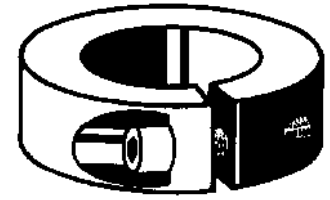
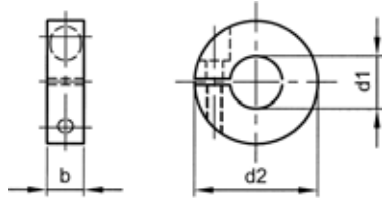
**Material** Spring steel  
**Surface treatment** Zinc plated  
**Packaging** Standard



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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>			

## Clamp-adjusting ring with hexagon socket head cap screw



### Technical data

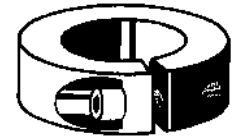
d1	d2	b	Screw size	d1	d2	b	Screw size	d1	d2	b	Screw size
8	25	10	M4x15	16	40	12	M5x20	35	63	12	M5x20
10	32	10	M4x15	20	45	12	M5x20	40	70	14	M6x20
12	32	10	M4x15	25	50	12	M5x20	45	80	14	M6x20
15	40	12	M5x20	30	56	12	M5x20	50	80	14	M6x20

- Special features of clamp-adjusting rings:
- Simple installation, low loading of the shaft.
- Compensates tolerance variations of the shaft.
- Simple dis-assembly and precise moveable.
- The shaft remains undamaged due to no metal disformation during tightening.
- Equal division of clamping force over the circumference.

### 37840 Clamp-adjusting ring with hexagon socket head cap screw

L07F

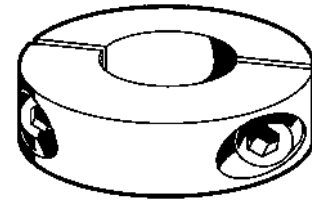
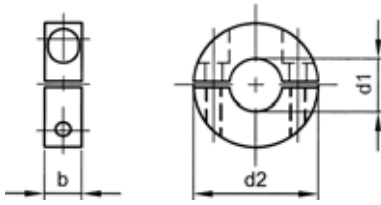
**Material** Free-cutting steel  
**Packaging** Standard



d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number
8X25X10MM	10	<a href="#">37840.080.001</a>	16X40X12MM	5	<a href="#">37840.160.001</a>	35X63X12MM	2	<a href="#">37840.350.001</a>
10X32X10MM	10	<a href="#">37840.100.001</a>	20X45X12MM	5	<a href="#">37840.200.001</a>	40X70X14MM	2	<a href="#">37840.400.001</a>
12X32X10MM	5	<a href="#">37840.120.001</a>	25X50X12MM	5	<a href="#">37840.250.001</a>	45X80X14MM	2	<a href="#">37840.450.001</a>
15X40X12MM	5	<a href="#">37840.150.001</a>	30X56X12MM	5	<a href="#">37840.300.001</a>	50X80X14MM	2	<a href="#">37840.500.001</a>



## Clamp-adjusting ring with 2x hexagon socket



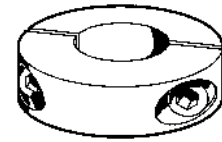
### Technical data

d1 (H8)	d2 (H13)	b (j14)	d1 (H8)	d2 (H13)	b (j14)	d1 (H8)	d2 (H13)	b (j14)
8	25	10	16	40	12	35	63	12
10	332	10	20	45	12	40	70	14
12	32	10	25	50	12	45	80	14
15	40	12	30	56	12	50	80	14

### 37845 Clamp-adjusting ring with 2x hexagon socket

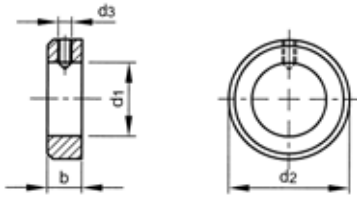
L07F

**Material** Free-cutting steel  
**Packaging** Standard

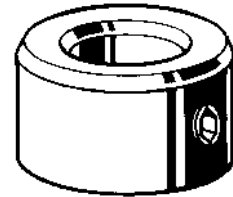


d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number
8X25X10MM	10	<a href="#">37845.080.001</a>	16X40X12MM	5	<a href="#">37845.160.001</a>	35X63X12MM	2	<a href="#">37845.350.001</a>
10X32X10MM	10	<a href="#">37845.100.001</a>	20X45X12MM	5	<a href="#">37845.200.001</a>	40X70X14MM	2	<a href="#">37845.400.001</a>
12X32X10MM	5	<a href="#">37845.120.001</a>	25X50X12MM	5	<a href="#">37845.250.001</a>	45X80X14MM	2	<a href="#">37845.450.001</a>
15X40X12MM	5	<a href="#">37845.150.001</a>	30X56X12MM	5	<a href="#">37845.300.001</a>	50X80X14MM	2	<a href="#">37845.500.001</a>

## Adjusting ring with set screw



ISO - / 7434  
 DIN **705 A**  
 NEN - / 1488  
 NF - / E25-161  
 BS - / 4219



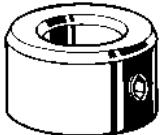
### Technical data

d1 (H8)	d2 (h13)	b (js14)	d3
3	7	5	M2
4	8	5	M2,5
5	10	6	M3
6	12	8	M4
7	12	8	M4
8	16	8	M4
9 (#DIN)	18	10	M5
10	20	10	M5
11 (#DIN)	20	10	M5
12	22	12	M6
13 (#DIN)	22	12	M6
14	25	12	M6
15	25	12	M6
16	28	12	M6
18	32	14	M6
20	32	14	M6
22	36	14	M6
24	40	16	M8
25	40	16	M8
26	40	16	M8
28	45	16	M8
30	45	16	M8
32	50	16	M8
34 (#DIN)	50	16	M8
35	56	16	M8
36	56	16	M8
38 (#DIN)	56	16	M8
40	63	18	M10
42 (#DIN)	63	18	M10
45	70	18	M10
48 (#DIN)	70	18	M10
50	80	18	M10
55	80	18	M10
56	80	18	M10
58 (#DIN)	90	20	M10
60	90	20	M10
63	90	20	M10
65	100	20	M10
70	100	20	M10
75 (2xset)	110	22	M12
80 (2xset)	110	22	M12

### Article groups

Material	Surface treatment		Packaging	Code	Page
Free-cutting steel		with DIN 916	Standard	37810	7-123
Free-cutting steel		with DIN 553	Standard	37815	7-123
Free-cutting steel	Zipl	with DIN 916	Standard	37820	7-123
St.St. A1		with DIN 916	Standard	51370	7-123
St.St. A1		with DIN 553	Standard	51372	7-124

**37810 Adjusting ring with hexagon socket set screw** L07F

<b>Material</b>	Free-cutting steel	
<b>Packaging</b>	Standard	
	ISO - / 4029	
	<b>DIN 705 A / 916</b>	
	NEN - / 2343	
	NF - / E27-183 BS - / 4168-5	


d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number
3X7X5MM	50	<a href="#">37810.030.001</a>	18X32X14MM	10	<a href="#">37810.180.001</a>	42X63X18MM	5	<a href="#">37810.420.001</a>
4X8X5MM	50	<a href="#">37810.040.001</a>	20X32X14MM	10	<a href="#">37810.200.001</a>	45X70X18MM	5	<a href="#">37810.450.001</a>
5X10X6MM	50	<a href="#">37810.050.001</a>	22X36X14MM	10	<a href="#">37810.220.001</a>	48X70X18MM	5	<a href="#">37810.480.001</a>
6X12X8MM	50	<a href="#">37810.060.001</a>	24X40X16MM	10	<a href="#">37810.240.001</a>	50X80X18MM	5	<a href="#">37810.500.001</a>
7X12X8MM	50	<a href="#">37810.070.001</a>	25X40X16MM	10	<a href="#">37810.250.001</a>	55X80X18MM	1	<a href="#">37810.550.001</a>
8X16X8MM	50	<a href="#">37810.080.001</a>	26X40X16MM	10	<a href="#">37810.260.001</a>	56X80X18MM	1	<a href="#">37810.560.001</a>
9X18X10MM	25	<a href="#">37810.090.001</a>	28X45X16MM	10	<a href="#">37810.280.001</a>	58X90X20MM	1	<a href="#">37810.580.001</a>
10X20X10MM	25	<a href="#">37810.100.001</a>	30X45X16MM	10	<a href="#">37810.300.001</a>	60X90X20MM	1	<a href="#">37810.600.001</a>
11X20X10MM	25	<a href="#">37810.110.001</a>	32X50X16MM	10	<a href="#">37810.320.001</a>	63X90X20MM	1	<a href="#">37810.630.001</a>
12X22X12MM	10	<a href="#">37810.120.001</a>	34X50X16MM	5	<a href="#">37810.340.001</a>	65X100X20MM	1	<a href="#">37810.650.001</a>
13X22X12MM	10	<a href="#">37810.130.001</a>	35X56X16MM	5	<a href="#">37810.350.001</a>	70X100X20MM	1	<a href="#">37810.700.001</a>
14X25X12MM	10	<a href="#">37810.140.001</a>	36X56X16MM	5	<a href="#">37810.360.001</a>	75X110X22MM	1	<a href="#">37810.750.001</a>
15X25X12MM	10	<a href="#">37810.150.001</a>	38X56X16MM	5	<a href="#">37810.380.001</a>	80X110X22MM	1	<a href="#">37810.800.001</a>
16X28X12MM	10	<a href="#">37810.160.001</a>	40X63X18MM	5	<a href="#">37810.400.001</a>			

**37815 Adjusting ring with slotted set screw** L07F

<b>Material</b>	Free-cutting steel	
<b>Packaging</b>	Standard	
	DIN 705 A / 553	


d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number
3X7X5MM	50	<a href="#">37815.030.001</a>	18X32X14MM	10	<a href="#">37815.180.001</a>	40X63X18MM	5	<a href="#">37815.400.001</a>
4X8X5MM	50	<a href="#">37815.040.001</a>	20X32X14MM	10	<a href="#">37815.200.001</a>	42X63X18MM	5	<a href="#">37815.420.001</a>
5X10X6MM	50	<a href="#">37815.050.001</a>	22X36X14MM	10	<a href="#">37815.220.001</a>	45X70X18MM	5	<a href="#">37815.450.001</a>
6X12X8MM	50	<a href="#">37815.060.001</a>	24X40X16MM	10	<a href="#">37815.240.001</a>	48X70X18MM	5	<a href="#">37815.480.001</a>
7X12X8MM	50	<a href="#">37815.070.001</a>	25X40X16MM	10	<a href="#">37815.250.001</a>	50X80X18MM	5	<a href="#">37815.500.001</a>
8X16X8MM	50	<a href="#">37815.080.001</a>	26X40X16MM	10	<a href="#">37815.260.001</a>	55X80X18MM	1	<a href="#">37815.550.001</a>
9X18X10MM	25	<a href="#">37815.090.001</a>	28X45X16MM	10	<a href="#">37815.280.001</a>	58X90X20MM	1	<a href="#">37815.580.001</a>
10X20X10MM	25	<a href="#">37815.100.001</a>	30X45X16MM	10	<a href="#">37815.300.001</a>	60X90X20MM	1	<a href="#">37815.600.001</a>
11X20X10MM	25	<a href="#">37815.110.001</a>	32X50X16MM	10	<a href="#">37815.320.001</a>	63X90X20MM	1	<a href="#">37815.630.001</a>
12X22X12MM	10	<a href="#">37815.120.001</a>	34X50X16MM	5	<a href="#">37815.340.001</a>	65X100X20MM	1	<a href="#">37815.650.001</a>
14X25X12MM	10	<a href="#">37815.140.001</a>	35X56X16MM	5	<a href="#">37815.350.001</a>	70X100X20MM	1	<a href="#">37815.700.001</a>
15X25X12MM	10	<a href="#">37815.150.001</a>	36X56X16MM	5	<a href="#">37815.360.001</a>	75X110X22MM	1	<a href="#">37815.750.001</a>
16X28X12MM	10	<a href="#">37815.160.001</a>	38X56X16MM	5	<a href="#">37815.380.001</a>	80X110X22MM	1	<a href="#">37815.800.001</a>

**37820 Adjusting ring with hexagon socket set screw** L07F

<b>Material</b>	Free-cutting steel	
<b>Surface treatment</b>	Zinc plated	
<b>Packaging</b>	Standard	
	ISO - / 4029	
	<b>DIN 705 A / 916</b>	
	NEN - / 2343 NF - / E27-183 BS - / 4168-5	

d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number
5X10X6MM	50	<a href="#">37820.050.001</a>	16X28X12MM	10	<a href="#">37820.160.001</a>	30X45X16MM	10	<a href="#">37820.300.001</a>
6X12X8MM	50	<a href="#">37820.060.001</a>	18X32X14MM	10	<a href="#">37820.180.001</a>	35X56X16MM	5	<a href="#">37820.350.001</a>
8X16X8MM	50	<a href="#">37820.080.001</a>	20X32X14MM	10	<a href="#">37820.200.001</a>	40X63X18MM	5	<a href="#">37820.400.001</a>
10X20X10MM	25	<a href="#">37820.100.001</a>	22X36X14MM	10	<a href="#">37820.220.001</a>	45X70X18MM	5	<a href="#">37820.450.001</a>
12X22X12MM	10	<a href="#">37820.120.001</a>	25X40X16MM	10	<a href="#">37820.250.001</a>	50X80X18MM	5	<a href="#">37820.500.001</a>
14X25X12MM	10	<a href="#">37820.140.001</a>	26X40X16MM	10	<a href="#">37820.260.001</a>	60X90X20MM	1	<a href="#">37820.600.001</a>
15X25X12MM	10	<a href="#">37820.150.001</a>	28X45X16MM	10	<a href="#">37820.280.001</a>	70X100X20MM	1	<a href="#">37820.700.001</a>

**51370 Adjusting ring with hexagon socket set screw** R09A

<b>Material</b>	Stainless steel A1	
<b>Packaging</b>	Standard	
	ISO - / 4029	
	<b>DIN 705 A / 916</b>	
	NEN - / 2343	
	NF - / E27-183 BS - / 4168-5	

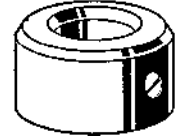
d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number
5X10X6MM	25	<a href="#">51370.050.001</a>	14X25X12MM	10	<a href="#">51370.140.001</a>	22X36X14MM	5	<a href="#">51370.220.001</a>
6X12X8MM	25	<a href="#">51370.060.001</a>	15X25X12MM	10	<a href="#">51370.150.001</a>	25X40X16MM	5	<a href="#">51370.250.001</a>
8X16X8MM	25	<a href="#">51370.080.001</a>	16X28X12MM	5	<a href="#">51370.160.001</a>	28X45X16MM	2	<a href="#">51370.280.001</a>
10X20X10MM	10	<a href="#">51370.100.001</a>	18X32X14MM	5	<a href="#">51370.180.001</a>	30X45X16MM	2	<a href="#">51370.300.001</a>
12X22X12MM	10	<a href="#">51370.120.001</a>	20X32X14MM	5	<a href="#">51370.200.001</a>	35X56X16MM	2	<a href="#">51370.350.001</a>

**51370 Adjusting ring with hexagon socket set screw**

d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number
36X56X16MM	1	<a href="#">51370.360.001</a>	45X70X18MM	1	<a href="#">51370.450.001</a>	60X90X20MM	1	<a href="#">51370.600.001</a>
40X63X18MM	1	<a href="#">51370.400.001</a>	50X80X18MM	1	<a href="#">51370.500.001</a>			

**51372 Adjusting ring with slotted set screw**
R09A

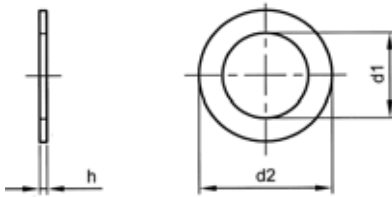
**Material** Stainless steel A1  
**Packaging** Standard  
 DIN ≈705 A / 553



d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number	d1 x d2 x b	☒	Art.number
5X10X6MM	25	<a href="#">51372.050.001</a>	16X28X12MM	5	<a href="#">51372.160.001</a>	34X50X16MM	2	<a href="#">51372.340.001</a>
6X12X8MM	25	<a href="#">51372.060.001</a>	20X32X14MM	5	<a href="#">51372.200.001</a>	35X56X16MM	2	<a href="#">51372.350.001</a>
8X16X8MM	25	<a href="#">51372.080.001</a>	24X40X16MM	5	<a href="#">51372.240.001</a>	36X56X16MM	1	<a href="#">51372.360.001</a>
9X18X10MM	10	<a href="#">51372.090.001</a>	25X40X16MM	5	<a href="#">51372.250.001</a>	38X56X16MM	1	<a href="#">51372.380.001</a>
10X20X10MM	10	<a href="#">51372.100.001</a>	26X40X16MM	5	<a href="#">51372.260.001</a>	40X63X18MM	1	<a href="#">51372.400.001</a>
11X20X10MM	10	<a href="#">51372.110.001</a>	28X45X16MM	2	<a href="#">51372.280.001</a>	45X70X18MM	1	<a href="#">51372.450.001</a>
12X22X12MM	10	<a href="#">51372.120.001</a>	30X45X16MM	2	<a href="#">51372.300.001</a>	50X80X18MM	1	<a href="#">51372.500.001</a>
15X25X12MM	10	<a href="#">51372.150.001</a>	32X50X16MM	2	<a href="#">51372.320.001</a>			

## Shim ring

DIN 988



### Technical data

d1 x d2	d <sub>1</sub> (min.)	d <sub>1</sub> (max.)	d <sub>2</sub> (min.)	d <sub>2</sub> (max.)
3x6	3,02	3,12	5,85	5,97
4x8	4,03	4,15	7,81	7,96
5x10	5,03	5,15	9,81	9,96
6x12	6,03	6,15	11,77	11,95
6x18 (#DIN)	6,03	6,15	17,77	17,95
7x13	7,04	7,15	12,77	12,95
8x14	8,04	8,19	13,77	13,95
8x20 (#DIN)	8,04	8,16	19,77	19,95
9x15	9,04	9,19	14,77	14,95
10x16	10,04	10,19	15,77	15,95
10x18 (#DIN)	10,04	10,19	17,77	15,95
10x22 (#DIN)	10,04	10,19	21,725	21,935
11x17	11,05	11,23	16,77	16,95
12x18	12,05	12,23	17,77	17,95
12x20 (#DIN)	12,05	12,23	19,725	19,935
12x24 (#DIN)	12,05	12,23	23,725	23,935
13x19	13,05	13,23	17,77	17,95
14x20	14,05	14,23	19,725	19,935
14x26 (#DIN)	14,03	14,23	25,725	25,935
15x21	15,05	15,23	20,725	20,935
16x22	16,05	16,23	21,725	21,935
16x26 (#DIN)	16,05	16,23	25,275	25,935
16x28 (#DIN)	16,05	16,23	27,275	27,935
17x24	17,05	17,23	23,725	23,935
18x25	18,05	18,23	24,725	24,935
18x30 (#DIN)	18,05	18,23	29,725	29,735
19x26	19,065	19,275	25,725	25,935
20x28	20,065	20,275	27,725	27,935
20x32 (#DIN)	20,065	20,275	31,67	31,92
22x30	22,065	22,275	29,725	29,935
22x32	22,065	22,275	31,67	31,92
22x34 (#DIN)	22,065	22,275	33,67	33,92
24x36 (#DIN)	24,065	24,275	35,67	35,92
25x35	25,065	25,275	34,67	34,92
25x36	25,065	25,275	35,67	35,92
26x37	26,065	26,275	36,67	36,92
26x38 (#DIN)	26,065	26,275	37,67	37,92
28x40	28,065	28,275	39,67	39,92
30x35 (#DIN)	30,065	30,275	34,67	34,92
30x40 (#DIN)	30,065	30,275	39,67	39,92
30x42	30,065	30,275	41,67	41,92
32x44 (#DIN)	32,08	32,33	43,67	43,92
32x45	32,08	32,33	44,67	44,92
34x46 (#DIN)	34,08	34,33	45,67	45,92
35x45	35,08	35,33	44,67	44,92
36x45	36,08	36,33	44,67	44,92
36x48 (#DIN)	36,08	36,33	47,67	47,92
37x47	37,08	37,33	46,67	46,92
38x50 (#DIN)	38,08	38,33	49,67	49,92
40x50	40,08	40,33	49,67	49,92
40x52 (#DIN)	40,08	40,33	51,6	51,9
42x52	42,08	42,33	51,6	51,9
42x54 (#DIN)	42,08	43,33	53,6	53,9
44x56 (#DIN)	44,08	44,33	55,6	55,9
45x55	45,08	45,33	54,6	54,9
45x56	45,08	45,33	55,6	55,9
46x58 (#DIN)	46,08	46,33	57,6	57,9
48x60	48,08	48,33	59,6	59,9
50x62	50,08	50,33	61,6	61,9

d1 x d2	d <sub>1</sub> (min.)	d <sub>1</sub> (max.)	d <sub>2</sub> (min.)	d <sub>2</sub> (max.)
50x63	50,08	50,33	62,6	62,9
52x65	52,1	52,4	64,6	64,9
55x68	55,1	55,4	67,6	67,9
56x68 (#DIN)	56,1	56,4	67,6	67,9
56x70	56,1	56,4	69,6	69,9
56x72	56,1	56,4	71,6	71,9
60x72 (#DIN)	60,1	60,4	71,6	71,9
60x75	60,1	60,4	74,6	74,9
63x80	63,1	63,4	79,6	79,9
65x80 (#DIN)	65,1	65,4	79,6	79,9
65x85	65,1	65,4	84,53	84,88
70x85 (#DIN)	70,1	70,4	84,53	84,88
70x90	70,1	70,4	89,53	89,88
75x90 (#DIN)	75,1	75,4	89,53	89,88
75x95	75,1	75,4	94,53	94,88
80x100	80,1	80,4	99,53	99,88
85x105	85,12	85,47	104,53	104,88
90x110	90,12	90,47	109,53	109,88
95x110 (#DIN)	95,12	95,47	109,53	109,88
100x120	100,12	100,47	119,53	119,88
100x125	100,12	100,47	124,455	124,855
105x125 (#DIN)	105,12	105,47	124,455	124,855
105x130	105,12	105,47	129,455	129,855
110x130 (#DIN)	110,12	110,47	129,455	129,855
110x140	110,12	110,47	139,455	139,855
120x140 (#DIN)	120,12	120,47	139,455	139,855
120x150	120,12	120,47	149,455	149,855
130x150 (#DIN)	130,145	130,545	149,455	149,855
130x160	130,145	130,545	159,455	159,855
140x170	140,145	140,545	169,455	169,855
150x180	150,145	150,545	179,455	179,855
160x180 (#DIN)	160,145	160,545	179,455	179,855
160x190	160,145	160,545	189,37	189,83
170x200	170,145	170,545	199,37	199,83
185x215 (#DIN)	185,12	185,47	214,37	214,83

## Article groups

Material	Packaging	Code	Page	
St 2 K 50 acc. DIN1624	h=0,1mm	Standard	38600	7-126
St 2 K 50 acc. DIN1624	h=0,25mm	Standard	38602	7-127
St 2 K 50 acc. DIN1624	h=0,3mm	Standard	38583	7-127
St 2 K 50 acc. DIN1624	h=0,5mm	Standard	38585	7-127
St 2 K 50 acc. DIN1624	h=1,0mm	Standard	38590	7-128

### 38600 Shim ring thickness h=0,1mm

L07H

Material Steel 2 K 50 acc. DIN1624  
 Packaging Standard



d1 x d2	☒	Art.number	d1 x d2	☒	Art.number	d1 x d2	☒	Art.number
8X14	100	<a href="#">38600.080.014</a>	20X28MM	50	<a href="#">38600.200.028</a>	38X50MM	25	<a href="#">38600.380.050</a>
8X20MM	100	<a href="#">38600.080.020</a>	20X32MM	50	<a href="#">38600.200.032</a>	40X50MM	25	<a href="#">38600.400.050</a>
						42X52MM	25	<a href="#">38600.420.052</a>
10X16	100	<a href="#">38600.100.016</a>	22X34MM	50	<a href="#">38600.220.034</a>	50X62MM	25	<a href="#">38600.500.062</a>
10X22MM	100	<a href="#">38600.100.022</a>	24X36MM	50	<a href="#">38600.240.036</a>	56X70MM	25	<a href="#">38600.560.070</a>
			25X35MM	50	<a href="#">38600.250.035</a>	56X72MM	10	<a href="#">38600.560.072</a>
12X18MM	100	<a href="#">38600.120.018</a>	26X38MM	50	<a href="#">38600.260.038</a>			
12X24MM	100	<a href="#">38600.120.024</a>	28X40MM	50	<a href="#">38600.280.040</a>	63X80MM	25	<a href="#">38600.630.080</a>
			30X35MM	50	<a href="#">38600.300.035</a>	75X90MM	10	<a href="#">38600.750.090</a>
14X26MM	100	<a href="#">38600.140.026</a>	30X42MM	50	<a href="#">38600.300.042</a>	80X100MM	10	<a href="#">38600.800.100</a>
16X28MM	50	<a href="#">38600.160.028</a>				90X110MM	10	<a href="#">38600.900.110</a>
17X24MM	50	<a href="#">38600.170.024</a>	32X44MM	25	<a href="#">38600.320.044</a>	105X125MM	10	<a href="#">38600.983.125</a>
18X25MM	50	<a href="#">38600.180.025</a>	34X46MM	25	<a href="#">38600.340.046</a>	110X140MM	5	<a href="#">38600.984.140</a>
18X30MM	50	<a href="#">38600.180.030</a>	36X48MM	25	<a href="#">38600.360.048</a>	120X140MM	10	<a href="#">38600.986.140</a>
			37X47MM	50	<a href="#">38600.370.047</a>	140X170MM	5	<a href="#">38600.990.170</a>

<b>38602 Shim ring thickness h=0,25mm</b>		<b>L07H</b>
<b>Material</b>	Steel 2 K 50 acc. DIN1624	
<b>Packaging</b>	Standard	
		

d1 x d2	☒	Art.number	d1 x d2	☒	Art.number	d1 x d2	☒	Art.number
8X20MM	100	<a href="#">38602.080.020</a>	16X28MM	50	<a href="#">38602.160.028</a>	36X48MM	25	<a href="#">38602.360.048</a>
10X16MM	100	<a href="#">38602.100.016</a>	20X32MM	50	<a href="#">38602.200.032</a>	38X50MM	25	<a href="#">38602.380.050</a>
10X22MM	100	<a href="#">38602.100.022</a>	18X30MM	50	<a href="#">38602.180.030</a>	42X54MM	25	<a href="#">38602.420.054</a>
12X20MM	100	<a href="#">38602.120.020</a>	22X34MM	50	<a href="#">38602.220.034</a>	44X56MM	25	<a href="#">38602.440.056</a>
12X24MM	100	<a href="#">38602.120.024</a>	24X36MM	50	<a href="#">38602.240.036</a>	46X58MM	25	<a href="#">38602.460.058</a>
14X26MM	100	<a href="#">38602.140.026</a>	26X38MM	50	<a href="#">38602.260.038</a>	48X60MM	25	<a href="#">38602.480.060</a>
16X26MM	100	<a href="#">38602.160.026</a>	32X44MM	25	<a href="#">38602.320.044</a>	50X62MM	25	<a href="#">38602.500.062</a>
			34X46MM	25	<a href="#">38602.340.046</a>	56X68MM	25	<a href="#">38602.560.068</a>
						60X72MM	25	<a href="#">38602.600.072</a>

<b>38583 Shim ring thickness h=0,3mm</b>		<b>L07H</b>
<b>Material</b>	Steel 2 K 50 acc. DIN1624	
<b>Packaging</b>	Standard	
		

d1 x d2	☒	Art.number	d1 x d2	☒	Art.number	d1 x d2	☒	Art.number
3X6MM	100	<a href="#">38583.030.006</a>	25X36MM	50	<a href="#">38583.250.036</a>	65X85MM	50	<a href="#">38583.650.085</a>
4X8MM	100	<a href="#">38583.040.008</a>	26X37MM	50	<a href="#">38583.260.037</a>	70X90MM	10	<a href="#">38583.700.090</a>
5X10MM	100	<a href="#">38583.050.010</a>	28X40MM	50	<a href="#">38583.280.040</a>	75X90MM	10	<a href="#">38583.750.090</a>
6X12MM	100	<a href="#">38583.060.012</a>	30X35MM	50	<a href="#">38583.300.035</a>	80X100MM	1	<a href="#">38583.800.100</a>
8X14MM	100	<a href="#">38583.080.014</a>	30X42MM	50	<a href="#">38583.300.042</a>	85X105MM	1	<a href="#">38583.850.105</a>
10X16MM	100	<a href="#">38583.100.016</a>	32X45MM	25	<a href="#">38583.320.045</a>	90X110MM	1	<a href="#">38583.900.110</a>
12X18MM	100	<a href="#">38583.120.018</a>	35X45MM	25	<a href="#">38583.350.045</a>	95X110MM	10	<a href="#">38583.950.110</a>
14X20MM	100	<a href="#">38583.140.020</a>	36X45MM	25	<a href="#">38583.360.045</a>	100X120MM	1	<a href="#">38583.982.120</a>
15X21MM	100	<a href="#">38583.150.021</a>	37X47MM	25	<a href="#">38583.370.047</a>	105X125MM	10	<a href="#">38583.983.125</a>
16X22MM	50	<a href="#">38583.160.022</a>	40X50MM	25	<a href="#">38583.400.050</a>	110X130MM	10	<a href="#">38583.984.130</a>
17X24MM	50	<a href="#">38583.170.024</a>	42X52MM	25	<a href="#">38583.420.052</a>	110X140MM	1	<a href="#">38583.984.140</a>
18X25MM	50	<a href="#">38583.180.025</a>	45X55MM	25	<a href="#">38583.450.055</a>	130X160MM	1	<a href="#">38583.988.160</a>
19X26MM	50	<a href="#">38583.190.026</a>	50X62MM	25	<a href="#">38583.500.062</a>	140X170MM	1	<a href="#">38583.990.170</a>
20X28MM	50	<a href="#">38583.200.028</a>	56X72MM	25	<a href="#">38583.560.072</a>	160X180MM	10	<a href="#">38583.993.180</a>
22X30MM	50	<a href="#">38583.220.030</a>	60X75MM	25	<a href="#">38583.600.075</a>	185X215MM	10	<a href="#">38583.996.215</a>
22X32MM	50	<a href="#">38583.220.032</a>	63X80MM	10	<a href="#">38583.630.080</a>			
24X36MM	50	<a href="#">38583.240.036</a>	65X80MM	10	<a href="#">38583.650.080</a>			
25X35MM	50	<a href="#">38583.250.035</a>						

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<b>38585 Shim ring thickness h=0,5mm</b>		<b>L07H</b>
<b>Material</b>	Steel 2 K 50 acc. DIN1624	
<b>Packaging</b>	Standard	
		

d1 x d2	☒	Art.number	d1 x d2	☒	Art.number	d1 x d2	☒	Art.number
3X6MM	100	<a href="#">38585.030.006</a>	28X40MM	50	<a href="#">38585.280.040</a>	75X90MM	10	<a href="#">38585.750.090</a>
4X8MM	100	<a href="#">38585.040.008</a>	30X42MM	50	<a href="#">38585.300.042</a>	80X100MM	10	<a href="#">38585.800.100</a>
5X10MM	100	<a href="#">38585.050.010</a>	32X45MM	25	<a href="#">38585.320.045</a>	90X110MM	10	<a href="#">38585.900.110</a>
6X12MM	100	<a href="#">38585.060.012</a>	35X45MM	25	<a href="#">38585.350.045</a>	100X120MM	1	<a href="#">38585.981.120</a>
8X14MM	100	<a href="#">38585.080.014</a>	36X45MM	25	<a href="#">38585.360.045</a>	105X125MM	10	<a href="#">38585.983.125</a>
10X16MM	100	<a href="#">38585.100.016</a>	37X47MM	25	<a href="#">38585.370.047</a>	110X130MM	10	<a href="#">38585.984.130</a>
12X18MM	100	<a href="#">38585.120.018</a>	40X50MM	25	<a href="#">38585.400.050</a>	110X140MM	1	<a href="#">38585.984.140</a>
14X20MM	100	<a href="#">38585.140.020</a>	42X52MM	25	<a href="#">38585.420.052</a>	130X150MM	5	<a href="#">38585.988.150</a>
16X22MM	50	<a href="#">38585.160.022</a>	45X55MM	10	<a href="#">38585.450.055</a>	130X160MM	1	<a href="#">38585.988.160</a>
17X24MM	50	<a href="#">38585.170.024</a>	50X62MM	25	<a href="#">38585.500.062</a>	140X170MM	1	<a href="#">38585.990.170</a>
18X25MM	50	<a href="#">38585.180.025</a>	56X72MM	10	<a href="#">38585.560.072</a>	150X180MM	1	<a href="#">38585.992.180</a>
19X26MM	50	<a href="#">38585.190.026</a>	60X75MM	10	<a href="#">38585.600.075</a>	160X180MM	5	<a href="#">38585.993.180</a>
20X28MM	50	<a href="#">38585.200.028</a>	63X80MM	10	<a href="#">38585.630.080</a>			
22X32MM	50	<a href="#">38585.220.032</a>	65X80MM	10	<a href="#">38585.650.080</a>			
25X35MM	50	<a href="#">38585.250.035</a>	70X85MM	50	<a href="#">38585.700.085</a>			
26X37MM	50	<a href="#">38585.260.037</a>	70X90MM	10	<a href="#">38585.700.090</a>			

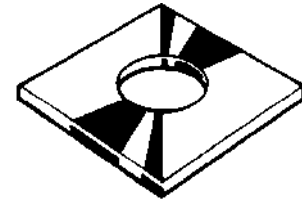
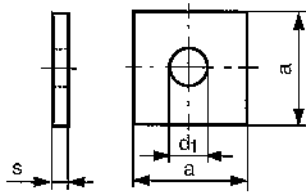
<b>38590 Shim ring thickness h=1,0mm</b>		<b>L07H</b>
<b>Material</b>	Steel 2 K 50 acc. DIN1624	
<b>Packaging</b>	Standard	
		

d1 x d2	☒	Art.number	d1 x d2	☒	Art.number	d1 x d2	☒	Art.number
3X6MM	100	<a href="#">38590.030.006</a>	16X22MM	50	<a href="#">38590.160.022</a>	28X40MM	50	<a href="#">38590.280.040</a>
4X8MM	100	<a href="#">38590.040.008</a>	18X25MM	50	<a href="#">38590.180.025</a>	30X42MM	50	<a href="#">38590.300.042</a>
5X10MM	100	<a href="#">38590.050.010</a>	20X28MM	50	<a href="#">38590.200.028</a>	32X45MM	25	<a href="#">38590.320.045</a>
6X12MM	100	<a href="#">38590.060.012</a>	20X32MM	50	<a href="#">38590.200.032</a>	35X45MM	25	<a href="#">38590.350.045</a>
8X14MM	100	<a href="#">38590.080.014</a>				36X45MM	25	<a href="#">38590.360.045</a>
10X16MM	100	<a href="#">38590.100.016</a>	22X32MM	50	<a href="#">38590.220.032</a>	37X47MM	25	<a href="#">38590.370.047</a>
12X18MM	100	<a href="#">38590.120.018</a>	25X35MM	50	<a href="#">38590.250.035</a>	40X50MM	25	<a href="#">38590.400.050</a>
12X24MM	100	<a href="#">38590.120.024</a>	26X37MM	50	<a href="#">38590.260.037</a>	45X55MM	10	<a href="#">38590.450.055</a>
14X20MM	100	<a href="#">38590.140.020</a>	26X38MM	50	<a href="#">38590.260.038</a>	60X75MM	100	<a href="#">38590.600.075</a>



## Square washer

DIN 436



### Technical data

For nom.size	d <sub>1</sub>	a	s
M8 (#DIN)	9	30	3
M10	11	30	3
M12	13,5	40	4
M16	17,5	50	5
M20	22	60	5
M22	24	70	6
M24	26	80	6
M27	30	90	6
M30	33	95	6

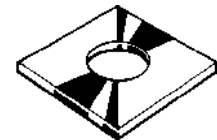
### Article groups

Material	Surface treatment	Packaging	Code	Page
St		Standard	38300	7-129
St	Zipl	Standard	38310	7-129
St	Hot d.g.	Standard	38320	7-129
St.St. A2		Standard	51908	7-130
St.St. A4		Standard	55908	7-130

#### 38300 Square washer

L07G

Material Steel  
 Packaging Standard

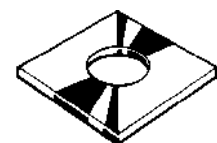


For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number
M8	100	<a href="#">38300.080.001</a>	M16	100	<a href="#">38300.160.001</a>	M24	25	<a href="#">38300.240.001</a>
M10	100	<a href="#">38300.100.001</a>	M20	50	<a href="#">38300.200.001</a>			
M12	100	<a href="#">38300.120.001</a>	M22	50	<a href="#">38300.220.001</a>			

#### 38310 Square washer

L07G

Material Steel  
 Surface treatment Zinc plated  
 Packaging Standard

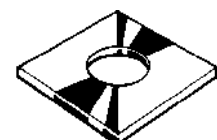


For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number
M8	100	<a href="#">38310.080.001</a>	M12	100	<a href="#">38310.120.001</a>	M20	50	<a href="#">38310.200.001</a>
M10	100	<a href="#">38310.100.001</a>	M16	100	<a href="#">38310.160.001</a>	M24	25	<a href="#">38310.240.001</a>

#### 38320 Square washer

L07G

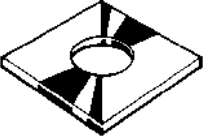
Material Steel  
 Surface treatment Hot dip galvanized  
 Packaging Standard



For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number
M8	100	<a href="#">38320.080.001</a>	M16	100	<a href="#">38320.160.001</a>	M24	25	<a href="#">38320.240.001</a>
M10	100	<a href="#">38320.100.001</a>	M20	50	<a href="#">38320.200.001</a>	M27	25	<a href="#">38320.270.001</a>
M12	100	<a href="#">38320.120.001</a>	M22	50	<a href="#">38320.220.001</a>	M30	10	<a href="#">38320.300.001</a>

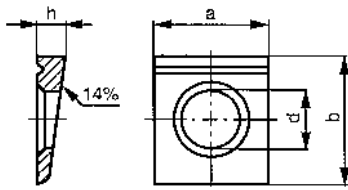
<b>51908 Square washer</b>		<b>R09A</b>
<b>Material</b>	Stainless steel A2	
<b>Packaging</b>	Standard DIN ≈436	
		

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M10	100	<a href="#">51908.100.001</a>	M16	100	<a href="#">51908.160.001</a>	M24	25	<a href="#">51908.240.001</a>
M12	100	<a href="#">51908.120.001</a>	M20	50	<a href="#">51908.200.001</a>			

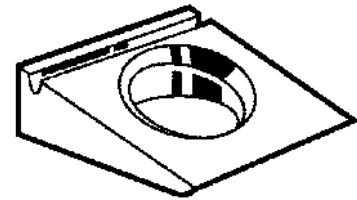
<b>55908 Square washer</b>		<b>R49A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard DIN ≈436	
		

For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M10	100	<a href="#">55908.100.001</a>	M16	100	<a href="#">55908.160.001</a>	M24	25	<a href="#">55908.240.001</a>
M12	100	<a href="#">55908.120.001</a>	M20	50	<a href="#">55908.200.001</a>			

## Square taper washers 14% for I-sections



DIN 435  
NEN 2273



### Technical data

For nom.size	d	a	b	h
M8	9	22	22	4,6
M10	11	22	22	4,6
M12	13,5	26	30	6,2
M16	17,5	32	36	7,5
M20	22	40	44	9,2
M22	24	44	50	10
M24	26	56	56	10,8
M27	30	56	56	10,8
M30 (#DIN)	33	62	62	11,7
M33 (#DIN)	36	68	68	11,7

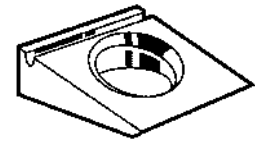
### Article groups

Material	Surface treatment	Packaging	Code	Page
St 100-250 HV10		Standard	38520	7-131
St 100-250 HV10	Hot d.g.	Standard	38540	7-131
St.St. A2		Standard	51922	7-131
St.St. A4		Standard	55922	7-132

#### 38520 Square taper washers 14% for I-sections

L07G

**Material** Steel 100-250 HV10  
**Packaging** Standard

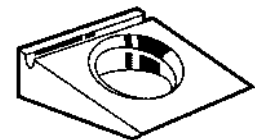


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M8	100	<a href="#">38520.080.001</a>	M16	100	<a href="#">38520.160.001</a>	M24	25	<a href="#">38520.240.001</a>
M10	100	<a href="#">38520.100.001</a>	M20	50	<a href="#">38520.200.001</a>			
M12	100	<a href="#">38520.120.001</a>	M22	50	<a href="#">38520.220.001</a>			

#### 38540 Square taper washers 14% for I-sections

L07G

**Material** Steel 100-250 HV10  
**Surface treatment** Hot dip galvanized  
**Packaging** Standard

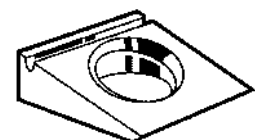


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M8	100	<a href="#">38540.080.001</a>	M20	50	<a href="#">38540.200.001</a>	M30	10	<a href="#">38540.300.001</a>
M10	100	<a href="#">38540.100.001</a>	M22	50	<a href="#">38540.220.001</a>	M33	10	<a href="#">38540.330.001</a>
M12	100	<a href="#">38540.120.001</a>	M24	25	<a href="#">38540.240.001</a>			
M16	100	<a href="#">38540.160.001</a>	M27	25	<a href="#">38540.270.001</a>			

#### 51922 Square taper washers 14% for I-sections

R09A

**Material** Stainless steel A2  
**Packaging** Standard  
DIN ≈435  
NEN ≈2273

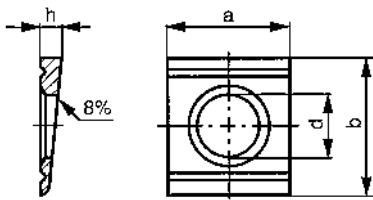


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M8	50	<a href="#">51922.080.001</a>	M16	50	<a href="#">51922.160.001</a>	M24 *	10	<a href="#">51922.240.001</a>
M10	50	<a href="#">51922.100.001</a>	M20 *	25	<a href="#">51922.200.001</a>			
M12	50	<a href="#">51922.120.001</a>	M22 *	25	<a href="#">51922.220.001</a>			

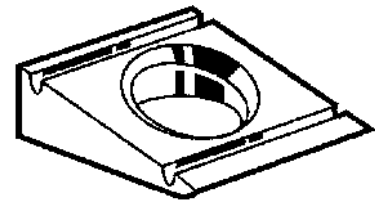
<b>55922 Square taper washers 14% for I-sections</b>		<b>R49A</b>
<b>Material</b>	Stainless steel A4	
<b>Packaging</b>	Standard	
	DIN ≈435 NEN ≈2273	

For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number
M10	50	<a href="#">55922.100.001</a>	M16	50	<a href="#">55922.160.001</a>			
M12	50	<a href="#">55922.120.001</a>	M20 *	25	<a href="#">55922.200.001</a>			

## Square taper washer 8% for U-section



DIN 434  
NEN 2272



### Technical data

For nom.size	d	a	b	h
M8	9	22	22	3,8
M10	11	22	22	3,8
M12	13,5	26	30	4,9
M14 (#DIN)	16,3	26,2	30,1	5,5
M16	17,5	32	36	5,9
M20	22	40	44	7
M22	24	44	50	8
M24	26	56	56	8,5
M27	30	56	56	8,5
M30 (#DIN)	33	56	56	8,5
M33 (#DIN)	36	56	56	8,5

### Article groups

Material	Surface treatment	Packaging	Code	Page
St 100-250 HV10		Standard	38500	7-133
St 100-250 HV10	Zipl	Standard	38495	7-133
St 100-250 HV10	Hot d.g.	Standard	38490	7-133
St.St. A2		Standard	51920	7-134
St.St. A4		Standard	55920	7-134

#### 38500 Square taper washer 8% for U-section

L07G

Material Steel 100-250 HV10  
Packaging Standard

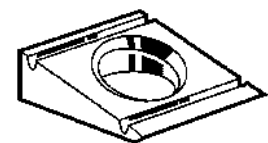


For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M8	100	<a href="#">38500.080.001</a>	M16	100	<a href="#">38500.160.001</a>	M27	25	<a href="#">38500.270.001</a>
M10	100	<a href="#">38500.100.001</a>	M20	50	<a href="#">38500.200.001</a>	M30	10	<a href="#">38500.300.001</a>
M12	100	<a href="#">38500.120.001</a>	M22	50	<a href="#">38500.220.001</a>	M33	10	<a href="#">38500.330.001</a>
M14	100	<a href="#">38500.140.001</a>	M24	25	<a href="#">38500.240.001</a>			

#### 38495 Square taper washer 8% for U-section

L07G

Material Steel 100-250 HV10  
Surface treatment Zinc plated  
Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M8	200	<a href="#">38495.080.001</a>	M12	100	<a href="#">38495.120.001</a>	M20	50	<a href="#">38495.200.001</a>
M10	200	<a href="#">38495.100.001</a>	M16	100	<a href="#">38495.160.001</a>	M24	50	<a href="#">38495.240.001</a>

#### 38490 Square taper washer 8% for U-section

L07G

Material Steel 100-250 HV10  
Surface treatment Hot dip galvanized  
Packaging Standard



For nom. size	☒	Art.number	For nom. size	☒	Art.number	For nom. size	☒	Art.number
M8	100	<a href="#">38490.080.001</a>	M16	100	<a href="#">38490.160.001</a>	M24	25	<a href="#">38490.240.001</a>
M10	100	<a href="#">38490.100.001</a>	M20	50	<a href="#">38490.200.001</a>	M27	25	<a href="#">38490.270.001</a>
M12	100	<a href="#">38490.120.001</a>	M22	50	<a href="#">38490.220.001</a>	M30	10	<a href="#">38490.300.001</a>

38490 Square taper washer 8% for U-section								
For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number
M33		10	<a href="#">38490.330.001</a>					

51920 Square taper washer 8% for U-section								R09A
<b>Material</b>	Stainless steel A2							
<b>Packaging</b>	Standard							
	DIN ≈434							
	NEN ≈2272							

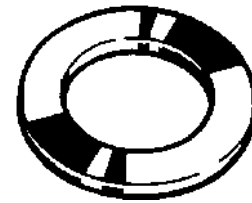
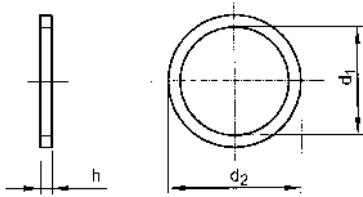
For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number	
M8		50	<a href="#">51920.080.001</a>	M16	50	<a href="#">51920.160.001</a>	M24 *	10	<a href="#">51920.240.001</a>
M10		50	<a href="#">51920.100.001</a>	M20	25	<a href="#">51920.200.001</a>			
M12		50	<a href="#">51920.120.001</a>	M22 *	10	<a href="#">51920.220.001</a>			

55920 Square taper washer 8% for U-section								R49A
<b>Material</b>	Stainless steel A4							
<b>Packaging</b>	Standard							
	DIN ≈434							
	NEN ≈2272							

For nom. size	✉	Art.number	For nom. size	✉	Art.number	For nom. size	✉	Art.number	
M8		50	<a href="#">55920.080.001</a>	M16	50	<a href="#">55920.160.001</a>	M24 *	10	<a href="#">55920.240.001</a>
M10		50	<a href="#">55920.100.001</a>	M20	25	<a href="#">55920.200.001</a>			
M12		50	<a href="#">55920.120.001</a>	M22 *	10	<a href="#">55920.220.001</a>			

## Sealing ring

DIN 7603 A/C



### Technical data

d1 x d2	d <sub>1</sub>	d <sub>2</sub>
4x8x1	4,2	7,9
5x7,5x1	5,2	7,9
5x9x1	5,2	8,9
5x9x1,5	5,2	8,9
5x10x1 (#DIN)	5,2	9,9
6x10x1	6,2	9,9
6x10x1,5	6,2	9,9
6x12x1 (#DIN)	6,2	11,9
6x12x1,5 (#DIN)	6,2	11,9
6,5x9,5x1	6,7	9,4
7x10x1 (#DIN)	7,2	9,9
7x15x2 (#DIN)	7,1	14,9
8x11,5x1	8,2	11,4
8x11,5x1,5	8,2	11,4
8x12x1	8,2	11,9
8x12x1,5	8,2	11,9
8x13x1	8,2	12,9
8x14x1	8,2	13,9
8x14x1,5	8,2	13,9
9x14x1 (#DIN)	9,2	13,9
9x14x1,5 (#DIN)	9,2	13,9
10x13,5x1	10,2	13,4
10x13,5x1,5	10,2	13,4
10x14x1	10,2	13,9
10x14x1,5	10,2	13,9
10x15x1	10,2	14,9
10x16x1	10,2	15,9
10x16x1,5	10,2	15,9
10x19x2 (#DIN)	10,2	18,9
10x20x1,5 (#DIN)	10,2	19,9
10,5x17x1,5 (#DIN)	10,7	16,9
11x17x1,5 (#DIN)	11,2	16,9
12x15,5x1,5	12,2	15,4
12x16x1 (#DIN)	12,2	15,9
12x16x1,5	12,2	15,9
12x16x2	12,2	15,9
12x17x1,5	12,2	16,9
12x18x1,5	12,2	17,9
12x18x2	12,2	17,9
12x20x1,5 (#DIN)	12,2	19,9
12,5x20x1,5 (#DIN)	12,7	19,9
13x18x1,5 (#DIN)	13,2	17,9
13x18x2 (#DIN)	13,2	17,9
14x18x1 (#DIN)	14,2	17,9
14x18x1,5	14,2	17,9
14x18x2	14,2	17,9
14x18x2 (#DIN)	14,2	17,9
14x20x1 (#DIN)	14,2	19,9
14x20x1,5	14,2	19,9
14x20x2	14,2	19,9
14x20x2 (#DIN)	14,2	19,9
14x22x1,5 (#DIN)	14,2	21,9
15x19x1,5	15,2	18,9
15x20x1 (#DIN)	15,2	19,9
15x20x1,5 (#DIN)	15,2	19,9
15x20x2 (#DIN)	15,2	19,9
16x20x1,5	16,2	19,9
16x20x2	16,2	19,9
16x20x2 (#DIN)	16,2	19,9

d1 x d2	d <sub>1</sub>	d <sub>2</sub>
16x21x2 (≠DIN)	16,2	20,9
16x22x1,5	16,2	21,9
16x22x2	16,2	21,9
16x22x2 (≠DIN)	16,2	21,9
16,5x24x2 (≠DIN)	16,7	23,9
17x21x1,5	17,2	20,9
17x21x2	17,2	20,9
17x22x1,5 (≠DIN)	17,2	21,9
17x23x1,5	17,2	22,9
17x23x2	17,2	22,9
17x24x2 (≠DIN)	17,2	23,9
17,5x25x2 (≠DIN)	17,7	24,9
18x22x1,5	18,2	21,9
18x22x2	18,2	21,9
18x24x1,5	18,2	23,9
18x24x2	18,2	23,9
18x24x2 (≠DIN)	18,2	23,9
19x26x2 (≠DIN)	19,2	25,9
20x24x1,5	20,2	23,9
20x24x2	20,2	23,9
20x24x2 (≠DIN)	20,2	23,9
20x26x1,5	20,2	25,9
20x26x2	20,2	25,9
21x26x1,5	21,2	25,9
21x26x2	21,2	25,9
21x26x2 (≠DIN)	21,2	25,9
21x28x1,5 (≠DIN)	21,2	27,9
21x28x2 (≠DIN)	21,2	27,9
22x26x2 (≠DIN)	22,2	25,9
22x27x1,5	22,2	26,9
22x27x2	22,2	26,9
22x29x1,5	22,2	28,9
22x29x2	22,2	28,9
22x29x2 (≠DIN)	22,2	28,9
24x29x2	24,3	28,9
24x29x2,5	24,3	28,9
24x30x2 (≠DIN)	24,3	29,9
24x30x2,5 (≠DIN)	24,3	29,9
24x32x2	24,3	31,9
24x32x2,5	24,3	31,9
26x31x2	26,3	30,9
26x32x2	26,3	31,9
26x32x2,5	26,3	31,9
26x33x2 (≠DIN)	26,3	32,9
26x34x2	26,3	33,9
26x34x2,5	26,3	33,9
27x32x2	27,3	31,9
27x32x2,5	27,3	31,9
28x34x2 (≠DIN)	28,3	33,9
28x34x2,5 (≠DIN)	28,3	33,9
30x36x2	30,3	35,9
30x36x2,5	30,3	35,9
30x38x2	30,3	37,9
30x38x2,5	30,3	37,9
32x38x2	32,3	37,9
32x38x2,5	32,3	37,9
32x40x2	32,3	39,9
33x39x2	33,3	38,9
33x39x2,5	33,3	38,9
35x41x2	35,3	40,9
35x41x2,5	35,3	40,9
35x45x2 (≠DIN)	35,3	44,9
36x42x2	36,3	41,9
36x42x2,5	36,3	41,9
38x44x2	38,3	43,9
38x44x2,5	38,3	43,9
40x47x2	40,3	46,9
40x47x2,5	40,3	46,9
42x49x2	42,3	48,9
42x49x2,5	42,3	48,9
45x52x2	44,3	51,9
45x52x2,5 (≠DIN)	45,3	51,9



d1 x d2	d <sub>1</sub>	d <sub>2</sub>
48x55x2	48,3	54,9
48x55x2,5	48,3	54,9
50x57x2	50,2	56,9
60x68x2,5	60,5	67,8
75x84x2,5	75,5	83,8
90x100x2,5	90,5	99,8

## Article groups

Material	Packaging	Code	Page	
Al 99F11	h=1,0mm	Standard	45191	7-137
Al 99F11	h=1,5mm	Standard	45192	7-137
Al 99F11	h=2,0mm	Standard	45193	7-137
Cu	h=1,0mm	Standard	50300	7-138
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Cu/FESTAPLAN	h=1,5mm	Standard	50332	7-139
Cu/FESTAPLAN	h=2,0mm	Standard	50333	7-139
Cu/FESTAPLAN	h=2,5mm	Standard	50334	7-139

**45191 Sealing ring annealed hardness HB 32-45 h=1mm** W01D

<b>Material</b>	Aluminium 99F11	
<b>Packaging</b>	Standard	
	DIN 7603 A	

d1 x d2	Art.number	d1 x d2	Art.number	d1 x d2	Art.number
4X8MM	100 <a href="#">45191.040.008</a>	6,5X9,5MM	100 <a href="#">45191.065.009</a>	10X13,5MM	100 <a href="#">45191.100.013</a>
5X7,5MM	100 <a href="#">45191.050.007</a>	8X11,5MM	100 <a href="#">45191.080.011</a>	10X14MM	100 <a href="#">45191.100.014</a>
5X9MM	100 <a href="#">45191.050.009</a>	8X12MM	100 <a href="#">45191.080.012</a>	10X16MM	100 <a href="#">45191.100.016</a>
6X10MM	100 <a href="#">45191.060.010</a>	8X13MM	100 <a href="#">45191.080.013</a>		
6X12MM (#DIN)	100 <a href="#">45191.060.012</a>	8X14MM	100 <a href="#">45191.080.014</a>		

- Applicable for pipe-connections and screw plugs.

**45192 Sealing ring annealed hardness HB 32-45 h=1,5mm** W01D

<b>Material</b>	Aluminium 99F11	
<b>Packaging</b>	Standard	
	DIN 7603 A	

d1 x d2	Art.number	d1 x d2	Art.number	d1 x d2	Art.number
12X15,5MM	100 <a href="#">45192.120.015</a>	16X22MM	100 <a href="#">45192.160.022</a>	20X26MM	50 <a href="#">45192.200.026</a>
12X16MM	100 <a href="#">45192.120.016</a>	17X21MM	100 <a href="#">45192.170.021</a>	21X28MM (#DIN)	50 <a href="#">45192.210.028</a>
12X17MM	100 <a href="#">45192.120.017</a>	17X23MM	100 <a href="#">45192.170.023</a>	22X27MM	50 <a href="#">45192.220.027</a>
12X18MM	100 <a href="#">45192.120.018</a>			22X29MM	50 <a href="#">45192.220.029</a>
13X18MM (#DIN)	100 <a href="#">45192.130.018</a>	18X22MM	100 <a href="#">45192.180.022</a>		
14X20MM	100 <a href="#">45192.140.020</a>	18X24MM	100 <a href="#">45192.180.024</a>		
15X19MM	100 <a href="#">45192.150.019</a>				
16X20MM	100 <a href="#">45192.160.020</a>	20X24MM	50 <a href="#">45192.200.024</a>		

- Applicable for pipe-connections and screw plugs.

**45193 Sealing ring annealed hardness HB 32-45 h=2mm** W01D

<b>Material</b>	Aluminium 99F11	
<b>Packaging</b>	Standard	
	DIN 7603 A	

d1 x d2	Art.number	d1 x d2	Art.number	d1 x d2	Art.number
24X29MM	50 <a href="#">45193.240.029</a>	26X32MM	50 <a href="#">45193.260.032</a>	28X34MM (#DIN)	10 <a href="#">45193.280.034</a>
24X30MM (#DIN)	50 <a href="#">45193.240.030</a>	26X34MM	10 <a href="#">45193.260.034</a>	30X36MM	10 <a href="#">45193.300.036</a>
26X31MM	50 <a href="#">45193.260.031</a>	27X32MM	10 <a href="#">45193.270.032</a>	30X38MM	10 <a href="#">45193.300.038</a>

**45193 Sealing ring annealed hardness HB 32-45 h=2mm**

d1 x d2	Art.number	d1 x d2	Art.number	d1 x d2	Art.number
32X38MM	10 <a href="#">45193.320.038</a>	40X47MM	10 <a href="#">45193.400.047</a>	50X57MM	10 <a href="#">45193.500.057</a>
33X39MM	10 <a href="#">45193.330.039</a>	42X49MM	10 <a href="#">45193.420.049</a>		
35X41MM	10 <a href="#">45193.350.041</a>	48X55MM	10 <a href="#">45193.480.055</a>		

- Applicable for pipe-connections and screw plugs.

**50300 Sealing ring annealed h=1mm**
**M03A**

**Material** Copper  
**Packaging** Standard  
**DIN** 7603 A



d1 x d2	Art.number	d1 x d2	Art.number	d1 x d2	Art.number
5X10MM (#DIN)	100 <a href="#">50300.050.010</a>	9X14MM (#DIN)	100 <a href="#">50300.090.014</a>	12X16MM (#DIN)	50 <a href="#">50300.120.016</a>
6X10MM	100 <a href="#">50300.060.010</a>	10X14MM	100 <a href="#">50300.100.014</a>	14X18MM (#DIN)	50 <a href="#">50300.140.018</a>
6,5X9,5MM	100 <a href="#">50300.065.009</a>	10X15MM	100 <a href="#">50300.100.015</a>	14X20MM (#DIN)	50 <a href="#">50300.140.020</a>
7X10MM (#DIN)	100 <a href="#">50300.070.010</a>	10X16MM	100 <a href="#">50300.100.016</a>		
8X12MM	100 <a href="#">50300.080.012</a>			15X20MM (#DIN)	50 <a href="#">50300.150.020</a>

- Applicable for pipe-connections and screw plugs.

**50301 Sealing ring annealed h=1,5mm**
**M03A**

**Material** Copper  
**Packaging** Standard  
**DIN** 7603 A



d1 x d2	Art.number	d1 x d2	Art.number	d1 x d2	Art.number
6X10MM	100 <a href="#">50301.060.010</a>	12,5X20MM (#DIN)	50 <a href="#">50301.125.020</a>	17X22MM (#DIN)	50 <a href="#">50301.170.022</a>
8X14MM	100 <a href="#">50301.080.014</a>	13X18MM (#DIN)	50 <a href="#">50301.130.018</a>	18X24MM	25 <a href="#">50301.180.024</a>
9X14MM (#DIN)	100 <a href="#">50301.090.014</a>	14X18MM	50 <a href="#">50301.140.018</a>	20X24MM	25 <a href="#">50301.200.024</a>
10X14MM	100 <a href="#">50301.100.014</a>	14X20MM	50 <a href="#">50301.140.020</a>	20X26MM	25 <a href="#">50301.200.026</a>
10X16MM	100 <a href="#">50301.100.016</a>	14X22MM (#DIN)	50 <a href="#">50301.140.022</a>		
10X20MM (#DIN)	100 <a href="#">50301.100.020</a>			21X26MM	25 <a href="#">50301.210.026</a>
10,5X17MM (#DIN)	100 <a href="#">50301.105.017</a>	15X20MM (#DIN)	50 <a href="#">50301.150.020</a>	21X28MM (#DIN)	25 <a href="#">50301.210.028</a>
11X17MM (#DIN)	100 <a href="#">50301.110.017</a>	16X20MM	50 <a href="#">50301.160.020</a>		
12X16MM	50 <a href="#">50301.120.016</a>	16X22MM	50 <a href="#">50301.160.022</a>	22X27MM	25 <a href="#">50301.220.027</a>
12X17MM	50 <a href="#">50301.120.017</a>			22X29MM	25 <a href="#">50301.220.029</a>
12X18MM	50 <a href="#">50301.120.018</a>	17X21MM	50 <a href="#">50301.170.021</a>		
12X20MM (#DIN)	50 <a href="#">50301.120.020</a>				

- Applicable for pipe-connections and screw plugs.

**50302 Sealing ring annealed h=2mm**
**M03A**

**Material** Copper  
**Packaging** Standard  
**DIN** 7603 A



d1 x d2	Art.number	d1 x d2	Art.number	d1 x d2	Art.number
7,1X15MM (#DIN)	100 <a href="#">50302.071.015</a>	19X26MM (#DIN)	25 <a href="#">50302.190.026</a>	28X34MM (#DIN)	10 <a href="#">50302.280.034</a>
10X19MM (#DIN)	100 <a href="#">50302.100.019</a>	20X24MM (#DIN)	25 <a href="#">50302.200.024</a>	30X36MM	10 <a href="#">50302.300.036</a>
13X18MM (#DIN)	50 <a href="#">50302.130.018</a>	21X26MM (#DIN)	25 <a href="#">50302.210.026</a>	30X38MM	10 <a href="#">50302.300.038</a>
14X18MM (#DIN)	50 <a href="#">50302.140.018</a>	21X28MM (#DIN)	25 <a href="#">50302.210.028</a>		
14X20MM (#DIN)	50 <a href="#">50302.140.020</a>			32X38MM	10 <a href="#">50302.320.038</a>
		22X26MM (#DIN)	25 <a href="#">50302.220.026</a>	32X40MM	10 <a href="#">50302.320.040</a>
15X20MM (#DIN)	50 <a href="#">50302.150.020</a>	22X29MM (#DIN)	25 <a href="#">50302.220.029</a>		
16X20MM (#DIN)	50 <a href="#">50302.160.020</a>			33X39MM	10 <a href="#">50302.330.039</a>
16X21MM (#DIN)	50 <a href="#">50302.160.021</a>	24X30MM (#DIN)	25 <a href="#">50302.240.030</a>	35X45MM (#DIN)	10 <a href="#">50302.350.045</a>
16X22MM (#DIN)	50 <a href="#">50302.160.022</a>	24X32MM	25 <a href="#">50302.240.032</a>	36X42MM	10 <a href="#">50302.360.042</a>
				38X44MM	10 <a href="#">50302.380.044</a>
16,5X24MM (#DIN)	25 <a href="#">50302.165.024</a>	26X32MM	10 <a href="#">50302.260.032</a>	40X47MM	10 <a href="#">50302.400.047</a>
17X24MM (#DIN)	25 <a href="#">50302.170.024</a>	26X33MM (#DIN)	10 <a href="#">50302.260.033</a>	45X52MM	10 <a href="#">50302.450.052</a>
17,5X25MM (#DIN)	25 <a href="#">50302.175.025</a>	26X34MM	10 <a href="#">50302.260.034</a>	50X57MM	10 <a href="#">50302.500.057</a>
18X24MM (#DIN)	25 <a href="#">50302.180.024</a>				

- Applicable for pipe-connections and screw plugs.

**7**

<b>50303</b>	<b>Sealing ring annealed h=2,5mm</b>	<b>M03A</b>
<b>Material</b>	Copper	
<b>Packaging</b>	Standard	
	DIN 7603 A	

d1 x d2	☒	Art.number	d1 x d2	☒	Art.number	d1 x d2	☒	Art.number
60X68MM	10	<a href="#">50303.600.068</a>	75X84MM	10	<a href="#">50303.750.084</a>	90X100MM	10	<a href="#">50303.900.100</a>

- Applicable for pipe-connections and screw plugs.

<b>50332</b>	<b>Sealing ring filled h=1,5mm</b>	<b>M03A</b>
<b>Material</b>	Copper/FESTAPLAN	
<b>Packaging</b>	Standard	
	DIN 7603 C	

d1 x d2	☒	Art.number	d1 x d2	☒	Art.number	d1 x d2	☒	Art.number
5X9MM	100	<a href="#">50332.050.009</a>	8X11,5MM	100	<a href="#">50332.080.011</a>	10X13,5MM	100	<a href="#">50332.100.013</a>
6X10MM	100	<a href="#">50332.060.010</a>	8X12MM	100	<a href="#">50332.080.012</a>	10X14MM	100	<a href="#">50332.100.014</a>
6X12MM (#DIN)	100	<a href="#">50332.060.012</a>	8X14MM	100	<a href="#">50332.080.014</a>	10X16MM	100	<a href="#">50332.100.016</a>

- Mineral fibres with the tradename FESTAPLAN.
- Suitable for applications with a temperature of max. 180°C.

<b>50333</b>	<b>Sealing ring filled h=2mm</b>	<b>M03A</b>
<b>Material</b>	Copper/FESTAPLAN	
<b>Packaging</b>	Standard	
	DIN 7603 C	

d1 x d2	☒	Art.number	d1 x d2	☒	Art.number	d1 x d2	☒	Art.number
12X16MM	100	<a href="#">50333.120.016</a>	16X22MM	100	<a href="#">50333.160.022</a>	20X24MM	50	<a href="#">50333.200.024</a>
12X18MM	100	<a href="#">50333.120.018</a>	17X21MM	100	<a href="#">50333.170.021</a>	20X26MM	50	<a href="#">50333.200.026</a>
13X18MM (#DIN)	100	<a href="#">50333.130.018</a>	17X23MM	100	<a href="#">50333.170.023</a>	21X26MM	50	<a href="#">50333.210.026</a>
14X18MM	100	<a href="#">50333.140.018</a>	18X22MM	100	<a href="#">50333.180.022</a>	22X27MM	50	<a href="#">50333.220.027</a>
14X20MM	100	<a href="#">50333.140.020</a>	18X24MM	50	<a href="#">50333.180.024</a>	22X29MM	50	<a href="#">50333.220.029</a>
16X20MM	100	<a href="#">50333.160.020</a>						

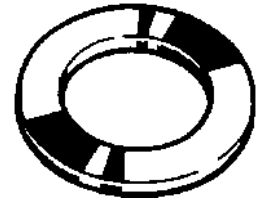
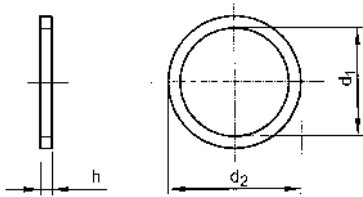
- Mineral fibres with the tradename FESTAPLAN.
- Suitable for applications with a temperature of max. 180°C.

<b>50334</b>	<b>Sealing ring filled h=2,5mm</b>	<b>M03A</b>
<b>Material</b>	Copper/FESTAPLAN	
<b>Packaging</b>	Standard	
	DIN 7603 C	

d1 x d2	☒	Art.number	d1 x d2	☒	Art.number	d1 x d2	☒	Art.number
24X29MM	25	<a href="#">50334.240.029</a>	27X32MM	25	<a href="#">50334.270.032</a>	35X41MM	25	<a href="#">50334.350.041</a>
24X30MM (#DIN)	25	<a href="#">50334.240.030</a>	28X34MM (#DIN)	25	<a href="#">50334.280.034</a>	36X42MM	25	<a href="#">50334.360.042</a>
24X32MM	25	<a href="#">50334.240.032</a>	30X36MM	25	<a href="#">50334.300.036</a>	38X44MM	25	<a href="#">50334.380.044</a>
			30X38MM	25	<a href="#">50334.300.038</a>	40X47MM	25	<a href="#">50334.400.047</a>
26X32MM	25	<a href="#">50334.260.032</a>				42X49MM	25	<a href="#">50334.420.049</a>
26X34MM	25	<a href="#">50334.260.034</a>	32X38MM	25	<a href="#">50334.320.038</a>	45X52MM (#DIN)	10	<a href="#">50334.450.052</a>
			33X39MM	25	<a href="#">50334.330.039</a>	48X55MM	10	<a href="#">50334.480.055</a>

- Mineral fibres with the tradename FESTAPLAN.
- Suitable for applications with a temperature of max. 180°C.

## Packing ring (Jointing ring)



### 50900 Packing ring (Jointing ring) h=1mm

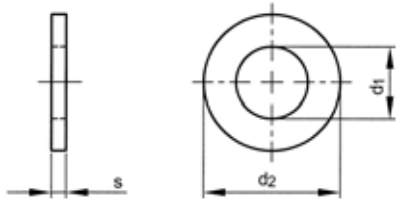
**W05C**

**Material** Vulcanized fibre Vf3110 DIN7737  
**Packaging** Standard



d1 x d2	☒	Art.number	d1 x d2	☒	Art.number	d1 x d2	☒	Art.number
3X5MM	200	<a href="#">50900.030.005</a>	8,5X14MM	200	<a href="#">50900.085.014</a>	18X24MM	100	<a href="#">50900.180.024</a>
3,5X6MM	200	<a href="#">50900.035.006</a>	9X14MM	200	<a href="#">50900.090.014</a>	19X23MM	100	<a href="#">50900.190.023</a>
4X6,5MM	200	<a href="#">50900.040.006</a>	9,5X14MM	200	<a href="#">50900.095.014</a>	20X24MM	100	<a href="#">50900.200.024</a>
4,5X8MM	200	<a href="#">50900.045.008</a>	10X14MM	200	<a href="#">50900.100.014</a>	22X26MM	50	<a href="#">50900.220.026</a>
5X8MM	200	<a href="#">50900.050.008</a>	10,5X17MM	200	<a href="#">50900.105.017</a>	24X28MM	50	<a href="#">50900.240.028</a>
5X10MM	200	<a href="#">50900.050.010</a>	11X17MM	200	<a href="#">50900.110.017</a>	25X34MM	50	<a href="#">50900.250.034</a>
5,5X9MM	200	<a href="#">50900.055.009</a>	12X16MM	200	<a href="#">50900.120.016</a>	26X33MM	50	<a href="#">50900.260.033</a>
6X9MM	200	<a href="#">50900.060.009</a>	12,5X18MM	100	<a href="#">50900.125.018</a>	28X40MM	50	<a href="#">50900.280.040</a>
6X10MM	200	<a href="#">50900.060.010</a>	13X18MM	100	<a href="#">50900.130.018</a>	30X42MM	50	<a href="#">50900.300.042</a>
6X12MM	200	<a href="#">50900.060.012</a>	14X18MM	100	<a href="#">50900.140.018</a>	32X44MM	25	<a href="#">50900.320.044</a>
6,5X10MM	200	<a href="#">50900.065.010</a>	15X19MM	100	<a href="#">50900.150.019</a>	34X46MM	25	<a href="#">50900.340.046</a>
7X10MM	200	<a href="#">50900.070.010</a>	16X20MM	100	<a href="#">50900.160.020</a>	36X48MM	25	<a href="#">50900.360.048</a>
8X12MM	200	<a href="#">50900.080.012</a>	16X21MM	100	<a href="#">50900.160.021</a>	38X50MM	25	<a href="#">50900.380.050</a>
8X16MM	200	<a href="#">50900.080.016</a>	17X22MM	100	<a href="#">50900.170.022</a>	40X52MM	25	<a href="#">50900.400.052</a>

## Flat washer for Toyota



### 72037 Flat washer Special for Toyota

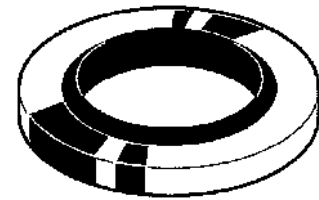
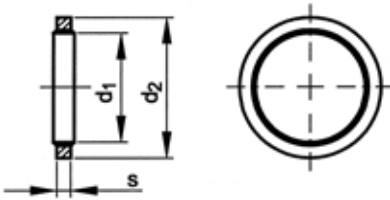
**Y92E**

**Material** Vulcanized fibre  
**Packaging** Standard




d1 x d2 x s	☒	Art.number	d1 x d2 x s	☒	Art.number	d1 x d2 x s	☒	Art.number
12X24X2MM	25	<a href="#">72037.120.020</a>						
18X28X2MM	25	<a href="#">72037.180.020</a>						

## Bonded seal with rubber

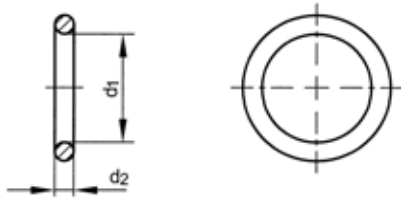


- Special features of bonded seals:
- Are particularly suitable for screw connections, pipe joints, hose couplings etc.
- The sealing lip of nitrile rubber is resistant to mineral oil, water, gas and numerous other media.

38793 Bonded seal with rubber		L07G
<b>Material</b>	Steel	
<b>Surface treatment</b>	Zinc plated	
<b>Packaging</b>	Standard	

d1 x d2 x s	☒	Art.number	d1 x d2 x s	☒	Art.number	d1 x d2 x s	☒	Art.number
4,5X7X1MM	100	<a href="#">38793.052.100</a>	12,7X20X1,5MM	100	<a href="#">38793.147.150</a>	24,7X32X2MM	25	<a href="#">38793.279.200</a>
5,7X10X1MM	100	<a href="#">38793.067.100</a>				26,7X35X2MM	25	<a href="#">38793.302.200</a>
6,7X11X1MM	100	<a href="#">38793.078.100</a>	14,7X22X1,5MM	50	<a href="#">38793.169.150</a>	27,2X36X2MM	25	<a href="#">38793.308.200</a>
7,1X12X1MM	100	<a href="#">38793.083.100</a>	16,7X24X1,5MM	50	<a href="#">38793.191.150</a>	28,7X37X2MM	25	<a href="#">38793.324.200</a>
8,7X16X1MM	100	<a href="#">38793.103.100</a>	18,7X26X1,5MM	50	<a href="#">38793.213.150</a>	31X39X2MM	10	<a href="#">38793.349.200</a>
10,7X18X1,5MM	100	<a href="#">38793.125.150</a>	20,7X28X1,5MM	50	<a href="#">38793.235.150</a>			
12,7X18X1,5MM	100	<a href="#">38793.145.150</a>	22,7X30X2MM	25	<a href="#">38793.257.200</a>			

## O-ring



- $d_1$  = Inside diameter.

### Article groups

Material	Colour		Packaging	Code	Page
Rubber NBR 70°shore	Black	$d_2=1,5\text{mm}$	Standard	38801	7-142
Rubber NBR 70°shore	Black	$d_2=1,6\text{mm}$	Standard	38802	7-142
Rubber NBR 70°shore	Black	$d_2=1,78\text{mm}$	Standard	38803	7-143
Rubber NBR 70°shore	Black	$d_2=2,0\text{mm}$	Standard	38805	7-143
Rubber NBR 70°shore	Black	$d_2=2,4\text{mm}$	Standard	38806	7-143
Rubber NBR 70°shore	Black	$d_2=2,5\text{mm}$	Standard	38807	7-143
Rubber NBR 70°shore	Black	$d_2=2,62\text{mm}$	Standard	38808	7-144
Rubber NBR 70°shore	Black	$d_2=3,0\text{mm}$	Standard	38810	7-144
Rubber NBR 70°shore	Black	$d_2=3,53\text{mm}$	Standard	38812	7-144
Rubber NBR 70°shore	Black	$d_2=4,0\text{mm}$	Standard	38814	7-145
Rubber NBR 70°shore	Black	$d_2=5,0\text{mm}$	Standard	38816	7-145
Rubber FPM 80°shore	Black	$d_2=1,6\text{mm}$	Standard	38869	7-145
Rubber FPM 80°shore	Black	$d_2=1,78\text{mm}$	Standard	38871	7-146
Rubber FPM 80°shore	Black	$d_2=1,9\text{mm}$	Standard	38873	7-146
Rubber FPM 80°shore	Black	$d_2=2,0\text{mm}$	Standard	38874	7-146
Rubber FPM 80°shore	Black	$d_2=2,4\text{mm}$	Standard	38875	7-146
Rubber FPM 80°shore	Black	$d_2=2,62\text{mm}$	Standard	38877	7-146
Rubber FPM 80°shore	Black	$d_2=3,53\text{mm}$	Standard	38883	7-147
Rubber FPM 80°shore	Black	$d_2=4,0\text{mm}$	Standard	38885	7-147
Rubber FPM 80°shore	Black	$d_2=5,0\text{mm}$	Standard	38887	7-147

#### 38801 O-ring, $d_2=1,5\text{mm}$

W05A

<b>Material</b>	Rubber NBR 70°shore
<b>Colour</b>	Black
<b>Packaging</b>	Standard



d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
3,0MM	50	<a href="#">38801.003.001</a>	7,0MM	50	<a href="#">38801.007.001</a>	9,0MM	50	<a href="#">38801.009.001</a>
5,0MM	50	<a href="#">38801.005.001</a>	7,5MM	50	<a href="#">38801.007.501</a>	35,0MM	10	<a href="#">38801.035.001</a>
6,0MM	50	<a href="#">38801.006.001</a>	8,0MM	50	<a href="#">38801.008.001</a>			

#### 38802 O-ring, $d_2=1,6\text{mm}$

W05A

<b>Material</b>	Rubber NBR 70°shore
<b>Colour</b>	Black
<b>Packaging</b>	Standard




d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
3,1MM	50	<a href="#">38802.003.101</a>	12,1MM	25	<a href="#">38802.012.101</a>	21,1MM	25	<a href="#">38802.021.101</a>
4,1MM	50	<a href="#">38802.004.101</a>	13,1MM	25	<a href="#">38802.013.101</a>	22,1MM	10	<a href="#">38802.022.101</a>
5,1MM	50	<a href="#">38802.005.101</a>	14,1MM	25	<a href="#">38802.014.101</a>	25,1MM	10	<a href="#">38802.025.101</a>
6,1MM	50	<a href="#">38802.006.101</a>	15,1MM	25	<a href="#">38802.015.101</a>	27,1MM	10	<a href="#">38802.027.101</a>
7,1MM	50	<a href="#">38802.007.101</a>	16,1MM	25	<a href="#">38802.016.101</a>	29,1MM	10	<a href="#">38802.029.101</a>
8,1MM	50	<a href="#">38802.008.101</a>	17,1MM	25	<a href="#">38802.017.101</a>	32,1MM	10	<a href="#">38802.032.101</a>
9,1MM	50	<a href="#">38802.009.101</a>	18,1MM	25	<a href="#">38802.018.101</a>	35,1MM	10	<a href="#">38802.035.101</a>
10,1MM	25	<a href="#">38802.010.101</a>	19,1MM	25	<a href="#">38802.019.101</a>	37,1MM	10	<a href="#">38802.037.101</a>
11,1MM	25	<a href="#">38802.011.101</a>	20,1MM	25	<a href="#">38802.020.101</a>			

<b>38803</b>	<b>O-ring, AS 568A d<sub>2</sub>=1,78mm</b>						<b>W05A</b>
<b>Material</b>	Rubber NBR 70°shore						
<b>Colour</b>	Black						
<b>Packaging</b>	Standard						

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
1,78-004	50	<a href="#">38803.001.781</a>	10,82-013	50	<a href="#">38803.010.821</a>	36,27MM	10	<a href="#">38803.036.271</a>
2,57-005	50	<a href="#">38803.002.571</a>	11,11MM	50	<a href="#">38803.011.111</a>	37,82-029	10	<a href="#">38803.037.821</a>
2,90-006	50	<a href="#">38803.002.901</a>	12,42-014	50	<a href="#">38803.012.421</a>	41,00-030	10	<a href="#">38803.041.001</a>
3,17MM	50	<a href="#">38803.003.171</a>	14,00-015	50	<a href="#">38803.014.001</a>	44,17-031	10	<a href="#">38803.044.171</a>
3,68-007	50	<a href="#">38803.003.681</a>	15,60-016	25	<a href="#">38803.015.601</a>	47,37-032	10	<a href="#">38803.047.371</a>
3,69-007	50	<a href="#">38803.003.691</a>	17,16-017	25	<a href="#">38803.017.161</a>	50,52-033	10	<a href="#">38803.050.521</a>
4,48-008	50	<a href="#">38803.004.481</a>	18,77-018	25	<a href="#">38803.018.771</a>	53,67-034	5	<a href="#">38803.053.671</a>
4,76MM	50	<a href="#">38803.004.761</a>	20,35-019	25	<a href="#">38803.020.351</a>	56,87-035	5	<a href="#">38803.056.871</a>
5,28-009	50	<a href="#">38803.005.281</a>	21,95-020	25	<a href="#">38803.021.951</a>	60,04MM	5	<a href="#">38803.060.041</a>
6,07-010	50	<a href="#">38803.006.071</a>	25,12-022	10	<a href="#">38803.025.121</a>	63,22-037	5	<a href="#">38803.063.221</a>
6,35MM	50	<a href="#">38803.006.351</a>	26,70-023	10	<a href="#">38803.026.701</a>	66,40-038	5	<a href="#">38803.066.401</a>
6,75MM	50	<a href="#">38803.006.751</a>	28,30-024	10	<a href="#">38803.028.301</a>	69,57-039	5	<a href="#">38803.069.571</a>
7,66-011	50	<a href="#">38803.007.661</a>	29,87-025	10	<a href="#">38803.029.871</a>	72,76-040	5	<a href="#">38803.072.761</a>
7,94MM	50	<a href="#">38803.007.941</a>	31,47-026	10	<a href="#">38803.031.471</a>	82,28-042	5	<a href="#">38803.082.281</a>
8,73MM	50	<a href="#">38803.008.731</a>	33,05-027	10	<a href="#">38803.033.051</a>			
9,25-012	50	<a href="#">38803.009.251</a>	34,65-028	10	<a href="#">38803.034.651</a>			

<b>38805</b>	<b>O-ring, d<sub>2</sub>=2,0mm</b>						<b>W05A</b>
<b>Material</b>	Rubber NBR 70°shore						
<b>Colour</b>	Black						
<b>Packaging</b>	Standard						

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
4,0MM	50	<a href="#">38805.004.001</a>	18,0MM	25	<a href="#">38805.018.001</a>	36,0MM	10	<a href="#">38805.036.001</a>
5,0MM	50	<a href="#">38805.005.001</a>	19,0MM	25	<a href="#">38805.019.001</a>	37,0MM	10	<a href="#">38805.037.001</a>
5,5MM	50	<a href="#">38805.005.501</a>	20,0MM	10	<a href="#">38805.020.001</a>	38,0MM	10	<a href="#">38805.038.001</a>
6,0MM	50	<a href="#">38805.006.001</a>	21,0MM	10	<a href="#">38805.021.001</a>	40,0MM	10	<a href="#">38805.040.001</a>
7,0MM	50	<a href="#">38805.007.001</a>	22,0MM	10	<a href="#">38805.022.001</a>	42,0MM	10	<a href="#">38805.042.001</a>
8,0MM	50	<a href="#">38805.008.001</a>	23,0MM	10	<a href="#">38805.023.001</a>	43,0MM	10	<a href="#">38805.043.001</a>
9,0MM	50	<a href="#">38805.009.001</a>	24,0MM	10	<a href="#">38805.024.001</a>	45,0MM	10	<a href="#">38805.045.001</a>
10,0MM	50	<a href="#">38805.010.001</a>	25,0MM	10	<a href="#">38805.025.001</a>	46,0MM	10	<a href="#">38805.046.001</a>
11,0MM	50	<a href="#">38805.011.001</a>	26,0MM	10	<a href="#">38805.026.001</a>	47,0MM	10	<a href="#">38805.047.001</a>
12,0MM	50	<a href="#">38805.012.001</a>	27,0MM	10	<a href="#">38805.027.001</a>	50,0MM	10	<a href="#">38805.050.001</a>
13,0MM	25	<a href="#">38805.013.001</a>	28,0MM	10	<a href="#">38805.028.001</a>	53,0MM	5	<a href="#">38805.053.001</a>
14,0MM	25	<a href="#">38805.014.001</a>	30,0MM	10	<a href="#">38805.030.001</a>	55,0MM	5	<a href="#">38805.055.001</a>
15,0MM	25	<a href="#">38805.015.001</a>	32,0MM	10	<a href="#">38805.032.001</a>	56,0MM	5	<a href="#">38805.056.001</a>
16,0MM	25	<a href="#">38805.016.001</a>	33,0MM	10	<a href="#">38805.033.001</a>	58,0MM	5	<a href="#">38805.058.001</a>
17,0MM	25	<a href="#">38805.017.001</a>	35,0MM	10	<a href="#">38805.035.001</a>			

<b>38806</b>	<b>O-ring, d<sub>2</sub>=2,4mm</b>						<b>W05A</b>
<b>Material</b>	Rubber NBR 70°shore						
<b>Colour</b>	Black						
<b>Packaging</b>	Standard						

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
5,3MM	50	<a href="#">38806.005.301</a>	9,3MM	50	<a href="#">38806.009.301</a>	14,3MM	25	<a href="#">38806.014.301</a>
6,3MM	50	<a href="#">38806.006.301</a>	10,3MM	50	<a href="#">38806.010.301</a>	16,3MM	25	<a href="#">38806.016.301</a>
7,3MM	50	<a href="#">38806.007.301</a>	11,3MM	50	<a href="#">38806.011.301</a>	17,3MM	25	<a href="#">38806.017.301</a>
8,0MM	50	<a href="#">38806.008.001</a>	12,3MM	50	<a href="#">38806.012.301</a>	20,3MM	25	<a href="#">38806.020.301</a>
8,3MM	50	<a href="#">38806.008.301</a>	13,3MM	50	<a href="#">38806.013.301</a>	25,3MM	25	<a href="#">38806.025.301</a>

<b>38807</b>	<b>O-ring, d<sub>2</sub>=2,5mm</b>						<b>W05A</b>
<b>Material</b>	Rubber NBR 70°shore						
<b>Colour</b>	Black						
<b>Packaging</b>	Standard						

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
5,0MM	50	<a href="#">38807.005.001</a>	8,0MM	50	<a href="#">38807.008.001</a>	11,0MM	50	<a href="#">38807.011.001</a>
6,0MM	50	<a href="#">38807.006.001</a>	9,0MM	50	<a href="#">38807.009.001</a>	12,0MM	50	<a href="#">38807.012.001</a>
7,0MM	50	<a href="#">38807.007.001</a>	10,0MM	50	<a href="#">38807.010.001</a>	13,0MM	50	<a href="#">38807.013.001</a>

38807 O-ring, d								
d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
14,0MM	25	<a href="#">38807.014.001</a>	23,0MM	10	<a href="#">38807.023.001</a>	32,0MM	10	<a href="#">38807.032.001</a>
15,0MM	25	<a href="#">38807.015.001</a>	24,0MM	10	<a href="#">38807.024.001</a>	35,0MM	10	<a href="#">38807.035.001</a>
16,0MM	25	<a href="#">38807.016.001</a>	25,0MM	10	<a href="#">38807.025.001</a>	36,0MM	10	<a href="#">38807.036.001</a>
17,0MM	25	<a href="#">38807.017.001</a>	26,0MM	10	<a href="#">38807.026.001</a>	38,0MM	10	<a href="#">38807.038.001</a>
18,0MM	10	<a href="#">38807.018.001</a>	27,0MM	10	<a href="#">38807.027.001</a>	39,0MM	10	<a href="#">38807.039.001</a>
19,0MM	10	<a href="#">38807.019.001</a>	28,0MM	10	<a href="#">38807.028.001</a>	40,0MM	10	<a href="#">38807.040.001</a>
20,0MM	10	<a href="#">38807.020.001</a>	29,0MM	10	<a href="#">38807.029.001</a>	44,0MM	10	<a href="#">38807.044.001</a>
21,0MM	10	<a href="#">38807.021.001</a>	30,0MM	10	<a href="#">38807.030.001</a>			
22,0MM	10	<a href="#">38807.022.001</a>	31,0MM	10	<a href="#">38807.031.001</a>			

38808 O-ring, AS 568A d <sub>2</sub> =2,62mm		W05A
<b>Material</b>	Rubber NBR 70°shore	
<b>Colour</b>	Black	
<b>Packaging</b>	Standard	

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
9,19-110	50	<a href="#">38808.009.191</a>	22,22MM	10	<a href="#">38808.022.221</a>	50,47-136	5	<a href="#">38808.050.471</a>
9,92MM	50	<a href="#">38808.009.921</a>	23,47-119	10	<a href="#">38808.023.471</a>	52,07-137	5	<a href="#">38808.052.071</a>
10,78-111	50	<a href="#">38808.010.781</a>	23,81MM	10	<a href="#">38808.023.811</a>	55,25-139	5	<a href="#">38808.055.251</a>
11,91MM	50	<a href="#">38808.011.911</a>	25,07-120	10	<a href="#">38808.025.071</a>	56,82-140	5	<a href="#">38808.056.821</a>
12,37-112	50	<a href="#">38808.012.371</a>	26,64MM	10	<a href="#">38808.026.641</a>	58,42-141	5	<a href="#">38808.058.421</a>
12,70MM	50	<a href="#">38808.012.701</a>	29,82-123	10	<a href="#">38808.029.821</a>	60,00-142	5	<a href="#">38808.060.001</a>
13,10MM	25	<a href="#">38808.013.101</a>	31,42-124	10	<a href="#">38808.031.421</a>	61,60-143	5	<a href="#">38808.061.601</a>
13,95-113	25	<a href="#">38808.013.951</a>	33,00-125	10	<a href="#">38808.033.001</a>	63,17-144	5	<a href="#">38808.063.171</a>
15,08MM	25	<a href="#">38808.015.081</a>	34,59-126	10	<a href="#">38808.034.591</a>	64,77-145	5	<a href="#">38808.064.771</a>
15,54-114	25	<a href="#">38808.015.541</a>	36,17-127	10	<a href="#">38808.036.171</a>	67,95-147	5	<a href="#">38808.067.951</a>
15,88MM	25	<a href="#">38808.015.881</a>	37,77-128	10	<a href="#">38808.037.771</a>	69,52-148	5	<a href="#">38808.069.521</a>
17,13-115	25	<a href="#">38808.017.131</a>	39,34-129	10	<a href="#">38808.039.341</a>	71,12-149	5	<a href="#">38808.071.121</a>
17,86MM	25	<a href="#">38808.017.861</a>	40,95-130	10	<a href="#">38808.040.951</a>	74,30MM	5	<a href="#">38808.074.301</a>
18,72-116	25	<a href="#">38808.018.721</a>	44,12-132	10	<a href="#">38808.044.121</a>	80,60MM	5	<a href="#">38808.080.601</a>
20,29-117	10	<a href="#">38808.020.291</a>	45,69-133	10	<a href="#">38808.045.691</a>	82,22-152	5	<a href="#">38808.082.221</a>
20,63MM	10	<a href="#">38808.020.631</a>	47,29-134	10	<a href="#">38808.047.291</a>	83,80MM	5	<a href="#">38808.083.801</a>
21,89-118	10	<a href="#">38808.021.891</a>	48,90-135	10	<a href="#">38808.048.901</a>	94,93MM	5	<a href="#">38808.094.931</a>

38810 O-ring, d <sub>2</sub> =3,0mm		W05A
<b>Material</b>	Rubber NBR 70°shore	
<b>Colour</b>	Black	
<b>Packaging</b>	Standard	

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
5,0MM	50	<a href="#">38810.005.001</a>	26,0MM	10	<a href="#">38810.026.001</a>	52,0MM	5	<a href="#">38810.052.001</a>
6,0MM	50	<a href="#">38810.006.001</a>	26,2MM	10	<a href="#">38810.026.201</a>	54,5MM	5	<a href="#">38810.054.501</a>
7,0MM	50	<a href="#">38810.007.001</a>	27,0MM	10	<a href="#">38810.027.001</a>	56,0MM	5	<a href="#">38810.056.001</a>
8,0MM	50	<a href="#">38810.008.001</a>	28,0MM	10	<a href="#">38810.028.001</a>	58,0MM	5	<a href="#">38810.058.001</a>
9,0MM	50	<a href="#">38810.009.001</a>	29,0MM	10	<a href="#">38810.029.001</a>	59,0MM	5	<a href="#">38810.059.001</a>
10,0MM	50	<a href="#">38810.010.001</a>	30,0MM	10	<a href="#">38810.030.001</a>	62,0MM	5	<a href="#">38810.062.001</a>
11,0MM	50	<a href="#">38810.011.001</a>	31,0MM	10	<a href="#">38810.031.001</a>	64,5MM	5	<a href="#">38810.064.501</a>
12,0MM	50	<a href="#">38810.012.001</a>	32,0MM	10	<a href="#">38810.032.001</a>	66,0MM	5	<a href="#">38810.066.001</a>
13,0MM	50	<a href="#">38810.013.001</a>	33,0MM	10	<a href="#">38810.033.001</a>	72,0MM	5	<a href="#">38810.072.001</a>
14,0MM	25	<a href="#">38810.014.001</a>	34,0MM	10	<a href="#">38810.034.001</a>	74,5MM	5	<a href="#">38810.074.501</a>
15,0MM	25	<a href="#">38810.015.001</a>	35,0MM	10	<a href="#">38810.035.001</a>	78,0MM	5	<a href="#">38810.078.001</a>
16,0MM	25	<a href="#">38810.016.001</a>	36,0MM	10	<a href="#">38810.036.001</a>	79,5MM	5	<a href="#">38810.079.501</a>
17,0MM	25	<a href="#">38810.017.001</a>	37,0MM	10	<a href="#">38810.037.001</a>	84,5MM	5	<a href="#">38810.084.501</a>
18,0MM	25	<a href="#">38810.018.001</a>	38,0MM	10	<a href="#">38810.038.001</a>	89,5MM	5	<a href="#">38810.089.501</a>
19,0MM	25	<a href="#">38810.019.001</a>	39,0MM	10	<a href="#">38810.039.001</a>	108,0MM	5	<a href="#">38810.108.001</a>
20,0MM	25	<a href="#">38810.020.001</a>	40,0MM	10	<a href="#">38810.040.001</a>	119,5MM	5	<a href="#">38810.119.501</a>
20,2MM	10	<a href="#">38810.020.201</a>	41,0MM	10	<a href="#">38810.041.001</a>	175,0MM	5	<a href="#">38810.175.001</a>
21,0MM	10	<a href="#">38810.021.001</a>	42,0MM	10	<a href="#">38810.042.001</a>	180,0MM	5	<a href="#">38810.180.001</a>
22,0MM	10	<a href="#">38810.022.001</a>	43,0MM	10	<a href="#">38810.043.001</a>	195,0MM	5	<a href="#">38810.195.001</a>
22,2MM	10	<a href="#">38810.022.201</a>	44,0MM	10	<a href="#">38810.044.001</a>	210,0MM	5	<a href="#">38810.210.001</a>
23,0MM	10	<a href="#">38810.023.001</a>	45,0MM	10	<a href="#">38810.045.001</a>	220,0MM	5	<a href="#">38810.220.001</a>
24,0MM	10	<a href="#">38810.024.001</a>	46,0MM	10	<a href="#">38810.046.001</a>	245,0MM	5	<a href="#">38810.245.001</a>
24,2MM	10	<a href="#">38810.024.201</a>	47,0MM	10	<a href="#">38810.047.001</a>	250,0MM	5	<a href="#">38810.250.001</a>
25,0MM	10	<a href="#">38810.025.001</a>	48,0MM	10	<a href="#">38810.048.001</a>	300,0MM	5	<a href="#">38810.300.001</a>

38812 O-ring, AS 568A d <sub>2</sub> =3,53mm		W05A
<b>Material</b>	Rubber NBR 70°shore	
<b>Colour</b>	Black	
<b>Packaging</b>	Standard	

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
18,64-210	25	<a href="#">38812.018.641</a>	20,22-211	10	<a href="#">38812.020.221</a>	21,82-212	10	<a href="#">38812.021.821</a>



**38812 O-ring, AS 568A d** ←

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
23,40-213	10	<a href="#">38812.023.401</a>	47,22-225	10	<a href="#">38812.047.221</a>	74,60MM	5	<a href="#">38812.074.601</a>
24,99-214	10	<a href="#">38812.024.991</a>	49,21MM	10	<a href="#">38812.049.211</a>	78,97-235	5	<a href="#">38812.078.971</a>
25,80MM	10	<a href="#">38812.025.801</a>	50,40MM	5	<a href="#">38812.050.401</a>	82,14-236	5	<a href="#">38812.082.141</a>
26,58-215	10	<a href="#">38812.026.581</a>	50,80-226	5	<a href="#">38812.050.801</a>	85,32-237	5	<a href="#">38812.085.321</a>
28,17-216	10	<a href="#">38812.028.171</a>	52,39MM	5	<a href="#">38812.052.391</a>	91,67-238	5	<a href="#">38812.091.671</a>
29,75-217	10	<a href="#">38812.029.751</a>	53,57-227	5	<a href="#">38812.053.571</a>	94,84-240	5	<a href="#">38812.094.841</a>
31,34-218	10	<a href="#">38812.031.341</a>	53,98MM	5	<a href="#">38812.053.981</a>	98,02-241	5	<a href="#">38812.098.021</a>
32,92-219	10	<a href="#">38812.032.941</a>	55,56MM	5	<a href="#">38812.055.561</a>	101,20-242	5	<a href="#">38812.101.201</a>
34,52-220	10	<a href="#">38812.034.521</a>	57,15MM	5	<a href="#">38812.057.151</a>	104,37-243	5	<a href="#">38812.104.371</a>
36,10-221	10	<a href="#">38812.036.101</a>	58,74MM	5	<a href="#">38812.058.741</a>	107,54-244	5	<a href="#">38812.107.541</a>
37,69-222	10	<a href="#">38812.037.691</a>	59,92-229	5	<a href="#">38812.059.921</a>	110,72-245	5	<a href="#">38812.110.721</a>
39,69MM	10	<a href="#">38812.039.691</a>	60,33MM	5	<a href="#">38812.060.331</a>	117,07-247	5	<a href="#">38812.117.071</a>
40,87-223	10	<a href="#">38812.040.871</a>	66,27-231	5	<a href="#">38812.066.271</a>	123,42-249	5	<a href="#">38812.123.421</a>
41,28MM	10	<a href="#">38812.041.281</a>	68,26MM	5	<a href="#">38812.068.261</a>	132,94-252	5	<a href="#">38812.132.941</a>
42,86MM	10	<a href="#">38812.042.861</a>	69,44-232	5	<a href="#">38812.069.441</a>	136,12-253	5	<a href="#">38812.136.121</a>
44,04-224	10	<a href="#">38812.044.041</a>	69,85MM	5	<a href="#">38812.069.851</a>	142,47-255	5	<a href="#">38812.142.471</a>
44,45MM	10	<a href="#">38812.044.451</a>	71,44MM	5	<a href="#">38812.071.441</a>	151,99-258	5	<a href="#">38812.151.991</a>
46,04MM	10	<a href="#">38812.046.041</a>	72,62-233	5	<a href="#">38812.072.621</a>			

**38814 O-ring, d<sub>2</sub>=4,0mm** W05A

<b>Material</b>	Rubber NBR 70°shore	
<b>Colour</b>	Black	
<b>Packaging</b>	Standard	

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
9,0MM	50	<a href="#">38814.009.001</a>	30,0MM	10	<a href="#">38814.030.001</a>	58,0MM	5	<a href="#">38814.058.001</a>
10,0MM	50	<a href="#">38814.010.001</a>	32,0MM	10	<a href="#">38814.032.001</a>	59,0MM	5	<a href="#">38814.059.001</a>
12,0MM	25	<a href="#">38814.012.001</a>	34,0MM	10	<a href="#">38814.034.001</a>	60,0MM	5	<a href="#">38814.060.001</a>
14,0MM	25	<a href="#">38814.014.001</a>	35,0MM	10	<a href="#">38814.035.001</a>	64,0MM	5	<a href="#">38814.064.001</a>
16,0MM	25	<a href="#">38814.016.001</a>	36,0MM	10	<a href="#">38814.036.001</a>	65,0MM	5	<a href="#">38814.065.001</a>
18,0MM	25	<a href="#">38814.018.001</a>	38,0MM	10	<a href="#">38814.038.001</a>	66,0MM	5	<a href="#">38814.066.001</a>
19,0MM	25	<a href="#">38814.019.001</a>	40,0MM	10	<a href="#">38814.040.001</a>	70,0MM	5	<a href="#">38814.070.001</a>
20,0MM	25	<a href="#">38814.020.001</a>	42,0MM	10	<a href="#">38814.042.001</a>	72,0MM	5	<a href="#">38814.072.001</a>
21,0MM	25	<a href="#">38814.021.001</a>	43,0MM	10	<a href="#">38814.043.001</a>	75,0MM	5	<a href="#">38814.075.001</a>
22,0MM	25	<a href="#">38814.022.001</a>	44,0MM	10	<a href="#">38814.044.001</a>	78,0MM	5	<a href="#">38814.078.001</a>
23,0MM	25	<a href="#">38814.023.001</a>	48,0MM	10	<a href="#">38814.048.001</a>	80,0MM	5	<a href="#">38814.080.001</a>
24,0MM	25	<a href="#">38814.024.001</a>	49,0MM	10	<a href="#">38814.049.001</a>	87,0MM	5	<a href="#">38814.087.001</a>
25,0MM	10	<a href="#">38814.025.001</a>	50,0MM	10	<a href="#">38814.050.001</a>	125,0MM	5	<a href="#">38814.125.001</a>
26,0MM	10	<a href="#">38814.026.001</a>	52,0MM	5	<a href="#">38814.052.001</a>			
28,0MM	10	<a href="#">38814.028.001</a>	55,0MM	5	<a href="#">38814.055.001</a>			

**38816 O-ring, d<sub>2</sub>=5,0mm** W05A

<b>Material</b>	Rubber NBR 70°shore	
<b>Colour</b>	Black	
<b>Packaging</b>	Standard	

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
12,0MM	25	<a href="#">38816.012.001</a>	22,0MM	10	<a href="#">38816.022.001</a>	48,0MM	10	<a href="#">38816.048.001</a>
15,0MM	25	<a href="#">38816.015.001</a>	23,0MM	10	<a href="#">38816.023.001</a>	50,0MM	10	<a href="#">38816.050.001</a>
16,0MM	25	<a href="#">38816.016.001</a>	25,0MM	10	<a href="#">38816.025.001</a>	55,0MM	5	<a href="#">38816.055.001</a>
17,0MM	25	<a href="#">38816.017.001</a>	27,0MM	10	<a href="#">38816.027.001</a>	65,0MM	5	<a href="#">38816.065.001</a>
18,0MM	25	<a href="#">38816.018.001</a>	30,0MM	10	<a href="#">38816.030.001</a>	70,0MM	5	<a href="#">38816.070.001</a>
19,0MM	25	<a href="#">38816.019.001</a>	35,0MM	10	<a href="#">38816.035.001</a>	75,0MM	5	<a href="#">38816.075.001</a>
20,0MM	10	<a href="#">38816.020.001</a>	40,0MM	10	<a href="#">38816.040.001</a>			
21,0MM	10	<a href="#">38816.021.001</a>	45,0MM	10	<a href="#">38816.045.001</a>			

**38869 O-ring (Viton), d<sub>2</sub>=1,6mm** W07A

<b>Material</b>	Rubber FPM 80°shore	
<b>Colour</b>	Black	
<b>Packaging</b>	Standard	

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
2,2MM	50	<a href="#">38869.002.201</a>	4,7MM	50	<a href="#">38869.004.701</a>	10,1MM	25	<a href="#">38869.010.101</a>
2,8MM	50	<a href="#">38869.002.801</a>	5,1MM	50	<a href="#">38869.005.101</a>	11,1MM	25	<a href="#">38869.011.101</a>
3,1MM	50	<a href="#">38869.003.101</a>	6,1MM	50	<a href="#">38869.006.101</a>	12,1MM	25	<a href="#">38869.012.101</a>
3,7MM	50	<a href="#">38869.003.701</a>	7,1MM	50	<a href="#">38869.007.101</a>	13,1MM	25	<a href="#">38869.013.101</a>
4,1MM	50	<a href="#">38869.004.101</a>	9,1MM	50	<a href="#">38869.009.101</a>			

<b>38871</b>	<b>O-ring (Viton), AS 568A d<sub>2</sub>=1,78mm</b>	<b>W07A</b>
<b>Material</b>	Rubber FPM 80°shore	
<b>Colour</b>	Black	
<b>Packaging</b>	Standard	

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
2,90-006	50	<a href="#">38871.002.901</a>	6,07-010	50	<a href="#">38871.006.071</a>	12,42-014	25	<a href="#">38871.012.421</a>
3,69-007	50	<a href="#">38871.003.691</a>	7,65MM	50	<a href="#">38871.007.651</a>	14,00MM	25	<a href="#">38871.014.001</a>
4,48-008	50	<a href="#">38871.004.481</a>	9,25-012	50	<a href="#">38871.009.251</a>	15,60-016	25	<a href="#">38871.015.601</a>
5,28-009	50	<a href="#">38871.005.281</a>	10,82-013	25	<a href="#">38871.010.821</a>	17,17MM	25	<a href="#">38871.017.171</a>

<b>38873</b>	<b>O-ring (Viton), d<sub>2</sub>=1,9mm</b>	<b>W07A</b>
<b>Material</b>	Rubber FPM 80°shore	
<b>Colour</b>	Black	
<b>Packaging</b>	Standard	

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
2,4MM	50	<a href="#">38873.002.401</a>	4,2MM	50	<a href="#">38873.004.201</a>	7,2MM	50	<a href="#">38873.007.201</a>
2,6MM	50	<a href="#">38873.002.601</a>	4,9MM	50	<a href="#">38873.004.901</a>	8,9MM	50	<a href="#">38873.008.901</a>
3,4MM	50	<a href="#">38873.003.401</a>	5,7MM	50	<a href="#">38873.005.701</a>			

<b>38874</b>	<b>O-ring (Viton), d<sub>2</sub>=2,0mm</b>	<b>W07A</b>
<b>Material</b>	Rubber FPM 80°shore	
<b>Colour</b>	Black	
<b>Packaging</b>	Standard	

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
4,0MM	50	<a href="#">38874.004.001</a>	10,0MM	25	<a href="#">38874.010.001</a>	16,0MM	25	<a href="#">38874.016.001</a>
6,0MM	50	<a href="#">38874.006.001</a>	12,0MM	25	<a href="#">38874.012.001</a>	18,0MM	25	<a href="#">38874.018.001</a>
8,0MM	50	<a href="#">38874.008.001</a>	14,0MM	25	<a href="#">38874.014.001</a>	20,0MM	10	<a href="#">38874.020.001</a>

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<b>38875</b>	<b>O-ring (Viton), d<sub>2</sub>=2,4mm</b>	<b>W07A</b>
<b>Material</b>	Rubber FPM 80°shore	
<b>Colour</b>	Black	
<b>Packaging</b>	Standard	


d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
3,3MM	50	<a href="#">38875.003.301</a>	8,3MM	50	<a href="#">38875.008.301</a>	13,3MM	25	<a href="#">38875.013.301</a>
4,3MM	50	<a href="#">38875.004.301</a>	9,3MM	50	<a href="#">38875.009.301</a>	14,3MM	25	<a href="#">38875.014.301</a>
5,3MM	50	<a href="#">38875.005.301</a>	10,3MM	25	<a href="#">38875.010.301</a>	15,3MM	25	<a href="#">38875.015.301</a>
6,3MM	50	<a href="#">38875.006.301</a>	11,3MM	25	<a href="#">38875.011.301</a>			
7,3MM	50	<a href="#">38875.007.301</a>	12,3MM	50	<a href="#">38875.012.301</a>			

<b>38877</b>	<b>O-ring (Viton), AS 568A d<sub>2</sub>=2,62mm</b>	<b>W07A</b>
<b>Material</b>	Rubber FPM 80°shore	
<b>Colour</b>	Black	
<b>Packaging</b>	Standard	

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
9,20MM	50	<a href="#">38877.009.201</a>	15,54-114	25	<a href="#">38877.015.541</a>	21,90MM	10	<a href="#">38877.021.901</a>
10,78-111	25	<a href="#">38877.010.781</a>	17,12MM	25	<a href="#">38877.017.121</a>	23,47-119	10	<a href="#">38877.023.471</a>
12,37-112	25	<a href="#">38877.012.371</a>	18,72-116	25	<a href="#">38877.018.721</a>			
13,95-113	25	<a href="#">38877.013.951</a>	20,30MM	10	<a href="#">38877.020.301</a>			

<b>38883</b>	<b>O-ring (Viton), AS 568A d<sub>2</sub>=3,53mm</b>		<b>W07A</b>
<b>Material</b>	Rubber FPM 80°shore		
<b>Colour</b>	Black		
<b>Packaging</b>	Standard		

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
18,64-210	25	<a href="#">38883.018.641</a>	26,57MM	10	<a href="#">38883.026.571</a>	34,52-220	10	<a href="#">38883.034.521</a>
20,22-211	10	<a href="#">38883.020.221</a>	28,17-216	10	<a href="#">38883.028.171</a>	36,09MM	10	<a href="#">38883.036.091</a>
21,82-212	10	<a href="#">38883.021.821</a>	29,74MM	10	<a href="#">38883.029.741</a>	37,69MM	10	<a href="#">38883.037.691</a>
23,39MM	10	<a href="#">38883.023.391</a>	31,34-218	10	<a href="#">38883.031.341</a>	40,87-223	10	<a href="#">38883.040.871</a>
24,99-214	10	<a href="#">38883.024.991</a>	32,92MM	10	<a href="#">38883.032.921</a>			

<b>38885</b>	<b>O-ring (Viton), d<sub>2</sub>=4,0mm</b>		<b>W07A</b>
<b>Material</b>	Rubber FPM 80°shore		
<b>Colour</b>	Black		
<b>Packaging</b>	Standard		

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
30,0MM	10	<a href="#">38885.030.001</a>	34,0MM	10	<a href="#">38885.034.001</a>	38,0MM	10	<a href="#">38885.038.001</a>
32,0MM	10	<a href="#">38885.032.001</a>	35,0MM	10	<a href="#">38885.035.001</a>	40,0MM	10	<a href="#">38885.040.001</a>

<b>38887</b>	<b>O-ring (Viton), d<sub>2</sub>=5,0mm</b>		<b>W07A</b>
<b>Material</b>	Rubber FPM 80°shore		
<b>Colour</b>	Black		
<b>Packaging</b>	Standard		

d1	☒	Art.number	d1	☒	Art.number	d1	☒	Art.number
35,0MM	10	<a href="#">38887.035.001</a>	45,0MM	10	<a href="#">38887.045.001</a>			
40,0MM	10	<a href="#">38887.040.001</a>	50,0MM	10	<a href="#">38887.050.001</a>			