M3 Spring Lock Washers Dimensions

Engineering Hardware & Fasteners · engineeringhardware.com/guide/size/m3-spring-lock-washers

M3 Spring Lock Washers dimensions to DIN 127: inside diameter 3.1 mm, outside diameter 6.2 mm, thickness 0.8 mm.

Inside diameter

3.1 mm

Outside diameter

6.2 mm

Thickness

0.8 mm

Figures are nominal values from the governing standard. Confirm against the tolerance class for your application before machining or ordering.

This page covers M3 Spring Lock Washers to DIN 127. M3 is the nominal bolt size; the dimensional row below is reproduced from the product table, followed by the tolerance, material and selection notes that apply to this size.

M3 Dimensional Row (DIN 127)

For bolt size	Inner diameter d1 min (mm)	Outer diameter d2 max (mm)	Width b (mm)
M3	3.1	6.2	2.0

Mating Parts for M3

A M3 flat washer pairs with a M3 bolt/screw and matching M3 nut.

Custom manufacturing · Made to drawing

Need spring lock washers in a size this table does not list?

This page covers M3 spring lock washers. Bearing area is usually the reason for a special washer: a larger outside diameter to spread load into a softer material, or a thicker section to resist dishing. Made by stamping or punching.

Minimum order from 2,000 pieces; samples within 7 days of drawing approval.

Custom washer manufacturing (https://engineeringhardware.com/custom/washers/)

Send a drawing (https://engineeringhardware.com/custom/washers/#rfq)

Technical Drawing

Customize the parameters below — every spec field is editable, and the drawing redraws to match the values you choose. Changing the size will snap the other fields to that size's standard values; you can then override any individual value.

Dimensioned line drawing of M3 Spring Lock Washers to DIN 127. Side view and top view, drawn to the dimensions in the table below and redrawn for any size selected.

Opens a short step to confirm the exact specification before you enter contact details.

Request a Quote

Click “Request this configuration” under the drawing to confirm the exact specification, then add your contact details. You can also send the request without a specification — but only an accurate selection gets an accurate quote.

Dimensions & Specifications (DIN 127)

For bolt size	Inner diameter d1 min (mm)	Outer diameter d2 max (mm)	Width b (mm)
M2	2.1	4.4	1.6
M2.5	2.6	5.1	2.0
M3	3.1	6.2	2.0
M3.5	3.6	7.0	2.5
M4	4.1	7.6	2.5
M5	5.1	9.2	3.0
M6	6.1	11.8	4.0
M7	7.1	13.1	4.0
M8	8.1	14.8	5.0
M10	10.2	18.1	6.0
M12	12.2	21.1	7.0
M14	14.2	24.1	8.0
M16	16.2	27.4	9.0
M18	18.2	29.4	9.0

For bolt size	Inner diameter d1 min (mm)	Outer diameter d2 max (mm)	Width b (mm)
M20	20.2	33.6	10.0
M22	22.5	35.9	11.0
M24	24.5	40.1	12.0
M27	27.5	44.8	12.0
M30	30.5	50.0	14.0
M36	36.5	60.0	16.0

Materials & Grades

Select a material class to see the grades we supply it in. Each designation is listed with its ISO/EN, AISI/SAE, JIS and GB equivalents.

Stainless Steel

Carbon Steel 66

Alloy Steel 41

Bearing Steel 5

Spring Steel 25

Aluminum and Aluminum Alloys 21

Brass 17

Bronze 11

Copper 8

Titanium and Titanium Alloys 18

Nickel and Nickel Alloys 22

Iron-Nickel and High-Temperature Alloys 10

Tool Steel and Specialty Hardened Steel 9

Structural and Construction Steel 9

Stainless Steel

Austenitic Stainless Steel

A1
AISI 303 · SAE 303 · SUS303 · EN 1.4305 · X8CrNiS18-9

A2
AISI 304 · SAE 304 · SUS304 · EN 1.4301 · X5CrNi18-10 · 06Cr19Ni10

304L
AISI 304L · SUS304L · EN 1.4307 · X2CrNi18-9 · 022Cr19Ni10

302
AISI 302 · SUS302 · EN 1.4310

305
AISI 305 · SUS305 · EN 1.4303

A4
AISI 316 · SAE 316 · SUS316 · EN 1.4401 · X5CrNiMo17-12-2 · 06Cr17Ni12Mo2

316L
AISI 316L · SUS316L · EN 1.4404 · X2CrNiMo17-12-2 · 022Cr17Ni12Mo2

321
AISI 321 · SUS321 · EN 1.4541 · X6CrNiTi18-10

310 / 310S
AISI 310 · AISI 310S · SUS310S · EN 1.4845

302HQ
AISI 302HQ

A3

A5

347
AISI 347 · SUS347 · EN 1.4550 · X6CrNiNb18-10

309 / 309S
AISI 309 · AISI 309S · SUS309S

Martensitic Stainless Steel

AISI 410
SUS410 · EN 1.4006 · X12Cr13 · 12Cr13

AISI 420
SUS420J1 · SUS420J2 · EN 1.4021 · EN 1.4028 · 20Cr13 · 30Cr13

AISI 431
SUS431 · EN 1.4057 · X17CrNi16-2

C1

C3

C4

AISI 440A

AISI 440B

AISI 440C
SUS440C · EN 1.4125

Ferritic Stainless Steel

AISI 430
SUS430 · EN 1.4016 · X6Cr17 · 10Cr17

F1

AISI 434

AISI 444

Precipitation-Hardening Stainless Steel

17-4 PH
AISI 630 · UNS S17400 · SUS630 · EN 1.4542 · X5CrNiCuNb16-4

15-5 PH
UNS S15500

17-7 PH
UNS S17700

Duplex and Super Duplex Stainless Steel

Duplex 2205
UNS S31803 · UNS S32205 · EN 1.4462

Super Duplex 2507
UNS S32750 · EN 1.4410

D2

D4

D6

D8

Lean Duplex 2101
UNS S32101

Super Duplex S32760
UNS S32760 · EN 1.4501

Carbon Steel

Low-Carbon Steel

- SAE 1006
- SAE 1008
- SAE 1010
- SAE 1018
- SAE 1020
- Q195
- Q235
- SAE 1012
- SAE 1015
- Q215
- ML08
- ML08Al
- ML10
- ML15
- ML20
- SWRCH6A
- SWRCH8A
- SWRCH10A
- SWRCH12A
- SWRCH15A
- SWRCH18A

Medium-Carbon Steel

- SAE 1035
- SAE 1045

S45C
C45
SAE 1030
SAE 1040
SAE 1050
30
35
40
45
50
S35C
S40C
S50C
C35
C40

High-Carbon Steel

SAE 1060
SAE 1070
65Mn
SAE 1065
SAE 1075
SAE 1080
SAE 1085
SAE 1090
SAE 1095
60
65

70
75
80
85

Cold-Heading Steel

SWRCH22A
10B21
SWRCH22K
SWRCH25K
SWRCH30K
SWRCH35K
SWRCH40K
ML20Mn
ML25
ML30
ML35
ML40
15B25

Alloy Steel

Chromium Steel

40Cr
45Cr
AISI 5140
SAE 5140

AISI 5120
SAE 5120
SCr420
SCr440

Chromium-Molybdenum Steel

35CrMo
42CrMo
AISI 4140
SCM435
SCM440
42CrMo4
30CrMo
AISI 4130
SAE 4130
SAE 4140
AISI 4142
AISI 4145
SCM415
SCM420
SCM445
EN 1.7220
EN 1.7225
25CrMo4
34CrMo4

Nickel-Chromium-Molybdenum Steel

AISI 4340

SAE 4340

40CrNiMo

SNCM439

EN 1.6511

36CrNiMo4

Boron Alloy Steel

10B22

10B21

15B21

15B25

20MnTiB

20Mn2B

35VB

40MnB

Bearing Steel

Bearing Steel

GCr15

AISI 52100
SAE 52100 · UNS G52986

SUJ2

100Cr6
EN 1.3505

GCr15SiMn

Spring Steel

Carbon Spring Steel

SAE 1065
SAE 1070
SAE 1075
SAE 1080
SAE 1095
65
70
75
80
65Mn

Silicon-Manganese Spring Steel

60Si2Mn
60Si2MnA
SUP6
SUP7

Chromium-Vanadium Spring Steel

50CrVA
SAE 6150
AISI 6150
SUP10

Stainless Spring Steel

AISI 301
SUS301

EN 1.4310
AISI 302
AISI 304
AISI 316
17-7 PH

Aluminum and Aluminum Alloys

Commercially Pure Aluminum

1050
1060
1070
1100

2xxx Series Aluminum

2024
2011
2014
2017

5xxx Series Aluminum

5052
5083
5754

6xxx Series Aluminum

6061
6061-T6

6063

6082

6082-T6

7xxx Series Aluminum

7075

7075-T6

7005

7050

7075-T73

Brass

Free-Cutting Brass

C36000

H62

HPb59-1

C3601

C3602

C3604

CuZn36Pb3

CuZn39Pb3

EN CW614N

EN CW617N

H65

Lead-Free Brass

C69300

C27450

CW510L

CW511L

Naval Brass

C46400

CuZn39Sn1

Bronze

Silicon Bronze

C65500

C65100

C65600

Phosphor Bronze

C51000

C52100

CuSn6

CuSn8

Aluminum Bronze

C95400

C95500

C63000

CuAl10Ni5Fe4

Copper

Copper

- C11000
- T2
- C10100
- C10200
- C12200
- T1
- TU1
- TU2

Titanium and Titanium Alloys

Commercially Pure Titanium

- Grade 2
- Grade 1
- Grade 3
- Grade 4
- TA1
- TA2
- TA3

Alpha-Beta Titanium Alloys

- Grade 5
- Ti-6Al-4V
- TC4
- UNS R56400

Low-Interstitial Grade

- Grade 23
- Ti-6Al-4V ELI
- UNS R56407

Other Titanium Fastener Alloys

- Ti-6Al-6V-2Sn
- Ti-6Al-2Sn-4Zr-2Mo
- Beta-C titanium
- Ti-10V-2Fe-3Al

Nickel and Nickel Alloys

Commercially Pure Nickel

- Nickel 200
- UNS N02200
- Nickel 201
- UNS N02201

Inconel Alloys

- Inconel 625
  UNS N06625
- Inconel 718
  UNS N07718
- Inconel 600
  UNS N06600
- Inconel 601
  UNS N06601
- Inconel 686

UNS N06686

Inconel X-750
UNS N07750

Monel Alloys

Monel 400
UNS N04400

Monel K-500
UNS N05500

Hastelloy Alloys

Hastelloy C-276
UNS N10276

Hastelloy C-22
UNS N06022

Hastelloy B-2
UNS N10665

Hastelloy B-3
UNS N10675

Hastelloy X
UNS N06002

Other Nickel Alloys

Alloy 20
UNS N08020

Alloy 625

Alloy 718

Alloy 825
UNS N08825

Alloy 925
UNS N09925

Iron-Nickel and High-Temperature Alloys

A286

- A-286
- UNS S66286
- EN 1.4980

Invar

- Invar 36
- Alloy 36
- UNS K93600
- FeNi36

Alloy 42

- Alloy 42
- UNS K94100
- FeNi42

Tool Steel and Specialty Hardened Steel

Tool Steel and Specialty Hardened Steel

- AISI D2
- AISI H13
- SKD11
- Cr12MoV
- AISI O1
- AISI A2
- AISI S7

SKD61
9CrSi

Structural and Construction Steel

Structural and Construction Steel

ASTM A36
Q235B
Q355B
S355JR
Q235C
Q355C
S235JR
S275JR
S355J2

Applications & Industries for M3 Spring Lock Washers

Spring Lock Washers are bought for a small number of well-defined jobs. These are the ones we ship them for. Stocked from M2 to M36 (nominal bolt size).

Industries that specify Spring Lock Washers

Rotating & vibrating plant **Spring, tooth and wedge types that maintain or lock bolt tension.**

Steel fabrication **Spreading load under a head or nut and protecting the surface finish.**

Machine building & OEM **Setting bearing area on soft alloy, plastic and oversized holes.**

Timber & construction **Large-diameter washers that stop pull-through in softer material.**

Typical applications

- **spreading clamp load over a soft or oversized bearing face**
- **protecting a painted or plated surface under a turned nut**
- **maintaining bolt tension in a joint that settles**

Service conditions to specify against

Marine and coastal

Available in A4 (316) stainless for chloride exposure — coastal structures, pool halls, water treatment and deck hardware, where A2 will eventually pit.

Vibration

Specified where cyclic load would loosen a plain nut or screw — rotating plant, rail, mobile equipment and anything that is not re-torqued in service.

Hardness matters

Under a high-strength bolt a soft washer embeds into the joint and preload is lost — specify a hardened washer for structural bolting.

Full application guide: where Spring Lock Washers are used, how to specify them, and the cases they are wrong for (https://engineeringhardware.com/applications/spring-lock-washers/)

Video: M3 Spring Lock Washers Dimensions

(https://www.youtube.com/watch?v=Yy_ke3Fz0o8)

► Watch video: https://www.youtube.com/watch?v=Yy_ke3Fz0o8 (https://www.youtube.com/watch?v=Yy_ke3Fz0o8)

Third-party video, selected automatically for this topic. It is not produced by Engineering Hardware and is not a specification source — use the tables on this page for dimensional data.

Inside the plant

Manufactured in our own plant

This part is cold-formed, threaded, heat-treated and finished in-house. The stages below are where its class and finish are actually decided.

01

Cold heading

Wire rod is drawn to size and cold-formed into blanks. Forming rather than cutting keeps the grain flow continuous around the head, which is where a bolt is most likely to fail.

Head dimensions and under-head radius checked at set-up and per shift.

02

Thread rolling

Threads are rolled between hardened dies rather than cut. Rolled threads are stronger in fatigue than cut threads and hold pitch and flank angle far more consistently across a batch.

Go / no-go ring gauges to ISO 965 tolerance class 6g.

03

Heat treatment

Quench-and-temper brings carbon and alloy steel to the property class ordered — 8.8, 10.9 or 12.9 — with the furnace charge tracked so a finished lot can be traced back to it.

Core hardness and tensile tested per lot to ISO 898-1.

04

Surface treatment

Zinc, zinc-nickel, hot-dip galvanizing, black oxide, phosphate and Dacromet, selected against the service environment rather than against the price list.

Coating thickness and neutral salt spray hours to ISO 9227.

Frequently Asked Questions

Is M3 Spring Lock Washers suitable for electronics and small mechanisms?

M3 Spring Lock Washers is in the micro range and is widely used in electronics, instrument enclosures and small precision mechanisms. Watch the over-torque margin — micro joints strip easily.

What's the typical proof load behavior of M3 class 8.8?

Micro-thread joints are sensitive to plastic deformation in the first turn under load — use a torque-limiting driver and check the bearing surface deformation on softer mating materials.

Which washer dimensions matter most for M3?

For a flat washer, the outside diameter (the bearing surface) and the thickness control how the load is spread under the head and how much elastic preload is preserved. The inside diameter must clear the bolt body but not be so large that the head bears mostly on the washer's outer rim.

What is the coarse-thread pitch of M3 for Spring Lock Washers?

For M3 the standard coarse pitch is 0.5 mm — this is the value used for Spring Lock Washers.

How do I request a quotation?

Use the technical drawing on this page to pick the exact configuration, then submit it with the quote form. We respond within one business day.

Related Pages

View the full Spring Lock Washers page (https://engineeringhardware.com/fastener/spring-lock-washers/)

More Spring Lock Washers Guides

- **M2 Spring Lock Washers (https://engineeringhardware.com/guide/size/m2-spring-lock-washers/)**
- **M2.5 Spring Lock Washers (https://engineeringhardware.com/guide/size/m2-5-spring-lock-washers/)**
- **M3.5 Spring Lock Washers (https://engineeringhardware.com/guide/size/m3-5-spring-lock-washers/)**
- **M4 Spring Lock Washers (https://engineeringhardware.com/guide/size/m4-spring-lock-washers/)**
- **M5 Spring Lock Washers (https://engineeringhardware.com/guide/size/m5-spring-lock-washers/)**
- **M6 Spring Lock Washers (https://engineeringhardware.com/guide/size/m6-spring-lock-washers/)**
- **M7 Spring Lock Washers (https://engineeringhardware.com/guide/size/m7-spring-lock-washers/)**
- **M8 Spring Lock Washers (https://engineeringhardware.com/guide/size/m8-spring-lock-washers/)**