Large-series plain washer

A broad bearing surface spreads clamping force over soft materials or large clearance holes. Check thickness and actual support: a larger outside diameter alone does not establish the joint capacity.

DIN 9021

Dimensional range

M3-M36

Series

Large · without chamfer

Configuration

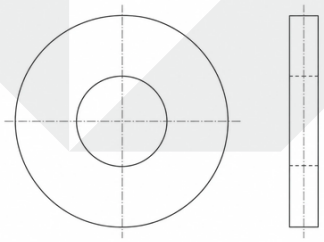
200 HV / 300 HV

References

DIN 9021



Technical drawing



d1

bore diameter

d2

outside diameter

s

thickness (also designated h in technical references)

Variants and dimensional data

Large series, product grade A, nominal sizes 3-36 mm. The nominal size identifies the mating screw; bore, outside diameter and thickness are separate dimensions. Enquire about other sizes and geometries.

Dimensions in mm. Identification drawing, not a manufacturing drawing.

M	d1 min.	d2 max.	s
3	3.2	9	0.8
3.5	3.7	11	0.8
4	4.3	12	1
5	5.3	15	1
6	6.4	18	1.6
8	8.4	24	2
10	10.5	30	2.5
12	13	37	3
14	15	44	3
16	17	50	3
18	19	56	4
20	21	60	4
22	23	66	5
24	25	72	5
27	30	85	6
30	33	92	6
33	36	105	6
36	39	110	8

M	d1 max.	d2 min.	s min.	s max.
3	3.38	8.64	0.7	0.9
3.5	3.88	10.57	0.7	0.9
4	4.48	11.57	0.9	1.1
5	5.48	14.57	0.9	1.1
6	6.62	17.57	1.4	1.8
8	8.62	23.48	1.8	2.2
10	10.77	29.48	2.3	2.7

M	d1 max.	d2 min.	s min.	s max.
12	13.27	36.38	2.7	3.3
14	15.27	43.38	2.7	3.3
16	17.27	49.38	2.7	3.3
18	19.33	55.26	3.7	4.3
20	21.33	59.26	3.7	4.3
22	23.52	64.8	4.4	5.6
24	25.52	70.8	4.4	5.6
27	30.52	83.6	5.4	6.6
30	33.62	90.6	5.4	6.6
33	36.62	103.6	5.4	6.6
36	39.62	108.6	7	9

Hardness is expressed in HV, not as a bolt property class. Steel: 200 HV or 300 HV; A2/A4 stainless: 200 HV. For large holes or yielding supports, also assess bending and bearing pressure.

Table dimensions refer to the stated execution. DIN/UNI, polymer and special variants require verification of their own dimensions; they do not automatically inherit reference geometry, weight or performance.

Materials, classes, finishes and treatments

Executions are distinguished by reference, material, class and finish. DIN, ISO and UNI references do not imply dimensional equivalence or availability of every size in each material. Supply and batch documents require quotation confirmation.

Execution reference	Material	Class / hardness	Documented finishes
DIN 9021	Stainless A2	To be specified	To be specified
DIN 9021	Nylon (PA)	Not applicable	To be specified
DIN 9021	Brass	Not applicable	To be specified
DIN 9021	Steel	100 HV	Black oxide; Black zinc plated; Bronze plated; GEOMET 321A; Geomet 321b; Hot-dip galvanized; Nickel plated; Plain; Trivalent iridescent zinc plated; Yellow zinc plated; Yellow zinc plated Cr III 12 µm with sealer; Yellow zinc plated ≥12 µm; Zinc plated; Zinc plated with sealer; Zinc plated ≥12 µm; Zinc plated ≥8 µm
DIN 9021	Stainless A4	To be specified	To be specified
UNI 6593	Steel	100 HV	Black oxide; Black zinc plated; GEOMET 321A; Hot-dip galvanized; Nickel plated; Plain; Yellow zinc plated; Yellow zinc plated Cr III 12 µm with sealer; Zinc plated; Zinc plated ≥8 µm
DIN 440	Steel	100 HV	Zinc plated
DIN 9021	Steel	200 HV	Zinc plated
DIN 433	Stainless A4	To be specified	To be specified
DIN 433	Steel	200 HV	Zinc plated
DIN 6340	Steel	100 HV	Zinc plated
DIN 34816 ex DIN 9021	Polyamide	Not applicable	Natural colour
DIN 9021	Stainless A5 · 1.4571	To be specified	To be specified
DIN 9021	Duplex · 1.4462	To be specified	To be specified
DIN 9021	Stainless HCR · 1.4529	To be specified	To be specified
DIN 9021	Nylon PA66	Not applicable	To be specified

“To be specified” is a requirement not established by this selection; it does not imply class 70/80, HV hardness or an automatic finish. Steel property classes do not apply to nylon/polyamide; PA6 and PA66 are distinguished only where stated. For nuts with non-metallic inserts, the material shown is the body material.

Documentation

Document	Status
Declaration of conformity	Subject to order agreement
Material certificate	Subject to order agreement
EN 10204 2.2 test report	Subject to order agreement
EN 10204 3.1 inspection certificate	Subject to order agreement
Dimensional inspection report	Subject to order agreement
Coating report	Subject to order agreement
Other documentation	Subject to order agreement

Batch documents are not automatically included: specify your requirements in the RFQ.

ISO, DIN and UNI: key differences

ISO 7093-1:2000

ISO 7093-1 identifies the large series in product grade A. Part 2 covers grade C; do not merge the two without checking tolerances.

DIN 9021

Related commercial reference. Neither 100 HV versions nor non-series sizes become ISO 7093-1 merely through resemblance: check dimensions, hardness and specification.