



 **Growermetal**

TOOTH LOCK WASHERS

# TOOTH LOCK WASHERS



## Description

Our production offers a wide range of tooth lock washers for several uses and applications.

### DIN 6798 A

Washer with overlapped teeth for fasteners with weak tightening couples. Suitable when the bearing surface is larger than the external diameter of the washer.

### DIN 6798 J

Washer with overlapped teeth for fasteners with weak tightening couples. In comparison with the external teeth type, this washer is recommended for an unflat supporting surface.

### DIN 6798 V

In case of joints with weak tightening couples for securing of countersunk head screws.

### DIN 6797 A

Recommended for the use in case of flat surfaces or when the bearing surface is greater than the external diameter of the washer. Suitable in case of fixings with weak tightening couples and unflat bearing surfaces.

### DIN 6797 J

Facilitates the locking when the bearing surface is not flat. Suitable in case of fixings with weak tightening couples and unflat bearing surfaces.

### DIN 6797 V

In case of joints with weak tightening couples for securing of countersunk head screws on soft materials.

### DIN 6907

Version of DIN 6798 for captive preassembling. We recommend to use this washer only for preassembling with metric pitch screws.

### DIN 6906

Version of DIN 6797 for captive preassembling. We recommend to use this washer only for preassembling with metric pitch screws.

### FOR SELF-TAPPING SCREWS

Recommended washer to be used only for preassembling with self-tapping screws.

### WITH DOUBLE TEETH

Ideally suited when the diameter of the bore is larger than the diameter of the screw or when the bore is lengthened and the bearing surface is flat.

### ASME B 18.21.1 EXTERNAL TEETH

Recommended for the use in case of flat surfaces or when the bearing surface is greater than the external diameter of the washer. Suitable in case of fixings with weak tightening couples and unflat bearing surfaces.

### ASME B 18.21.1 INTERNAL TEETH

Facilitates the locking when the bearing surface is not flat. Suitable in case of fixings with weak tightening couples and unflat bearing surfaces.



## Standard materials

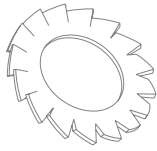
- Carbon steel C60S (N° 1.1211) EN 10132, hardness 350–425 Hv after heat-treatment (hardening and tempering).
- Stainless steel A2 (AISI 304 - N°1.4301 ) EN 10088, cold rolled.
- Stainless steel A4 (AISI 316 - N°1.4401 ) EN 10088, cold rolled.
- Phosphor bronze CuSn8 EN 1652 (N° CW453K), cold rolled.
- Steel DC01 (1.0330) EN 10139



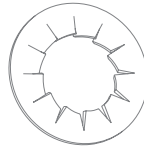
## Surface treatments

- Burnishing
- Galvanic zinc plating Cr6free
- Mechanical zinc plating Cr6free
- Nickel plating
- Geomet®
- Other surface treatments on request, according to the minimum delivery quantities.

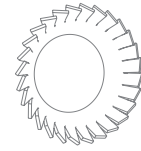
## DIMENSIONS AND FEATURES



DIN 6798 A



DIN 6798 J



DIN 6798 V

### DIN 6798 A/J

DIN 6798 A/J								
Screw size	Internal diameter min.-max.	External diameter min.-max.	Thickness min.-max.	Number of teeth	Kg/1000 pieces *	N° pieces standard packaging	N° pieces bulk packaging	N° pieces micro packaging
M 2.0	2.20-2.34	4.20-4.50	0.27-0.33	9	0.030	5000	180000	1000
M 2.3	2.50-2.64	4.70-5.00	0.36-0.44	9	0.040	5000	140000	1000
M 2.5	2.70-2.84	5.20-5.50	0.36-0.44	9	0.050	5000	125000	1000
M 3.0	3.20-3.38	5.70-6.00	0.36-0.44	9	0.060	2000	100000	500
M 3.5	3.70-3.88	6.64-7.00	0.46-0.54	10	0.100	2000	65000	500
M 4.0	4.30-4.48	7.64-8.00	0.46-0.54	11	0.130	2000	45000	500
M 5.0	5.10-5.28	8.64-9.00	0.46-0.54	11	0.150	1000	35000	200
M 5.0	5.30-5.48	9.64-10.00	0.55-0.65	11	0.230	1000	20000	200
M 6.0	6.40-6.62	10.57-11.00	0.65-0.75	12	0.290	1000	17500	200
M 7.0	7.40-7.62	12.07-12.50	0.75-0.85	14	0.440	1000	12000	200
M 8.0	8.20-8.42	13.57-14.00	0.75-0.85	14	0.515	1000	10000	200
M 8.0	8.40-8.62	14.57-15.00	0.75-0.85	14	0.680	1000	7500	200
M 10.0	10.50-10.77	17.57-18.00	0.85-0.95	16	1.020	1000	5000	100
M 12.0	13.00-13.27	19.98-20.50	0.94-1.06	16	1.260	1000	3500	100
M 14.0	15.00-15.27	23.48-24.00	0.94-1.06	18	1.910	500	2000	100
M 16.0	17.00-17.27	25.48-26.00	1.14-1.26	18	2.560	500	1500	100
M 18.0	19.00-19.33	29.48-30.00	1.34-1.46	18	4.270	250	900	
M 20.0	21.00-21.33	32.38-33.00	1.34-1.46	20	5.300	250	750	
M 22.0	23.00-23.33	35.38-36.00	1.42-1.58	20	6.530	200	650	
M 24.0	25.00-25.33	37.38-38.00	1.42-1.58	20	6.900	150	600	
M 27.0	28.00-28.33	43.38-44.00	1.52-1.68	22	8.790	100	450	
M 30.0	31.00-31.39	47.38-48.00	1.52-1.68	22	11.620	100	350	

Dimensions in mm.

\* The specified values refer to the version DIN 6798 A in carbon steel.

Standard materials: carbon steel, stainless steel A2 (AISI 304), stainless steel A4 (AISI 316), phosphor bronze.

### DIN 6798 V

DIN 6798 V						
Screw size	Internal diameter min.-max.	External diameter ~	Thickness min.-max.	Number of teeth	Kg/1000 pieces	N° pieces standard packaging
M 4.0	4.30-4.48	8.00	0.24-0.27	14	0.100	2.000
M 5.0	5.30-5.48	9.80	0.29-0.32	14	0.200	1.000
M 6.0	6.40-6.62	11.80	0.39-0.42	16	0.300	1.000
M 8.0	8.40-8.62	15.30	0.39-0.42	18	0.500	1.000
M 10.0	10.50-10.77	19.00	0.48-0.52	20	1.000	1.000
M 12.0	13.00-13.27	23.00	0.48-0.52	26	1.500	1.000
M 14.0	15.00-15.27	26.20	0.58-0.62	28	1.900	500
M 16.0	17.00-17.27	30.20	0.58-0.62	30	2.300	500

Dimensions in mm.

Standard material: carbon steel.

## DIMENSIONS AND FEATURES



DIN 6797 A



DIN 6797 J



DIN 6797 V

### DIN 6797 A/J

DIN 6797 A/J								
Screw size	Internal diameter min.-max.	External diameter min.-max.	Thickness min.-max.	Number of teeth	Kg/1000 pieces *	N° pieces standard packaging	N° pieces bulk packaging	N° pieces micro packaging
M 2.0	2.20-2.34	4.20-4.50	0.27-0.33	6	0.020	5000	275000	1000
M 2.3	2.50-2.64	4.70-5.00	0.36-0.44	6	0.025	5000	200000	1000
M 2.5	2.70-2.84	5.20-5.50	0.36-0.44	6	0.040	5000	170000	1000
M 3.0	3.20-3.38	5.70-6.00	0.36-0.44	6	0.040	2000	160000	500
M 3.5	3.70-3.88	6.64-7.00	0.46-0.54	6	0.070	2000	80000	500
M 4.0	4.30-4.48	7.64-8.00	0.46-0.54	8	0.090	2000	60000	500
M 5.0	5.10-5.28	8.64-9.00	0.46-0.54	8	0.120	1000	50000	200
M 5.0	5.30-5.48	9.64-10.00	0.55-0.65	8	0.175	1000	35000	200
M 6.0	6.40-6.62	10.57-11.00	0.65-0.75	8	0.217	1000	25000	200
M 7.0	7.40-7.62	12.07-12.50	0.75-0.85	8	0.330	1000	16000	200
M 8.0	8.20-8.42	13.57-14.00	0.75-0.85	8	0.400	1000	12000	200
M 8.0	8.40-8.62	14.57-15.00	0.75-0.85	8	0.480	1000	12000	200
M 10.0	10.50-10.77	17.57-18.00	0.85-0.95	9	0.750	1000	6000	100
M 12.0	13.00-13.27	19.98-20.50	0.94-1.06	10	1.000	1000	4000	100
M 14.0	15.00-15.27	23.48-24.00	0.94-1.06	10	1.390	1000	3000	100
M 16.0	17.00-17.27	25.48-26.00	1.14-1.26	12	1.920	500	2000	100
M 18.0	19.00-19.33	29.48-30.00	1.34-1.46	12	3.235	500	1500	
M 20.0	21.00-21.33	32.38-33.00	1.34-1.46	12	4.030	250	1000	
M 22.0	23.00-23.33	35.38-36.00	1.42-1.58	14	4.500	250	950	
M 24.0	25.00-25.33	37.38-38.00	1.42-1.58	14	4.855	250	850	
M 27.0	28.00-28.33	43.38-44.00	1.52-1.68	14	7.350	150	500	
M 30.0	31.00-31.39	47.38-48.00	1.52-1.68	14	9.030	150	400	

Dimensions in mm.

\* The specified values refer to the version DIN 6797 A in carbon steel.  
Standard materials: carbon steel, stainless steel A2 (AISI 304).

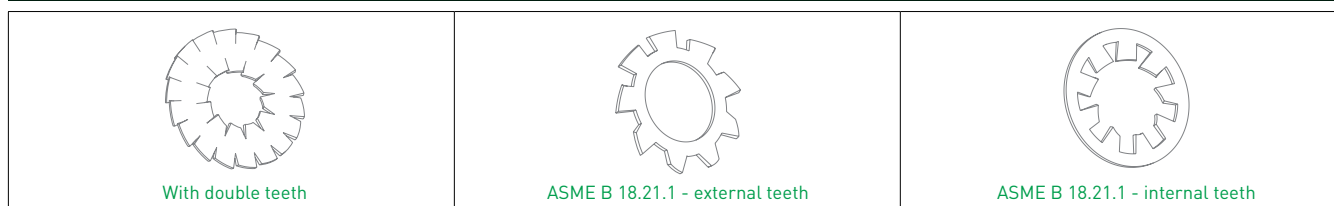
### DIN 6797 V

DIN 6797 V						
Screw size	Internal diameter min.-max.	External diameter ~	Thickness min.-max.	Number of teeth	Kg/1000 pieces	N° pieces standard packaging
M 4.0	4.30-4.48	8.00	0.24-0.27	8	0.050	2.000
M 5.0	5.30-5.48	9.80	0.29-0.32	8	0.120	1.000
M 6.0	6.40-6.62	11.80	0.39-0.42	10	0.200	1.000
M 8.0	8.40-8.62	15.30	0.39-0.42	10	0.400	1.000
M 10.0	10.50-10.77	19.00	0.48-0.52	10	0.700	1.000
M 12.0	13.00-13.27	23.00	0.48-0.52	10	1.200	1.000
M 14.0	15.00-15.27	26.20	0.58-0.62	12	1.300	500
M 16.0	17.00-17.27	30.20	0.58-0.62	12	1.300	500

Dimensions in mm.

Standard material: carbon steel.

## DIMENSIONS AND FEATURES



### ASME B 18.21.1 - EXTERNAL TEETH

Screw size	Internal diameter min.-max.	External diameter min.-max.	Thickness min.-max.	Number of teeth	Kg/1000 pieces	N° pieces standard packaging	N° pieces bulk packaging
N.10	4.95-5.18	10.03-10.31	0.45-0.61	8	0.155	1000	30000
1/4"	6.50-6.73	12.54-12.85	0.59-0.71	10	0.300	1000	15000
5/16"	8.12-8.43	14.93-15.26	0.71-0.86	8	0.530	1000	10000
3/8"	9.75-10.05	17.27-17.62	0.81-1.01	12	0.750	1000	7500
7/16"	11.37-11.70	18.90-19.30	0.81-1.01	12	1.165	1000	5000
1/2"	13.03-13.43	22.35-22.80	0.94-1.14	12	1.360	1000	3750
1"	26.03-26.92	40.39-41.15	1.50-1.70	14	7.800	150	500

Dimensions in mm.

### ASME B 18.21.1 - INTERNAL TEETH

Screw size	Internal diameter min.-max.	External diameter min.-max.	Thickness min.-max.	Number of teeth	Kg/1000 pieces	N° pieces standard packaging	N° pieces bulk packaging
N.10	4.95-5.18	9.37-9.67	0.45-0.61	8	0.153	1000	35000
1/4"	6.50-6.78	11.83-12.14	0.59-0.71	8	0.300	1000	15000
5/16"	8.12-8.43	15.08-15.41	0.71-0.86	8	0.530	1000	10000
3/8"	9.75-10.05	17.20-17.57	0.81-1.01	10	0.750	1000	7500
7/16"	11.37-11.70	19.58-20.04	0.81-1.01	10	1.164	1000	5000
1/2"	13.00-13.43	22.02-22.42	0.94-1.14	10	1.360	1000	3750
1"	25.88-26.49	40.97-41.57	1.50-1.70	14	7.800	150	500

Dimensions in mm.

### WITH DOUBLE TEETH

Screw size	Internal diameter min.-max.	External diameter min.-max.	Thickness min.-max.	Height min.-max.	Number of internal teeth	Number of external teeth	Kg/1000 pieces	N° pieces standard packaging	N° pieces bulk packaging
M 4	4.20-4.38	15.17-15.60	0.77-0.83	2.00-2.80	7	16	1.100	1000	6500
M 5	5.10-5.28	17.47-17.90	0.77-0.83	2.00-2.80	7	16	1.450	1000	5000
M 6	6.10-6.32	17.70-18.20	0.87-0.93	2.25-3.15	8	16	1.530	1000	4500
M 8	8.20-8.42	21.73-22.25	0.96-1.04	2.50-3.50	10	16	2.490	500	3250
M 10	10.20-10.47	25.58-26.10	1.06-1.14	2.60-3.85	12	18	3.770	500	1750
M 12	12.50-12.77	29.78-30.30	1.16-1.24	3.00-4.20	12	18	5.400	500	1400
M 16	16.30-16.73	35.48-36.10	1.36-1.44	3.50-4.90	12	20	8.700	250	800

Dimensions in mm.

Standard material: carbon steel.

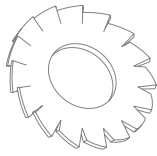
## PACKAGING



### Types of packaging available:

Standard packaging (1),  
Bulk packaging (2),  
Micro packaging (3).

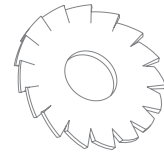
## DIMENSIONS AND FEATURES



DIN 6907



DIN 6906



For self-tapping screws

### DIN 6907

Screw size	Internal diameter min.-max.	External diameter min.-max.	Thickness min.-max.	Number of teeth	Kg/1000 pieces *	N° pieces bulk packaging
M 2.5	2.25-2.35	5.32-5.50	0.36-0.44	9	0.055	125000
M 3.0	2.70-2.80	5.82-6.00	0.36-0.44	9	0.070	100000
M 3.5	3.20-3.32	6.78-7.00	0.46-0.54	10	0.120	65000
M 4.0	3.60-3.72	7.78-8.00	0.46-0.54	11	0.155	50000
M 5.0	4.55-4.67	8.78-9.00	0.55-0.65	11	0.210	35000
M 6.0	5.50-5.62	10.73-11.00	0.65-0.75	12	0.390	20000
M 8.0	7.40-7.55	13.73-14.00	0.75-0.85	14	0.620	10000

Dimensions in mm.

\* The specified values refer to the version DIN 6907 in carbon steel.

Standard materials: carbon steel, stainless steel A2 (AISI 304).

### DIN 6906

Screw size	Internal diameter min.-max.	External diameter min.-max.	Thickness min.-max.	Number of teeth	Kg/1000 pieces	N° pieces bulk packaging
M 2.5	2.25-2.35	5.32-5.50	0.36-0.44	6	0.045	170000
M 3.0	2.70-2.80	5.82-6.00	0.36-0.44	6	0.050	160000
M 3.5	3.20-3.32	6.78-7.00	0.46-0.54	6	0.080	100000
M 4.0	3.60-3.72	7.78-8.00	0.46-0.54	8	0.100	60000
M 5.0	4.55-4.67	8.78-9.00	0.55-0.65	8	0.165	40000
M 6.0	5.50-5.57	10.73-11.00	0.65-0.75	8	0.220	25000
M 8.0	7.40-7.55	13.73-14.00	0.75-0.85	8	0.400	12000

Dimensions in mm.

Standard material: carbon steel

### FOR SELF-TAPPING SCREWS

Screw size	Internal diameter min.-max.	External diameter min.-max.	Thickness min.-max.	Height min.-max.	Kg/1000 pieces	N° pieces bulk packaging
M 3.5	3.04-3.09	8.90-9.10	0.55-0.65	1.43-1.57	0.250	35000
M 3.9	3.35-3.40	8.90-9.10	0.55-0.65	1.43-1.57	0.255	35000
M 4.2	3.60-3.65	8.90-9.10	0.55-0.65	1.43-1.57	0.245	35000
M 4.2	3.60-3.67	7.78-8.00	0.46-0.54	1.23-1.37	0.155	50000
M 4.8	4.07-4.13	10.90-11.10	0.75-0.85	1.90-2.10	0.515	17500
M 5.5	4.53-4.59	10.90-11.10	0.75-0.85	1.90-2.10	0.500	17500
M 6.3	5.37-5.42	10.90-11.10	0.75-0.85	1.90-2.10	0.455	17500
M 6.3	5.37-5.42	12.40-12.60	0.75-0.85	1.90-2.10	0.640	12000

Dimensions in mm.

Standard material: steel DC01.



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