Plain washer, normal series

Plain washer without chamfer, providing a bearing surface under a bolt head or nut. Bore, outside diameter and thickness are distinct from the nominal bolt diameter.

DIN 125 A · UNI 6592

Dimensional range

M1.6-M64

Series

Normal · without chamfer

Configuration

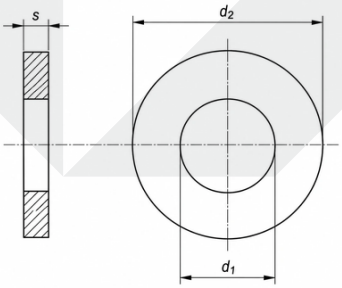
200 HV / 300 HV

References

DIN 125 A · UNI 6592



Technical drawing



d1

bore diameter

d2

outside diameter

s

thickness (also designated h in technical references)

Variants and dimensional data

ISO 7089 normal series, nominal sizes 1.6-64 mm, including dimensional limits. Nominal size identifies the mating bolt, not the bore diameter.

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

M	d1 min.	d2 max.	s
1.6	1.7	4	0.3
2	2.2	5	0.3
2.5	2.7	6	0.5
3	3.2	7	0.5
3.5	3.7	8	0.5
4	4.3	9	0.8
5	5.3	10	1
6	6.4	12	1.6
8	8.4	16	1.6
10	10.5	20	2
12	13	24	2.5
14	15	28	2.5
16	17	30	3
18	19	34	3
20	21	37	3
22	23	39	3
24	25	44	4
27	28	50	4
30	31	56	4
33	34	60	5
36	37	66	5
39	42	72	6
42	45	78	8
45	48	85	8
48	52	92	8
52	56	98	8

M	d1 min.	d2 max.	s
56	62	105	10
60	66	110	10
64	70	115	10

M	d1 max.	d2 min.	s min.	s max.
1.6	1.84	3.7	0.25	0.35
2	2.34	4.7	0.25	0.35
2.5	2.84	5.7	0.45	0.55
3	3.38	6.64	0.45	0.55
3.5	3.88	7.64	0.45	0.55
4	4.48	8.64	0.7	0.9
5	5.48	9.64	0.9	1.1
6	6.62	11.57	1.4	1.8
8	8.62	15.57	1.4	1.8
10	10.77	19.48	1.8	2.2
12	13.27	23.48	2.3	2.7
14	15.27	27.48	2.3	2.7
16	17.27	29.48	2.7	3.3
18	19.33	33.38	2.7	3.3
20	21.33	36.38	2.7	3.3
22	23.33	38.38	2.7	3.3
24	25.33	43.38	3.7	4.3
27	28.33	49.38	3.7	4.3
30	31.39	55.26	3.7	4.3
33	34.62	58.8	4.4	5.6
36	37.62	64.8	4.4	5.6
39	42.62	70.8	5.4	6.6
42	45.62	76.8	7	9
45	48.62	83.6	7	9
48	52.74	90.6	7	9
52	56.74	96.6	7	9
56	62.74	103.6	9	11

M	d1 max.	d2 min.	s min.	s max.
60	66.74	108.6	9	11
64	70.74	113.6	9	11

Hardness is separate from bolt property class: 200 HV or 300 HV for steel; 200 HV for A2/A4 in this specification. ISO 7089:2000 associates 200 HV with bolts up to 8.8 and nuts up to 8, and 300 HV with bolts up to 10.9 and nuts up to 10. Bearing conditions, environment and joint design must also be checked.

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
ISO 7089	Steel	300 HV	GEOMET 321A; Hot-dip galvanized; Plain; Zinc plated
ISO 7089	Steel	200 HV	Black zinc plated; Black zinc-nickel with sealer; GEOMET 321A; Hot-dip galvanized; Iridescent ≥8 µm; Plain; Yellow zinc plated; Zinc plated
DIN 125	Nylon (PA)	Not applicable	To be specified
ISO 7089	Stainless A4	To be specified	To be specified
DIN 125	Steel	100 HV	GEOMET 321A; Geomet 500a; Grey nickel plated with sealer
DIN 125	Stainless A2	To be specified	To be specified
DIN 125	Stainless A4	To be specified	To be specified
DIN 125 A	Steel	100 HV	Yellow zinc plated; Zinc plated
DIN 125	Brass	Not applicable	To be specified
DIN125	Brass	Not applicable	To be specified
DIN 34815 ex DIN 125	Polyamide	Not applicable	Natural colour
DIN 125 A	Stainless A5 · 1.4571	To be specified	To be specified
DIN 125 A	Duplex · 1.4462	To be specified	To be specified
DIN 125 A	Stainless HCR · 1.4529	To be specified	To be specified
ISO 7089	Stainless A4	200 HV	To be specified
DIN 125 A	Brass OT63	Not applicable	To be specified
DIN 125 A	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 7089:2000

Main standard used for the dimensions in this data sheet.

DIN 125 A

Historical unchamfered-washer reference. Geometry, hardness and edition must be checked: a 100 HV washer is not automatically ISO 7089.

UNI 6592:1997

Withdrawn on 31 July 2001 and replaced by UNI EN ISO 7089:2001 and UNI EN ISO 7092:2001. Check the series, not just nominal size.