



# WASHERS AND NUTS

**DIN 125**  
Washers  
PA, PP, PVDF




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**DIN 433**  
Washers  
PA



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**DIN 9021**  
Washers  
PA



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**DIN 125**  
Washers  
Steel, stainless steel



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**DIN 9021**  
Washers  
Steel, Stainless steel



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**E003**  
Washers without DIN  
PA, PVC, PC, PEEK



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**E024**  
Anti-loss washers  
PA



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**E011**  
Quick-locking rings  
POM



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**E011**  
Centre fixing ring  
POM



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**E011**  
Retaining rings  
POM



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**E015**  
Captive washers  
LDPE



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**E016**  
Screw retaining washers  
PA



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**E344**  
Retaining rings  
Steel  
Stainless steel



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**E005**  
Spacers / bushings  
PA  
POM



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**E102**  
Saddle washers  
PA



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**E05**  
Spacers  
PA



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**E002**  
Spacers / bushings  
PA-GV



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**E311**  
Spacers / bushings  
Brass



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**E022**  
Spacers with anti-loss protection  
PA



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**E023**  
Spacers with sinking  
PA-GV



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**E083, E018, E312**  
Insulating cases  
PA, PA-GV



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# WASHERS AND NUTS

**E007**  
Metric finishing washers  
PA



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**DIN 6319-A4**  
Spherical washers  
Stainless Steel



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**DIN 6319**  
Spherical washers  
Steel



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**DIN 6319-NI**  
Spherical washers  
Stainless Steel



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**DIN 6319-A4**  
Spherical washers  
Stainless Steel



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**GN 6319.1**  
Spherical washers  
Steel



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**GN 6319.1-NI**  
Spherical washers  
Stainless Steel



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**GN 350.3**  
Spherical levelling washers  
Steel



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**GN 350.3-NI**  
Spherical levelling washers  
Stainless Steel



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**GN 6341**  
Washers  
Steel



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**GN 6341-NI**  
Washers  
Stainless Steel



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**GN 6339**  
Heavy duty washers  
Low type, High type



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**GN 183**  
C-Washers



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**DIN 6371**  
Captive C-Washers




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**GN 184**  
Countersunk washers




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**GN 184.5**  
Stainless Steel-  
Countersunk washers



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**GN 185**  
Stainless Steel-  
Bezel discs



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**DIN 6340**  
Washers



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**GN 338**  
Discs with cover cap  
(Component feet)



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**GN 6342**  
Washers  
Steel, with axial friction bearing



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**GN 6342-NI**  
Washers  
Stainless Steel, with axial friction bearing




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# WASHERS AND NUTS

**CMC**  
Torque amplifier collar  
Technopolymer



**INOX**  
STAINLESS STEEL

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**GN 6343**  
Washers / Levelling disks



**INOX**  
STAINLESS STEEL

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**DIN 508**  
T-Nuts  
Steel



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**DIN 508-NI**  
T-Nuts  
Stainless Steel



**INOX**  
STAINLESS STEEL

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**GN 505**  
T-Nuts  
Accessory for profile systems



**INOX**  
STAINLESS STEEL

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**GN 505.4**  
T-Slot bolts  
Accessory for profile systems



**INOX**  
STAINLESS STEEL

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**GN 505.5**  
Stainless Steel-T-Slot bolts  
Accessory for profile systems



**INOX**  
STAINLESS STEEL

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**GN 506**  
T-Nuts  
Accessory for profile systems, with guide step



**INOX**  
STAINLESS STEEL

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**GN 506.1**  
T-Nuts  
Steel  
Accessory for profile systems, with guide step



**INOX**  
STAINLESS STEEL

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**GN 506.1-NI**  
T-Nuts  
Stainless Steel  
Accessory for profile systems, with guide step



**INOX**  
STAINLESS STEEL

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**GN 506.2**  
T-Nuts  
Accessory for profile systems, with spring steel sheet



**INOX**  
STAINLESS STEEL

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**GN 507**  
T-Nuts  
Accessory for profile systems



**INOX**  
STAINLESS STEEL

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**GN 508.1**  
Rhombus T-Nuts




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**DIN 787**  
T-Slot bolts



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**GN 230**  
Shallow T-Nuts



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**GN 508.2**  
T-Nuts  
with slip proof



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**DIN 6330**  
Hexagon nuts  
Steel



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**DIN 6330-NI**  
Hexagon nuts  
Stainless Steel



**INOX**  
STAINLESS STEEL

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**DIN 6331**  
Hexagon nuts  
with collar



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**DIN 1804**  
Slotted locknuts  
Steel



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**DIN 1804-WNI**  
Slotted locknuts  
Stainless Steel




**INOX**  
STAINLESS STEEL

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# WASHERS AND NUTS

**GN 1804.1**  
Slotted locknuts  
self-locking, with polyamide insert




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**GN 1804.2**  
Slotted locknuts  
with thread locking



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**DIN 1810**  
C-Spanner



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**DIN 6885**  
Feather keys  
Steel



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**DIN 6885-NI**  
Feather keys  
Stainless Steel



**INOX**  
STAINLESS STEEL

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**GN 965**  
Assembly sets for profile systems 30 / 40  
for slot width 6 / 8, assembly with T-Nuts GN 506



**INOX**  
STAINLESS STEEL

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**GN 967**  
Angle pieces / Shackles  
for profile systems



**INOX**  
STAINLESS STEEL

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**GN 970**  
Installation brackets  
equal / unequal sides



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**GN 968**  
Assembly sets for profile systems 30 / 40 / 45  
for slot width 8 / 10, assembly with T-Nuts GN 505



**INOX**  
STAINLESS STEEL

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**DIRAK 6-045**  
Cage Nuts



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**DIRAK 6-046**  
Grounding Cage Nuts




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**DIRAK 6-045.01**  
Cage Nuts



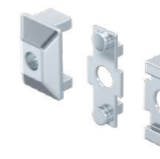
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**DIRAK 6-045.02**  
Cage Nuts




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**DIRAK 4-248**  
Tenon Blocks and Anti-twist Protection




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**DIRAK 6-042**  
Nut plates



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**DIN 1587**  
Hexagon cap nuts  
PA



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**DIN 315**  
Wing nuts  
PA



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**DIN 934**  
Hexagon nuts  
PA, PP, PVDF



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**DIN 1587**  
Hexagon cap nuts  
Steel  
Stainless steel



**INOX**  
STAINLESS STEEL

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**DIN 6923**  
Hexagon nuts  
Steel



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**DIN 934**  
Hexagon nuts  
Steel  
Stainless steel



**INOX**  
STAINLESS STEEL

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# WASHERS AND NUTS

**DIN 985**  
Hexagon nuts  
Steel  
Stainless steel



**INOX**  
STAINLESS STEEL

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**E082**  
Binding screws  
PA




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**E284, E271**  
Hexagon nuts  
PEEK, PC



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**E088**  
Hexagon nuts with flange  
PA




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**E053, E453**  
Wing nuts  
PA  
Steel



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**E262**  
Grommet nuts  
PA




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**E081**  
Book screw nuts  
PA



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**E253**  
ISO Box nuts  
EPDM



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**E144**  
Kwik Nut Fastener  
PA



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**E048, E068**  
Wing nuts  
PA



page E-299A

**E141, E058, E076**  
Knurled nuts  
PA



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**E055**  
Dome Nuts  
PA



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**E05M**  
Locking Dome nuts  
PA



page E-299B

**Z25**  
Quick Acting Star Knobs  
PA, Steel



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**DIN 6336**  
Star Knobs  
PA, Steel



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**Z26**  
Star Knobs with Projecting Bush  
PA, Steel/Stainless steel



**INOX**  
STAINLESS STEEL

page Z-26

**M300**  
Star Knobs  
Stainless Steel



**INOX**  
STAINLESS STEEL


page Z-27

**Z29**  
Star knobs, closed shape  
PA, Steel



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**DIN 6336**  
Star Knobs, threaded through-bore  
PA, Steel



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**Z68, Z69**  
Star knobs  
PA, Steel



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**DIN 6335**  
Cross knobs  
Duroplast



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# WASHERS AND NUTS

**Z23**  
Cross knobs with Projecting Steel Bush  
PA, Steel



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**DIN 319**  
Ball knobs  
Duroplast



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**Z33, Z67**  
Knurl nuts  
PA, Duroplast



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**DIN 6306**  
Knurl nuts  
Steel  
Stainless steel



**INOX**  
STAINLESS STEEL

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**DIN 467**  
Flat Knurl Nuts  
Steel  
Stainless steel



**INOX**  
STAINLESS STEEL

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**DIN 466**  
Elevated Knurl Nuts  
Steel  
Stainless steel



**INOX**  
STAINLESS STEEL

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**Z57**  
Knurl Nuts with threaded through-bore  
PA, brass/stainless steel



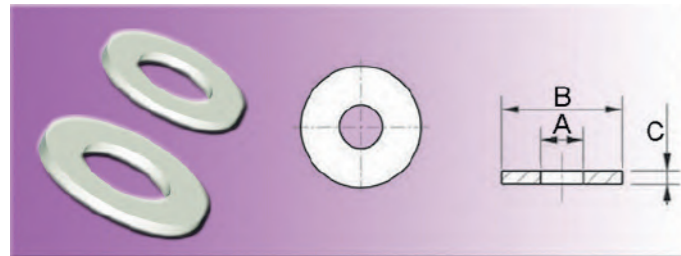
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**Z27**  
Knurled nuts  
PA



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Washers according to DIN plastic | DIN 125 | PA

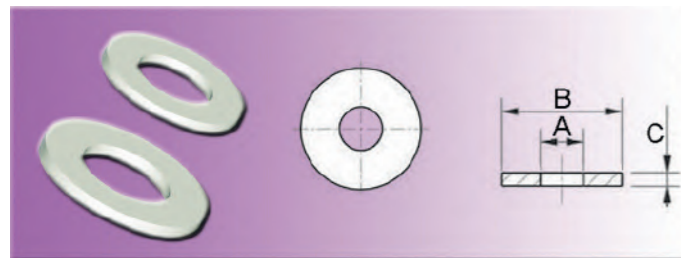


Flat washers ~DIN 125 (~DIN EN ISO 7089)

Material: PA (TPG on request)  
Colour: natural (black on request)

| Part no. | A   | B   | C   | Part no. | A    | B    | C   | Part no. | A    | B    | C   |
|----------|-----|-----|-----|----------|------|------|-----|----------|------|------|-----|
| 0030106  | 1,7 | 4,0 | 0,3 | 0030503  | 5,3  | 10,0 | 1,0 | 0032000  | 21,0 | 37,0 | 3,0 |
| 0030107  | 1,8 | 4,5 | 0,3 | 0030600  | 6,4  | 12,0 | 1,6 | 0032202  | 23,0 | 39,0 | 3,0 |
| 0030200  | 2,2 | 5,0 | 0,3 | 0030700  | 7,4  | 14,0 | 1,6 | 0032505  | 25,0 | 44,0 | 4,0 |
| 0030201  | 2,5 | 6,0 | 0,5 | 0030803  | 8,4  | 16,0 | 1,6 | 0032700  | 28,0 | 50,0 | 4,0 |
| 0030249  | 2,7 | 6,0 | 0,5 | 0031002  | 10,5 | 20,0 | 2,0 | 0033000  | 31,0 | 56,0 | 4,0 |
| 0030252  | 2,8 | 7,0 | 0,5 | 0031200  | 13,0 | 24,0 | 2,5 | 0033300  | 34,0 | 60,0 | 5,0 |
| 0030305  | 3,2 | 7,0 | 0,5 | 0031400  | 15,0 | 28,0 | 2,5 | 0033600  | 37,0 | 66,0 | 5,0 |
| 0030307  | 3,7 | 8,0 | 0,5 | 0031600  | 17,0 | 30,0 | 3,0 | 0033900  | 40,0 | 72,0 | 6,0 |
| 0030407  | 4,3 | 9,0 | 0,8 | 0031800  | 19,0 | 34,0 | 3,0 |          |      |      |     |

Washers according to DIN plastic | DIN 125 | PP

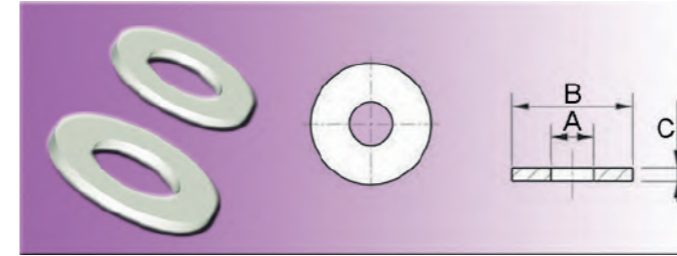


Flat washers ~DIN 125 (~DIN EN ISO 7089)

Material: PP  
Colour: natural

| Part no.  | A   | B  | C   | Part no.  | A   | B  | C   | Part no.  | A    | B  | C   |
|-----------|-----|----|-----|-----------|-----|----|-----|-----------|------|----|-----|
| 0030407PP | 4,3 | 9  | 0,8 | 0030600PP | 6,4 | 12 | 1,6 | 0031002PP | 10,5 | 20 | 2,0 |
| 0030503PP | 5,3 | 10 | 1,0 | 0030803PP | 8,4 | 16 | 1,6 | 0031200PP | 13,0 | 24 | 2,5 |

Washers according to DIN plastic | DIN 125 | PVDF

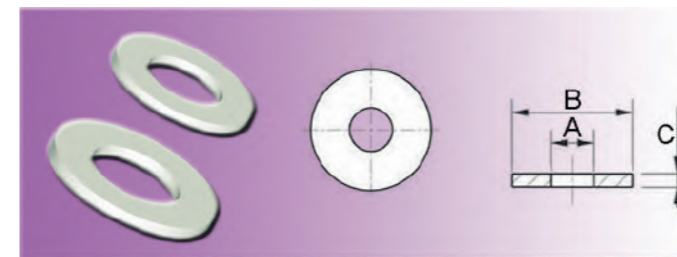


Flat washers ~DIN 125 (~DIN EN ISO 7089)

Material: PVDF  
Colour: natural

| Part no.    | A   | B  | C   | Part no.    | A    | B  | C   | Part no.    | A    | B  | C   |
|-------------|-----|----|-----|-------------|------|----|-----|-------------|------|----|-----|
| 0030407PVDF | 4,3 | 9  | 0,8 | 0030803PVDF | 8,4  | 16 | 1,6 | 0031600PVDF | 17,0 | 30 | 3,0 |
| 0030503PVDF | 5,3 | 10 | 1,0 | 0031002PVDF | 10,5 | 20 | 2,0 |             |      |    |     |
| 0030600PVDF | 6,4 | 12 | 1,6 | 0031200PVDF | 13,0 | 24 | 2,5 |             |      |    |     |

Washers according to DIN plastic | DIN 433 | PA



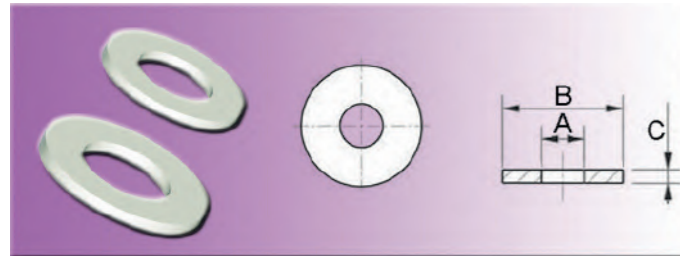
Flat washers ~DIN 433 (~DIN EN ISO 7092)

\* = version with anti-loss protection

Material: PA  
Colour: natural

| Part no. | A   | B   | C   | Part no. | A                    | B    | C   | Part no. | A    | B    | C   |
|----------|-----|-----|-----|----------|----------------------|------|-----|----------|------|------|-----|
| 0410251  | 2,7 | 5,0 | 0,5 | 0410400* | 4,3                  | 8,0  | 1,0 | 0411000  | 10,5 | 18,0 | 1,6 |
| 0410250* | 2,7 | 5,0 | 1,0 | 0410501  | 5,3                  | 9,5  | 1,0 | 0411200  | 13,0 | 20,0 | 2,0 |
| 0410301  | 3,2 | 6,0 | 0,5 | 0410600  | 6,4                  | 11,0 | 1,6 | 0411400  | 15,0 | 24,0 | 2,5 |
| 0410300* | 3,2 | 6,0 | 1,0 | 0410800* | 8,4                  | 15,0 | 1,5 | 0411600  | 17,0 | 28,0 | 2,5 |
| 0410302  | 3,7 | 7,0 | 0,5 | 0410801  | 8,8                  | 15,0 | 1,6 | 0411800  | 19,0 | 30,0 | 2,5 |
| 0410401  | 4,3 | 8,0 | 0,5 | 0411001  | no longer available! |      |     | 0412000  | 21,0 | 34,0 | 3,0 |

Washers according to DIN plastic | DIN 9021 | PA



Flat washers ~DIN 9021 (~DIN 34816)

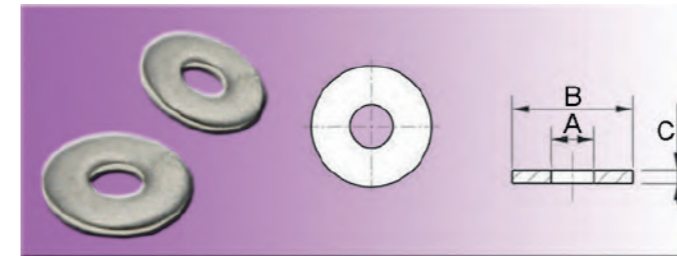
Material: PA (TPG on request)  
Colour: natural

| Part no.     | A   | B    | C   |
|--------------|-----|------|-----|
| 0320200      | 2,7 | 8,0  | 0,8 |
| 032030100001 | 3,2 | 9,0  | 0,8 |
| 0320302      | 3,7 | 11,0 | 0,8 |
| 032040000001 | 4,3 | 12,0 | 1,5 |
| 032040100001 | 4,3 | 12,0 | 1,0 |

| Part no.     | A    | B    | C   |
|--------------|------|------|-----|
| 032050000001 | 5,3  | 15,0 | 1,2 |
| 032060000001 | 6,4  | 18,0 | 1,6 |
| 0320700      | 7,4  | 22,0 | 2,0 |
| 0320802      | 8,4  | 24,0 | 2,0 |
| 0321001      | 10,5 | 30,0 | 2,5 |

| Part no. | A    | B    | C   |
|----------|------|------|-----|
| 0321202  | 13,0 | 37,0 | 3,0 |
| 0321400  | 15,0 | 44,0 | 3,0 |
| 0321600  | 17,0 | 50,0 | 3,0 |
| 0321800  | 20,0 | 56,0 | 4,0 |
| 0322000  | 22,0 | 60,0 | 4,0 |

Washers according to DIN metal | DIN 9021



Flat washers ~DIN 9021 (~DIN EN ISO 7093)  
Washer's outer diameter = 3x screw diameter

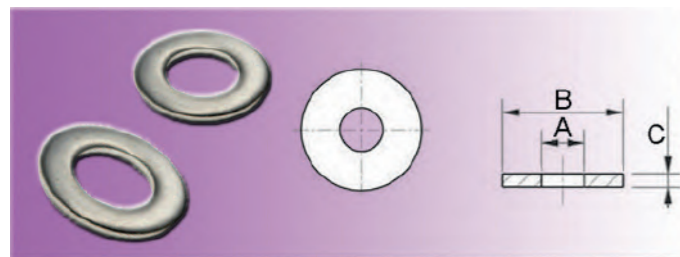
Material:  
zinc-plated steel (final digits 52)  
stainless steel (final digits 53)

| Part no.  | A   | B  | C   |
|-----------|-----|----|-----|
| 505030052 | 3,2 | 9  | 0,8 |
| 505030053 | 3,2 | 9  | 0,8 |
| 505040052 | 4,3 | 12 | 1,0 |
| 505040053 | 4,3 | 12 | 1,0 |

| Part no.  | A   | B  | C   |
|-----------|-----|----|-----|
| 505050052 | 5,3 | 15 | 1,2 |
| 505050053 | 5,3 | 15 | 1,2 |
| 505060052 | 6,4 | 18 | 1,6 |
| 505060053 | 6,4 | 18 | 1,6 |

| Part no.  | A    | B  | C   |
|-----------|------|----|-----|
| 505080052 | 8,4  | 24 | 2,0 |
| 505080053 | 8,4  | 24 | 2,0 |
| 505100053 | 10,5 | 30 | 2,5 |

Washers according to DIN metal | DIN 125



Flat washers ~DIN 125 (~DIN EN ISO 7089) form A

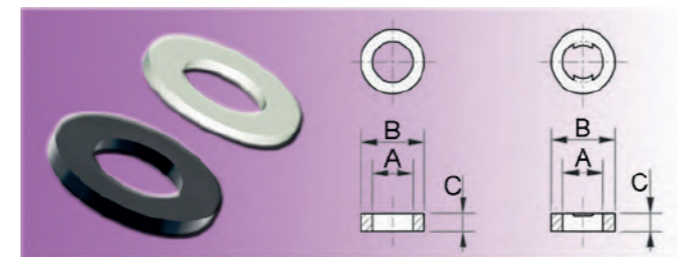
Material:  
zinc-plated steel (final digits 52)  
stainless steel (final digits 53)

| Part no.  | A   | B   | C   |
|-----------|-----|-----|-----|
| 504010052 | 2,2 | 5,0 | 0,3 |
| 504010053 | 2,2 | 5,0 | 0,3 |
| 504020052 | 2,7 | 6,5 | 0,5 |
| 504020053 | 2,7 | 6,5 | 0,5 |
| 504030052 | 3,2 | 7,0 | 0,5 |

| Part no.  | A   | B    | C   |
|-----------|-----|------|-----|
| 504030053 | 3,2 | 7,0  | 0,5 |
| 504040052 | 4,3 | 9,0  | 0,8 |
| 504040053 | 4,3 | 9,0  | 0,8 |
| 504050052 | 5,3 | 10,0 | 1,0 |
| 504050053 | 5,3 | 10,0 | 1,0 |

| Part no.  | A   | B    | C   |
|-----------|-----|------|-----|
| 504060052 | 6,4 | 12,5 | 1,6 |
| 504060053 | 6,4 | 12,0 | 1,6 |
| 504080052 | 8,4 | 17,0 | 1,6 |
| 504080053 | 8,4 | 17,0 | 1,6 |

Washers without DIN plastic | PA | PVC



\* = version with anti-loss protection  
without final digits = PA 6, natural  
final digits 000 01 = PA 6.6, natural  
final digits 599 = PA 6, black  
final digits 114 07 = plasticised PVC, black

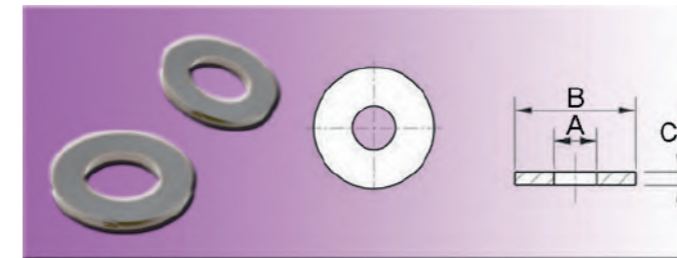
| Part no.      | A   | B    | C   |
|---------------|-----|------|-----|
| 0030202       | 2,5 | 8,0  | 1,0 |
| 0310250*      | 2,7 | 5,0  | 1,5 |
| 0030251       | 2,7 | 6,5  | 0,5 |
| 0030250       | 2,7 | 6,8  | 1,1 |
| 0010301599    | 3,0 | 9,0  | 0,8 |
| 0310301       | 3,2 | 5,5  | 2,2 |
| 0310300*      | 3,2 | 5,5  | 2,2 |
| 0030306       | 3,2 | 7,0  | 1,0 |
| 0030300       | 3,2 | 7,0  | 1,4 |
| 0030308*      | 3,2 | 7,0  | 1,4 |
| 0030301       | 3,2 | 8,0  | 1,5 |
| 032030000001* | 3,2 | 9,0  | 1,5 |
| 032030011407* | 3,2 | 9,0  | 1,5 |
| 033030000001* | 3,2 | 15,0 | 1,5 |
| 033030011407* | 3,2 | 15,0 | 1,5 |
| 0030304       | 3,4 | 5,7  | 0,6 |
| 0030303       | 3,5 | 8,0  | 1,0 |
| 0030401       | 4,1 | 10,0 | 1,0 |

| Part no.      | A                    | B    | C   |
|---------------|----------------------|------|-----|
| 0010401599    | 4,2                  | 9,0  | 0,7 |
| 0010405599    | 4,2                  | 9,0  | 1,2 |
| 0010404599    | 4,2                  | 12,0 | 2,0 |
| 0010402599    | 4,2                  | 16,0 | 2,0 |
| 0310401       | 4,3                  | 7,0  | 2,3 |
| 0310400*      | 4,3                  | 7,0  | 2,3 |
| 0030408       | no longer available! |      |     |
| 0030400*      | 4,3                  | 9,0  | 1,4 |
| 0010403599    | 4,3                  | 9,0  | 2,5 |
| 032040011407* | 4,3                  | 12,0 | 1,5 |
| 033040000001  | 4,3                  | 18,0 | 2,0 |
| 033040011407* | 4,3                  | 18,0 | 2,0 |
| 0030404       | 4,9                  | 9,5  | 1,4 |
| 0030402       | 4,9                  | 12,7 | 1,4 |
| 0030405       | 4,9                  | 12,7 | 3,2 |
| 0030403       | 4,9                  | 15,9 | 2,5 |
| 0030406       | 4,9                  | 22,2 | 1,0 |
| 0010502599    | 5,1                  | 12,0 | 1,8 |

| Part no.      | A                    | B    | C   |
|---------------|----------------------|------|-----|
| 0010505599    | 5,2                  | 12,0 | 5,0 |
| 0010503599    | 5,2                  | 20,0 | 3,0 |
| 0010504599    | 5,2                  | 20,0 | 4,0 |
| 0310501       | 5,3                  | 8,5  | 2,8 |
| 0310500*      | 5,3                  | 8,5  | 2,8 |
| 0030500*      | 5,3                  | 11,5 | 1,4 |
| 032050011407* | 5,3                  | 15,0 | 1,2 |
| 033050000001  | 5,3                  | 25,0 | 2,5 |
| 033050011407  | 5,3                  | 25,0 | 2,5 |
| 0030504       | 5,4                  | 12,0 | 1,5 |
| 0010501599    | 5,5                  | 8,0  | 1,0 |
| 0010601599    | 5,5                  | 8,0  | 1,4 |
| 0010602599    | 5,8                  | 8,0  | 1,5 |
| 0310600*      | 6,4                  | 10,0 | 2,5 |
| 0310601       | no longer available! |      |     |
| 032060100001  | 6,4                  | 18,0 | 2,0 |
| 032060011407* | 6,4                  | 18,0 | 2,0 |
| 033060000001  | 6,4                  | 30,0 | 3,0 |

Washers without DIN plastic | PEEK

| Part no.      | A   | B    | C   | Part no.      | A                    | B    | C   | Part no.   | A    | B    | C   |
|---------------|-----|------|-----|---------------|----------------------|------|-----|------------|------|------|-----|
| 033060011407* | 6,4 | 30,0 | 3,0 | 0011002599    | 9,5                  | 14,0 | 2,0 | 0011304599 | 13,5 | 25,0 | 4,5 |
| 0030601       | 6,5 | 12,0 | 1,5 | 0030813       | 9,6                  | 18,0 | 1,2 | 0011401599 | 14,5 | 20,0 | 0,5 |
| 0030606       | 6,5 | 14,0 | 1,2 | 0011001599    | 9,9                  | 13,0 | 1,0 | 0031403    | 15,2 | 26,0 | 1,4 |
| 0030608       | 6,6 | 14,3 | 1,4 | 0011004599    | 10,2                 | 27,6 | 4,0 | 0031601    | 16,2 | 32,3 | 2,0 |
| 0030812       | 8,1 | 14,0 | 1,0 | 0011000599    | 10,2                 | 13,0 | 0,6 | 0031602    | 17,0 | 28,0 | 2,0 |
| 0310801       | 8,4 | 13,0 | 2,8 | 0031001       | 10,2                 | 17,0 | 2,0 | 0031605    | 17,2 | 26,0 | 1,4 |
| 0310800*      | 8,4 | 13,0 | 2,8 | 0031003       | 10,5                 | 21,0 | 2,0 | 0011802599 | 18,0 | 25,0 | 2,0 |
| 0030801       | 8,4 | 17,0 | 1,6 | 032100000001  | 10,5                 | 30,0 | 3,0 | 0031805    | 19,2 | 34,0 | 1,5 |
| 0030800       | 8,4 | 17,0 | 2,0 | 032100011407* | 10,5                 | 30,0 | 3,0 | 0032003    | 21,2 | 34,0 | 1,5 |
| 0320800000001 | 8,4 | 25,0 | 2,0 | 0031000       | 10,6                 | 21,0 | 2,5 | 0032203    | 22,2 | 34,0 | 1,5 |
| 0320801       | 8,4 | 25,0 | 2,5 | 0011003599    | 10,7                 | 23,0 | 2,9 | 0032204    | 23,2 | 38,0 | 1,7 |
| 032080011407  | 8,4 | 25,0 | 2,5 | 0011101599    | 10,7                 | 23,2 | 1,0 | 0032504    | 25,2 | 40,0 | 1,7 |
| 0330800000001 | 8,4 | 40,0 | 3,0 | 0031007       | 11,2                 | 18,0 | 1,2 | 0032600    | 27,0 | 50,0 | 4,0 |
| 033080011407* | 8,4 | 40,0 | 3,0 | 0031204       | 12,2                 | 24,0 | 1,3 | 0032800    | 29,0 | 50,0 | 4,0 |
| 0030802       | 8,6 | 17,0 | 2,0 | 0321200000001 | no longer available! |      |     | 0033200    | 33,0 | 60,0 | 5,0 |
| 0010903599    | 9,0 | 11,0 | 2,5 | 032120011407* | 13,0                 | 40,0 | 3,0 | 0033800    | 39,0 | 72,0 | 6,0 |
| 0010901599    | 9,0 | 14,0 | 1,0 | 0031205       | 13,2                 | 24,0 | 1,3 | 0034000    | 41,0 | 72,0 | 6,0 |
| 0010902599    | 9,0 | 14,0 | 2,0 | 0011303599    | 13,5                 | 25,0 | 3,0 |            |      |      |     |

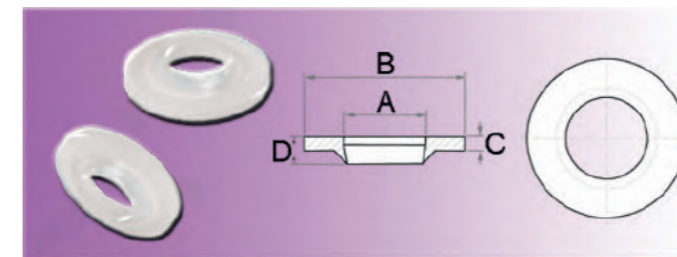


Material: PEEK  
Colour: light brown

- Temperature: max. 180°C
- High-strength and excellent form stability
- High modulus of elasticity and excellent creep resistance
- Resistant to many chemicals
- Flammability rating: UL94 V0
- Further PEEK products: series 280 to series 285 and series 386

| Part no. | A                    | B   | C   | Part no. | A   | B    | C   | Part no. | A    | B    | C   |
|----------|----------------------|-----|-----|----------|-----|------|-----|----------|------|------|-----|
| 2850200  | no longer available! |     |     | 2850500  | 5,3 | 10,0 | 1,0 | 2851000  | 10,5 | 21,0 | 2,0 |
| 2850300  | 3,2                  | 7,0 | 0,5 | 2850600  | 6,4 | 12,5 | 1,6 |          |      |      |     |
| 2850400  | 4,3                  | 9,0 | 0,8 | 2850800  | 8,4 | 17,0 | 1,6 |          |      |      |     |

Retaining washers of plastic | Anti-loss washers

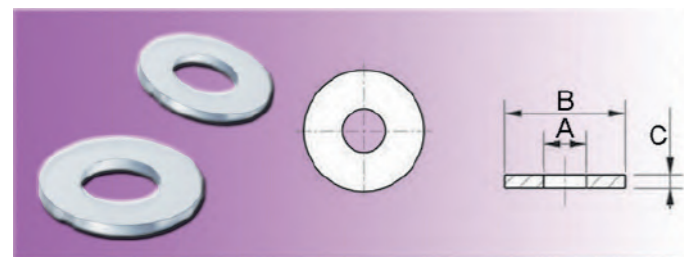


These rings were specially developed to use a screw (even sheet metal screws) as a captive connecting element, to protect surfaces of sensitive instruments, to construct temporary connections without nuts or to attach washers to screws captively before using an automatic screw driver.

Material: polyamide  
Colour: natural

| Part no. | M      | A       | B    | C    | D    | Part no. | M     | A    | B    | C    | D   |
|----------|--------|---------|------|------|------|----------|-------|------|------|------|-----|
| 0240003  | M3,5   | 3,6     | 9,15 | 1,2  | 2,7  | 0240010  | M10   | 10,5 | 15,0 | 2,1  | 4,3 |
| 0240004  | M4/3,8 | 3,9-4,2 | 9,0  | 1,5  | --   | 0240012  | R¼"   | 13,2 | 18,9 | 2,6  | 4,5 |
| 0240005  | M5     | 4,8     | 10,0 | 1,6  | 3,65 | 0240016  | R3/8" | 17,7 | 23,0 | 2,15 | 4,5 |
| 0240006  | M6     | 6,3     | 12,5 | 1,5  | 2,75 | 0240020  | R½"   | 21,5 | 27,6 | 2,1  | 4,2 |
| 0240008  | M8     | 8,25    | 16,2 | 1,65 | 3,5  |          |       |      |      |      |     |

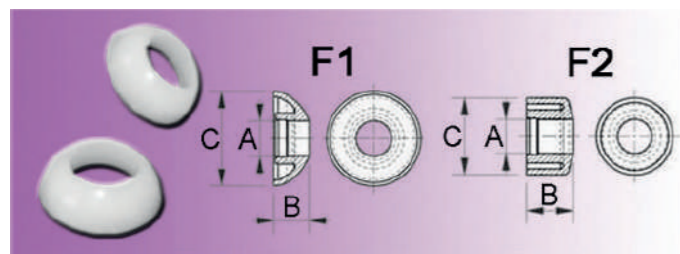
Washers without DIN plastic | PC



Material: PC  
Colour: transparent

| Part no. | A   | B | C   | Part no. | A   | B  | C   | Part no. | A   | B  | C   |
|----------|-----|---|-----|----------|-----|----|-----|----------|-----|----|-----|
| 2680002  | 2,1 | 4 | 0,5 | 2680004  | 4,5 | 10 | 0,8 | 2680008  | 8,5 | 18 | 1,6 |
| 2680026  | 2,7 | 6 | 0,5 | 2680005  | 5,5 | 12 | 0,8 |          |     |    |     |
| 2680003  | 3,3 | 8 | 0,8 | 2680006  | 6,5 | 13 | 1,0 |          |     |    |     |

Retaining washers of plastic | Quick-locking rings



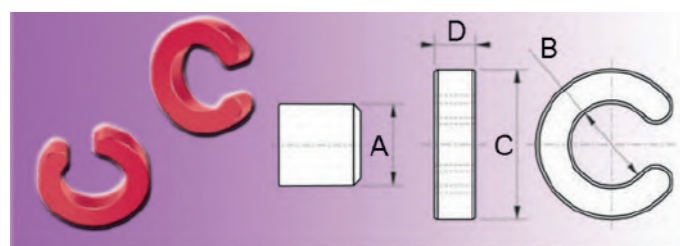
For plane shafts and bolts. Easy to mount. Replace screws and split pins.

Material: POM  
Colour: natural

| Part no. | A | B   | C    | F |
|----------|---|-----|------|---|
| 0110030  | 3 | 5,0 | 12,5 | 1 |
| 0110040  | 4 | 5,5 | 14,5 | 1 |
| 0110050  | 5 | 5,1 | 14,5 | 1 |
| 0110061  | 6 | 8,0 | 13,0 | 2 |
| 0110060  | 6 | 6,0 | 16,0 | 1 |

| Part no. | A  | B   | C    | F |
|----------|----|-----|------|---|
| 0110071  | 7  | 8,0 | 13,0 | 2 |
| 0110080  | 8  | 5,5 | 16,0 | 1 |
| 0110100  | 10 | 7,5 | 21,0 | 1 |
| 0110120  | 12 | 7,5 | 21,0 | 1 |

Retaining washers of plastic | Centre fixing rings



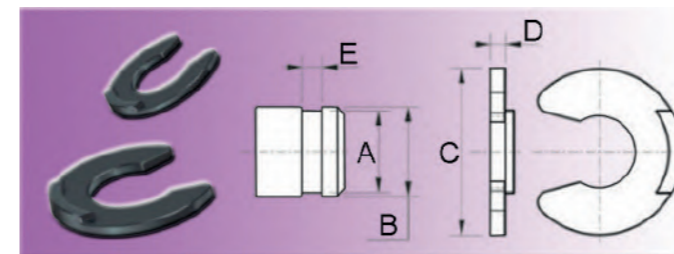
Excellent for retaining lightweight objects e.g. paper rolls, knurls, spools etc.  
Easy to mount and adjust - constant clamping effect.

Material: POM  
Colour: red

| Part no. | A | B   | C    | D   |
|----------|---|-----|------|-----|
| 0111030  | 3 | 2,5 | 6,0  | 2,0 |
| 0111040  | 4 | 3,5 | 7,5  | 2,5 |
| 0111050  | 5 | 4,5 | 9,0  | 2,5 |
| 0111060  | 6 | 5,3 | 11,0 | 3,0 |

| Part no. | A  | B    | C    | D   |
|----------|----|------|------|-----|
| 0111080  | 8  | 7,0  | 13,0 | 3,0 |
| 0111100  | 10 | 9,0  | 16,0 | 3,5 |
| 0111120  | 12 | 11,0 | 19,0 | 4,0 |

Retaining washers of plastic | Retaining rings



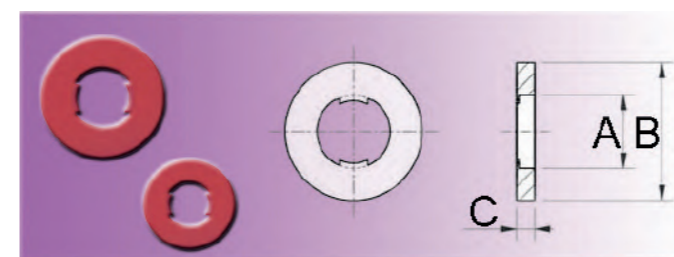
For shafts and bolts with groove. Easy to mount without tools. Resistant to high axial pressure!

Material: POM  
Colour: black

| Part no. | A   | B   | C    | D   | E    |
|----------|-----|-----|------|-----|------|
| 0112023  | 2,3 | 3-4 | 6,0  | 1,0 | 1,05 |
| 0112032  | 3,2 | 4-5 | 7,0  | 1,0 | 1,05 |
| 0112040  | 4,0 | 5-7 | 9,0  | 1,1 | 1,15 |
| 0112050  | 5,0 | 6-8 | 11,0 | 1,1 | 1,15 |

| Part no. | A    | B     | C    | D   | E    |
|----------|------|-------|------|-----|------|
| 0112060  | 6,0  | 7-11  | 14,0 | 1,3 | 1,35 |
| 0112070  | 7,0  | 8-11  | 14,0 | 1,3 | 1,35 |
| 0112090  | 9,0  | 10-14 | 18,5 | 1,4 | 1,5  |
| 0112120  | 12,0 | 13-18 | 23,0 | 1,6 | 1,7  |

Retaining washers of plastic | Captive washers red



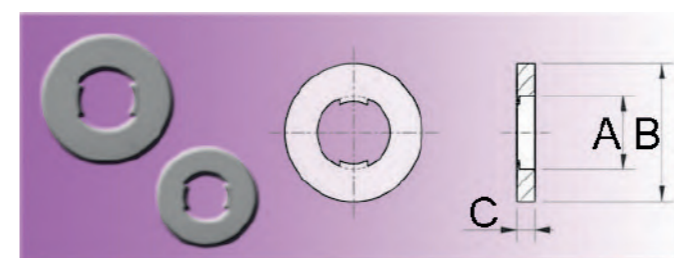
Specially developed for retaining screws and bolts during the assembly.  
Suitable for the pre-assembly of bolts without nuts.

Material: LDPE  
Colour: red

| Part no. | A   | B   | C   | M   | WW    |
|----------|-----|-----|-----|-----|-------|
| 0150025  | 2,7 | 6,5 | 1,1 | 2,5 | 3/32" |
| 0150030  | 3,2 | 7,0 | 1,4 | 3,0 | 1/8"  |
| 0150040  | 4,3 | 9,0 | 1,1 | 4,0 | 5/32" |

| Part no. | A   | B    | C   | M   | WW    |
|----------|-----|------|-----|-----|-------|
| 0150050  | 5,3 | 11,0 | 1,3 | 5,0 | 3/16" |
| 0150060  | 6,4 | 12,0 | 1,6 | 6,0 | 1/4"  |
| 0150080  | 8,4 | 17,0 | 2,0 | 8,0 | 5/16" |

Retaining washers of plastic | Captive washers grey



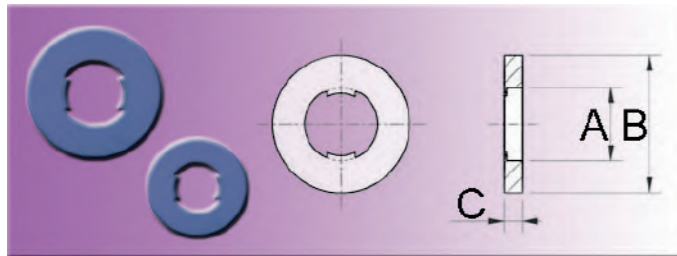
Specially developed for retaining screws and bolts during the assembly.  
Suitable for the pre-assembly of bolts without nuts.

Material: LDPE  
Colour: grey

| Part no. | A   | B   | C   | M   | WW    |
|----------|-----|-----|-----|-----|-------|
| 0151025  | 2,7 | 5,0 | 1,5 | 2,5 | 3/32" |
| 0151030  | 3,2 | 5,5 | 2,1 | 3,0 | 1/8"  |
| 0151040  | 4,3 | 7,0 | 2,2 | 4,0 | 5/32" |

| Part no. | A   | B    | C   | M   | WW    |
|----------|-----|------|-----|-----|-------|
| 0151050  | 5,3 | 8,5  | 2,7 | 5,0 | 3/16" |
| 0151060  | 6,4 | 10,0 | 2,7 | 6,0 | 1/4"  |
| 0151080  | 8,4 | 13,0 | 2,7 | 8,0 | 5/16" |

Retaining washers of plastic | Captive washers blue



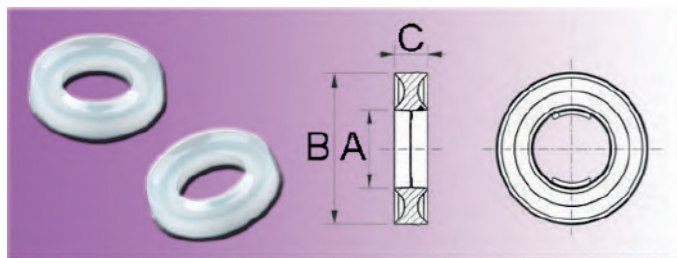
Specially developed for retaining screws and bolts during the assembly.  
Suitable for the pre-assembly of bolts without nuts.

Material: LDPE  
Colour: blue

| Part no. | A   | B  | C   | M   | WW    |
|----------|-----|----|-----|-----|-------|
| 0152025  | 2,7 | 5  | 1,0 | 2,5 | 3/32" |
| 0152030  | 3,2 | 6  | 1,0 | 3,0 | 1/8"  |
| 0152040  | 4,3 | 8  | 1,0 | 4,0 | 5/32" |
| 0152050  | 5,3 | 10 | 1,0 | 5,0 | 3/16" |

| Part no. | A    | B  | C   | M    | WW    |
|----------|------|----|-----|------|-------|
| 0152060  | 6,4  | 11 | 1,5 | 6,0  | ¼"    |
| 0152080  | 8,4  | 15 | 1,5 | 8,0  | 5/16" |
| 0152100  | 10,5 | 18 | 1,5 | 10,0 | 3/8"  |

Retaining washers of plastic | Screw retaining washers - for hexagon socket screws



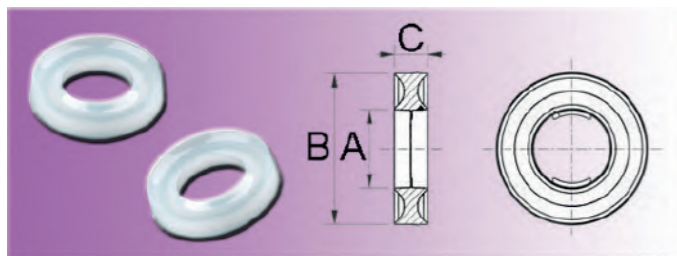
Appropriate for retaining screws and bolts.  
Avoid rust and corrosion damage due to perfect sealing and insulation.

Material: PA  
Colour: natural

| Part no. | A   | B    | C   | M | WW    |
|----------|-----|------|-----|---|-------|
| 0161040  | 4,2 | 8,0  | 2,5 | 4 | 5/32" |
| 0161050  | 5,2 | 10,0 | 2,8 | 5 | 3/16" |
| 0161060  | 6,2 | 10,7 | 3,0 | 6 | -     |
| 0161080  | 8,2 | 14,0 | 3,7 | 8 | 5/16" |

| Part no. | A                           | B    | C   | M  | WW    |
|----------|-----------------------------|------|-----|----|-------|
| 0161100  | 10,2                        | 16,0 | 4,2 | 10 | 3/8"  |
| 0161120  | 12,2                        | 20,0 | 5,0 | 12 | 7/16" |
| 0161140  | <i>NO LONGER AVAILABLE!</i> |      |     |    |       |
| 0161160  | 16,2                        | 25,0 | 6,0 | 16 | 5/8"  |

Retaining washers of plastic | Screw retaining washers - for hexagon head screws



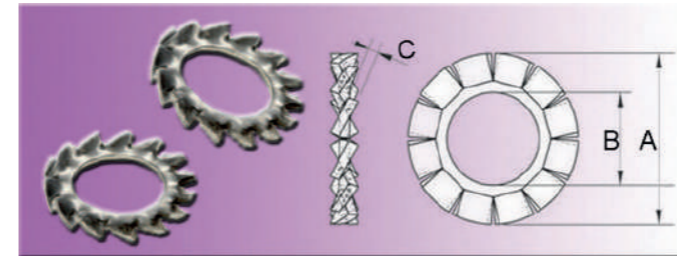
Appropriate for retaining screws and bolts.  
Avoid rust and corrosion damage due to perfect sealing and insulation.

Material: PA  
Colour: natural

| Part no. | A    | B    | C   | M    | WW    |
|----------|------|------|-----|------|-------|
| 0160020  | 2,1  | 5,0  | 2,0 | 2,0  | 5/64" |
| 0160025  | 2,6  | 6,0  | 2,2 | 2,5  | 3/32" |
| 0160030  | 3,1  | 8,0  | 2,5 | 3,0  | 1/8"  |
| 0160040  | 4,2  | 10,0 | 2,8 | 4,0  | 5/32" |
| 0160120  | 12,2 | 24,0 | 5,2 | 12,0 | 7/16" |
| 0160140  | 14,2 | 26,0 | 5,6 | 14,0 | -     |

| Part no. | A    | B    | C   | M    | WW    |
|----------|------|------|-----|------|-------|
| 0160050  | 5,2  | 10,7 | 3,0 | 5,0  | 3/16" |
| 0160060  | 6,2  | 12,7 | 3,8 | 6,0  | -     |
| 0160080  | 8,2  | 16,2 | 4,2 | 8,0  | 5/16" |
| 0160100  | 10,2 | 20,0 | 5,0 | 10,0 | 3/8"  |
| 0160160  | 16,2 | 30,0 | 5,9 | 16,0 | 5/8"  |
| 0160200  | 20,3 | 36,0 | 6,8 | 20,0 | ¾"    |

Retaining washers of metal | Retaining rings



Locking washers - metal  
Developed for securing screws, bolts and nuts

Material:  
machining steel (final digits 52)  
stainless steel (final digits 53)

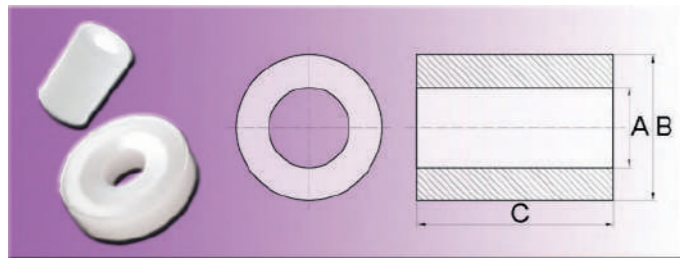
| Part no.  | A   | B   | C   |
|-----------|-----|-----|-----|
| 344020053 | 4,5 | 2,3 | 0,3 |
| 344025053 | 5,0 | 2,8 | 0,4 |
| 344030052 | 6,0 | 3,1 | 0,4 |
| 344030053 | 6,0 | 3,1 | 0,4 |

| Part no.  | A   | B   | C   |
|-----------|-----|-----|-----|
| 344040052 | 8,0 | 4,1 | 0,5 |
| 344040053 | 8,0 | 4,1 | 0,5 |
| 344050052 | 9,2 | 5,1 | 0,6 |
| 344050053 | 9,2 | 5,1 | 0,6 |

| Part no.  | A    | B   | C   |
|-----------|------|-----|-----|
| 344060052 | 11,0 | 6,1 | 0,7 |
| 344060053 | 11,0 | 6,1 | 0,7 |
| 344080052 | 14,0 | 8,2 | 0,8 |
| 344080053 | 14,0 | 8,2 | 0,8 |



Spacers | bushings | PA



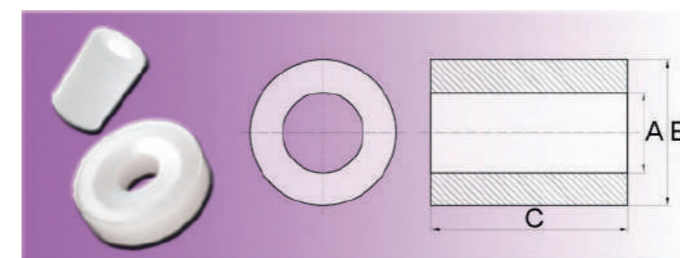
Material: PA  
Colour: natural

Further types on written request.

| Part no. | A   | B | C    | Part no. | A   | B | C    | Part no. | A   | B  | C    |
|----------|-----|---|------|----------|-----|---|------|----------|-----|----|------|
| 0052000  | 2,6 | 4 | 2,0  | 0053242  | 3,2 | 6 | 12,0 | 0054280  | 4,2 | 8  | 10,0 |
| 0052030  | 2,6 | 4 | 3,0  | 0053260  | 3,2 | 6 | 15,0 | 0054292  | 4,3 | 8  | 12,0 |
| 0052060  | 2,6 | 4 | 5,0  | 0053278  | 3,2 | 6 | 18,0 | 0054310  | 4,2 | 8  | 15,0 |
| 0052090  | 2,6 | 4 | 7,5  | 0053290  | 3,2 | 6 | 20,0 | 0054328  | 4,3 | 8  | 18,0 |
| 0052120  | 2,6 | 4 | 10,0 | 0053320  | 3,2 | 6 | 25,0 | 0054340  | 4,3 | 8  | 20,0 |
| 0052150  | 2,6 | 4 | 15,0 | 0053350  | 3,1 | 6 | 30,0 | 0054370  | 4,2 | 8  | 25,0 |
| 0052180  | 2,6 | 4 | 20,0 | 0053480  | 3,2 | 8 | 3,0  | 0054400  | 4,2 | 8  | 30,0 |
| 0052210  | 2,6 | 4 | 25,0 | 0053510  | 3,2 | 8 | 5,0  | 0054410  | 4,2 | 8  | 35,0 |
| 0052240  | 2,6 | 4 | 30,0 | 0053540  | 3,2 | 8 | 7,5  | 0054420  | 4,2 | 8  | 40,0 |
| 0052370  | 2,6 | 5 | 2,0  | 0053570  | 3,2 | 8 | 10,0 | 0054530  | 5,3 | 10 | 3,0  |
| 0052400  | 2,6 | 5 | 3,0  | 0053600  | 3,2 | 8 | 15,0 | 0054545  | 5,3 | 10 | 4,0  |
| 0052430  | 2,6 | 5 | 5,0  | 0053630  | 3,2 | 8 | 20,0 | 0054560  | 5,3 | 10 | 5,0  |
| 0052520  | 2,6 | 5 | 15,0 | 0053660  | 3,2 | 8 | 25,0 | 0054590  | 5,3 | 10 | 7,5  |
| 0052550  | 2,6 | 5 | 20,0 | 0053690  | 3,2 | 8 | 30,0 | 0054596  | 5,3 | 10 | 8,0  |
| 0052580  | 2,6 | 5 | 25,0 | 0053820  | 3,6 | 6 | 2,0  | 0054620  | 5,3 | 10 | 10,0 |
| 0052610  | 2,6 | 5 | 30,0 | 0053850  | 3,6 | 6 | 3,0  | 0054632  | 5,3 | 10 | 12,0 |
| 0052740  | 3,2 | 5 | 2,0  | 0053865  | 3,6 | 6 | 4,0  | 0054650  | 5,3 | 10 | 15,0 |
| 0052770  | 3,2 | 5 | 3,0  | 0053880  | 3,6 | 6 | 5,0  | 0054668  | 5,3 | 10 | 18,0 |
| 0052800  | 3,2 | 5 | 5,0  | 0053910  | 3,6 | 6 | 7,5  | 0054680  | 5,3 | 10 | 20,0 |
| 0052830  | 3,1 | 5 | 7,5  | 0053916  | 3,6 | 6 | 8,0  | 0054710  | 5,3 | 10 | 25,0 |
| 0052860  | 3,2 | 5 | 10,0 | 0053940  | 3,6 | 6 | 10,0 | 0054740  | 5,3 | 10 | 30,0 |
| 0052890  | 3,2 | 5 | 15,0 | 0053952  | 3,6 | 6 | 12,0 | 0054870  | 6,4 | 10 | 3,0  |
| 0052920  | 3,2 | 5 | 20,0 | 0053970  | 3,6 | 6 | 15,0 | 0054900  | 6,4 | 10 | 5,0  |
| 0052950  | 3,2 | 5 | 25,0 | 0053988  | 3,6 | 6 | 18,0 | 0054930  | 6,4 | 10 | 7,5  |
| 0052980  | 3,2 | 5 | 30,0 | 0054000  | 3,6 | 6 | 20,0 | 0054960  | 6,4 | 10 | 10,0 |
| 0053110  | 3,2 | 6 | 2,0  | 0054030  | 3,6 | 6 | 25,0 | 0054990  | 6,4 | 10 | 15,0 |
| 0053140  | 3,2 | 6 | 3,0  | 0054060  | 3,6 | 6 | 30,0 | 0055020  | 6,4 | 10 | 20,0 |
| 0053155  | 3,2 | 6 | 4,0  | 0054190  | 4,3 | 8 | 3,0  | 0055050  | 6,4 | 10 | 25,0 |
| 0053170  | 3,2 | 6 | 5,0  | 0054205  | 4,3 | 8 | 4,0  | 0055080  | 6,4 | 10 | 30,0 |
| 0053182  | 3,2 | 6 | 6,0  | 0054220  | 4,3 | 8 | 5,0  | 0055210  | 6,4 | 15 | 3,0  |
| 0053200  | 3,2 | 6 | 7,5  | 0054232  | 4,3 | 8 | 6,0  | 0055240  | 6,4 | 15 | 5,0  |
| 0053206  | 3,2 | 6 | 8,0  | 0054250  | 4,2 | 8 | 7,5  | 0055270  | 6,4 | 15 | 7,5  |
| 0053230  | 3,2 | 6 | 10,0 | 0054256  | 4,3 | 8 | 8,0  | 0055300  | 6,4 | 15 | 10,0 |

| Part no. | A    | B  | C    | Part no. | A    | B  | C    | Part no. | A    | B  | C    |
|----------|------|----|------|----------|------|----|------|----------|------|----|------|
| 0055330  | 6,4  | 15 | 15,0 | 0056290  | 10,5 | 15 | 7,5  | 0057400  | 12,6 | 25 | 5,0  |
| 0055360  | 6,4  | 15 | 20,0 | 0056320  | 10,5 | 15 | 10,0 | 0057430  | 12,6 | 25 | 10,0 |
| 0055390  | 6,4  | 15 | 25,0 | 0056350  | 10,5 | 15 | 15,0 | 0057460  | 12,6 | 25 | 15,0 |
| 0055420  | 6,4  | 15 | 30,0 | 0056380  | 10,5 | 15 | 20,0 | 0057490  | 12,6 | 25 | 20,0 |
| 0055550  | 8,2  | 12 | 3,0  | 0056410  | 10,5 | 15 | 25,0 | 0057520  | 12,6 | 25 | 25,0 |
| 0055580  | 8,2  | 12 | 5,0  | 0056440  | 10,5 | 15 | 30,0 | 0057550  | 12,6 | 25 | 30,0 |
| 0055610  | 8,2  | 12 | 7,5  | 0056460  | 10,3 | 15 | 40,0 | 0057580  | 12,6 | 25 | 35,0 |
| 0055640  | 8,2  | 12 | 10,0 | 0056600  | 10,5 | 22 | 5,0  | 0057610  | 12,6 | 25 | 40,0 |
| 0055670  | 8,2  | 12 | 15,0 | 0056630  | 10,5 | 22 | 10,0 | 0057640  | 12,6 | 25 | 45,0 |
| 0055700  | 8,2  | 12 | 20,0 | 0056690  | 10,5 | 22 | 15,0 | 0057670  | 12,5 | 25 | 50,0 |
| 0055730  | 8,2  | 12 | 25,0 | 0056710  | 10,5 | 22 | 20,0 | 0058196  | 16,5 | 25 | 5,0  |
| 0055760  | 8,2  | 12 | 30,0 | 0056750  | 10,5 | 22 | 25,0 | 0058216  | 16,5 | 25 | 10,0 |
| 0055780  | 8,2  | 12 | 35,0 | 0056780  | 10,5 | 22 | 30,0 | 0058236  | 16,5 | 25 | 15,0 |
| 0055800  | 8,2  | 12 | 40,0 | 0056810  | 10,5 | 22 | 35,0 | 0058256  | 16,5 | 25 | 20,0 |
| 0055890  | 8,4  | 18 | 3,0  | 0056840  | 10,6 | 22 | 40,0 | 0058276  | 16,5 | 25 | 25,0 |
| 0055920  | 8,4  | 18 | 5,0  | 0056870  | 10,3 | 22 | 45,0 | 0058296  | 16,5 | 25 | 30,0 |
| 0055950  | 8,4  | 18 | 8,0  | 0056900  | 10,6 | 22 | 50,0 | 0058316  | 16,5 | 25 | 35,0 |
| 0055980  | 8,4  | 18 | 10,0 | 0057030  | 12,8 | 18 | 3,0  | 0058336  | 16,5 | 25 | 40,0 |
| 0056010  | 8,4  | 18 | 15,0 | 0057060  | 12,8 | 18 | 5,0  | 0058356  | 16,5 | 25 | 45,0 |
| 0056040  | 8,4  | 18 | 20,0 | 0057090  | 12,8 | 18 | 7,5  | 0058376  | 16,5 | 25 | 50,0 |
| 0056070  | 8,4  | 18 | 25,0 | 0057120  | 12,8 | 18 | 10,0 | 0058396  | 16,5 | 25 | 55,0 |
| 0056100  | 8,4  | 18 | 30,0 | 0057150  | 12,8 | 18 | 15,0 | 0058416  | 16,5 | 25 | 60,0 |
| 0056110  | 8,2  | 18 | 40,0 | 0057180  | 12,8 | 18 | 20,0 | 0058436  | 16,5 | 25 | 65,0 |
| 0056230  | 10,5 | 15 | 3,0  | 0057210  | 12,8 | 18 | 25,0 |          |      |    |      |
| 0056260  | 10,4 | 15 | 5,0  | 0057240  | 12,8 | 18 | 30,0 |          |      |    |      |

Spacers | bushings | POM



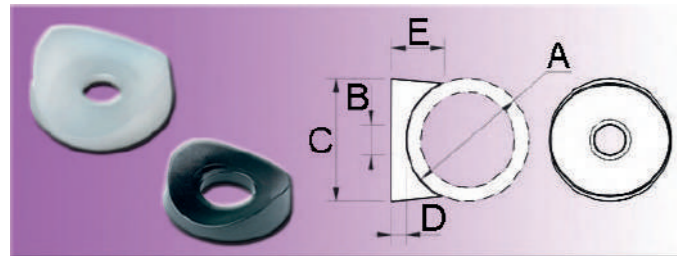
Material: POM  
Colour: natural

Further types on written request.

| Part no. | A                   | B | C   | Part no. | A   | B | C    | Part no. | A   | B | C    |
|----------|---------------------|---|-----|----------|-----|---|------|----------|-----|---|------|
| 0051500  | no longer available |   |     | 0051548  | 2,2 | 4 | 10,0 | 0051638  | 2,2 | 4 | 25,0 |
| 0051506  | 2,2                 | 4 | 3,0 | 0051560  | 2,2 | 4 | 12,0 | 0051668  | 2,2 | 4 | 30,0 |
| 0051512  | 2,2                 | 4 | 4,0 | 0051578  | 2,2 | 4 | 15,0 | 0052460  | 2,6 | 5 | 7,5  |
| 0051518  | 2,2                 | 4 | 5,0 | 0051596  | 2,2 | 4 | 18,0 | 0052490  | 2,6 | 5 | 10,0 |
| 0051536  | 2,2                 | 4 | 8,0 | 0051608  | 2,2 | 4 | 20,0 |          |     |   |      |

Spacers | bushings | Saddle washers

Spacers of PA | with outer Ø 10 mm



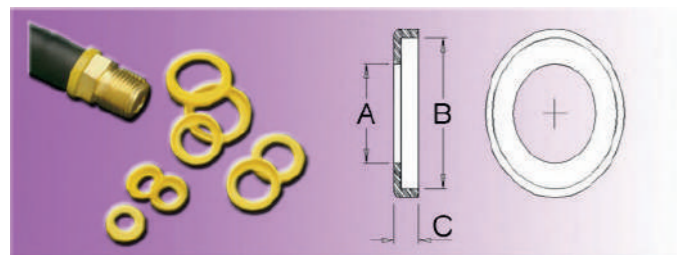
Self-lubricating polyamide, ideal for pivotal points.

Material: PA 6  
Colour:  
without last digits = natural  
last digits 599 = black

| Part no.   | A     | B   | C    | D   | E   |
|------------|-------|-----|------|-----|-----|
| 1020110    | 9-11  | 3,3 | 10,0 | 2,0 | 4,2 |
| 1020110599 | 9-11  | 3,3 | 10,0 | 2,0 | 4,2 |
| 1020130    | 12-14 | 4,2 | 13,0 | 2,2 | 5,5 |
| 1020130599 | 12-14 | 4,2 | 13,0 | 2,2 | 5,5 |
| 1020140    | 12-14 | 5,2 | 13,0 | 2,2 | 5,5 |
| 1020140599 | 12-14 | 5,2 | 13,0 | 2,2 | 5,5 |
| 1020160    | 15-17 | 5,0 | 16,0 | 2,4 | 6,8 |
| 1020160599 | 15-17 | 5,0 | 16,0 | 2,4 | 6,8 |
| 1020190    | 18-20 | 5,2 | 19,0 | 2,7 | 8,0 |
| 1020190599 | 18-20 | 5,2 | 19,0 | 2,7 | 8,0 |
| 1020200    | 18-20 | 6,2 | 19,0 | 2,7 | 8,0 |
| 1020200599 | 18-20 | 6,2 | 19,0 | 2,7 | 8,0 |
| 1020220    | 21-23 | 5,2 | 22,0 | 3,0 | 9,0 |
| 1020220599 | 21-23 | 5,2 | 22,0 | 3,0 | 9,0 |
| 1020230    | 21-23 | 6,2 | 22,0 | 3,0 | 9,0 |
| 1020230599 | 21-23 | 6,2 | 22,0 | 3,0 | 9,0 |
| 1020240    | 21-23 | 8,2 | 22,0 | 3,0 | 9,0 |
| 1020240599 | 21-23 | 8,2 | 22,0 | 3,0 | 9,0 |

| Part no.   | A     | B    | C    | D   | E    |
|------------|-------|------|------|-----|------|
| 1020250    | 24-26 | 6,2  | 25,0 | 3,1 | 10,0 |
| 1020250599 | 24-26 | 6,2  | 25,0 | 3,1 | 10,0 |
| 1020260    | 24-26 | 8,3  | 25,0 | 3,1 | 10,0 |
| 1020260599 | 24-26 | 8,3  | 25,0 | 3,1 | 10,0 |
| 1020280    | 27-29 | 6,2  | 28,0 | 3,3 | 11,0 |
| 1020280599 | 27-29 | 6,2  | 28,0 | 3,3 | 11,0 |
| 1020290    | 27-29 | 8,3  | 28,0 | 3,3 | 11,0 |
| 1020290599 | 27-29 | 8,3  | 28,0 | 3,3 | 11,0 |
| 1020320    | 30-34 | 8,3  | 32,0 | 3,4 | 12,0 |
| 1020320599 | 30-34 | 8,3  | 32,0 | 3,4 | 12,0 |
| 1020330    | 30-34 | 10,4 | 32,0 | 3,4 | 12,0 |
| 1020330599 | 30-34 | 10,4 | 32,0 | 3,4 | 12,0 |
| 1020550    | 50-60 | 6,6  | 40,0 | 5,0 | 12,0 |
| 1020550599 | 50-60 | 6,6  | 40,0 | 5,0 | 12,0 |
| 1020560    | 50-60 | 16,5 | 40,0 | 5,0 | 12,0 |
| 1020560599 | 50-60 | 16,5 | 40,0 | 5,0 | 12,0 |
| 1020570    | 50-60 | 10,4 | 40,0 | 5,0 | 12,0 |
| 1020570599 | 50-60 | 10,4 | 40,0 | 5,0 | 12,0 |

Spacers | bushings | Coding rings with flange



Washers with flange

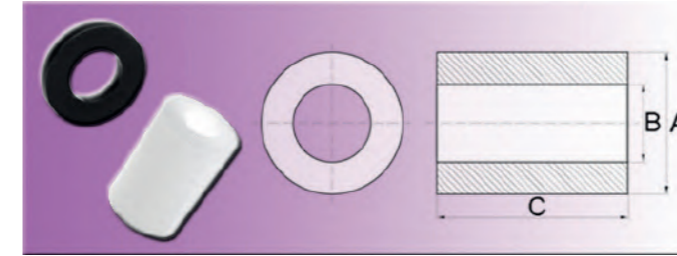
Wall thickness: 8.13 mm  
Material: LDPE  
Colour: yellow

Discontinued item - available  
as long as stocks last!

| Part no. | A                    | B     | C    |
|----------|----------------------|-------|------|
| 0840006  | 8,23                 | 14,86 | 4,37 |
| 0840007  | no longer available! |       |      |

| Part no. | A     | B     | C    |
|----------|-------|-------|------|
| 0840008  | 11,43 | 19,69 | 4,37 |
| 0840010  | 14,74 | 22,23 | 4,37 |

| Part no. | A                    | B | C |
|----------|----------------------|---|---|
| 0840013  | no longer available! |   |   |
| 0840015  | no longer available! |   |   |

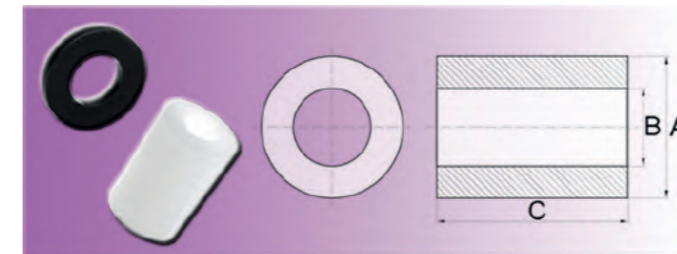


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the  
desired length as X.  
Material: PA 6  
Colour: natural / black / white (please mention in case of order)  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

| Part no.    | A  | B   | C    |
|-------------|----|-----|------|
| 05-10-4,4-X | 10 | 4,4 | 1-35 |
| 05-10-5,3-X | 10 | 5,3 | 1-35 |

| Part no.    | A  | B   | C    |
|-------------|----|-----|------|
| 05-10-6,4-X | 10 | 6,4 | 1-35 |
| 05-10-8,4-X | 10 | 8,4 | 1-35 |

Spacers of PA | with outer Ø 12 mm

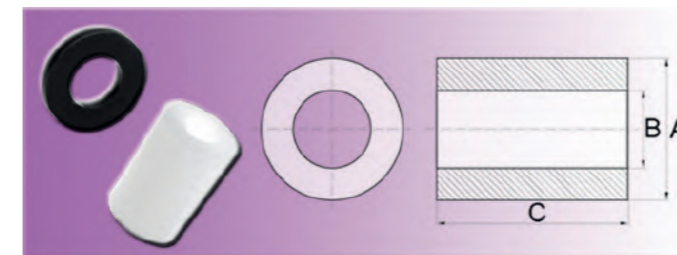


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the  
desired length as X.  
Material: PA 6  
Colour: natural / black / white (please mention in case of order)  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

| Part no.    | A  | B   | C    |
|-------------|----|-----|------|
| 05-12-4,4-X | 12 | 4,4 | 1-35 |
| 05-12-5,3-X | 12 | 5,3 | 1-35 |

| Part no.    | A  | B   | C    |
|-------------|----|-----|------|
| 05-12-6,4-X | 12 | 6,4 | 1-35 |
| 05-12-8,4-X | 12 | 8,4 | 1-35 |

Spacers of PA | with outer Ø 15.5 mm



X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the  
desired length as X.  
Material: PA 6  
Colour: natural / black / white (please mention in case of order)  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

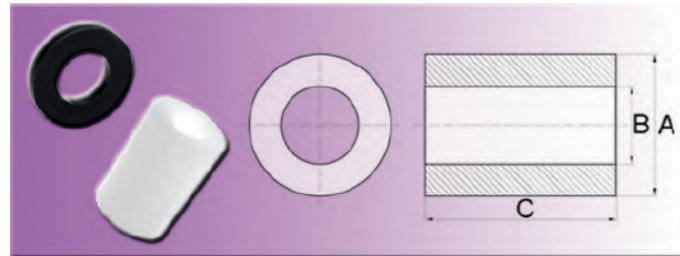
A production as concave discs is possible on request!

| Part no.      | A    | B   | C    |
|---------------|------|-----|------|
| 05-15,5-5,3-X | 15,5 | 5,3 | 1-35 |
| 05-15,5-6,4-X | 15,5 | 6,4 | 1-35 |

| Part no.      | A    | B   | C    |
|---------------|------|-----|------|
| 05-15,5-7,3-X | 15,5 | 7,3 | 1-35 |
| 05-15,5-8,4-X | 15,5 | 8,4 | 1-35 |

| Part no.       | A    | B    | C    |
|----------------|------|------|------|
| 05-15,5-10,5-X | 15,5 | 10,5 | 1-35 |

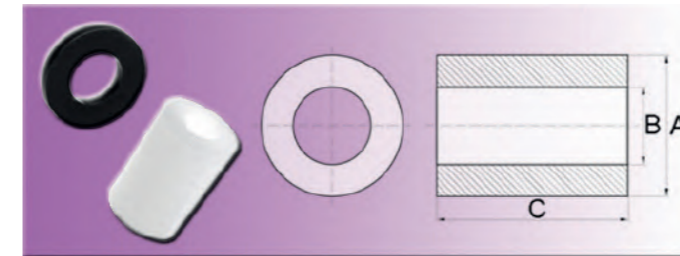
Spacers of PA | with outer Ø 16 mm



X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA 6  
Colour: natural / black / white (please mention in case of order)  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

| Part no.    | A  | B   | C    | Part no.    | A  | B   | C    |
|-------------|----|-----|------|-------------|----|-----|------|
| 05-16-5,3-X | 16 | 5,3 | 1-35 | 05-16-6,4-X | 16 | 6,4 | 1-35 |

Spacers of PA | with outer Ø 22 mm

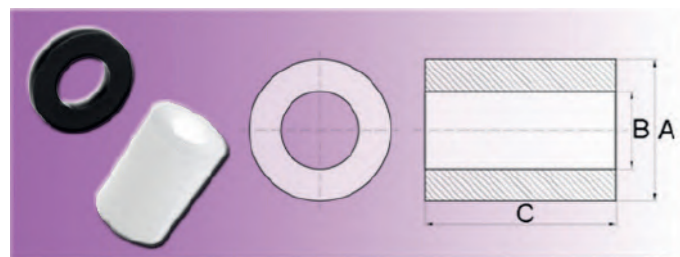


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA 6  
Colour: natural / black / white (please mention in case of order)  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

A production as concave discs is possible on request!

| Part no.    | A  | B   | C    | Part no.     | A  | B    | C    | Part no.     | A  | B    | C    |
|-------------|----|-----|------|--------------|----|------|------|--------------|----|------|------|
| 05-22-5,3-X | 22 | 5,3 | 1-35 | 05-22-8,4-X  | 22 | 8,4  | 1-35 | 05-22-12,5-X | 22 | 12,6 | 1-35 |
| 05-22-6,4-X | 22 | 6,4 | 1-35 | 05-22-10,5-X | 22 | 10,5 | 1-35 | 05-22-15,5-X | 22 | 15,6 | 1-35 |

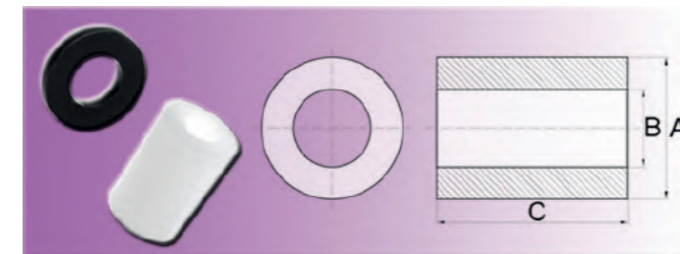
Spacers of PA | with outer Ø 18 mm



X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA 6  
Colour: natural / black / white (please mention in case of order)  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

| Part no.    | A  | B   | C    | Part no.     | A  | B    | C    |
|-------------|----|-----|------|--------------|----|------|------|
| 05-18-5,3-X | 18 | 5,3 | 1-35 | 05-18-8,4-X  | 18 | 8,4  | 1-35 |
| 05-18-6,4-X | 18 | 6,4 | 1-35 | 05-18-10,5-X | 18 | 10,5 | 1-35 |

Spacers of PA | with outer Ø 24 mm

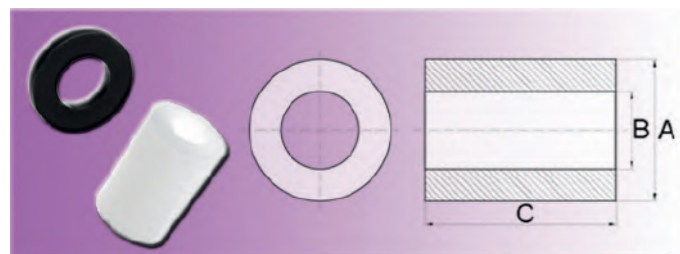


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA 6  
Colour: natural / black / white (please mention in case of order)  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

A production as concave discs is possible on request!

| Part no.    | A  | B   | C    | Part no.     | A  | B    | C    | Part no.     | A  | B    | C    |
|-------------|----|-----|------|--------------|----|------|------|--------------|----|------|------|
| 05-24-5,3-X | 24 | 5,3 | 1-35 | 05-24-10,5-X | 24 | 10,5 | 1-35 | 05-24-14,5-X | 24 | 14,6 | 1-35 |
| 05-24-6,4-X | 24 | 6,4 | 1-35 | 05-24-12,5-X | 24 | 12,6 | 1-35 | 05-24-16,5-X | 24 | 16,5 | 1-35 |
| 05-24-8,4-X | 24 | 8,4 | 1-35 | 05-24-13,5-X | 24 | 13,6 | 1-35 |              |    |      |      |

Spacers of PA | with outer Ø 20 mm

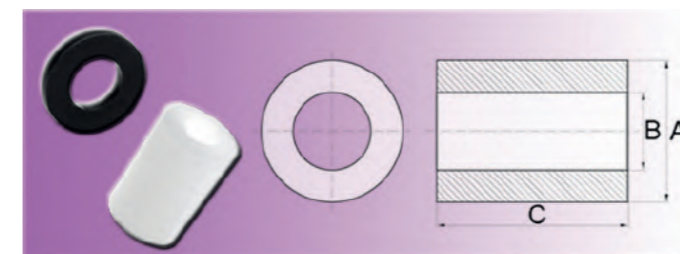


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA 6  
Colour: natural / black / white (please mention in case of order)  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

A production as concave discs is possible on request!

| Part no.    | A  | B   | C    | Part no.     | A  | B    | C    | Part no.     | A  | B    | C    |
|-------------|----|-----|------|--------------|----|------|------|--------------|----|------|------|
| 05-20-5,3-X | 20 | 5,3 | 1-35 | 05-20-8,4-X  | 20 | 8,4  | 1-35 | 05-20-12,5-X | 20 | 12,6 | 1-35 |
| 05-20-6,4-X | 20 | 6,4 | 1-35 | 05-20-10,5-X | 20 | 10,5 | 1-35 |              |    |      |      |
| 05-20-7,3-X | 20 | 7,3 | 1-35 | 05-20-11,3-X | 20 | 11,3 | 1-35 |              |    |      |      |

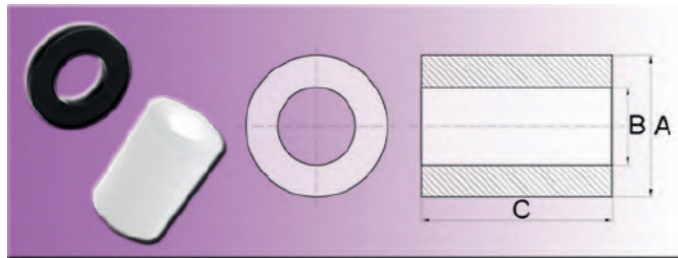
Spacers of PA | with outer Ø 26 mm



X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA 6  
Colour: natural / black / white (please mention in case of order)  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

| Part no.     | A  | B    | C    | Part no.     | A  | B    | C    |
|--------------|----|------|------|--------------|----|------|------|
| 05-26-11,3-X | 26 | 11,3 | 1-35 | 05-26-16,5-X | 26 | 16,5 | 1-35 |
| 05-26-12,6-X | 26 | 12,6 | 1-35 | 05-26-17,3-X | 26 | 17,3 | 1-35 |

Spacers of PA | with outer  $\varnothing$  28 mm

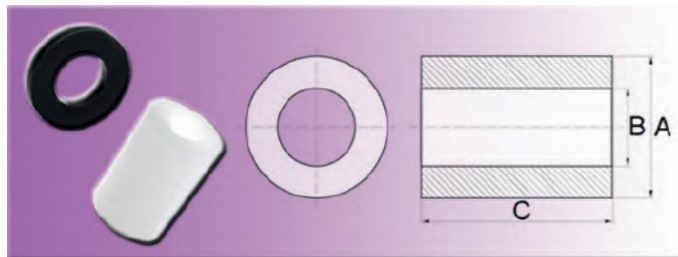


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA 6  
Colour: natural / black / white (please mention in case of order)  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

A production as concave discs is possible on request!

| Part no.    | A  | B   | C    | Part no.     | A  | B    | C    | Part no.     | A  | B    | C    |
|-------------|----|-----|------|--------------|----|------|------|--------------|----|------|------|
| 05-28-5,3-X | 28 | 5,3 | 1-35 | 05-28-10,5-X | 28 | 10,5 | 1-35 | 05-28-14,6-X | 28 | 14,6 | 1-35 |
| 05-28-6,4-X | 28 | 6,4 | 1-35 | 05-28-11,3-X | 28 | 11,3 | 1-35 | 05-28-21-X   | 28 | 21,0 | 1-35 |
| 05-28-8,4-X | 28 | 8,4 | 1-35 | 05-28-12,5-X | 28 | 12,6 | 1-35 |              |    |      |      |

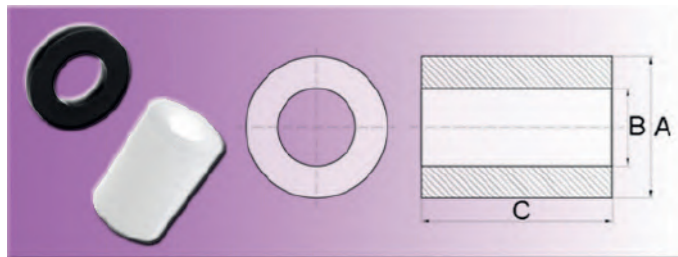
Spacers of PA | with outer  $\varnothing$  30 mm



X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA 6  
Colour: natural / black / white (please mention in case of order)  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

| Part no.     | A  | B    | C    | Part no.   | A  | B    | C    |
|--------------|----|------|------|------------|----|------|------|
| 05-30-14,6-X | 30 | 14,6 | 1-35 | 05-30-21-X | 30 | 21,0 | 1-35 |

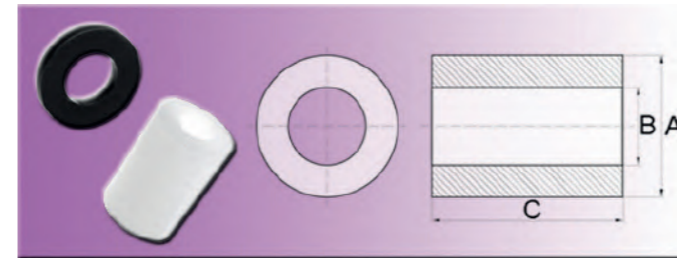
Spacers of PA | with outer  $\varnothing$  32 mm



X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA 6  
Colour: natural / black / white (please mention in case of order)  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

| Part no.    | A  | B   | C    | Part no.     | A  | B    | C    |
|-------------|----|-----|------|--------------|----|------|------|
| 05-32-8,4-X | 32 | 8,4 | 1-35 | 05-32-10,5-X | 32 | 10,5 | 1-35 |

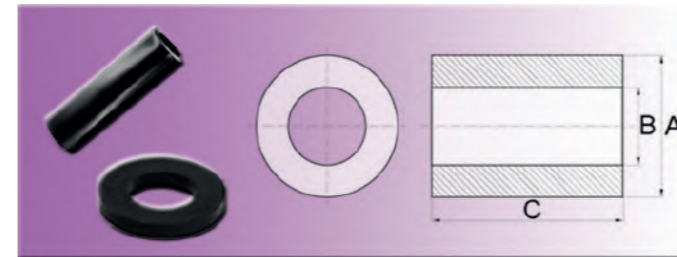
Spacers of PA | with outer  $\varnothing$  40 mm



X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA 6  
Colour: natural / black / white (please mention in case of order)  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

| Part no.     | A  | B    | C    | Part no.     | A  | B    | C    |
|--------------|----|------|------|--------------|----|------|------|
| 05-40-8,4-X  | 40 | 8,4  | 1-35 | 05-40-28,4-X | 40 | 28,4 | 1-35 |
| 05-40-25,5-X | 40 | 25,5 | 1-35 | 05-40-30,4-X | 40 | 30,4 | 1-35 |

Spacers of PA-glass fibre reinforced | with outer  $\varnothing$  4 mm

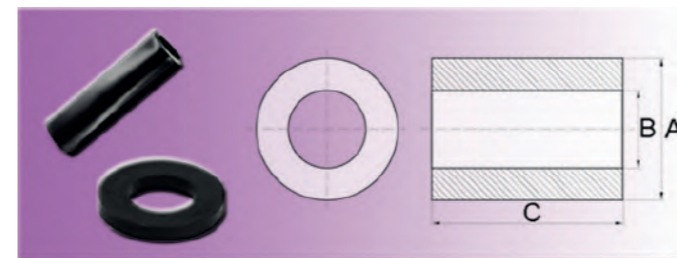


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA-GV (glass fibre reinforced), temperature-resistant up to approx. 110°C  
Colour: black  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

All spacers can also be supplied in polystyrene (natural) and PA-GV (white) on request!

| Part no.  | A | B   | C   | Part no.    | A | B   | C    | Part no.  | A | B   | C    |
|-----------|---|-----|-----|-------------|---|-----|------|-----------|---|-----|------|
| 002-4-1-X | 4 | 1,0 | 2-5 | 002-4-2,2-X | 4 | 2,2 | 2-40 | 002-4-3-X | 4 | 3,0 | 2-19 |

Spacers of PA-glass fibre reinforced | with outer  $\varnothing$  5 mm

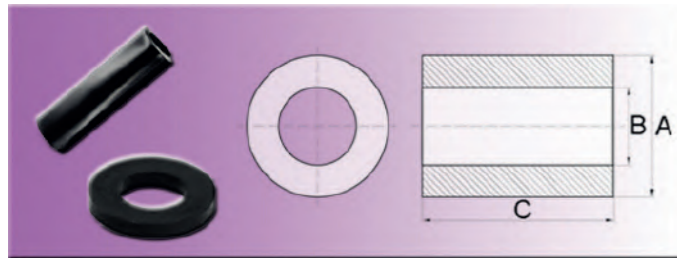


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA-GV (glass fibre reinforced), temperature-resistant up to approx. 110°C  
Colour: black  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

All spacers can also be supplied in polystyrene (natural) and PA-GV (white) on request!

| Part no.    | A | B   | C    | Part no.    | A | B   | C    | Part no.    | A | B   | C    |
|-------------|---|-----|------|-------------|---|-----|------|-------------|---|-----|------|
| 002-5-2,2-X | 5 | 2,2 | 2-45 | 002-5-2,7-X | 5 | 2,7 | 2-40 | 002-5-3,2-X | 5 | 3,2 | 2-40 |

Spacers of PA-glass fibre reinforced | with outer  $\varnothing$  6 mm

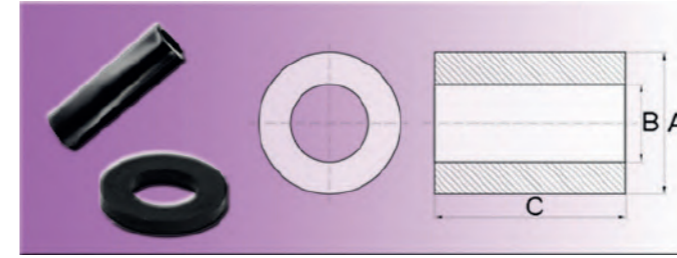


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA-GV (glass fibre reinforced), temperature-resistant up to approx. 110°C  
Colour: black  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

All spacers can also be supplied in polystyrene (natural) and PA-GV (white) on request!

| Part no.    | A | B   | C    | Part no.    | A | B   | C    | Part no.    | A | B   | C    |
|-------------|---|-----|------|-------------|---|-----|------|-------------|---|-----|------|
| 002-6-2,2-X | 6 | 2,2 | 2-50 | 002-6-3,2-X | 6 | 3,2 | 2-50 | 002-6-4,1-X | 6 | 4,1 | 2-50 |
| 002-6-2,7-X | 6 | 2,7 | 2-50 | 002-6-3,4-X | 6 | 3,4 | 2-50 | 002-6-4,7-X | 6 | 4,7 | 2-45 |

Spacers of PA-glass fibre reinforced | with outer  $\varnothing$  9 mm

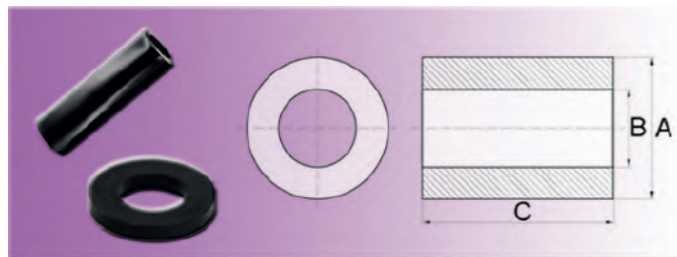


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA-GV (glass fibre reinforced), temperature-resistant up to approx. 110°C  
Colour: black  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

All spacers can also be supplied in polystyrene (natural) and PA-GV (white) on request!

| Part no.    | A | B   | C    |
|-------------|---|-----|------|
| 002-9-6,2-X | 9 | 6,2 | 2-25 |

Spacers of PA-glass fibre reinforced | with outer  $\varnothing$  7 mm

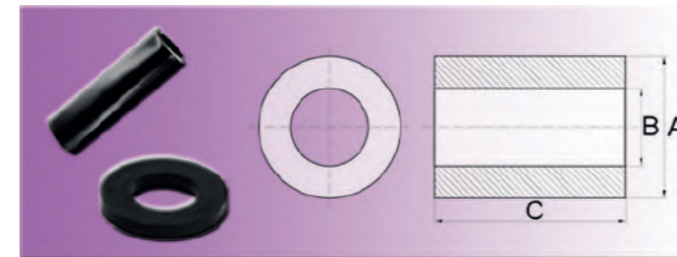


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA-GV (glass fibre reinforced), temperature-resistant up to approx. 110°C  
Colour: black  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

All spacers can also be supplied in polystyrene (natural) and PA-GV (white) on request!

| Part no.    | A | B   | C    | Part no.    | A | B   | C    | Part no.    | A | B   | C    |
|-------------|---|-----|------|-------------|---|-----|------|-------------|---|-----|------|
| 002-7-3,4-X | 7 | 3,4 | 2-50 | 002-7-4,5-X | 7 | 4,5 | 2-55 | 002-7-5,0-X | 7 | 5,0 | 2-53 |

Spacers of PA-glass fibre reinforced | with outer  $\varnothing$  10 mm

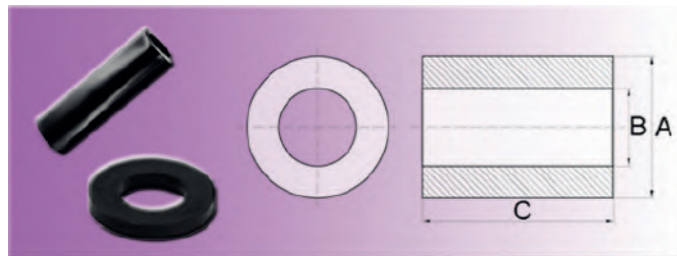


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA-GV (glass fibre reinforced), temperature-resistant up to approx. 110°C  
Colour: black  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

All spacers can also be supplied in polystyrene (natural) and PA-GV (white) on request!

| Part no.     | A  | B   | C    | Part no.     | A  | B   | C    |
|--------------|----|-----|------|--------------|----|-----|------|
| 002-10-3,2-X | 10 | 3,2 | 2-18 | 002-10-6,2-X | 10 | 6,2 | 2-50 |
| 002-10-5,2-X | 10 | 5,2 | 2-57 | 002-10-8,2-X | 10 | 8,2 | 2-45 |

Spacers of PA-glass fibre reinforced | with outer  $\varnothing$  8 mm

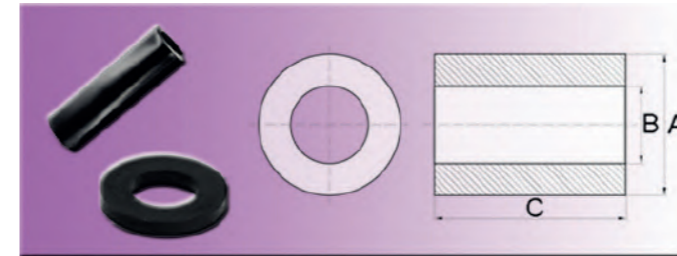


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA-GV (glass fibre reinforced), temperature-resistant up to approx. 110°C  
Colour: black  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

All spacers can also be supplied in polystyrene (natural) and PA-GV (white) on request!

| Part no.    | A | B   | C    | Part no.    | A | B   | C    |
|-------------|---|-----|------|-------------|---|-----|------|
| 002-8-3,5-X | 8 | 3,5 | 2-50 | 002-8-6,2-X | 8 | 6,2 | 2-60 |
| 002-8-4,2-X | 8 | 4,2 | 2-50 | 002-8-6,4-X | 8 | 6,4 | 2-59 |

Spacers of PA-glass fibre reinforced | with outer  $\varnothing$  12 mm

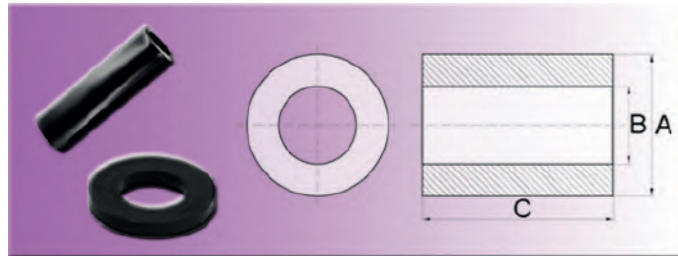


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA-GV (glass fibre reinforced), temperature-resistant up to approx. 110°C  
Colour: black  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

All spacers can also be supplied in polystyrene (natural) and PA-GV (white) on request!

| Part no.     | A  | B   | C    | Part no.     | A  | B   | C    | Part no.     | A  | B   | C    |
|--------------|----|-----|------|--------------|----|-----|------|--------------|----|-----|------|
| 002-12-5,2-X | 12 | 5,2 | 2-50 | 002-12-8,2-X | 12 | 8,2 | 2-50 | 002-12-9,6-X | 12 | 9,6 | 2-50 |
| 002-12-6,2-X | 12 | 6,2 | 2-50 | 002-12-9,1-X | 12 | 9,1 | 2-65 |              |    |     |      |

Spacers of PA-glass fibre reinforced | with outer  $\varnothing$  14 mm

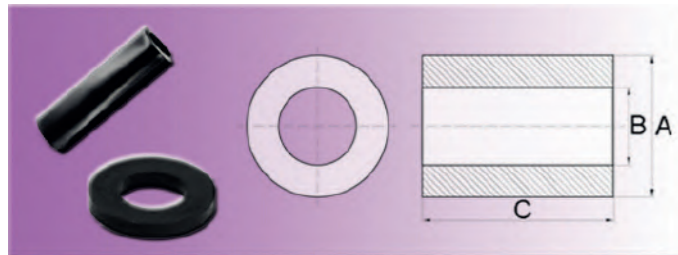


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA-GV (glass fibre reinforced), temperature-resistant up to approx. 110°C  
Colour: black  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

All spacers can also be supplied in polystyrene (natural) and PA-GV (white) on request!

| Part no.     | A  | B   | C    |
|--------------|----|-----|------|
| 002-14-8,2-X | 14 | 8,2 | 2-50 |

Spacers of PA-glass fibre reinforced | with outer  $\varnothing$  16 mm

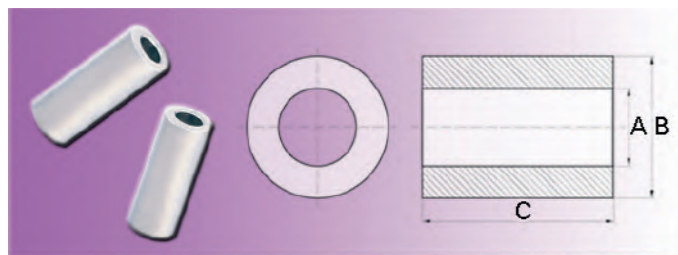


X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.  
Material: PA-GV (glass fibre reinforced), temperature-resistant up to approx. 110°C  
Colour: black  
Minimum order quantity: 1,000 pcs per order and dimension  
Manufacturing time: approx. 10 workdays

All spacers can also be supplied in polystyrene (natural) and PA-GV (white) on request!

| Part no.     | A  | B   | C    | Part no.      | A  | B    | C    | Part no.      | A  | B    | C    |
|--------------|----|-----|------|---------------|----|------|------|---------------|----|------|------|
| 002-16-6,2-X | 16 | 6,2 | 3-20 | 002-16-10,5-X | 16 | 10,5 | 2-50 | 002-16-12,5-X | 16 | 12,4 | 2-50 |

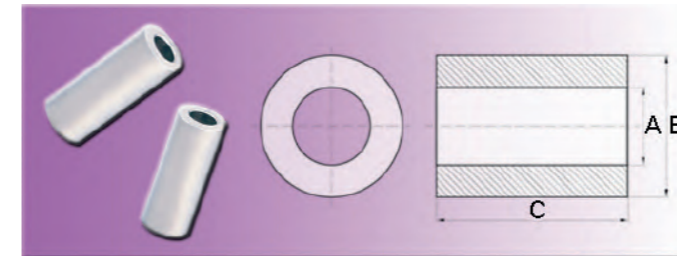
Spacers of brass | with outer  $\varnothing$  4 mm



Material: brass (CuZn40Pb3) nickel-plated (Ni3bk)  
Further dimensions or materials on request!

| Part no.     | A   | B | C  | Part no.     | A   | B | C  | Part no.     | A   | B | C  |
|--------------|-----|---|----|--------------|-----|---|----|--------------|-----|---|----|
| 311220140050 | 2,2 | 4 | 1  | 311220740050 | 2,2 | 4 | 7  | 311221340050 | 2,2 | 4 | 13 |
| 311220240050 | 2,2 | 4 | 2  | 311220840050 | 2,2 | 4 | 8  | 311221440050 | 2,2 | 4 | 14 |
| 311220340050 | 2,2 | 4 | 3  | 311220940050 | 2,2 | 4 | 9  | 311221540050 | 2,2 | 4 | 15 |
| 311220440050 | 2,2 | 4 | 4  | 311221040050 | 2,2 | 4 | 10 | 311221640050 | 2,2 | 4 | 16 |
| 311220540050 | 2,2 | 4 | 5  | 311221140050 | 2,2 | 4 | 11 | 311221740050 | 2,2 | 4 | 17 |
| 311220640050 | 2,2 | 4 | 6  | 311221240050 | 2,2 | 4 | 12 | 311221840050 | 2,2 | 4 | 18 |
| 311221940050 | 2,2 | 4 | 19 | 311222540050 | 2,2 | 4 | 25 |              |     |   |    |
| 311222040050 | 2,2 | 4 | 20 | 311223040050 | 2,2 | 4 | 30 |              |     |   |    |

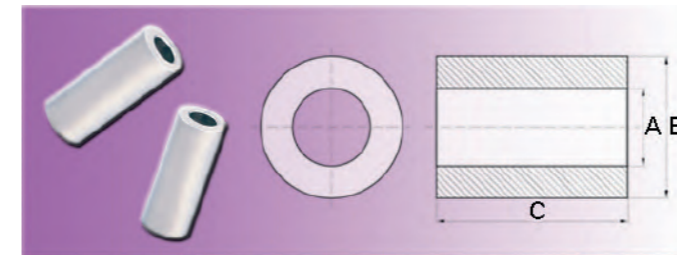
Spacers of brass | with outer  $\varnothing$  5 mm



Material: brass (CuZn40Pb3) nickel-plated (Ni3bk)  
Further dimensions or materials on request!

| Part no.     | A   | B | C | Part no.     | A   | B | C  | Part no.     | A   | B | C  |
|--------------|-----|---|---|--------------|-----|---|----|--------------|-----|---|----|
| 311250140050 | 2,5 | 5 | 1 | 311250940050 | 2,5 | 5 | 9  | 311251740050 | 2,5 | 5 | 17 |
| 311250240050 | 2,5 | 5 | 2 | 311251040050 | 2,5 | 5 | 10 | 311251840050 | 2,5 | 5 | 18 |
| 311250340050 | 2,5 | 5 | 3 | 311251140050 | 2,5 | 5 | 11 | 311251940050 | 2,5 | 5 | 19 |
| 311250440050 | 2,5 | 5 | 4 | 311251240050 | 2,5 | 5 | 12 | 311252040050 | 2,5 | 5 | 20 |
| 311250540050 | 2,5 | 5 | 5 | 311251340050 | 2,5 | 5 | 13 | 311252540050 | 2,5 | 5 | 25 |
| 311250640050 | 2,5 | 5 | 6 | 311251440050 | 2,5 | 5 | 14 | 311253040050 | 2,5 | 5 | 30 |
| 311250740050 | 2,5 | 5 | 7 | 311251540050 | 2,5 | 5 | 15 |              |     |   |    |
| 311250840050 | 2,5 | 5 | 8 | 311251640050 | 2,5 | 5 | 16 |              |     |   |    |

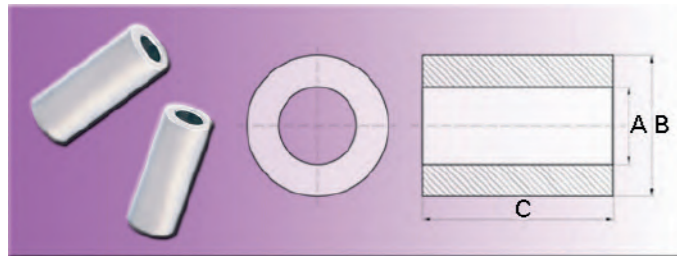
Spacers of brass | with outer  $\varnothing$  6 mm



Material: brass (CuZn40Pb3) nickel-plated (Ni3bk)  
Further dimensions or materials on request!

| Part no.     | A   | B | C | Part no.     | A   | B | C  | Part no.     | A                    | B | C  |
|--------------|-----|---|---|--------------|-----|---|----|--------------|----------------------|---|----|
| 311320140050 | 3,2 | 6 | 1 | 311321040050 | 3,2 | 6 | 10 | 311321940050 | 3,2                  | 6 | 19 |
| 311320240050 | 3,2 | 6 | 2 | 311321140050 | 3,2 | 6 | 11 | 311322040050 | 3,2                  | 6 | 20 |
| 311320340050 | 3,2 | 6 | 3 | 311321240050 | 3,2 | 6 | 12 | 311322540050 | 3,2                  | 6 | 25 |
| 311320440050 | 3,2 | 6 | 4 | 311321340050 | 3,2 | 6 | 13 | 311323040050 | 3,2                  | 6 | 30 |
| 311320540050 | 3,2 | 6 | 5 | 311321440050 | 3,2 | 6 | 14 | 311323540050 | 3,2                  | 6 | 35 |
| 311320640050 | 3,2 | 6 | 6 | 311321540050 | 3,2 | 6 | 15 | 311324040050 | 3,2                  | 6 | 40 |
| 311320740050 | 3,2 | 6 | 7 | 311321640050 | 3,2 | 6 | 16 | 311324540050 | no longer available! |   |    |
| 311320840050 | 3,2 | 6 | 8 | 311321740050 | 3,2 | 6 | 17 | 311325040050 | no longer available! |   |    |
| 311320940050 | 3,2 | 6 | 9 | 311321840050 | 3,2 | 6 | 18 |              |                      |   |    |

Spacers of brass | with outer  $\varnothing$  8 mm

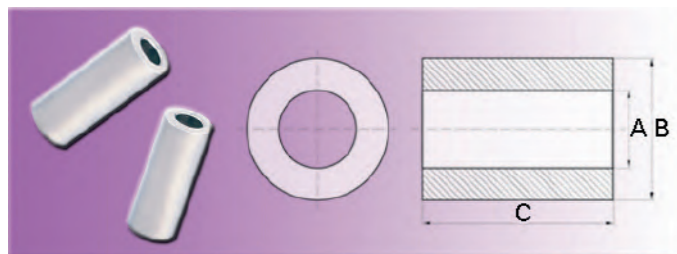


Material: brass (CuZn40Pb3) nickel-plated (Ni3bk)

Further dimensions or materials on request!

| Part no.     | A   | B | C | Part no.     | A   | B | C  | Part no.     | A                    | B | C  |
|--------------|-----|---|---|--------------|-----|---|----|--------------|----------------------|---|----|
| 311430140050 | 4,3 | 8 | 1 | 311431040050 | 4,3 | 8 | 10 | 311431940050 | 4,3                  | 8 | 19 |
| 311430240050 | 4,3 | 8 | 2 | 311431140050 | 4,3 | 8 | 11 | 311432040050 | 4,3                  | 8 | 20 |
| 311430340050 | 4,3 | 8 | 3 | 311431240050 | 4,3 | 8 | 12 | 311432540050 | 4,3                  | 8 | 25 |
| 311430440050 | 4,3 | 8 | 4 | 311431340050 | 4,3 | 8 | 13 | 311433040050 | 4,3                  | 8 | 30 |
| 311430540050 | 4,3 | 8 | 5 | 311431440050 | 4,3 | 8 | 14 | 311433540050 | 4,3                  | 8 | 35 |
| 311430640050 | 4,3 | 8 | 6 | 311431540050 | 4,3 | 8 | 15 | 311434040050 | 4,3                  | 8 | 40 |
| 311430740050 | 4,3 | 8 | 7 | 311431640050 | 4,3 | 8 | 16 | 311434540050 | no longer available! |   |    |
| 311430840050 | 4,3 | 8 | 8 | 311431740050 | 4,3 | 8 | 17 | 311435040050 | no longer available! |   |    |
| 311430940050 | 4,3 | 8 | 9 | 311431840050 | 4,3 | 8 | 18 |              |                      |   |    |

Spacers of brass | with outer  $\varnothing$  10 mm

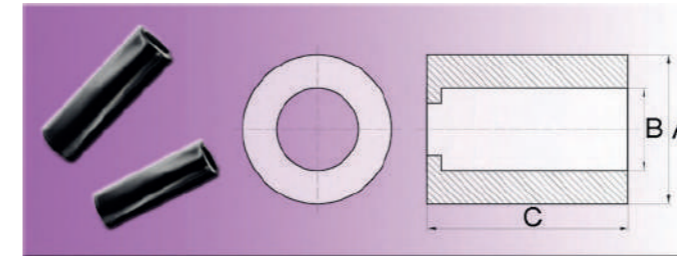


Material: brass (CuZn40Pb3) nickel-plated (Ni3bk)

Further dimensions or materials on request!

| Part no.     | A   | B  | C | Part no.     | A   | B  | C  | Part no.     | A   | B  | C  |
|--------------|-----|----|---|--------------|-----|----|----|--------------|-----|----|----|
| 311530140050 | 5,3 | 10 | 1 | 311530940050 | 5,3 | 10 | 9  | 311531740050 | 5,3 | 10 | 17 |
| 311530240050 | 5,3 | 10 | 2 | 311531040050 | 5,3 | 10 | 10 | 311531840050 | 5,3 | 10 | 18 |
| 311530340050 | 5,3 | 10 | 3 | 311531140050 | 5,3 | 10 | 11 | 311531940050 | 5,3 | 10 | 19 |
| 311530440050 | 5,3 | 10 | 4 | 311531240050 | 5,3 | 10 | 12 | 311532040050 | 5,3 | 10 | 20 |
| 311530540050 | 5,3 | 10 | 5 | 311531340050 | 5,3 | 10 | 13 | 311532540050 | 5,3 | 10 | 25 |
| 311530640050 | 5,3 | 10 | 6 | 311531440050 | 5,3 | 10 | 14 | 311533040050 | 5,3 | 10 | 30 |
| 311530740050 | 5,3 | 10 | 7 | 311531540050 | 5,3 | 10 | 15 | 311533540050 | 5,3 | 10 | 35 |
| 311530840050 | 5,3 | 10 | 8 | 311531640050 | 5,3 | 10 | 16 | 311534040050 | 5,3 | 10 | 40 |

Spacers with anti-loss protection | with outer  $\varnothing$  4 mm



With anti-loss protection.

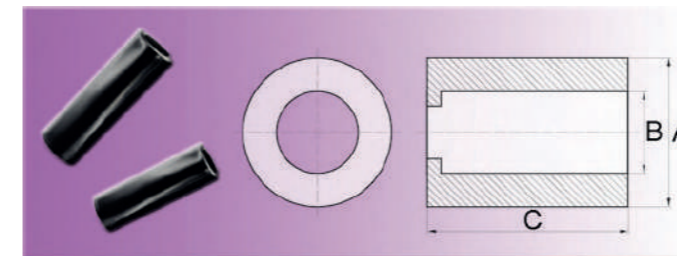
X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.

Material: PA 6.6  
Colour: black

Minimum order quantity: 1,000 pcs per order and dimension

| Part no.    | A | B   | C    |
|-------------|---|-----|------|
| 022-4-2,2-X | 4 | 2,2 | 2-40 |

Spacers with anti-loss protection | with outer  $\varnothing$  5 mm



With anti-loss protection.

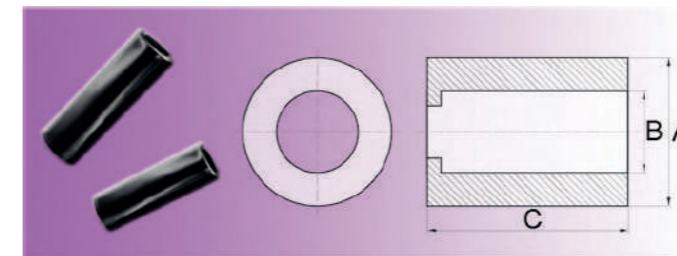
X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.

Material: PA 6.6  
Colour: black

Minimum order quantity: 1,000 pcs per order and dimension

| Part no.    | A | B   | C    |
|-------------|---|-----|------|
| 022-5-2,7-X | 5 | 2,7 | 2-55 |

Spacers with anti-loss protection | with outer  $\varnothing$  6 mm



With anti-loss protection.

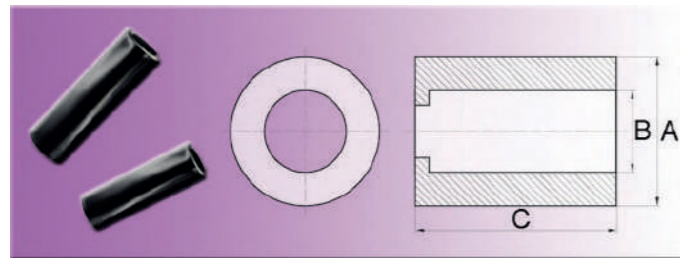
X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.

Material: PA 6.6  
Colour: black

Minimum order quantity: 1,000 pcs per order and dimension

| Part no.    | A | B   | C    |
|-------------|---|-----|------|
| 022-6-3,4-X | 6 | 3,4 | 2-45 |

Spacers with anti-loss protection | with outer  $\varnothing$  8 mm



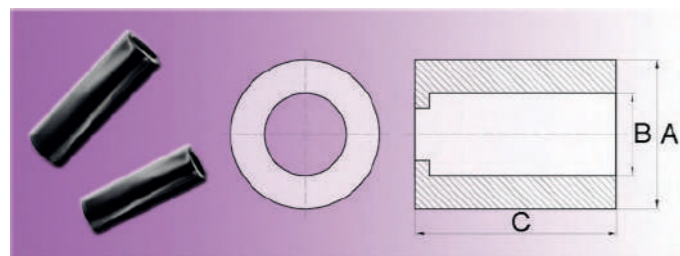
With anti-loss protection.  
X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.

Material: PA 6.6  
Colour: black

Minimum order quantity: 1,000 pcs per order and dimension

| Part no.    | A | B   | C    |
|-------------|---|-----|------|
| 022-8-4,2-X | 8 | 4,2 | 2-50 |

Spacers with anti-loss protection | with outer  $\varnothing$  10 mm



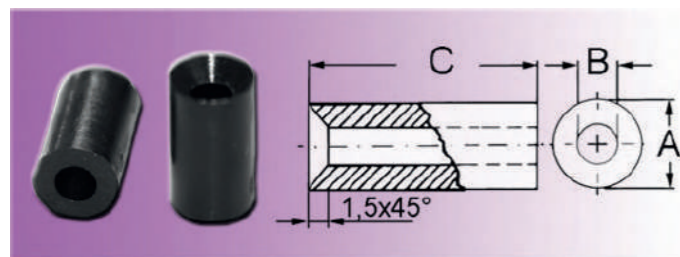
With anti-loss protection.  
X = length (see column C)  
Manufacturing range in steps of 1 mm. Please indicate the desired length as X.

Material: PA 6.6  
Colour: black

Minimum order quantity: 1,000 pcs per order and dimension

| Part no.     | A  | B   | C    |
|--------------|----|-----|------|
| 022-10-6,2-X | 10 | 6,2 | 2-55 |

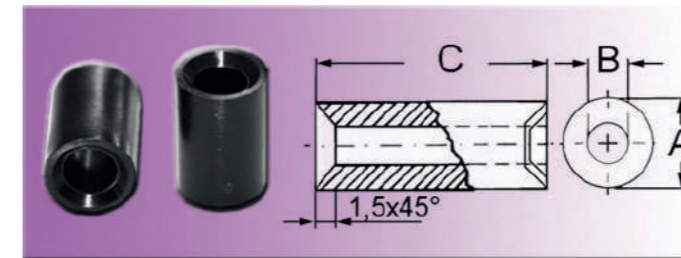
Spacers with sinking | Onesided chamfer



Round spacers with sinking und onesided chamfer.  
Material: PA-GV (glass fibre reinforced), temperature-resistant up to approx. 110°C  
Colour: black

| Part no. | A  | B   | C  | Part no. | A  | B   | C  | Part no. | A  | B   | C  |
|----------|----|-----|----|----------|----|-----|----|----------|----|-----|----|
| 0231003  | 16 | 6,2 | 3  | 0231011  | 16 | 6,2 | 11 | 0231019  | 16 | 6,2 | 19 |
| 0231004  | 16 | 6,2 | 4  | 0231012  | 16 | 6,2 | 12 | 0231020  | 16 | 6,2 | 20 |
| 0231005  | 16 | 6,2 | 5  | 0231013  | 16 | 6,2 | 13 | 0231021  | 16 | 6,2 | 21 |
| 0231006  | 16 | 6,2 | 6  | 0231014  | 16 | 6,2 | 14 | 0231022  | 16 | 6,2 | 22 |
| 0231007  | 16 | 6,2 | 7  | 0231015  | 16 | 6,2 | 15 | 0231023  | 16 | 6,2 | 23 |
| 0231008  | 16 | 6,2 | 8  | 0231016  | 16 | 6,2 | 16 | 0231024  | 16 | 6,2 | 24 |
| 0231009  | 16 | 6,2 | 9  | 0231017  | 16 | 6,2 | 17 | 0231025  | 16 | 6,2 | 25 |
| 0231010  | 16 | 6,2 | 10 | 0231018  | 16 | 6,2 | 18 | 0231026  | 16 | 6,2 | 26 |
| 0231027  | 16 | 6,2 | 27 | 0231029  | 16 | 6,2 | 29 |          |    |     |    |
| 0231028  | 16 | 6,2 | 28 | 0231030  | 16 | 6,2 | 30 |          |    |     |    |

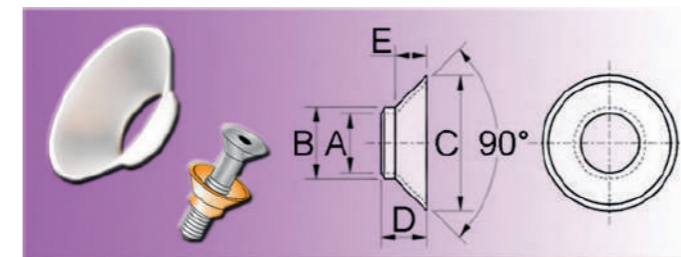
Spacers with sinking | Both-sided chamfer



Round spacers with sinking und both-sided chamfer.  
Material: PA-GV (glass fibre reinforced), temperature-resistant up to approx. 110°C  
Colour: black

| Part no. | A  | B   | C | Part no. | A  | B   | C  | Part no. | A  | B   | C  |
|----------|----|-----|---|----------|----|-----|----|----------|----|-----|----|
| 0232004  | 16 | 6,2 | 4 | 0232010  | 16 | 6,2 | 10 | 0232016  | 16 | 6,2 | 16 |
| 0232005  | 16 | 6,2 | 5 | 0232011  | 16 | 6,2 | 11 | 0232017  | 16 | 6,2 | 17 |
| 0232006  | 16 | 6,2 | 6 | 0232012  | 16 | 6,2 | 12 | 0232018  | 16 | 6,2 | 18 |
| 0232007  | 16 | 6,2 | 7 | 0232013  | 16 | 6,2 | 13 | 0232019  | 16 | 6,2 | 19 |
| 0232008  | 16 | 6,2 | 8 | 0232014  | 16 | 6,2 | 14 | 0232020  | 16 | 6,2 | 20 |
| 0232009  | 16 | 6,2 | 9 | 0232015  | 16 | 6,2 | 15 |          |    |     |    |

Insulating cases | PA 6 natural - tapered



Prevent electrolytic corrosion of screws with counter-sunk heads. Frequently applied in the lighting and electrotechnical industry. Compulsory by law in many countries. Furthermore a good protection for countersunk screws. Absorb vibrations.

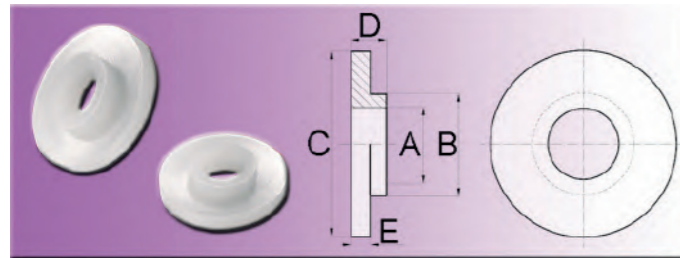
Material: PA 6  
Colour: natural

Further types on written request.

| Part no. | A   | B   | C     | D   | E   | Part no. | A    | B    | C    | D    | E   |
|----------|-----|-----|-------|-----|-----|----------|------|------|------|------|-----|
| 0830302  | 3,1 | 4,9 | 8,2   | 3,7 | 1,7 | 0830802  | 8,1  | 9,9  | 18,6 | 6,4  | 4,4 |
| 0830402  | 4,1 | 5,9 | 10,4  | 4,3 | 2,3 | 0831005  | 10,1 | 12,4 | 22,2 | 10,0 | 5,0 |
| 0830502  | 5,1 | 6,9 | 12,4  | 4,8 | 2,8 | 0831202  | 12,1 | 13,9 | 28,8 | 8,5  | 6,5 |
| 0830602  | 6,1 | 7,9 | 12,62 | 4,9 | 3,5 |          |      |      |      |      |     |



Insulating cases | PA 6 natural



Protection of transformers, installations, lighting fixtures etc.

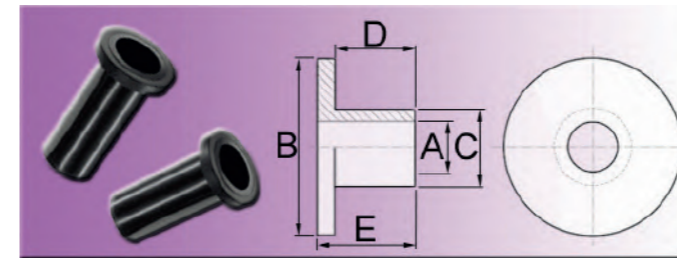
Material: PA 6  
Colour: natural

Further types on written request.

| Part no. | A   | B    | C  | D   | E   |
|----------|-----|------|----|-----|-----|
| 0180200  | 2,1 | 3,3  | 6  | 2,5 | 1,0 |
| 0180250  | 2,6 | 3,9  | 10 | 3,0 | 1,3 |
| 0180300  | 3,1 | 3,9  | 10 | 3,0 | 1,3 |
| 0180301  | 3,1 | 4,9  | 10 | 3,0 | 1,3 |
| 0180302  | 3,1 | 5,9  | 10 | 3,0 | 1,3 |
| 0180303  | 3,1 | 6,9  | 15 | 3,5 | 1,5 |
| 0180304  | 3,1 | 7,9  | 15 | 3,5 | 1,5 |
| 0180305  | 3,1 | 8,9  | 15 | 3,5 | 1,5 |
| 0180306  | 3,1 | 9,9  | 15 | 3,5 | 1,5 |
| 0180307  | 3,1 | 10,9 | 18 | 3,5 | 1,5 |
| 0180400  | 4,2 | 4,9  | 10 | 3,0 | 1,3 |
| 0180401  | 4,2 | 5,9  | 10 | 3,0 | 1,3 |
| 0180402  | 4,2 | 6,9  | 15 | 3,5 | 1,5 |
| 0180403  | 4,2 | 7,9  | 15 | 3,5 | 1,5 |
| 0180404  | 4,2 | 8,9  | 15 | 3,5 | 1,5 |
| 0180405  | 4,2 | 9,9  | 15 | 3,5 | 1,5 |
| 0180406  | 4,2 | 10,9 | 18 | 3,5 | 1,5 |
| 0180407  | 4,2 | 11,9 | 18 | 3,5 | 1,5 |
| 0180500  | 5,2 | 5,9  | 10 | 3,0 | 1,3 |
| 0180501  | 5,2 | 6,9  | 15 | 3,5 | 1,5 |
| 0180502  | 5,2 | 7,9  | 15 | 3,5 | 1,5 |
| 0180503  | 5,2 | 8,9  | 15 | 3,5 | 1,5 |
| 0180504  | 5,2 | 9,9  | 15 | 3,5 | 1,5 |
| 0180505  | 5,2 | 10,9 | 18 | 3,5 | 1,5 |

| Part no. | A    | B    | C  | D   | E   |
|----------|------|------|----|-----|-----|
| 0180506  | 5,2  | 11,9 | 18 | 3,5 | 1,5 |
| 0180600  | 6,2  | 6,9  | 15 | 3,5 | 1,5 |
| 0180601  | 6,2  | 7,9  | 15 | 3,5 | 1,5 |
| 0180602  | 6,2  | 8,9  | 15 | 3,5 | 1,5 |
| 0180603  | 6,2  | 9,9  | 15 | 3,5 | 1,5 |
| 0180604  | 6,2  | 10,9 | 18 | 3,5 | 1,5 |
| 0180605  | 6,2  | 11,9 | 18 | 3,5 | 1,5 |
| 0180800  | 8,2  | 8,9  | 15 | 3,5 | 1,5 |
| 0180801  | 8,2  | 9,9  | 15 | 3,5 | 1,5 |
| 0180802  | 8,2  | 10,9 | 18 | 3,5 | 1,5 |
| 0180803  | 8,2  | 11,9 | 18 | 3,5 | 1,5 |
| 0181000  | 10,2 | 10,9 | 18 | 3,5 | 1,5 |
| 0181001  | 10,2 | 11,9 | 18 | 3,5 | 1,5 |
| 0181002  | 10,2 | 12,9 | 19 | 3,5 | 1,5 |
| 0181200  | 12,2 | 13,8 | 25 | 4,0 | 2,0 |
| 0181201  | 12,2 | 14,8 | 25 | 4,0 | 2,0 |
| 0181202  | 12,2 | 15,8 | 25 | 4,0 | 2,0 |
| 0181203  | 12,2 | 17,8 | 25 | 4,0 | 2,0 |
| 0181400  | 14,2 | 15,8 | 25 | 4,0 | 2,0 |
| 0181401  | 14,2 | 17,8 | 25 | 4,0 | 2,0 |
| 0181600  | 16,2 | 17,8 | 25 | 4,0 | 2,0 |
| 0181801  | 18,2 | 21,8 | 36 | 6,0 | 3,0 |
| 0182000  | 20,1 | 21,8 | 36 | 6,0 | 3,0 |

Insulating cases | PA-glass fibre reinforced black



These insulating cases combine electrical insulation with high mechanical strength. As they are resistant to electrolytic corrosion, they are essential for connections between incompatible metals.

Material: PA-glass fibre reinforced  
Colour: black

Colour white on written request.

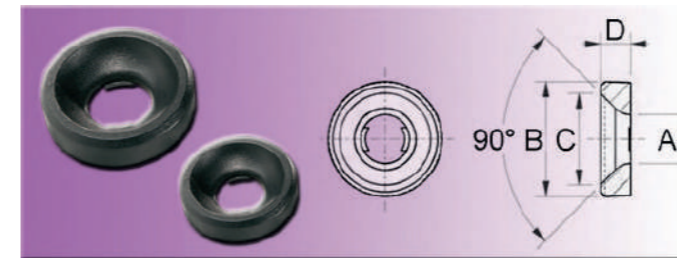
| Part no.   | A   | B    | C    | D   | E    |
|------------|-----|------|------|-----|------|
| 3120832599 | 2,1 | 8,0  | 4,5  | 4,5 | 5,5  |
| 3120891599 | 2,2 | 5,0  | 4,2  | 4,0 | 5,0  |
| 3120865599 | 2,5 | 6,0  | 3,0  | 3,5 | 5,0  |
| 3120886599 | 2,6 | 6,0  | 3,5  | 1,3 | 2,3  |
| 3120839599 | 2,6 | 8,0  | 4,5  | 1,6 | 4,2  |
| 3120802599 | 2,6 | 8,0  | 4,8  | 1,1 | 2,1  |
| 3120102599 | 2,7 | 5,0  | 3,15 | 1,4 | 1,9  |
| 3120833599 | 2,7 | 5,0  | 3,15 | 1,4 | 2,4  |
| 3120812599 | 3,0 | 5,5  | 3,5  | 2,5 | 3,5  |
| 3120849599 | 3,0 | 5,9  | 3,5  | 0,6 | 1,8  |
| 3120859599 | 3,0 | 5,9  | 3,5  | 0,6 | 2,6  |
| 3120860599 | 3,0 | 5,9  | 3,5  | 1,2 | 2,5  |
| 3120870599 | 3,0 | 6,5  | 3,6  | 2,5 | 3,5  |
| 3120869599 | 3,0 | 6,5  | 3,6  | 2,5 | 4,5  |
| 3120884599 | 3,0 | 8,0  | 3,6  | 1,5 | 4,5  |
| 3120843599 | 3,1 | 10,0 | 3,4  | 8,0 | 9,0  |
| 3120871599 | 3,1 | 10,0 | 4,1  | 1,6 | 3,0  |
| 3120846599 | 3,1 | 10,0 | 4,2  | 8,0 | 10,0 |
| 3120896599 | 3,1 | 10,0 | 4,2  | 8,0 | 12,0 |
| 3120852599 | 3,1 | 10,0 | 6,4  | 1,3 | 2,8  |
| 3120867599 | 3,1 | 6,0  | 3,5  | 1,1 | 2,1  |
| 3120836599 | 3,1 | 6,0  | 3,5  | 1,3 | 2,3  |
| 3120893599 | 3,1 | 6,0  | 3,5  | 1,3 | 3,7  |
| 3120866599 | 3,1 | 6,0  | 3,5  | 3,0 | 5,0  |
| 3120890599 | 3,1 | 6,0  | 3,5  | 3,5 | 6,0  |
| 3120887599 | 3,1 | 6,0  | 3,7  | 3,0 | 5,0  |
| 3120862599 | 3,1 | 6,0  | 3,8  | 3,3 | 4,4  |
| 3120863599 | 3,1 | 6,0  | 3,8  | 5,2 | 6,4  |
| 3120819599 | 3,1 | 7,5  | 3,5  | 1,3 | 2,3  |
| 3120894599 | 3,1 | 7,5  | 3,5  | 1,3 | 4,3  |
| 3120801599 | 3,1 | 7,5  | 3,5  | 2,5 | 3,5  |
| 3120810599 | 3,1 | 7,5  | 3,5  | 2,5 | 6,5  |
| 3120885599 | 3,1 | 7,5  | 3,5  | 2,5 | 7,5  |

| Part no.   | A   | B    | C   | D    | E    |
|------------|-----|------|-----|------|------|
| 3120853599 | 3,1 | 7,5  | 3,9 | 2,0  | 4,0  |
| 3120838599 | 3,1 | 7,5  | 3,9 | 3,5  | 4,5  |
| 3120895599 | 3,1 | 7,5  | 3,9 | 3,5  | 5,5  |
| 3120851599 | 3,1 | 7,5  | 3,9 | 4,0  | 6,0  |
| 3120814599 | 3,1 | 7,5  | 3,9 | 4,5  | 6,0  |
| 3120877599 | 3,1 | 7,6  | 6,0 | 1,0  | 2,0  |
| 3120809599 | 3,5 | 7,0  | 4,9 | 7,4  | 8,2  |
| 3120806599 | 3,5 | 7,0  | 5,1 | 2,2  | 3,0  |
| 3120858599 | 3,5 | 9,0  | 6,3 | 2,0  | 4,0  |
| 3120842599 | 4,0 | 10,0 | 4,4 | 8,0  | 9,0  |
| 3120850599 | 4,0 | 9,3  | 6,3 | 1,3  | 2,5  |
| 3120847599 | 4,1 | 10,0 | 5,2 | 10,0 | 12,0 |
| 3120876599 | 4,1 | 10,0 | 7,0 | 1,0  | 2,0  |
| 3120855599 | 4,1 | 8,0  | 5,0 | 3,0  | 7,0  |
| 3120883599 | 4,1 | 8,0  | 5,6 | 6,5  | 10,5 |
| 3120897599 | 4,2 | 10,0 | 5,2 | 10,0 | 14,0 |
| 3120888599 | 4,2 | 11,9 | 7,8 | 6,3  | 7,9  |
| 3120892599 | 4,5 | 15,7 | 9,7 | 1,7  | 5,7  |
| 3120861599 | 4,5 | 15,7 | 9,7 | 6,5  | 11,5 |
| 3120804599 | 4,5 | 15,7 | 9,7 | 8,0  | 13,0 |
| 3120831599 | 4,5 | 8,0  | 6,0 | 3,2  | 4,0  |
| 3120879599 | 5,0 | 10,1 | 6,3 | 2,24 | 3,05 |
| 3120828599 | 5,1 | 12,0 | 5,5 | 2,0  | 3,0  |
| 3120808599 | 5,1 | 12,0 | 5,5 | 4,0  | 5,0  |
| 3120821599 | 5,1 | 12,0 | 6,4 | 15,0 | 16,0 |
| 3120844599 | 5,1 | 12,0 | 6,4 | 15,0 | 17,0 |
| 3120875599 | 5,2 | 10,0 | 6,2 | 1,5  | 2,5  |
| 3120857599 | 5,2 | 10,0 | 6,2 | 1,5  | 4,0  |
| 3120864599 | 5,2 | 12,0 | 5,5 | 3,5  | 5,0  |
| 3120826599 | 5,2 | 12,0 | 6,2 | 10,0 | 11,0 |
| 3120898599 | 5,2 | 12,0 | 6,4 | 15,0 | 20,0 |
| 3120816599 | 5,2 | 12,0 | 6,9 | 8,0  | 11,0 |
| 3120873599 | 5,2 | 12,0 | 7,0 | 0,8  | 2,8  |

Metric finishing washers | Type 1

| Part no.   | A   | B    | C    | D    | E    |
|------------|-----|------|------|------|------|
| 3120878599 | 6,1 | 10,0 | 8,5  | 3,1  | 6,0  |
| 3120807599 | 6,1 | 12,0 | 6,5  | 4,0  | 5,0  |
| 3120880599 | 6,1 | 12,0 | 7,6  | 15,0 | 16,0 |
| 3120881599 | 6,1 | 12,0 | 7,6  | 15,0 | 17,0 |
| 3120845599 | 6,1 | 12,0 | 7,8  | 15,0 | 17,0 |
| 3120825599 | 6,1 | 12,0 | 7,9  | 1,0  | 2,0  |
| 3120817599 | 6,2 | 12,0 | 6,5  | 2,0  | 3,0  |
| 3120811599 | 6,2 | 12,0 | 6,5  | 4,0  | 4,5  |
| 3120827599 | 6,2 | 12,0 | 7,2  | 10,0 | 11,0 |
| 3120899599 | 6,2 | 12,0 | 7,2  | 10,0 | 13,0 |
| 3120820599 | 6,2 | 12,0 | 7,8  | 15,0 | 16,0 |
| 3120100599 | 6,2 | 12,0 | 7,8  | 15,0 | 20,0 |
| 3120824599 | 6,2 | 12,0 | 7,9  | 2,0  | 4,0  |
| 3120815599 | 6,2 | 12,0 | 7,9  | 8,0  | 11,0 |
| 3120818599 | 6,4 | 16,0 | 10,0 | 2,3  | 3,5  |
| 3120834599 | 6,5 | 13,0 | 9,6  | 1,3  | 1,9  |
| 3120854599 | 6,5 | 25,0 | 13,0 | 3,5  | 8,0  |
| 3120805599 | 6,5 | 25,0 | 13,0 | 6,0  | 10,5 |

| Part no.   | A    | B    | C    | D    | E    |
|------------|------|------|------|------|------|
| 3120813599 | 6,5  | 25,0 | 13,0 | 8,5  | 13,0 |
| 3120872599 | 8,2  | 14,0 | 10,9 | 16,0 | 18,0 |
| 3120823599 | 8,2  | 14,0 | 9,9  | 16,0 | 18,0 |
| 3120101599 | 8,2  | 14,0 | 9,9  | 16,0 | 21,0 |
| 3120882599 | 8,2  | 18,0 | 9,9  | 20,0 | 23,0 |
| 3120835599 | 8,2  | 19,0 | 9,35 | 1,7  | 2,5  |
| 3120822599 | 8,5  | 25,0 | 12,8 | 9,0  | 13,5 |
| 3120803599 | 8,5  | 25,0 | 13,0 | 6,0  | 10,5 |
| 3120856599 | 8,5  | 25,0 | 17,5 | 2,5  | 5,5  |
| 3120837599 | 10,2 | 16,0 | 11,0 | 1,0  | 2,0  |
| 3120874599 | 10,2 | 16,0 | 11,0 | 2,0  | 3,0  |
| 3120829599 | 10,2 | 28,0 | 12,5 | 2,5  | 3,7  |
| 3120840599 | 10,2 | 28,0 | 17,5 | 2,5  | 6,5  |
| 3120889599 | 10,3 | 18,6 | 14,0 | 5,2  | 7,2  |
| 3120841599 | 10,5 | 21,0 | 14,5 | 32,0 | 35,0 |
| 3120830599 | 12,2 | 20,0 | 16,0 | 1,0  | 2,0  |
| 3120848599 | 12,5 | 21,0 | 14,5 | 32,5 | 35,5 |



For the protection of surfaces like enamel, paint, textile, glass, ceramic etc.  
Also suitable for decoration purposes.

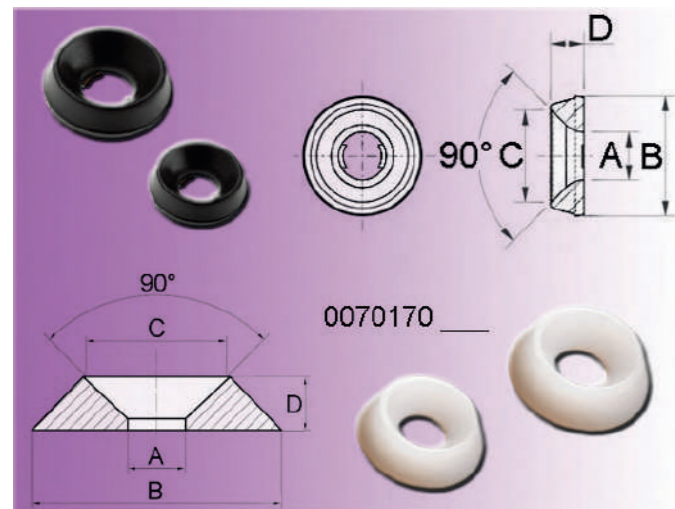
Material: PA 6  
Colour:  
Last digits 599 = black  
Last digits 500 = white

| Part no.   | A   | B    | C | D   | M   | WW    |
|------------|-----|------|---|-----|-----|-------|
| 0071025500 | 2,7 | 6,8  | 5 | 2,0 | 2,5 | 3/32" |
| 0071025599 | 2,7 | 6,8  | 5 | 2,0 | 2,5 | 3/32" |
| 0071030500 | 3,2 | 8,5  | 6 | 2,2 | 3   | 1/8"  |
| 0071030599 | 3,2 | 8,5  | 6 | 2,2 | 3   | 1/8"  |
| 0071040500 | 4,3 | 10,5 | 8 | 2,8 | 4   | 5/32" |
| 0071040599 | 4,3 | 10,5 | 8 | 2,8 | 4   | 5/32" |

| Part no.   | A   | B    | C  | D   | M | WW    |
|------------|-----|------|----|-----|---|-------|
| 0071050500 | 5,3 | 12,7 | 10 | 3,4 | 5 | 3/16" |
| 0071050599 | 5,3 | 12,7 | 10 | 3,4 | 5 | 3/16" |
| 0071060500 | 6,4 | 15   | 12 | 4,0 | 6 | 1/4"  |
| 0071060599 | 6,4 | 15   | 12 | 4,0 | 6 | 1/4"  |
| 0071080500 | 8,4 | 20,0 | 16 | 5,0 | 8 | 5/16" |
| 0071080599 | 8,4 | 20,0 | 16 | 5,0 | 8 | 5/16" |

Metric finishing washers | Type 2

Metric finishing washers | Type 0

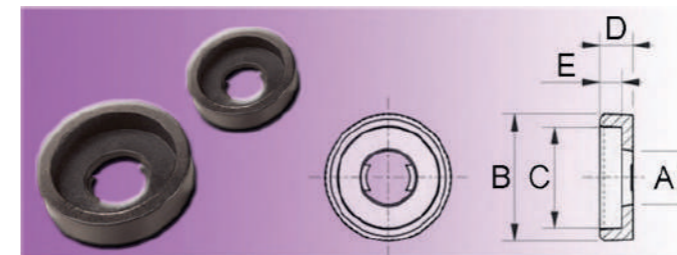


For the protection of surfaces like enamel, paint, textile, glass, ceramic etc.  
Also suitable for decoration purposes.

Material: PA 6  
Colour:  
Last digits 599 = black  
Last digits 500 = white

| Part no.   | A   | B    | C    | D   | M | WW    |
|------------|-----|------|------|-----|---|-------|
| 0070090500 | 3,2 | 10,5 | 7,0  | 3,0 | 3 | 1/8"  |
| 0070090599 | 3,2 | 10,5 | 7,0  | 3,0 | 3 | 1/8"  |
| 0070110500 | 4,3 | 12,5 | 9,0  | 3,0 | 4 | 5/32" |
| 0070110599 | 4,3 | 12,5 | 9,0  | 3,0 | 4 | 5/32" |
| 0070130500 | 5,3 | 14,0 | 11,0 | 3,8 | 5 | 3/16" |

| Part no.   | A   | B    | C    | D   | M | WW    |
|------------|-----|------|------|-----|---|-------|
| 0070130599 | 5,3 | 14,0 | 11,0 | 3,8 | 5 | 3/16" |
| 0070150500 | 6,4 | 16,0 | 13,0 | 4,5 | 6 | 1/4"  |
| 0070150599 | 6,4 | 16,0 | 13,0 | 4,5 | 6 | 1/4"  |
| 0070170500 | 8,0 | 22,3 | 14,3 | 5,9 | 8 | -     |
| 0070170599 | 8,0 | 22,3 | 14,3 | 5,9 | 8 | -     |

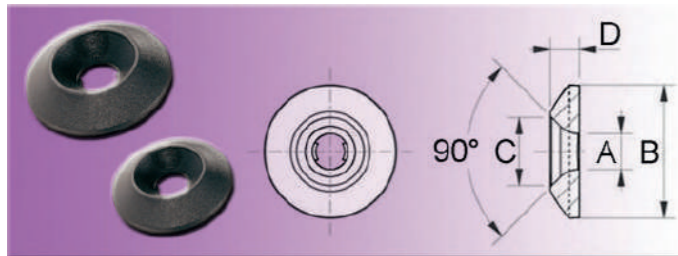


For the protection of surfaces like enamel, paint, textile, glass, ceramic etc.  
Also suitable for decoration purposes.

Material: PA 6  
Colour:  
Last digits 599 = black  
Last digits 500 = white

| Part no.   | A   | B    | C  | D   | E   | M   | WW    |
|------------|-----|------|----|-----|-----|-----|-------|
| 0072025500 | 2,7 | 6,8  | 5  | 2,0 | 1,0 | 2,5 | 3/32" |
| 0072025599 | 2,7 | 6,8  | 5  | 2,0 | 1,0 | 2,5 | 3/32" |
| 0072030500 | 3,2 | 8,5  | 6  | 2,2 | 1,2 | 3   | 1/8"  |
| 0072030599 | 3,2 | 8,5  | 6  | 2,2 | 1,2 | 3   | 1/8"  |
| 0072040500 | 4,3 | 10,5 | 8  | 2,8 | 1,7 | 4   | 5/32" |
| 0072040599 | 4,3 | 10,5 | 8  | 2,8 | 1,7 | 4   | 5/32" |
| 0072050500 | 5,3 | 12,7 | 10 | 3,4 | 2,2 | 5   | 3/16" |
| 0072050599 | 5,3 | 12,7 | 10 | 3,4 | 2,2 | 5   | 3/16" |
| 0072060500 | 6,4 | 15,0 | 12 | 4,0 | 2,7 | 6   | 1/4"  |
| 0072060599 | 6,4 | 15,0 | 12 | 4,0 | 2,7 | 6   | 1/4"  |
| 0072080500 | 8,4 | 20,0 | 16 | 5,0 | 3,5 | 8   | 5/16" |
| 0072080599 | 8,4 | 20,0 | 16 | 5,0 | 3,5 | 8   | 5/16" |

Metric finishing washers | Type 3



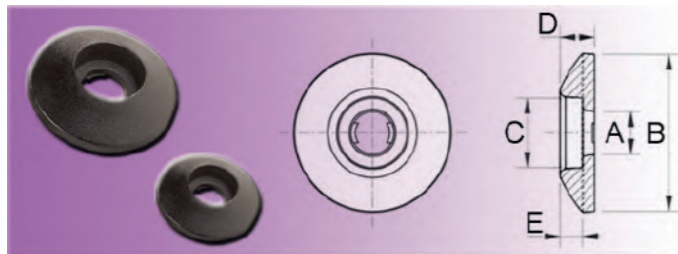
For the protection of surfaces like enamel, paint, textile, glass, ceramic etc.  
Also suitable for decoration purposes.

Material: PA 6  
Colour:  
Last digits 599 = black  
Last digits 500 = white

| Part no.   | A   | B  | C | D   | M | WW    |
|------------|-----|----|---|-----|---|-------|
| 0073030500 | 3,2 | 14 | 7 | 2,9 | 3 | 1/8"  |
| 0073030599 | 3,2 | 14 | 7 | 2,9 | 3 | 1/8"  |
| 0073040500 | 4,3 | 16 | 9 | 3,5 | 4 | 5/32" |
| 0073040599 | 4,3 | 16 | 9 | 3,5 | 4 | 5/32" |

| Part no.   | A   | B  | C  | D   | M | WW    |
|------------|-----|----|----|-----|---|-------|
| 0073050500 | 5,3 | 18 | 11 | 3,8 | 5 | 3/16" |
| 0073050599 | 5,3 | 18 | 11 | 3,8 | 5 | 3/16" |
| 0073060500 | 6,4 | 22 | 13 | 4,5 | 6 | 1/4"  |
| 0073060599 | 6,4 | 22 | 13 | 4,5 | 6 | 1/4"  |

Metric finishing washers | Type 4

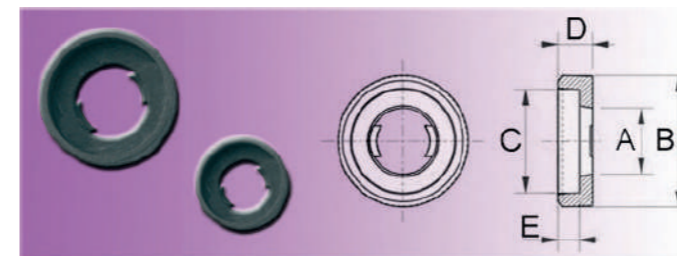


For the protection of surfaces like enamel, paint, textile, glass, ceramic etc.  
Also suitable for decoration purposes.

Material: PA 6  
Colour:  
Last digits 599 = black  
Last digits 500 = white

| Part no.   | A   | B    | C    | D   | E   | M | WW    |
|------------|-----|------|------|-----|-----|---|-------|
| 0074030500 | 3,2 | 14,0 | 5,5  | 2,8 | 1,7 | 3 | 1/8"  |
| 0074030599 | 3,2 | 14,0 | 5,5  | 2,8 | 1,7 | 3 | 1/8"  |
| 0074040500 | 4,3 | 16,0 | 7,0  | 3,5 | 2,3 | 4 | 5/32" |
| 0074040599 | 4,3 | 16,0 | 7,0  | 3,5 | 2,3 | 4 | 5/32" |
| 0074050500 | 5,3 | 18,0 | 8,5  | 4,0 | 2,7 | 5 | 3/16" |
| 0074050599 | 5,3 | 18,0 | 8,5  | 4,0 | 2,7 | 5 | 3/16" |
| 0074060500 | 6,4 | 22,0 | 10,0 | 4,9 | 3,5 | 6 | 1/4"  |
| 0074060599 | 6,4 | 22,0 | 10,0 | 4,9 | 3,5 | 6 | 1/4"  |

Metric finishing washers | Type 5



For the protection of surfaces like enamel, paint, textile, glass, ceramic etc.  
Also suitable for decoration purposes.

Material: PA 6  
Colour:  
Last digits 599 = black  
Last digits 500 = white

| Part no.   | A   | B    | C    | D   | E   | M | WW    |
|------------|-----|------|------|-----|-----|---|-------|
| 0075030500 | 3,2 | 6,5  | 5,5  | 2,0 | 1,1 | 3 | 1/8"  |
| 0075030599 | 3,2 | 6,5  | 5,5  | 2,0 | 1,1 | 3 | 1/8"  |
| 0075040500 | 4,3 | 8,5  | 7,0  | 2,2 | 1,2 | 4 | 5/32" |
| 0075040599 | 4,3 | 8,5  | 7,0  | 2,2 | 1,2 | 4 | 5/32" |
| 0075050500 | 5,3 | 10,5 | 8,5  | 2,8 | 1,6 | 5 | 3/16" |
| 0075050599 | 5,3 | 10,5 | 8,5  | 2,8 | 1,6 | 5 | 3/16" |
| 0075060500 | 6,4 | 12,7 | 10,0 | 3,4 | 2,1 | 6 | 1/4"  |
| 0075060599 | 6,4 | 12,7 | 10,0 | 3,4 | 2,1 | 6 | 1/4"  |
| 0075080500 | 8,4 | 15,0 | 13,0 | 4,0 | 2,6 | 8 | 5/16" |
| 0075080599 | 8,4 | 15,0 | 13,0 | 4,0 | 2,6 | 8 | 5/16" |

Metric finishing washers | Type 6



For the protection of surfaces like enamel, paint, textile, glass, ceramic etc.  
Also suitable for decoration purposes.

Material: PA 6  
Colour: black

| Part no. | A   | B   | C   | D   | M   | Part no. | A    | B   | C   | D    | M |
|----------|-----|-----|-----|-----|-----|----------|------|-----|-----|------|---|
| 0076025  | 7,0 | 2,7 | 1,5 | 5,0 | 2,5 | 0076040  | 12,0 | 4,1 | 3,0 | 7,0  | 4 |
| 0076030  | 7,5 | 3,1 | 1,5 | 5,4 | 3   | 0076060  | 16,0 | 6,2 | 3,3 | 13,0 | 6 |

# Spherical washers

Steel / Stainless Steel

## SPECIFICATION

### Version in Steel

#### Types

- Type **C**: male
- Type **D**: female  $d_4 = d_3$
- Type **G**: female  $d_4 > d_3$

#### Type **C / D**

case hardening steel  
case hardened  
all round depth 0.2 to 0.4 mm  
hardness (550+ 100) HV 10

#### Type **G**

Heat-treatable Steel  
tempered  
hardness (350 + 80) HV 30

### Version in Stainless Steel

#### Types

- Type **C**: male
- Type **D**: female  $d_4 = d_3$

Stainless Steel AISI 303 **NI**  
not hardened

Stainless Steel AISI 316 **A4**  
not hardened

## INFORMATION

Spherical washers DIN 6319 are used for clamping on non-parallel surfaces.

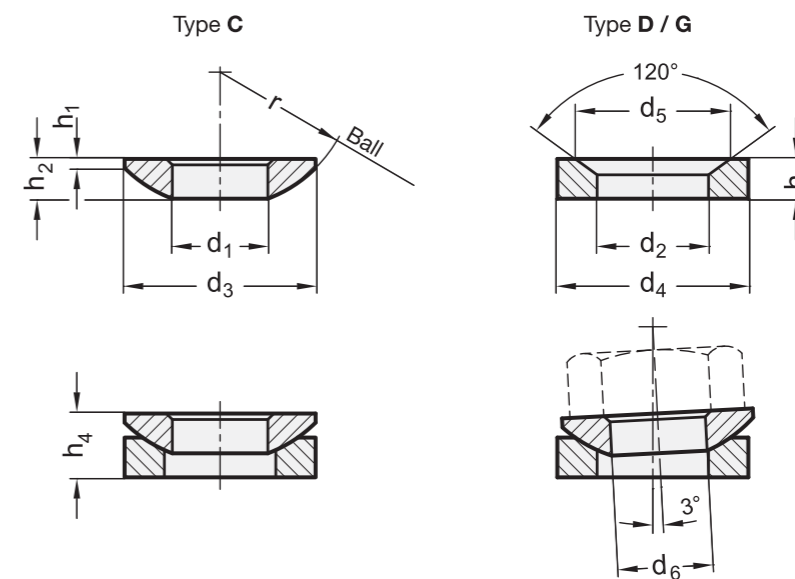
Female washers Type G are mainly used on elongated holes.  
When utilizing hexagon nuts with spherical seating DIN 6330 (see page 988 ) the male washer is redundant.

### ON REQUEST (STEEL VERSION)

- Not hardened spherical washers.

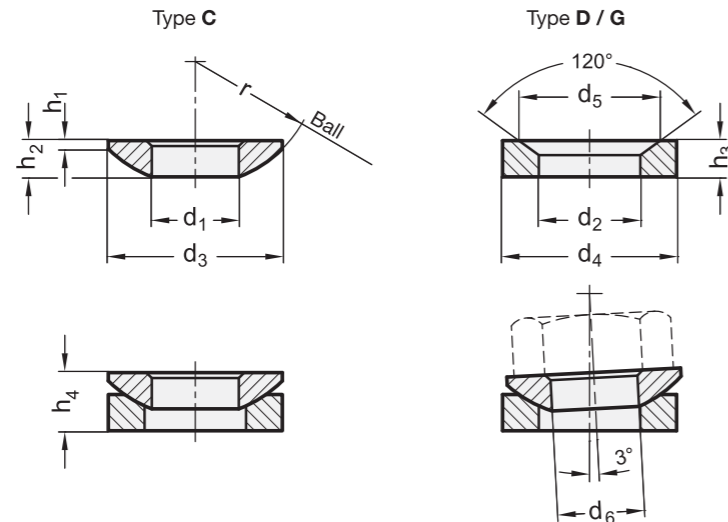
## TECHNICAL INFORMATION

- ISO-Fundamental Tolerances (see page A21)
- Stainless Steel characteristics (see page A26)



## DIN 6319

| Description     | d1 H13 | d2 H13 | d3 | d4 | d5   | d6   | h1  | h2   | h3  | h4   | r  | Transferable static bolt force in kN max. | ⚖   |
|-----------------|--------|--------|----|----|------|------|-----|------|-----|------|----|---|-----|
| DIN 6319-6,4-C  | 6.4    | -      | 12 | -  | -    | M 6  | 0.7 | 2.3  | -   | -    | 9  | 9   | 1   |
| DIN 6319-8,4-C  | 8.4    | -      | 17 | -  | -    | M 8  | 0.6 | 3.2  | -   | -    | 12 | 17  | 2   |
| DIN 6319-10,5-C | 10.5   | -      | 21 | -  | -    | M 10 | 0.8 | 4    | -   | -    | 15 | 26  | 5   |
| DIN 6319-13-C   | 13     | -      | 24 | -  | -    | M 12 | 1.1 | 4.6  | -   | -    | 17 | 38  | 7   |
| DIN 6319-15-C   | 15     | -      | 28 | -  | -    | M 14 | 1.2 | 5    | -   | -    | 22 | 53  | 12  |
| DIN 6319-17-C   | 17     | -      | 30 | -  | -    | M 16 | 1.3 | 5.3  | -   | -    | 22 | 73  | 13  |
| DIN 6319-21-C   | 21     | -      | 36 | -  | -    | M 20 | 2   | 6.3  | -   | -    | 27 | 117                                       | 30  |
| DIN 6319-25-C   | 25     | -      | 44 | -  | -    | M 24 | 2.4 | 8.2  | -   | -    | 32 | 168                                       | 45  |
| DIN 6319-31-C   | 31     | -      | 56 | -  | -    | M 30 | 3.6 | 11.2 | -   | -    | 41 | 269                                       | 100 |
| DIN 6319-37-C   | 37     | -      | 68 | -  | -    | M 36 | 4.6 | 14   | -   | -    | 50 | 394                                       | 190 |
| DIN 6319-43-C   | 43     | -      | 78 | -  | -    | M 42 | 6.5 | 17   | -   | -    | 58 | 542                                       | 305 |
| DIN 6319-50-C   | 50     | -      | 92 | -  | -    | M 48 | 8   | 21   | -   | -    | 67 | 714                                       | 540 |
| DIN 6319-7,1-D  | -      | 7.1    | -  | 12 | 11   | M 6  | -   | -    | 2.8 | 4.2  | 9  | 9   | 2   |
| DIN 6319-9,6-D  | -      | 9.6    | -  | 17 | 14.5 | M 8  | -   | -    | 3.5 | 5.6  | 12 | 17  | 4   |
| DIN 6319-12-D   | -      | 12     | -  | 21 | 18.5 | M 10 | -   | -    | 4.2 | 6.5  | 15 | 26  | 7   |
| DIN 6319-14,2-D | -      | 14.2   | -  | 24 | 20   | M 12 | -   | -    | 5   | 8    | 17 | 38  | 10  |
| DIN 6319-16,5-D | -      | 16.5   | -  | 28 | 24.8 | M 14 | -   | -    | 5.6 | 8.5  | 22 | 53  | 15  |
| DIN 6319-19-D   | -      | 19     | -  | 30 | 26   | M 16 | -   | -    | 6.2 | 9.6  | 22 | 73  | 18  |
| DIN 6319-23,2-D | -      | 23.2   | -  | 36 | 31   | M 20 | -   | -    | 7.5 | 11.7 | 27 | 117                                       | 30  |
| DIN 6319-28-D   | -      | 28     | -  | 44 | 37   | M 24 | -   | -    | 9.5 | 15.2 | 32 | 168                                       | 61  |
| DIN 6319-35-D   | -      | 35     | -  | 56 | 49   | M 30 | -   | -    | 12  | 19.2 | 41 | 269                                       | 120 |
| DIN 6319-42-D   | -      | 42     | -  | 68 | 60   | M 36 | -   | -    | 15  | 23.5 | 50 | 394                                       | 230 |
| DIN 6319-49-D   | -      | 49     | -  | 78 | 70   | M 42 | -   | -    | 18  | 29   | 58 | 542                                       | 360 |
| DIN 6319-56-D   | -      | 56     | -  | 92 | 82   | M 48 | -   | -    | 22  | 35.5 | 67 | 714                                       | 640 |
| DIN 6319-7,1-G  | -      | 7.1    | -  | 17 | 11   | M 6  | -   | -    | 4   | -    | 9  | 9   | 6   |
| DIN 6319-9,6-G  | -      | 9.6    | -  | 24 | 14.5 | M 8  | -   | -    | 5   | -    | 12 | 17  | 14  |
| DIN 6319-12-G   | -      | 12     | -  | 30 | 18.5 | M 10 | -   | -    | 5   | -    | 15 | 26  | 20  |
| DIN 6319-14,2-G | -      | 14.2   | -  | 36 | 20   | M 12 | -   | -    | 6   | -    | 17 | 38  | 38  |
| DIN 6319-19-G   | -      | 19     | -  | 44 | 26   | M 16 | -   | -    | 7   | -    | 22 | 73  | 50  |
| DIN 6319-23,2-G | -      | 23.2   | -  | 50 | 31   | M 20 | -   | -    | 8   | -    | 27 | 117                                       | 92  |
| DIN 6319-28-G   | -      | 28     | -  | 60 | 37   | M 24 | -   | -    | 10  | -    | 32 | 168                                       | 165 |
| DIN 6319-35-G   | -      | 35     | -  | 68 | 49   | M 30 | -   | -    | 12  | -    | 41 | 269                                       | 235 |



DIN 6319-NI

STAINLESS STEEL

| Description        | d1 H13 | d2 H13 | d3 | d4 | d5   | d6   | h1  | h2   | h3  | h4   | r  | ⚖   |
|--------------------|--------|--------|----|----|------|------|-----|------|-----|------|----|-----|
| DIN 6319-6,4-C-NI  | 6.4    | -      | 12 | -  | -    | M 6  | 0.7 | 2.3  | -   | -    | 9  | 1   |
| DIN 6319-8,4-C-NI  | 8.4    | -      | 17 | -  | -    | M 8  | 0.6 | 3.2  | -   | -    | 12 | 3   |
| DIN 6319-10,5-C-NI | 10.5   | -      | 21 | -  | -    | M 10 | 0.8 | 4    | -   | -    | 15 | 6   |
| DIN 6319-13-C-NI   | 13     | -      | 24 | -  | -    | M 12 | 1.1 | 4.6  | -   | -    | 17 | 8   |
| DIN 6319-17-C-NI   | 17     | -      | 30 | -  | -    | M 16 | 1.3 | 5.3  | -   | -    | 22 | 13  |
| DIN 6319-21-C-NI   | 21     | -      | 36 | -  | -    | M 20 | 2   | 6.3  | -   | -    | 27 | 22  |
| DIN 6319-25-C-NI   | 25     | -      | 44 | -  | -    | M 24 | 2.4 | 8.2  | -   | -    | 32 | 43  |
| DIN 6319-31-C-NI   | 31     | -      | 56 | -  | -    | M 30 | 3.6 | 11.2 | -   | -    | 41 | 110 |
| DIN 6319-37-C-NI   | 37     | -      | 68 | -  | -    | M 36 | 4.6 | 14   | -   | -    | 50 | 190 |
| DIN 6319-43-C-NI   | 43     | -      | 78 | -  | -    | M 42 | 6.5 | 17   | -   | -    | 58 | 305 |
| DIN 6319-50-C-NI   | 50     | -      | 92 | -  | -    | M 48 | 8   | 21   | -   | -    | 67 | 540 |
| DIN 6319-7,1-D-NI  | -      | 7.1    | -  | 12 | 11   | M 6  | -   | -    | 2.8 | 4.2  | 9  | 1   |
| DIN 6319-9,6-D-NI  | -      | 9.6    | -  | 17 | 14.5 | M 8  | -   | -    | 3.5 | 5.6  | 12 | 4   |
| DIN 6319-12-D-NI   | -      | 12     | -  | 21 | 18.5 | M 10 | -   | -    | 4.2 | 6.5  | 15 | 6   |
| DIN 6319-14,2-D-NI | -      | 14.2   | -  | 24 | 20   | M 12 | -   | -    | 5   | 8    | 17 | 10  |
| DIN 6319-19-D-NI   | -      | 19     | -  | 30 | 26   | M 16 | -   | -    | 6.2 | 9.6  | 22 | 18  |
| DIN 6319-23,2-D-NI | -      | 23.2   | -  | 36 | 31   | M 20 | -   | -    | 7.5 | 11.7 | 27 | 32  |
| DIN 6319-28-D-NI   | -      | 28     | -  | 44 | 37   | M 24 | -   | -    | 9.5 | 15.2 | 32 | 61  |
| DIN 6319-35-D-NI   | -      | 35     | -  | 56 | 49   | M 30 | -   | -    | 12  | 19.2 | 41 | 110 |
| DIN 6319-42-D-NI   | -      | 42     | -  | 68 | 60   | M 36 | -   | -    | 15  | 23.5 | 50 | 230 |
| DIN 6319-49-D-NI   | -      | 49     | -  | 78 | 70   | M 42 | -   | -    | 18  | 29   | 58 | 360 |
| DIN 6319-56-D-NI   | -      | 56     | -  | 92 | 82   | M 48 | -   | -    | 22  | 35.5 | 67 | 640 |

DIN 6319-A4

STAINLESS STEEL

| Description        | d1 H13 | d2 H13 | d3 | d4 | d5   | d6   | h1  | h2   | h3  | h4   | r  | ⚖   |
|--------------------|--------|--------|----|----|------|------|-----|------|-----|------|----|-----|
| DIN 6319-6,4-C-A4  | 6.4    | -      | 12 | -  | -    | M 6  | 0.7 | 2.3  | -   | -    | 9  | 3   |
| DIN 6319-8,4-C-A4  | 8.4    | -      | 17 | -  | -    | M 8  | 0.6 | 3.2  | -   | -    | 12 | 2   |
| DIN 6319-10,5-C-A4 | 10.5   | -      | 21 | -  | -    | M 10 | 0.8 | 4    | -   | -    | 15 | 7   |
| DIN 6319-13-C-A4   | 13     | -      | 24 | -  | -    | M 12 | 1.1 | 4.6  | -   | -    | 17 | 7   |
| DIN 6319-17-C-A4   | 17     | -      | 30 | -  | -    | M 16 | 1.3 | 5.3  | -   | -    | 22 | 13  |
| DIN 6319-21-C-A4   | 21     | -      | 36 | -  | -    | M 20 | 2   | 6.3  | -   | -    | 27 | 22  |
| DIN 6319-25-C-A4   | 25     | -      | 44 | -  | -    | M 24 | 2.4 | 8.2  | -   | -    | 32 | 43  |
| DIN 6319-31-C-A4   | 31     | -      | 56 | -  | -    | M 30 | 3.6 | 11.2 | -   | -    | 41 | 110 |
| DIN 6319-7,1-D-A4  | -      | 7.1    | -  | 12 | 11   | M 6  | -   | -    | 2.8 | 4.2  | 9  | 2   |
| DIN 6319-9,6-D-A4  | -      | 9.6    | -  | 17 | 14.5 | M 8  | -   | -    | 3.5 | 5.6  | 12 | 4   |
| DIN 6319-12-D-A4   | -      | 12     | -  | 21 | 18,5 | M 10 | -   | -    | 4.2 | 6.5  | 15 | 7   |
| DIN 6319-14,2-D-A4 | -      | 14.2   | -  | 24 | 20   | M 12 | -   | -    | 5   | 8    | 17 | 10  |
| DIN 6319-19-D-A4   | -      | 19     | -  | 30 | 26   | M 16 | -   | -    | 6.2 | 9.6  | 22 | 18  |
| DIN 6319-23,2-D-A4 | -      | 23.2   | -  | 36 | 31   | M 20 | -   | -    | 7.5 | 11.7 | 27 | 31  |
| DIN 6319-28-D-A4   | -      | 28     | -  | 44 | 37   | M 24 | -   | -    | 9.5 | 15.2 | 32 | 61  |
| DIN 6319-35-D-A4   | -      | 35     | -  | 56 | 49   | M 30 | -   | -    | 12  | 19.2 | 41 | 120 |

Spherical washers

Steel / Stainless Steel, combined

SPECIFICATION

Version in Steel

Steel **ST**  
Case hardening steel  
case hardened  
all round depth 0.2 to 0.4 mm  
hardness (550 + 100) HV 10

Version in Stainless Steel

Stainless Steel **AISI 303 NI**

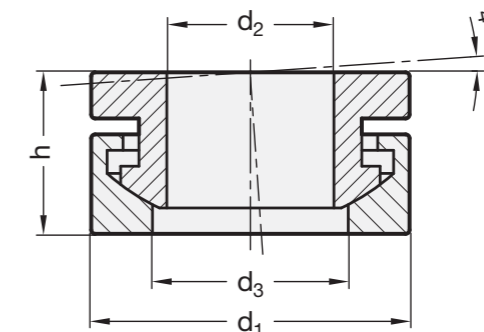
INFORMATION

Spherical washers combinations GN 6319.1 provide an "und detachable" connection for male and female spherical washers DIN 6319 (see page 962). They simply storage and allow fast and efficient installation.



TECHNICAL INFORMATION

- Stainless Steel characteristics (see page A26)



GN 6319.1

| Description     | d1 | d2   | d3   | h    | For screw | Static load F in kN | ⚖   |
|-----------------|----|------|------|------|-----------|---------------------|-----|
| GN 6319.1-13-ST | 13 | 6.4  | 7.4  | 7    | M 6       | 9                   | 4   |
| GN 6319.1-17-ST | 17 | 8.4  | 9.7  | 8.5  | M 8       | 17                  | 9   |
| GN 6319.1-21-ST | 21 | 10.5 | 12   | 10.5 | M 10      | 26                  | 17  |
| GN 6319.1-25-ST | 25 | 13   | 14.8 | 13   | M 12      | 38                  | 28  |
| GN 6319.1-32-ST | 32 | 17   | 19.7 | 17   | M 16      | 73                  | 62  |
| GN 6319.1-40-ST | 40 | 21   | 24.6 | 20.3 | M 20      | 117                 | 114 |

GN 6319.1-NI

STAINLESS STEEL

| Description     | d1 | d2   | d3   | h    | For screw | Static load F in kN | ⚖   |
|-----------------|----|------|------|------|-----------|---------------------|-----|
| GN 6319.1-13-NI | 13 | 6.4  | 7.4  | 7    | M 6       | 6                   | 4   |
| GN 6319.1-17-NI | 17 | 8.4  | 9.7  | 8.5  | M 8       | 12                  | 9   |
| GN 6319.1-21-NI | 21 | 10.5 | 12   | 10.5 | M 10      | 16                  | 18  |
| GN 6319.1-25-NI | 25 | 13   | 14.8 | 13   | M 12      | 24                  | 20  |
| GN 6319.1-32-NI | 32 | 17   | 19.7 | 17   | M 16      | 45                  | 60  |
| GN 6319.1-40-NI | 40 | 21   | 24.6 | 20.3 | M 20      | 71                  | 110 |

## Spherical levelling washers

Steel / Stainless Steel

### SPECIFICATION

#### Version in Steel

Steel, 1.7225 (42 CrMo 4 V) **ST**  
zinc plated, blue passivated

#### Version in Stainless Steel

Stainless Steel AISI 303 **NI**

### INFORMATION

Spherical levelling washers GN 350.3 have been designed to match the levelling sets GN 350 (see page 1014), GN 350.1 (see page 1016), GN 350.2 (see page 1018), GN 350.5 (see page 1020).

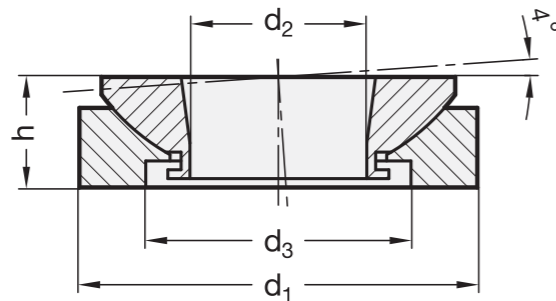
The two spherical washers are used together „und detachably“.

The load bearing capacity of these spherical washers is relatively high. This is not only due to the material quality but also to the matched sphere of the concave „pan“.

Furthermore it is recommended using high-strength washers for bridging d.

### TECHNICAL INFORMATION

- Stainless Steel characteristics (see page A26)



### GN 350.3

| Description     | d1 -1 | d2  | d3 | h    | For threaded bolt up to max. | Static load in kN | ⚖   |
|-----------------|-------|-----|----|------|------------------------------|-------------------|-----|
| GN 350.3-25-ST  | 25    | 8.5 | 15 | 8    | M 8                          | 40                | 22  |
| GN 350.3-32-ST  | 32    | 13  | 20 | 10   | M 10                         | 65                | 44  |
| GN 350.3-45-ST  | 45    | 20  | 30 | 12.5 | M 16                         | 120               | 90  |
| GN 350.3-58-ST  | 58    | 29  | 38 | 16   | M 24                         | 210               | 215 |
| GN 350.3-70-ST  | 70    | 36  | 48 | 20   | M 30                         | 330               | 362 |
| GN 350.3-80-ST  | 80    | 44  | 61 | 20   | M 36                         | 495               | 425 |
| GN 350.3-105-ST | 105   | 58  | 78 | 25   | M 48                         | 920               | 930 |

### GN 350.3-NI

**STAINLESS STEEL**

| Description     | d1 -1 | d2  | d3 | h    | For threaded bolt up to max. | Static load in kN | ⚖   |
|-----------------|-------|-----|----|------|------------------------------|-------------------|-----|
| GN 350.3-25-NI  | 25    | 8.5 | 15 | 8    | M 8                          | 271               | 20  |
| GN 350.3-32-NI  | 32    | 13  | 20 | 10   | M 10                         | 43.4              | 45  |
| GN 350.3-45-NI  | 45    | 20  | 30 | 12.5 | M 16                         | 84                | 105 |
| GN 350.3-58-NI  | 58    | 29  | 38 | 16   | M 24                         | 148               | 215 |
| GN 350.3-70-NI  | 70    | 36  | 48 | 20   | M 30                         | 225               | 372 |
| GN 350.3-80-NI  | 80    | 44  | 61 | 20   | M 36                         | 323               | 427 |
| GN 350.3-105-NI | 105   | 58  | 78 | 25   | M 48                         | 546               | 940 |

## Washers

Steel / Stainless Steel

### SPECIFICATION

#### Types

- Type **A**: with cylindrical bore
- Type **B**: with bore for countersunk screw

#### Version in Steel

Steel **ST**

- turned
- blackened **BT**
- zinc plated, blue passivated **ZB**

#### Version in Stainless Steel

Stainless Steel AISI 303 **NI**

- turned
- matt shot-blasted **MT**

### INFORMATION

Washers GN 6341 are used mainly in mechanical machine and jig construction when DIN 125, DIN 9021 and DIN 6340 washers no longer meet requirements.

In particular, Type B for countersunk screws is ideal for solid screw connections with a low construction height.

### TECHNICAL INFORMATION

- Stainless Steel characteristics (see page A26)



\* Complete with type index of the Washers

**BT**      **ZB**

### GN 6341

| Description          | d1 +0.5/+0.2 | d2 | d3   | s   | ⚖  |
|----------------------|--------------|----|------|-----|----|
| GN 6341-ST-4-10-A-*  | 4            | 10 | -    | 2.5 | 1  |
| GN 6341-ST-4-13-A-*  | 4            | 13 | -    | 2.5 | 2  |
| GN 6341-ST-5-13-A-*  | 5            | 13 | -    | 3   | 3  |
| GN 6341-ST-5-16-A-*  | 5            | 16 | -    | 3   | 3  |
| GN 6341-ST-6-15-A-*  | 6            | 15 | -    | 4   | 4  |
| GN 6341-ST-6-20-A-*  | 6            | 20 | -    | 4   | 8  |
| GN 6341-ST-8-20-A-*  | 8            | 20 | -    | 5   | 9  |
| GN 6341-ST-8-26-A-*  | 8            | 26 | -    | 5   | 18 |
| GN 6341-ST-10-25-A-* | 10           | 25 | -    | 6.5 | 20 |
| GN 6341-ST-10-32-A-* | 10           | 32 | -    | 6.5 | 40 |
| GN 6341-ST-12-30-A-* | 12           | 30 | -    | 7.5 | 34 |
| GN 6341-ST-12-40-A-* | 12           | 40 | -    | 7.5 | 65 |
| GN 6341-ST-4-10-B-*  | 4            | 10 | 8.4  | 2.5 | 1  |
| GN 6341-ST-4-13-B-*  | 4            | 13 | 8.4  | 2.5 | 2  |
| GN 6341-ST-5-13-B-*  | 5            | 13 | 10.5 | 3   | 2  |
| GN 6341-ST-5-16-B-*  | 5            | 16 | 10.5 | 3   | 3  |
| GN 6341-ST-6-15-B-*  | 6            | 15 | 12.6 | 4   | 3  |
| GN 6341-ST-6-20-B-*  | 6            | 20 | 12.6 | 4   | 8  |
| GN 6341-ST-8-20-B-*  | 8            | 20 | 16.8 | 5   | 8  |
| GN 6341-ST-8-26-B-*  | 8            | 26 | 16.8 | 5   | 16 |
| GN 6341-ST-10-25-B-* | 10           | 25 | 21   | 6.5 | 15 |
| GN 6341-ST-10-32-B-* | 10           | 32 | 21   | 6.5 | 30 |
| GN 6341-ST-12-30-B-* | 12           | 30 | 25.2 | 7.5 | 25 |
| GN 6341-ST-12-40-B-* | 12           | 40 | 25.2 | 7.5 | 57 |

### GN 6341-NI

**STAINLESS STEEL**

| Description           | d1 +0.5/+0.2 | d2 | d3   | s   | ⚖  |
|-----------------------|--------------|----|------|-----|----|
| GN 6341-NI-4-10-A-MT  | 4            | 10 | -    | 2.5 | 1  |
| GN 6341-NI-4-13-A-MT  | 4            | 13 | -    | 2.5 | 2  |
| GN 6341-NI-5-13-A-MT  | 5            | 13 | -    | 3   | 2  |
| GN 6341-NI-5-16-A-MT  | 5            | 16 | -    | 3   | 4  |
| GN 6341-NI-6-15-A-MT  | 6            | 15 | -    | 4   | 4  |
| GN 6341-NI-6-20-A-MT  | 6            | 20 | -    | 4   | 8  |
| GN 6341-NI-8-20-A-MT  | 8            | 20 | -    | 5   | 10 |
| GN 6341-NI-8-26-A-MT  | 8            | 26 | -    | 5   | 18 |
| GN 6341-NI-10-25-A-MT | 10           | 25 | -    | 6.5 | 20 |
| GN 6341-NI-10-32-A-MT | 10           | 32 | -    | 6.5 | 36 |
| GN 6341-NI-12-30-A-MT | 12           | 30 | -    | 7.5 | 33 |
| GN 6341-NI-12-40-A-MT | 12           | 40 | -    | 7.5 | 65 |
| GN 6341-NI-4-10-B-MT  | 4            | 10 | 8.4  | 2.5 | 1  |
| GN 6341-NI-4-13-B-MT  | 4            | 13 | 8.4  | 2.5 | 2  |
| GN 6341-NI-5-13-B-MT  | 5            | 13 | 10.5 | 3   | 2  |
| GN 6341-NI-5-16-B-MT  | 5            | 16 | 10.5 | 3   | 4  |
| GN 6341-NI-6-15-B-MT  | 6            | 15 | 12.6 | 4   | 4  |
| GN 6341-NI-6-20-B-MT  | 6            | 20 | 12.6 | 4   | 8  |
| GN 6341-NI-8-20-B-MT  | 8            | 20 | 16.8 | 5   | 5  |
| GN 6341-NI-8-26-B-MT  | 8            | 26 | 16.8 | 5   | 16 |
| GN 6341-NI-10-25-B-MT | 10           | 25 | 21   | 6.5 | 20 |
| GN 6341-NI-10-32-B-MT | 10           | 32 | 21   | 6.5 | 31 |
| GN 6341-NI-12-30-B-MT | 12           | 30 | 25.2 | 7.5 | 25 |
| GN 6341-NI-12-40-B-MT | 12           | 40 | 25.2 | 7.5 | 60 |

# Heavy duty washers

Low type, High type

## SPECIFICATION

Steel, 1.7227 (42 CrMoS 4 V)

tempered to tensile strength

Rm = 1220 ... 1400 N/mm<sup>2</sup>

fine turned and slide ground

blackened **BT**

GEOMET 500-treated **GO**

## INFORMATION

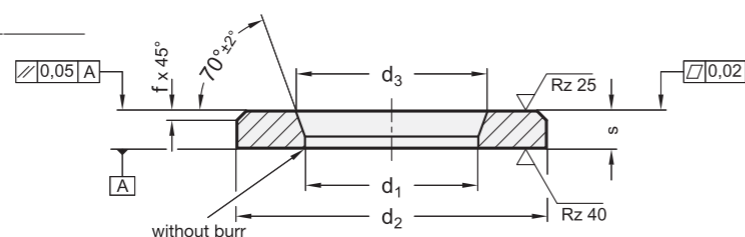
The influence of a washer on the quality of the screwed connection is very often underestimated. With washers GN 6339, high quality preloaded screwed connections can be established.

A high static clamping force can be reached avoiding loss of tension.

At a specified preloaded clamping force it is often possible to use thinner bolts. This can result in a better ratio between clamping distance and bolt diameter to minimise the danger of failure.

The case hardened smooth bolt head/screw contact face leads to a lower and more constant friction co-efficient even when continuous clamping and releasing operations are required.

Washers GN 6339 are only suitable for machine construction bolts of classes 8.8 / 10.9 / 12.9, and not for steel bolts DIN 6914.



## TECHNICAL INFORMATION

- ISO-Fundamental Tolerances (see page A21)

\* Complete with finish index of the Heavy duty washer

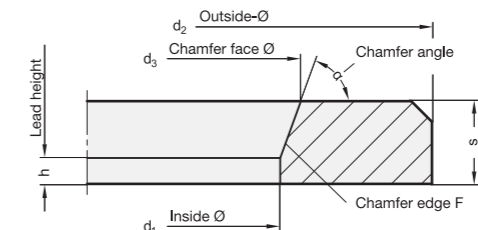
**BT** Blackened  
**GO** Geomet 500-treated

## GN 6339

| Description           | d1 H13 | d2 h13 Low type | d2 h13 High type | s Low type | s High type | d3 H13 | f Low type | f High type | For threaded bolts | ⚖   |
|-----------------------|--------|-----------------|------------------|------------|-------------|--------|------------|-------------|--------------------|-----|
| GN 6339-6,3-12-2,5-*  | 6.3    | 12              | -                | 2.5        | -           | 7      | 0.6        | -           | M 6                | 2   |
| GN 6339-6,3-17-3-*    | 6.3    | -               | 17               | -          | 3           | 7      | -          | 1           | M 6                | 2   |
| GN 6339-8,4-16-2,5-*  | 8.4    | 16              | -                | 2.5        | -           | 9.5    | 0.75       | -           | M 8                | 2   |
| GN 6339-8,4-21-4-*    | 8.4    | -               | 21               | -          | 4           | 9.5    | -          | 1.5         | M 8                | 8   |
| GN 6339-10,4-20-3-*   | 10.4   | 20              | -                | 3          | -           | 11.5   | 0.75       | -           | M 10               | 5   |
| GN 6339-10,4-25-4-*   | 10.4   | -               | 25               | -          | 4           | 11.5   | -          | 1.5         | M 10               | 12  |
| GN 6339-12,5-24-3,5-* | 12.5   | 24              | -                | 3.5        | -           | 14     | 1          | -           | M 12               | 19  |
| GN 6339-12,5-30-6-*   | 12.5   | -               | 30               | -          | 6           | 14     | -          | 2           | M 12               | 26  |
| GN 6339-14,5-28-3,5-* | 14.5   | 28              | -                | 3.5        | -           | 16     | 1          | -           | M 14               | 12  |
| GN 6339-14,5-36-6-*   | 14.5   | -               | 36               | -          | 6           | 16     | -          | 2           | M 14               | 38  |
| GN 6339-16,5-30-4-*   | 16.5   | 30              | -                | 4          | -           | 18     | 1          | -           | M 16               | 15  |
| GN 6339-16,5-40-6-*   | 16.5   | -               | 40               | -          | 6           | 18     | -          | 2           | M 16               | 47  |
| GN 6339-18,5-34-5-*   | 18.5   | 34              | -                | 5          | -           | 21     | 1.5        | -           | M 18               | 23  |
| GN 6339-18,5-44-8-*   | 18.5   | -               | 44               | -          | 8           | 21     | -          | 2.5         | M 18               | 74  |
| GN 6339-20,5-37-5-*   | 20.5   | 37              | -                | 5          | -           | 23     | 1.5        | -           | M 20               | 78  |
| GN 6339-20,5-44-8-*   | 20.5   | -               | 44               | -          | 8           | 23     | -          | 2.5         | M 20               | 71  |
| GN 6339-22,5-40-5-*   | 22.5   | 40              | -                | 5          | -           | 25     | 1.5        | -           | M 22               | 82  |
| GN 6339-22,5-50-8-*   | 22.5   | -               | 50               | -          | 8           | 25     | -          | 2.5         | M 22               | 93  |
| GN 6339-24,5-44-5-*   | 24.5   | 44              | -                | 5          | -           | 27     | 1.5        | -           | M 24               | 99  |
| GN 6339-24,5-50-10-*  | 24.5   | -               | 50               | -          | 10          | 27     | -          | 3.5         | M 24               | 100 |
| GN 6339-28-50-6-*     | 28     | 50              | -                | 6          | -           | 31     | 1.5        | -           | M 27               | 150 |
| GN 6339-28-60-10-*    | 28     | -               | 60               | -          | 10          | 31     | -          | 3.5         | M 27               | 161 |
| GN 6339-31-56-6-*     | 31     | 56              | -                | 6          | -           | 34     | 1.5        | -           | M 30               | 190 |
| GN 6339-31-68-10-*    | 31     | -               | 68               | -          | 10          | 34     | -          | 3.5         | M 30               | 212 |
| GN 6339-37-66-7-*     | 37     | 66              | -                | 7          | -           | 40     | 2          | -           | M 36               | 122 |

Weight type BT

## TECHNICAL INFORMATION



### Outside diameter d2

The outside diameter d2 of the lower type refers to washers DIN 125 / ISO 7089, and the higher type to washers DIN 7349.

### Chamfer face diameter d3

This dimension is, together with the chamfer angle  $\alpha = 70^\circ$  and the inside diameter d1, the most important dimension of these heavy duty washers. Diameter d3 is actually, even in the lower tolerance range, larger than the max. contact under head diameter on a bolt. This will ensure that the chamfer of d3 of the hardened washer will not be pressed into the underhead radius causing an indentation on the bolt which would damage the bolt.

### Inside diameter d1

The inside diameter d1 is kept as small as possible ensuring that the bolt is inserted centrally into the washer. The choice of a matching pair of bolt and washer with least radial clearance is important in order to avoid a mismatch between chamfer diameter d3 and the max. contact area diameter of the bolt head.

### Chamfer angle $\alpha = 70^\circ \pm 2^\circ$

This relatively large angle is necessary when using hexagon headed bolts, which usually have a tapered transfer from shank to head (the so-called trumpet) to avoid fouling of the washer.

### Chamfer edge F

The extended chamfer side F as seen from d3 creates with d1 an edge the so-called trumpet of the transfer from shank to head of the bolt, so that the smallest radial clearance prevails. Even with the smallest angle of 68° and the lower dimension of d3 and d1 the radial clearance of all bolts to DIN EN is still sufficient.

### Lead height h

This is the height of the cylindrical part of the internal diameter d1, h should be as high as possible in relation to the pitch of the thread of the bolt.

### Washer thickness s

Washers GN 6339 are higher when compared with DIN washers (exception: DIN 7439 which is equal to the high type). A larger thickness leads to a stronger washer. As a result, bearing in mind the chamfer d3, a minimum height is established which ensures that the bolt thread will not be damaged when the bolt is tightened.



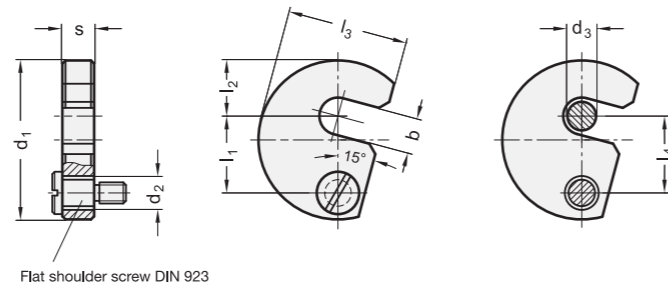
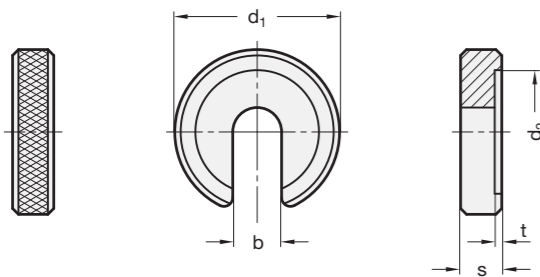
## C-Washers

### SPECIFICATION

Steel  
- Case hardened  
- blackened

### INFORMATION

C-Washers GN 183 may be installed without the removal of the nut from the stud.  
In terms of dimensions they are almost identical to DIN 6372 C-Washers.



Flat shoulder screw DIN 923

### DIN 6371

| Description      | d1 | b    | d2 | d3 | l1   | l2 | l3   | l4 | s-0.5 | Screw<br>DIN 923 | △   |
|------------------|----|------|----|----|------|----|------|----|-------|------------------|-----|
| DIN 6371-38-7,5  | 38 | 7.5  | 9  | 6  | 19.6 | 11 | 29   | 19 | 9.8   | M6x10            | 64  |
| DIN 6371-43-9,5  | 43 | 9.5  | 9  | 8  | 21.6 | 14 | 32.5 | 21 | 9.8   | M6x10            | 80  |
| DIN 6371-48-11,5 | 48 | 11.5 | 9  | 10 | 23.6 | 17 | 36.5 | 23 | 9.8   | M6x10            | 99  |
| DIN 6371-61-13,5 | 61 | 13.5 | 11 | 12 | 29.6 | 22 | 45   | 29 | 11.8  | M8x12            | 189 |
| DIN 6371-68-17,5 | 68 | 17.5 | 11 | 16 | 33.6 | 25 | 50   | 33 | 11.8  | M8x12            | 226 |
| DIN 6371-74-21,5 | 74 | 21.5 | 11 | 20 | 36.6 | 28 | 55   | 36 | 11.8  | M8x12            | 262 |
| DIN 6371-82-25,5 | 82 | 25.5 | 11 | 24 | 40.6 | 32 | 62   | 40 | 15.8  | M8x16            | 423 |
| DIN 6371-97-32   | 97 | 32   | 11 | 30 | 49   | 39 | 73   | 48 | 15.8  | M8x16            | 560 |

### GN 183

| Description    | d1 | b    | d2 | s  | t   | For threaded<br>bolt | △   |
|----------------|----|------|----|----|-----|----------------------|-----|
| GN 183-22-6,2  | 22 | 6.2  | 16 | 6  | 0.8 | M6                   | 13  |
| GN 183-28-8,3  | 28 | 8.3  | 21 | 7  | 1   | M8                   | 23  |
| GN 183-34-10,4 | 34 | 10.4 | 25 | 8  | 1.2 | M10                  | 38  |
| GN 183-40-12,5 | 40 | 12.5 | 30 | 9  | 1.8 | M12                  | 57  |
| GN 183-56-16,5 | 56 | 16.5 | 37 | 12 | 1.8 | M16                  | 161 |

## Captive C-Washers

### SPECIFICATION

Steel  
- tempered  
- blackened

Flat shoulder screw DIN 923  
blackened

### INFORMATION

Captive C-Washers DIN 6371 transfer the clamping force of screw or nut to the workpiece. After releasing the thread they can be swung away from the clamping point. They are hinged and thus can never be mislaid.  
Flat shoulder screws DIN 923 are included.



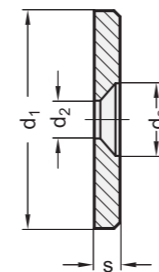
## Countersunk washers

### SPECIFICATION

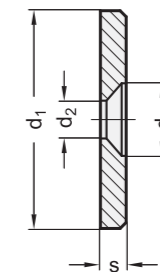
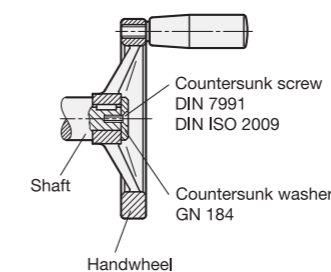
Steel  
- turned  
- blackened

### INFORMATION

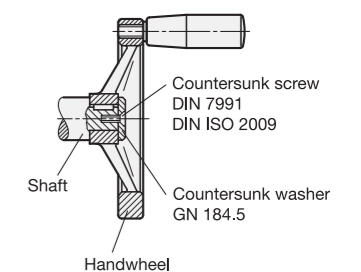
Countersunk washers GN 184 are retained to the face of the shaft end with a countersunk head screw DIN ISO 2009 or DIN 7991 forming a clean-look end cap.  
A typical application is the retention of handwheels with hub keyed to the shaft.



Example of application:  
Fixing  
of a handwheel  
with keyway  
on the shaft



Example of application:  
Fixing  
of a handwheel  
with keyway  
on the shaft



### GN 184

| Description | d1 | d2  | d3 | s   | For counter-<br>sunk screws<br>DIN 7991<br>DIN ISO<br>2009 | △  |
|-------------|----|-----|----|-----|--|----|
| GN 184-16   | 16 | 4.3 | 8  | 3   | M4   | 4  |
| GN 184-20   | 20 | 4.3 | 8  | 3   | M4   | 6  |
| GN 184-22   | 22 | 5.3 | 10 | 3.5 | M5   | 9  |
| GN 184-25   | 25 | 5.3 | 10 | 3.5 | M5   | 12 |
| GN 184-28   | 28 | 5.3 | 10 | 3.5 | M5   | 15 |
| GN 184-32   | 32 | 6.4 | 12 | 4   | M6   | 21 |
| GN 184-36   | 36 | 6.4 | 12 | 4   | M6   | 29 |
| GN 184-40   | 40 | 6.4 | 12 | 5   | M6   | 46 |
| GN 184-45   | 45 | 6.4 | 12 | 6   | M6   | 71 |
| GN 184-52   | 52 | 6.4 | 12 | 6   | M6   | 90 |

### GN 184.5

| Description | d1 | d2  | d3 | s   | For counter-<br>sunk screws<br>DIN 7991<br>DIN ISO<br>2009 | △  |
|-------------|----|-----|----|-----|--|----|
| GN 184.5-16 | 16 | 4.3 | 8  | 3   | M4   | 4  |
| GN 184.5-20 | 20 | 4.3 | 8  | 3   | M4   | 6  |
| GN 184.5-22 | 22 | 5.3 | 10 | 3.5 | M5   | 9  |
| GN 184.5-25 | 25 | 5.3 | 10 | 3.5 | M5   | 12 |
| GN 184.5-28 | 28 | 5.3 | 10 | 3.5 | M5   | 15 |
| GN 184.5-32 | 32 | 6.4 | 12 | 4   | M6   | 22 |
| GN 184.5-36 | 36 | 6.4 | 12 | 4   | M6   | 32 |
| GN 184.5-40 | 40 | 6.4 | 12 | 5   | M6   | 46 |
| GN 184.5-45 | 45 | 6.4 | 12 | 6   | M6   | 70 |
| GN 184.5-52 | 52 | 6.4 | 12 | 6   | M6   | 94 |

### STAINLESS STEEL



## Stainless Steel-Bezel discs

### SPECIFICATION

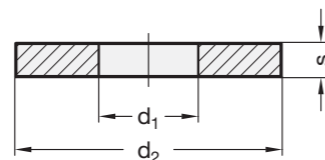
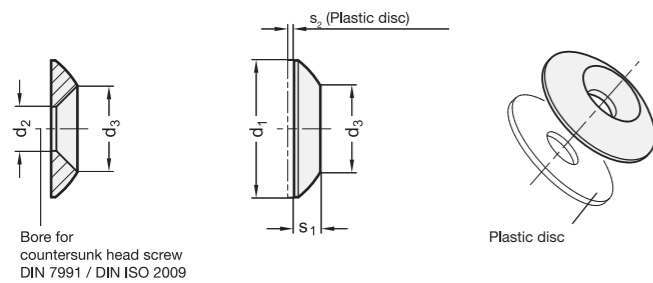
Stainless Steel AISI 303 **NI**  
 - matt shot-blasted  
 Plastic disc (Polyamide PA)  
 white

### INFORMATION

Stainless Steel-Bezel discs GN 185 are used for shrouding screw joints when a visually nice finish is required.  
 The purpose of the plastic discs supplied as a standard item on delivery is merely to avoid damage to improved surfaces.

### TECHNICAL INFORMATION

- Stainless Steel characteristics (see page A26)
- Plastic characteristics (see page A2)



| GN 185       |    | STAINLESS STEEL |      |     |     |   |    |
|--------------|----|-----------------|------|-----|-----|---|----|
| Description  | d1 | d2              | d3   | s1  | s2  | For counter-sunk screws<br>DIN 7991<br>DIN ISO 2009 | Δ  |
| GN 185-18-NI | 18 | 4.3             | 8.5  | 3   | 0.8 | M 4   | 3  |
| GN 185-20-NI | 20 | 5.3             | 10.5 | 3.5 | 1   | M 5   | 5  |
| GN 185-22-NI | 22 | 6.4             | 12.6 | 4   | 1   | M 6   | 7  |
| GN 185-26-NI | 26 | 8.4             | 16.8 | 5   | 1   | M 8   | 11 |

## Washers

### SPECIFICATION

Heat-treatable Steel  
 - tempered hardness (350 + 80) HV 30  
 - phosphate-treated  
 - blanked not deburred

### INFORMATION

Washers DIN 6340 are mainly used for elongated holes.

## Discs with cover cap (Component feet)

### SPECIFICATION

#### Types

- Type **KS**: with cover cap, gliding
- Type **KR**: with cover cap, non-gliding

Steel  
 zinc plated, blue passivated

Cover caps:

Cover cap, gliding **KS**  
 Polyacetal (POM)  
 white (natural colour) RAL 9001

Cover cap, non-gliding **KR**  
 Elastomer (TPE)  
 78 shore, black



### INFORMATION

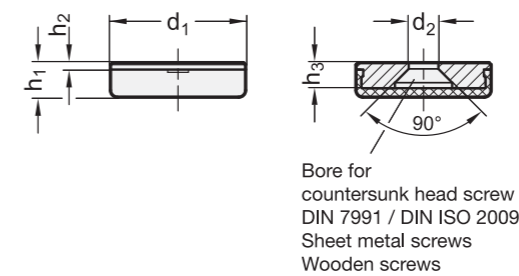
Discs with cover caps GN 338 are suitable for use as gliding or non gliding feet on machinery.  
 Removal of the cover can be done by inserting a screwdriver in the gap on the edge.

### ON REQUEST

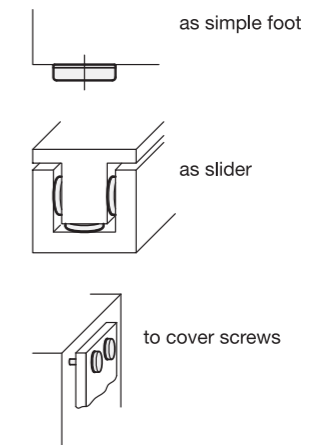
- Cover cap in other colours (Standard white, natural colour)

### TECHNICAL INFORMATION

- Plastic characteristics - Polyacetal (POM) (see page A2)
- Plastic characteristics - Elastomer (TPE) (see page A2)



### Examples of application



### DIN 6340

| Description   | d1   | d2 | s  | For threaded bolts | Δ   |
|---------------|------|----|----|--------------------|-----|
| DIN 6340-6.4  | 6.4  | 17 | 3  | M 6                | 5   |
| DIN 6340-8.4  | 8.4  | 23 | 4  | M 8                | 10  |
| DIN 6340-10.5 | 10.5 | 28 | 4  | M 10               | 15  |
| DIN 6340-13   | 13   | 35 | 5  | M 12               | 30  |
| DIN 6340-15   | 15   | 40 | 5  | M 14               | 42  |
| DIN 6340-17   | 17   | 45 | 6  | M 16               | 50  |
| DIN 6340-21   | 21   | 50 | 6  | M 20               | 60  |
| DIN 6340-25   | 25   | 60 | 8  | M 24               | 135 |
| DIN 6340-31   | 31   | 68 | 10 | M 30               | 230 |

### GN 338

| Description  | d1 | d2  | h1  | h2 | h3  | Δ  |
|--------------|----|-----|-----|----|-----|----|
| GN 338-16-KS | 16 | 3.2 | 5   | 1  | 3.7 | 5  |
| GN 338-20-KS | 20 | 4.3 | 5   | 1  | 3.7 | 10 |
| GN 338-25-KS | 25 | 4.3 | 5.7 | 1  | 4   | 13 |
| GN 338-32-KS | 32 | 5.3 | 6.7 | 1  | 5   | 28 |
| GN 338-16-KR | 16 | 3.2 | 5   | 1  | 3.7 | 4  |
| GN 338-20-KR | 20 | 4.3 | 5   | 1  | 3.7 | 7  |
| GN 338-25-KR | 25 | 4.3 | 5.7 | 1  | 4   | 10 |
| GN 338-32-KR | 32 | 5.3 | 6.7 | 1  | 5   | 24 |

## Washers

Steel / Stainless Steel, with axial friction bearing

### SPECIFICATION

#### Version in Steel

Steel **ST**  
blackened

#### Version in Stainless Steel

Stainless Steel **NI**  
AISI 303

Sliding disk

- Plastic (Polyamide 46)
- glasfibre reinforced
- temperature resistant up to 120 °C
- slightly greased (PTFE-mounting grease)

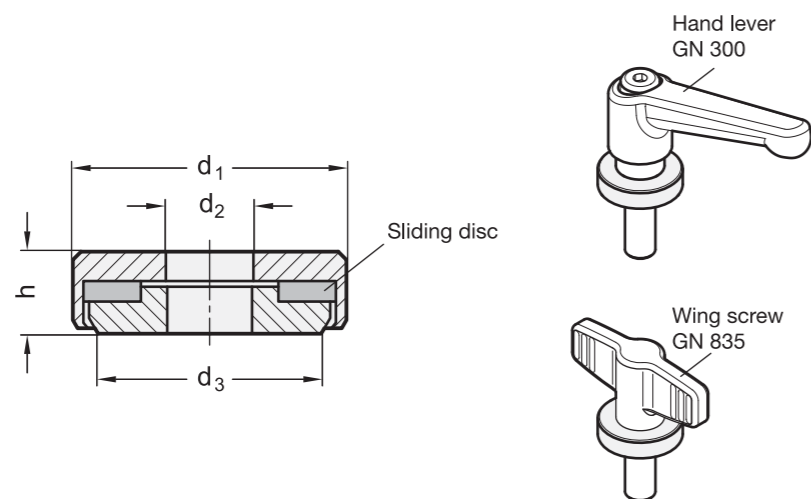
### INFORMATION

Used in connection with clamping screws, e. g. star knob screws, washers with axial friction bearing GN 6342 offer the following advantages:

- almost **double** the clamping force owing to lower area friction
- fixed contact surface acting gently on the element to be clamped

### TECHNICAL INFORMATION

- Stainless Steel characteristics (see page A26)
- Plastic characteristics (see page A2)



### GN 6342

| Description      | d1 | d2 +0.2/+0.4 | d3 | h | For screws with thread | Static load in kN | ⚖  |
|------------------|----|--------------|----|---|------------------------|-------------------|----|
| GN 6342-ST-20-6  | 20 | 6            | 16 | 6 | M 6                    | 20                | 10 |
| GN 6342-ST-26-8  | 26 | 8            | 22 | 7 | M 8                    | 38                | 21 |
| GN 6342-ST-28-10 | 28 | 10           | 24 | 8 | M 10                   | 40                | 28 |
| GN 6342-ST-32-12 | 32 | 12           | 28 | 9 | M 12                   | 55                | 41 |

### GN 6342-NI

STAINLESS STEEL

| Description      | d1 | d2 +0.2/+0.4 | d3 | h | For screws with thread | Static load in kN | ⚖  |
|------------------|----|--------------|----|---|------------------------|-------------------|----|
| GN 6342-NI-20-6  | 20 | 6            | 16 | 6 | M 6                    | 20                | 12 |
| GN 6342-NI-26-8  | 26 | 8            | 22 | 7 | M 8                    | 38                | 22 |
| GN 6342-NI-28-10 | 28 | 10           | 24 | 8 | M 10                   | 40                | 29 |
| GN 6342-NI-32-12 | 32 | 12           | 28 | 9 | M 12                   | 55                | 41 |

## Torque amplifier collar

Technopolymer

### BEARING CASE MATERIAL

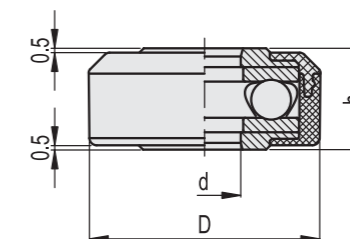
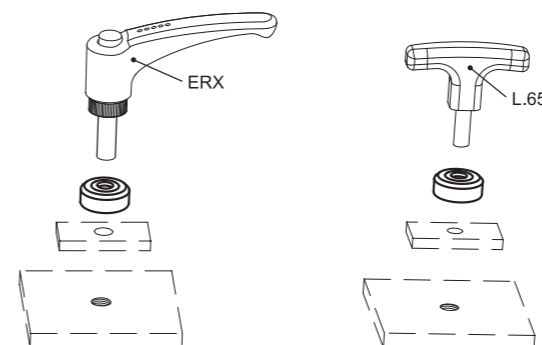
Glass-fibre reinforced polyamide based (PA) technopolymer, black colour, matte finish.

### STANDARD EXECUTIONS

- **CMC**: AISI 52100 steel axial bearing, zinc-plated steel washers.
- **CMC-SST**: AISI 440 C stainless steel axial bearing, AISI 303 stainless steel washers.

### FEATURES AND APPLICATIONS

Used in combination with clamping levers ERX., ERW., MRX., ERF., clamping knobs type VCT.SOFT or handles type L.652. CMC torque amplifier collars double the clamping force applied at equal torque due to the presence of a bearing acting to reduce friction.



### CMC

| Code  | Description | D  | h  | d  | ⚖  |
|-------|-------------|----|----|----|----|
| 32401 | CMC.32-8    | 32 | 14 | 8  | 38 |
| 32402 | CMC.32-10   | 32 | 14 | 10 | 37 |
| 32403 | CMC.32-12   | 32 | 14 | 12 | 36 |

### CMC-SST

STAINLESS STEEL

| Code  | Description   | D  | h  | d  | ⚖  |
|-------|---------------|----|----|----|----|
| 32411 | CMC.32-SST-8  | 32 | 14 | 8  | 38 |
| 32412 | CMC.32-SST-10 | 32 | 14 | 10 | 37 |
| 32413 | CMC.32-SST-12 | 32 | 14 | 12 | 36 |

## Washers / Levelling disks

### SPECIFICATION

Stainless Steel **NI**

- AISI 304
- turned, blank

### INFORMATION

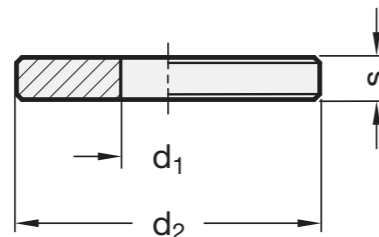
Washers / Levelling disks GN 6343 are used mainly in mechanical engineering and jigmaking is required for levelling.

### ON REQUEST

- other dimensions
- chemically blackened surface

### TECHNICAL INFORMATION

- Stainless Steel characteristics (see page A26)



### GN 6343 STAINLESS STEEL

| Description       | d1<br>+0.1/+0.3 | d2 -0.2 | s ±0.1 | ⚖  |
|-------------------|-----------------|---------|--------|----|
| GN 6343-NI-4-8-1  | 4               | 8       | 1      | 3  |
| GN 6343-NI-4-8-2  | 4               | 8       | 2      | 6  |
| GN 6343-NI-4-12-1 | 4               | 12      | 1      | 8  |
| GN 6343-NI-4-12-2 | 4               | 12      | 2      | 16 |
| GN 6343-NI-4-12-3 | 4               | 12      | 3      | 24 |
| GN 6343-NI-5-10-1 | 5               | 10      | 1      | 5  |
| GN 6343-NI-5-10-2 | 5               | 10      | 2      | 10 |
| GN 6343-NI-5-10-3 | 5               | 10      | 3      | 14 |
| GN 6343-NI-5-15-2 | 5               | 15      | 2      | 30 |
| GN 6343-NI-5-15-3 | 5               | 15      | 3      | 37 |
| GN 6343-NI-6-12-1 | 6               | 12      | 1      | 7  |
| GN 6343-NI-6-12-2 | 6               | 12      | 2      | 14 |
| GN 6343-NI-6-12-3 | 6               | 12      | 3      | 22 |
| GN 6343-NI-6-20-2 | 6               | 20      | 2      | 30 |
| GN 6343-NI-6-20-3 | 6               | 20      | 3      | 60 |
| GN 6343-NI-6-20-5 | 6               | 20      | 5      | 80 |
| GN 6343-NI-8-16-2 | 8               | 16      | 2      | 2  |
| GN 6343-NI-8-16-3 | 8               | 16      | 3      | 4  |
| GN 6343-NI-8-16-5 | 8               | 16      | 5      | 6  |

### GN 6343 STAINLESS STEEL

| Description        | d1<br>+0.1/+0.3 | d2 -0.2 | s ±0.1 | ⚖   |
|--------------------|-----------------|---------|--------|-----|
| GN 6343-NI-8-25-2  | 8               | 25      | 2      | 6   |
| GN 6343-NI-8-25-3  | 8               | 25      | 3      | 10  |
| GN 6343-NI-8-25-5  | 8               | 25      | 5      | 17  |
| GN 6343-NI-10-20-2 | 10              | 20      | 2      | 4   |
| GN 6343-NI-10-20-3 | 10              | 20      | 3      | 6   |
| GN 6343-NI-10-20-5 | 10              | 20      | 5      | 10  |
| GN 6343-NI-10-30-3 | 10              | 30      | 3      | 15  |
| GN 6343-NI-10-30-5 | 10              | 30      | 5      | 30  |
| GN 6343-NI-12-20-2 | 12              | 20      | 2      | 3   |
| GN 6343-NI-12-20-3 | 12              | 20      | 3      | 4   |
| GN 6343-NI-12-20-5 | 12              | 20      | 5      | 8   |
| GN 6343-NI-12-30-3 | 12              | 30      | 3      | 14  |
| GN 6343-NI-12-30-5 | 12              | 30      | 5      | 23  |
| GN 6343-NI-16-20-2 | 16              | 20      | 2      | 18  |
| GN 6343-NI-16-20-3 | 16              | 20      | 3      | 27  |
| GN 6343-NI-16-20-5 | 16              | 20      | 5      | 45  |
| GN 6343-NI-16-30-3 | 16              | 30      | 3      | 120 |
| GN 6343-NI-16-30-5 | 16              | 30      | 5      | 200 |

## T-Nuts

Steel / Stainless Steel

### SPECIFICATION

Version in Steel

Heat-treatable Steel

Tensile strength class **8**

blank

Tensile strength class **10**

blackened

Version in Stainless Steel

Stainless Steel AISI 303 / AISI 316Ti **NI**

### INFORMATION

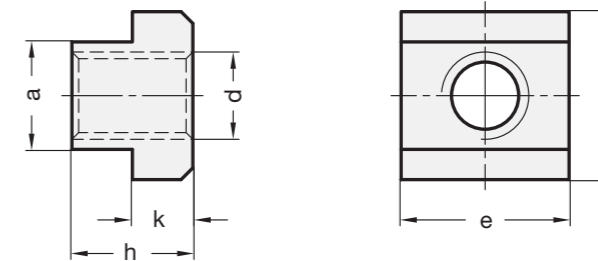
Beyond the scope of the official standard sheet DIN 508, there is also a choice of additional sizes a = 16, 20 and 24 and a selection of various thread sizes d.

T-Nuts DIN 508 untapped with the tensile strength class 8 (blank) are also available. When ordering the latter the thread size is omitted in part number.

### TECHNICAL INFORMATION

- Stainless Steel characteristics (see page A26)

- Strength values of nuts (see page A20)



### DIN 508-NI

STAINLESS STEEL

| Description       | a -0.3/-0.5 | d    | e -0.5 | h  | k -0.5 | T-Slot width DIN 650 | ⚖  |
|-------------------|-------------|------|--------|----|--------|----------------------|----|
| DIN 508-8-NI      | 8           | -    | 13     | 10 | 6      | 8                    | 10 |
| DIN 508-10-NI     | 10          | -    | 15     | 12 | 6      | 10                   | 15 |
| DIN 508-12-NI     | 12          | -    | 18     | 14 | 7      | 12                   | 26 |
| DIN 508-14-NI     | 14          | -    | 22     | 16 | 8      | 14                   | 46 |
| DIN 508-16-NI     | 16          | -    | 25     | 18 | 9      | 16                   | 66 |
| DIN 508-18-NI     | 18          | -    | 28     | 20 | 10     | 18                   | 95 |
| DIN 508-8-M6-NI   | 8           | M 6  | 13     | 10 | 6      | 8                    | 9  |
| DIN 508-10-M8-NI  | 10          | M 8  | 15     | 12 | 6      | 10                   | 12 |
| DIN 508-12-M10-NI | 12          | M 10 | 18     | 14 | 7      | 12                   | 20 |
| DIN 508-14-M12-NI | 14          | M 12 | 22     | 16 | 8      | 14                   | 34 |
| DIN 508-16-M14-NI | 16          | M 14 | 25     | 18 | 9      | 16                   | 49 |
| DIN 508-18-M16-NI | 18          | M 16 | 28     | 20 | 10     | 18                   | 69 |

### DIN 508

| Description  | a -0.3/-0.5 | d | e      | h   | k     | T-Slot width DIN 650 | ⚖  |
|--------------|-------------|---|--------|-----|-------|----------------------|----|
| DIN 508-5-8  | 5           | - | 9-0.5  | 6.5 | 3-0.3 | 5                    | 3  |
| DIN 508-6-8  | 6           | - | 10-0.5 | 8   | 4-0.5 | 6                    | 4  |
| DIN 508-8-8  | 8           | - | 13-0.5 | 10  | 6-0.5 | 8                    | 10 |
| DIN 508-10-8 | 10          | - | 15-0.5 | 12  | 6-0.5 | 10                   | 10 |
| DIN 508-12-8 | 12          | - | 18-0.5 | 14  | 7-0.5 | 12                   | 26 |
| DIN 508-14-8 | 14          | - | 22-0.5 | 16  | 8-0.5 | 14                   | 46 |
| DIN 508-16-8 | 16          | - | 25-0.5 | 18  | 9-0.5 | 16                   | 66 |

DIN 508

| Description       | a -0.3/-0.5 | d    | e      | h   | k      | T-Slot width DIN 650 | ⚖   |
|-------------------|-------------|------|--------|-----|--------|----------------------|-----|
| DIN 508-18-8      | 18          | -    | 28-0.5 | 20  | 10-0.5 | 18                   | 90  |
| DIN 508-20-8      | 20          | -    | 32-0.5 | 24  | 12-0.5 | 20                   | 148 |
| DIN 508-22-8      | 22          | -    | 35-0.5 | 28  | 14-0.5 | 22                   | 200 |
| DIN 508-24-8      | 24          | -    | 40-0.5 | 32  | 16-0.5 | 24                   | 258 |
| DIN 508-28-8      | 28          | -    | 44-1   | 36  | 18-1   | 28                   | 420 |
| DIN 508-5-M4-8    | 5           | M 4  | 9-0.5  | 6.5 | 3-0.3  | 5                    | 2   |
| DIN 508-5-M4-10   | 5           | M 4  | 9-0.5  | 6.5 | 3-0.3  | 5                    | 2   |
| DIN 508-6-M5-8    | 6           | M 5  | 10-0.5 | 8   | 4-0.5  | 6                    | 4   |
| DIN 508-6-M5-10   | 6           | M 5  | 10-0.5 | 8   | 4-0.5  | 6                    | 4   |
| DIN 508-8-M6-8    | 8           | M 6  | 13-0.5 | 10  | 6-0.5  | 8                    | 8   |
| DIN 508-8-M6-10   | 8           | M 6  | 13-0.5 | 10  | 6-0.5  | 8                    | 8   |
| DIN 508-10-M6-8   | 10          | M 6  | 15-0.5 | 12  | 6-0.5  | 10                   | 10  |
| DIN 508-10-M6-10  | 10          | M 6  | 15-0.5 | 12  | 6-0.5  | 10                   | 10  |
| DIN 508-10-M8-8   | 10          | M 8  | 15-0.5 | 12  | 6-0.5  | 10                   | 12  |
| DIN 508-10-M8-10  | 10          | M 8  | 15-0.5 | 12  | 6-0.5  | 10                   | 12  |
| DIN 508-12-M8-8   | 12          | M 8  | 18-0.5 | 14  | 7-0.5  | 12                   | 23  |
| DIN 508-12-M8-10  | 12          | M 8  | 18-0.5 | 14  | 7-0.5  | 12                   | 23  |
| DIN 508-12-M10-8  | 12          | M 10 | 18-0.5 | 14  | 7-0.5  | 12                   | 20  |
| DIN 508-12-M10-10 | 12          | M 10 | 18-0.5 | 14  | 7-0.5  | 12                   | 20  |
| DIN 508-14-M10-8  | 14          | M 10 | 22-0.5 | 16  | 8-0.5  | 14                   | 38  |
| DIN 508-14-M10-10 | 14          | M 10 | 22-0.5 | 16  | 8-0.5  | 14                   | 38  |
| DIN 508-14-M12-8  | 14          | M 12 | 22-0.5 | 16  | 8-0.5  | 14                   | 34  |
| DIN 508-14-M12-10 | 14          | M 12 | 22-0.5 | 16  | 8-0.5  | 14                   | 34  |
| DIN 508-16-M10-8  | 16          | M 10 | 25-0.5 | 18  | 9-0.5  | 16                   | 58  |
| DIN 508-16-M10-10 | 16          | M 10 | 25-0.5 | 18  | 9-0.5  | 16                   | 58  |
| DIN 508-16-M12-8  | 16          | M 12 | 25-0.5 | 18  | 9-0.5  | 16                   | 55  |
| DIN 508-16-M12-10 | 16          | M 12 | 25-0.5 | 18  | 9-0.5  | 16                   | 55  |
| DIN 508-16-M14-8  | 16          | M 14 | 25-0.5 | 18  | 9-0.5  | 16                   | 51  |
| DIN 508-16-M14-10 | 16          | M 14 | 25-0.5 | 18  | 9-0.5  | 16                   | 51  |
| DIN 508-18-M12-8  | 18          | M 12 | 28-0.5 | 20  | 10-0.5 | 18                   | 60  |
| DIN 508-18-M12-10 | 18          | M 12 | 28-0.5 | 20  | 10-0.5 | 18                   | 60  |
| DIN 508-18-M14-8  | 18          | M 14 | 28-0.5 | 20  | 10-0.5 | 18                   | 74  |
| DIN 508-18-M14-10 | 18          | M 14 | 28-0.5 | 20  | 10-0.5 | 18                   | 74  |
| DIN 508-18-M16-8  | 18          | M 16 | 28-0.5 | 20  | 10-0.5 | 18                   | 62  |
| DIN 508-18-M16-10 | 18          | M 16 | 28-0.5 | 20  | 10-0.5 | 18                   | 62  |
| DIN 508-20-M12-8  | 20          | M 12 | 32-0.5 | 24  | 12-0.5 | 20                   | 131 |
| DIN 508-20-M12-10 | 20          | M 12 | 32-0.5 | 24  | 12-0.5 | 20                   | 131 |
| DIN 508-20-M16-8  | 20          | M 16 | 32-0.5 | 24  | 12-0.5 | 20                   | 116 |
| DIN 508-20-M16-10 | 20          | M 16 | 32-0.5 | 24  | 12-0.5 | 20                   | 116 |
| DIN 508-20-M18-8  | 20          | M 18 | 32-0.5 | 24  | 12-0.5 | 20                   | 110 |
| DIN 508-20-M18-10 | 20          | M 18 | 32-0.5 | 24  | 12-0.5 | 20                   | 110 |
| DIN 508-22-M16-8  | 22          | M 16 | 35-0.5 | 28  | 14-0.5 | 22                   | 160 |
| DIN 508-22-M16-10 | 22          | M 16 | 35-0.5 | 28  | 14-0.5 | 22                   | 170 |
| DIN 508-22-M20-8  | 22          | M 20 | 35-0.5 | 28  | 14-0.5 | 22                   | 149 |
| DIN 508-22-M20-10 | 22          | M 20 | 35-0.5 | 28  | 14-0.5 | 22                   | 149 |
| DIN 508-24-M20-8  | 24          | M 20 | 40-0.5 | 32  | 16-0.5 | 24                   | 236 |
| DIN 508-24-M20-10 | 24          | M 20 | 40-0.5 | 32  | 16-0.5 | 24                   | 236 |
| DIN 508-24-M22-8  | 24          | M 22 | 40-0.5 | 32  | 16-0.5 | 24                   | 230 |
| DIN 508-24-M22-10 | 24          | M 22 | 40-0.5 | 32  | 16-0.5 | 24                   | 230 |
| DIN 508-28-M20-8  | 28          | M 20 | 44-1   | 36  | 18-1   | 28                   | 347 |
| DIN 508-28-M20-10 | 28          | M 20 | 44-1   | 36  | 18-1   | 28                   | 347 |
| DIN 508-28-M24-8  | 28          | M 24 | 44-1   | 36  | 18-1   | 28                   | 314 |
| DIN 508-28-M24-10 | 28          | M 24 | 44-1   | 36  | 18-1   | 28                   | 314 |

T-Nuts

Accessory for profile systems

SPECIFICATION

Types

- Type **MB**: with increased torque
- Type **OB**: without increased torque

Steel  
zinc plated, blue passivated

INFORMATION

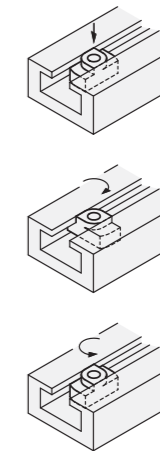
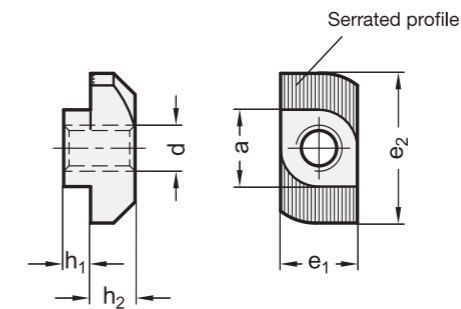
T-Slots GN 505 can be inserted vertically into a T-Slot like rhombus T-Nuts GN 508.1 (see page 985).

When tightening the clamping bolt, the nut will be forced into a crosswise position by the applied torque and firmly anchored in the T-slot.

This action is achieved by using T-nut type MB which is intentionally fitted with an overtight fit requiring a higher torque.

To remove the bolt and T-nut a 90° anticlockwise turn is sufficient to withdraw the two components with the clamped workpiece.

The clamping face of the T-nut is serrated to ensure that a possible plating coat in the T-slot is penetrated to establish a good electrical contact.



GN 505

| Description     | a -0.1/-0.5 | d   | e1 -0.1/-0.5 | e2 ±0.5 | h1      | h2 -0.4 | ⚖ |
|-----------------|-------------|-----|--------------|---------|---------|---------|---|
| GN 505-8-M4-MB  | 8           | M 4 | 8            | 16      | 1.6-0.4 | 5       | 4 |
| GN 505-8-M5-MB  | 8           | M 5 | 8            | 16      | 1.6-0.4 | 5       | 4 |
| GN 505-8-M6-MB  | 8           | M 6 | 8            | 16      | 1.6-0.4 | 5       | 4 |
| GN 505-10-M4-MB | 10          | M 4 | 10           | 19      | 3.5-1   | 5.8     | 8 |
| GN 505-10-M5-MB | 10          | M 5 | 10           | 19      | 3.5-1   | 5.8     | 7 |
| GN 505-10-M6-MB | 10          | M 6 | 10           | 19      | 3.5-1   | 5.8     | 7 |
| GN 505-10-M8-MB | 10          | M 8 | 10           | 19      | 3.5-1   | 5.8     | 5 |
| GN 505-8-M4-OB  | 8           | M 4 | 8            | 16      | 1.6-0.4 | 5       | 4 |
| GN 505-8-M5-OB  | 8           | M 5 | 8            | 16      | 1.6-0.4 | 5       | 4 |
| GN 505-8-M6-OB  | 8           | M 6 | 8            | 16      | 1.6-0.4 | 5       | 3 |
| GN 505-10-M4-OB | 10          | M 4 | 10           | 19      | 3.5-1   | 5.8     | 6 |
| GN 505-10-M5-OB | 10          | M 5 | 10           | 19      | 3.5-1   | 5.8     | 6 |
| GN 505-10-M6-OB | 10          | M 6 | 10           | 19      | 3.5-1   | 5.8     | 6 |
| GN 505-10-M8-OB | 10          | M 8 | 10           | 19      | 3.5-1   | 5.8     | 6 |

## T-Slot bolts

Accessory for profile systems

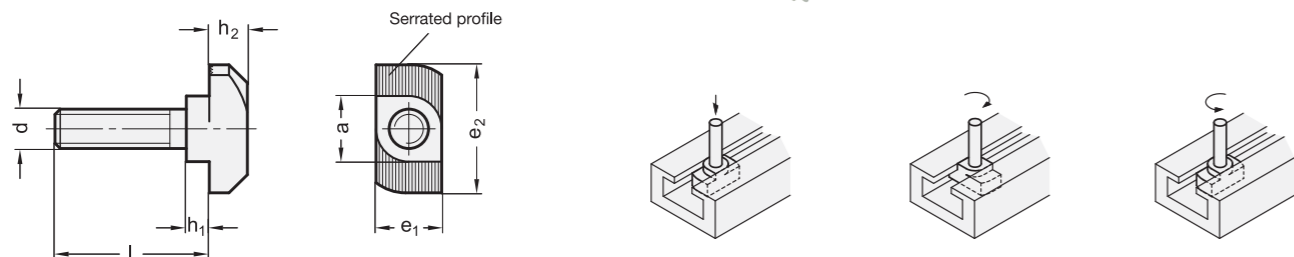
### SPECIFICATION

Steel  
zinc plated, blue passivated

### INFORMATION

T-Slot bolts GN 505.4 can be inserted vertically into the slot. During tightening, the bolt is forced into the crosswise position and thus anchored in the slot. Conversely, the bolt is turned back during loosening and can then be removed.

The clamping face of the bolt is serrated to ensure that the eloxal coating is broken up to establish a good electrical contact.



### GN 505.4

| Description           | a -0.1/-0.6 | d  | l  | h1      | h2      | e1        | e2          | ⚙  |
|-----------------------|-------------|----|----|---------|---------|-----------|-------------|----|
| GN 505.4-8-M6-20-1.6  | 8           | M6 | 20 | 1.6-0.6 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 7  |
| GN 505.4-8-M6-25-1.6  | 8           | M6 | 25 | 1.6-0.6 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 8  |
| GN 505.4-8-M6-30-1.6  | 8           | M6 | 30 | 1.6-0.6 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 9  |
| GN 505.4-8-M6-40-1.6  | 8           | M6 | 40 | 1.6-0.6 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 10 |
| GN 505.4-8-M6-60-1.6  | 8           | M6 | 60 | 1.6-0.6 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 15 |
| GN 505.4-8-M6-20-3.5  | 8           | M6 | 20 | 3.5-1.0 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 8  |
| GN 505.4-8-M6-25-3.5  | 8           | M6 | 25 | 3.5-1.0 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 9  |
| GN 505.4-8-M6-30-3.5  | 8           | M6 | 30 | 3.5-1.0 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 6  |
| GN 505.4-8-M6-40-3.5  | 8           | M6 | 40 | 3.5-1.0 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 11 |
| GN 505.4-8-M6-60-3.5  | 8           | M6 | 60 | 3.5-1.0 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 14 |
| GN 505.4-8-M8-20-1.6  | 8           | M8 | 20 | 1.6-0.6 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 10 |
| GN 505.4-8-M8-25-1.6  | 8           | M8 | 25 | 1.6-0.6 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 11 |
| GN 505.4-8-M8-30-1.6  | 8           | M8 | 30 | 1.6-0.6 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 13 |
| GN 505.4-8-M8-20-3.5  | 8           | M8 | 20 | 3.5-1.0 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 10 |
| GN 505.4-8-M8-25-3.5  | 8           | M8 | 25 | 3.5-1.0 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 11 |
| GN 505.4-8-M8-30-3.5  | 8           | M8 | 30 | 3.5-1.0 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 13 |
| GN 505.4-10-M6-20-1.6 | 10          | M6 | 20 | 1.6-0.6 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 10 |
| GN 505.4-10-M6-25-1.6 | 10          | M6 | 25 | 1.6-0.6 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 10 |
| GN 505.4-10-M6-30-1.6 | 10          | M6 | 30 | 1.6-0.6 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 12 |
| GN 505.4-10-M6-40-1.6 | 10          | M6 | 40 | 1.6-0.6 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 14 |
| GN 505.4-10-M6-60-1.6 | 10          | M6 | 60 | 1.6-0.6 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 16 |
| GN 505.4-10-M6-20-3.5 | 10          | M6 | 20 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 11 |
| GN 505.4-10-M6-25-3.5 | 10          | M6 | 25 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 12 |
| GN 505.4-10-M6-30-3.5 | 10          | M6 | 30 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 12 |
| GN 505.4-10-M6-40-3.5 | 10          | M6 | 40 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 14 |
| GN 505.4-10-M6-60-3.5 | 10          | M6 | 60 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 18 |
| GN 505.4-10-M8-20-1.6 | 10          | M8 | 20 | 1.6-0.6 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 11 |
| GN 505.4-10-M8-25-1.6 | 10          | M8 | 25 | 1.6-0.6 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 13 |
| GN 505.4-10-M8-30-1.6 | 10          | M8 | 30 | 1.6-0.6 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 15 |
| GN 505.4-10-M8-40-1.6 | 10          | M8 | 40 | 1.6-0.6 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 15 |
| GN 505.4-10-M8-60-1.6 | 10          | M8 | 60 | 1.6-0.6 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 15 |
| GN 505.4-10-M8-20-3.5 | 10          | M8 | 20 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 13 |
| GN 505.4-10-M8-25-3.5 | 10          | M8 | 25 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 15 |
| GN 505.4-10-M8-30-3.5 | 10          | M8 | 30 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 16 |
| GN 505.4-10-M8-40-3.5 | 10          | M8 | 40 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 19 |
| GN 505.4-10-M8-60-3.5 | 10          | M8 | 60 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 26 |

## Stainless Steel-T-Slot bolts

Accessory for profile systems

### SPECIFICATION

Stainless Steel AISI 304

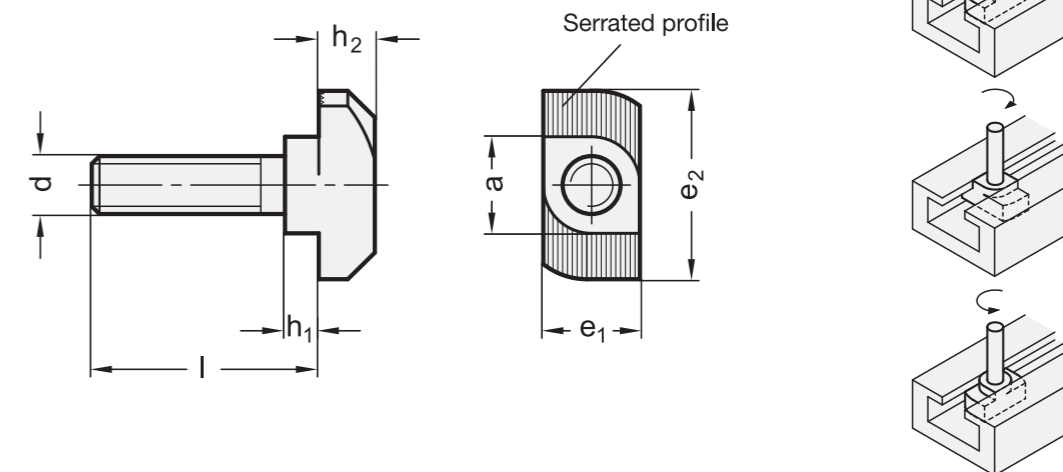
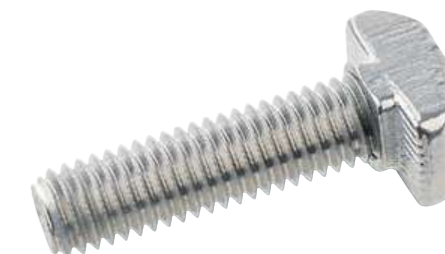
### INFORMATION

T-Slot bolts GN 505.5 can be inserted vertically into the slot. During tightening, the bolt is forced into the crosswise position and thus anchored in the slot. Conversely, the bolt is turned back during loosening and can then be removed.

The clamping face of the bolt is serrated to ensure that the eloxal coating is broken up to establish a good electrical contact.

### TECHNICAL INFORMATION

- Stainless Steel characteristics (see page A26)



### GN 505.5

STAINLESS STEEL

| Description           | a -0.1/-0.6 | d  | l  | h1      | h2      | e1        | e2          | ⚙  |
|-----------------------|-------------|----|----|---------|---------|-----------|-------------|----|
| GN 505.5-8-M6-20-1.6  | 8           | M6 | 20 | 1.6-0.6 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 8  |
| GN 505.5-8-M6-25-1.6  | 8           | M6 | 25 | 1.6-0.6 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 5  |
| GN 505.5-8-M6-30-1.6  | 8           | M6 | 30 | 1.6-0.6 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 10 |
| GN 505.5-8-M6-40-1.6  | 8           | M6 | 40 | 1.6-0.6 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 10 |
| GN 505.5-8-M6-60-1.6  | 8           | M6 | 60 | 1.6-0.6 | 5±1.0   | 7.9-0.5   | 16+0.5/-1.0 | 15 |
| GN 505.5-10-M6-20-3.5 | 10          | M6 | 20 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 10 |
| GN 505.5-10-M6-25-3.5 | 10          | M6 | 25 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 10 |
| GN 505.5-10-M6-30-3.5 | 10          | M6 | 30 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 15 |
| GN 505.5-10-M6-40-3.5 | 10          | M6 | 40 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 17 |
| GN 505.5-10-M6-60-3.5 | 10          | M6 | 60 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 18 |
| GN 505.5-10-M8-20-3.5 | 10          | M8 | 20 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 10 |
| GN 505.5-10-M8-25-3.5 | 10          | M8 | 25 | 3.5-1.0 | 6.5-1.5 | 10.0/-2.5 | 19+0.5/-2.0 | 15 |

## T-Nuts

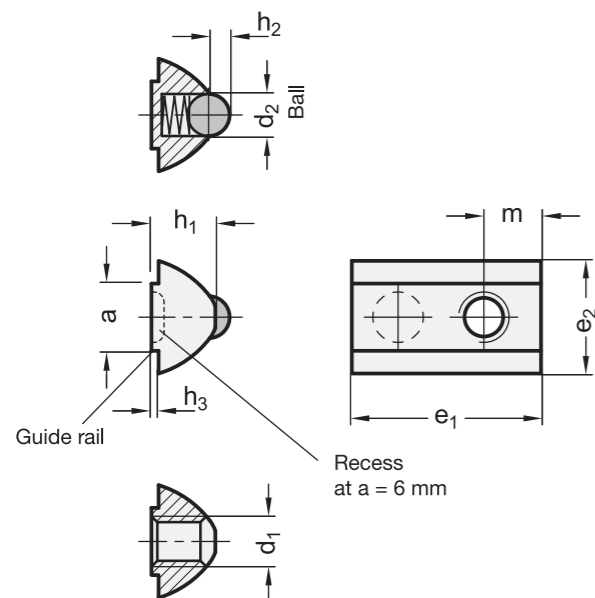
Accessory for profile systems, with guide step

### SPECIFICATION

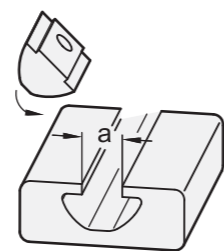
Steel  
zinc plated, blue passivated  
Ball  
Stainless Steel  
Spring  
Stainless Steel

### INFORMATION

T-Nuts GN 506 can be turned into position, i.e. they can be inserted at any point along the slot.  
The guide step positions the nut parallel and centered in relation to the slot, a configuration which eases the sliding movement and prevents the assembly from twisting during tightening.  
The spring element (ball / pressure spring) prevents the nut from accidentally sliding inside the slot, which is particularly advantageous when the profile rail is mounted perpendicularly.



T-nuts to swivel in



### GN 506

| Description | a | d1 | d2  | e1 | e2   | h1  | h2  | h3   | m   | For slot width a | ⚖  |
|-------------|---|----|-----|----|------|-----|-----|------|-----|------------------|----|
| GN 506-5-M3 | 5 | M3 | 3   | 12 | 7.7  | 4.5 | 0.7 | 0.6  | 4   | 5                | 2  |
| GN 506-5-M4 | 5 | M4 | 3   | 12 | 7.7  | 4.5 | 0.7 | 0.6  | 4   | 5                | 2  |
| GN 506-5-M5 | 5 | M5 | 3   | 12 | 7.7  | 4.5 | 0.7 | 0.6  | 4   | 5                | 2  |
| GN 506-6-M3 | 6 | M3 | 3.5 | 17 | 10.5 | 6.8 | 0.5 | 0.8  | 5   | 6                | 6  |
| GN 506-6-M4 | 6 | M4 | 3.5 | 17 | 10.5 | 6.8 | 0.5 | 0.8  | 5   | 6                | 5  |
| GN 506-6-M5 | 6 | M5 | 3.5 | 17 | 10.5 | 6.8 | 0.5 | 0.8  | 5   | 6                | 5  |
| GN 506-6-M6 | 6 | M6 | 3.5 | 17 | 10.5 | 6.8 | 0.5 | 0.8  | 5   | 6                | 5  |
| GN 506-8-M4 | 8 | M4 | 5   | 22 | 13.4 | 7.6 | 1.7 | 0.85 | 6.8 | 8                | 11 |
| GN 506-8-M5 | 8 | M5 | 5   | 22 | 13.4 | 7.6 | 1.7 | 0.85 | 6.8 | 8                | 10 |
| GN 506-8-M6 | 8 | M6 | 5   | 22 | 13.4 | 7.6 | 1.7 | 0.85 | 6.8 | 8                | 10 |
| GN 506-8-M8 | 8 | M8 | 5   | 22 | 13.4 | 7.6 | 1.7 | 0.85 | 6.8 | 8                | 9  |

## T-Nuts

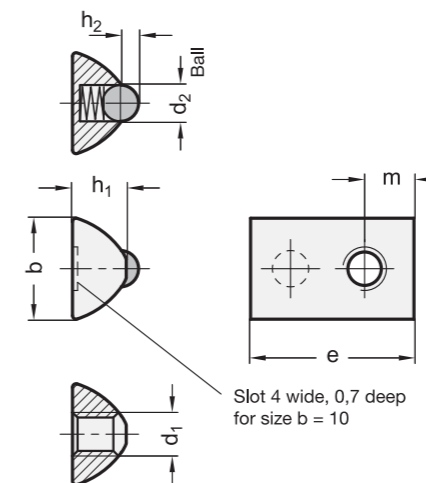
Steel / Stainless Steel, accessory for profile systems, without guide step

### SPECIFICATION

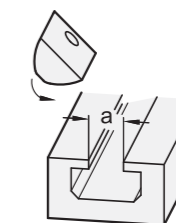
**Version in Steel**  
Steel  
zinc plated, blue passivated  
**Version in Stainless Steel**  
Stainless steel **NI**  
Ball  
Stainless Steel  
Spring  
Stainless Steel

### INFORMATION

T-Nuts GN 506.1 can be turned into position, i.e. they can be inserted at any point along the slot.  
The spring loaded ball will prevent an unwanted movement of the nut in the slot which can easily occur on a bed with the T-slots in a vertical position.  
As an example Nuts GN 506.1 can be used to fit hinges to commercially available extrusion rails.



T-nuts to swivel in



### GN 506.1

| Description    | b       | d1 | d2 | e +0.5 | h1   | h2   | m   | For slot width a | ⚖  |
|----------------|---------|----|----|--------|------|------|-----|------------------|----|
| GN 506.1-8-M3  | 8 -0.1  | M3 | 3  | 12     | 4.25 | 0.7  | 4   | 5                | 2  |
| GN 506.1-8-M4  | 8 -0.1  | M4 | 3  | 12     | 4.25 | 0.7  | 4   | 5                | 2  |
| GN 506.1-8-M5  | 8 -0.1  | M5 | 3  | 12     | 4.25 | 0.7  | 4   | 5                | 2  |
| GN 506.1-10-M3 | 10 +0.3 | M3 | 4  | 17.5   | 6.25 | 1.15 | 5   | 6                | 5  |
| GN 506.1-10-M4 | 10 +0.3 | M4 | 4  | 17.5   | 6.25 | 1.15 | 5   | 6                | 5  |
| GN 506.1-10-M5 | 10 +0.3 | M5 | 4  | 17.5   | 6.25 | 1.15 | 5   | 6                | 5  |
| GN 506.1-10-M6 | 10 +0.3 | M6 | 4  | 17.5   | 6.25 | 1.15 | 5   | 6                | 4  |
| GN 506.1-14-M4 | 14 -0.2 | M4 | 5  | 22.5   | 7.4  | 1.7  | 6.8 | 8                | 11 |
| GN 506.1-14-M5 | 14 -0.2 | M5 | 5  | 22.5   | 7.4  | 1.7  | 6.8 | 8                | 11 |
| GN 506.1-14-M6 | 14 -0.2 | M6 | 5  | 22.5   | 7.4  | 1.7  | 6.8 | 8                | 10 |
| GN 506.1-14-M8 | 14 -0.2 | M8 | 5  | 22.5   | 7.4  | 1.7  | 6.8 | 8                | 10 |

### GN 506.1-NI

**STAINLESS STEEL**

| Description       | b       | d1 | d2 | e +0.5 | h1  | h2  | m   | For slot width a | ⚖  |
|-------------------|---------|----|----|--------|-----|-----|-----|------------------|----|
| GN 506.1-14-M4-NI | 14 -0.2 | M4 | 5  | 22.5   | 7.4 | 1.7 | 6.8 | 8                | 11 |
| GN 506.1-14-M5-NI | 14 -0.2 | M5 | 5  | 22.5   | 7.4 | 1.7 | 6.8 | 8                | 11 |
| GN 506.1-14-M6-NI | 14 -0.2 | M6 | 5  | 22.5   | 7.4 | 1.7 | 6.8 | 8                | 10 |
| GN 506.1-14-M8-NI | 14 -0.2 | M8 | 5  | 22.5   | 7.4 | 1.7 | 6.8 | 8                | 10 |

## T-Nuts

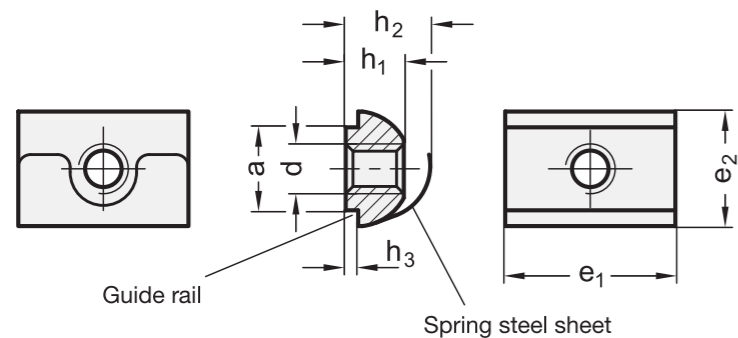
Accessory for profile systems, with spring steel sheet

### SPECIFICATION

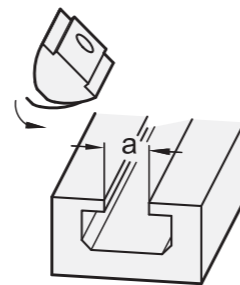
Steel  
zinc plated, blue passivated  
Spring steel sheet  
Stainless Steel AISI 301  
- spot-welded

### INFORMATION

T-Nuts GN 506.2 can be turned into position, i.e. they can be inserted at any point along the slot.  
The spring washer prevents the nut from inadvertently being displaced inside the slot, which is particularly advantageous if the profile rail is arranged vertically. The outstanding feature of this design is that different slot heights can be bridged.  
As an example, T-Nuts GN 506.2 can be used to fit hinges to commercially available extrusion rails.



T-nuts to swivel in



### GN 506.2

| Description    | a            | d   | e1   | e2   | h1  | h2   | h3 -0.1 | For slot width a | ⚖ |
|----------------|--------------|-----|------|------|-----|------|---------|------------------|---|
| GN 506.2-8-M4  | 8 +0.1/-0.1  | M 4 | 16   | 11.5 | 5.8 | 8.5  | 1       | 8                | 6 |
| GN 506.2-8-M5  | 8 +0.1/-0.1  | M 5 | 16   | 11.5 | 5.8 | 8.5  | 1       | 8                | 6 |
| GN 506.2-8-M6  | 8 +0.1/-0.1  | M 6 | 16   | 11.5 | 5.8 | 8.5  | 1       | 8                | 6 |
| GN 506.2-8-M8  | 8 +0.1/-0.1  | M 8 | 16   | 11.5 | 5.8 | 8.5  | 1       | 8                | 5 |
| GN 506.2-10-M5 | 10 -0.1/-0.3 | M 5 | 20.5 | 13.8 | 5.2 | 10.2 | 1.5     | 10               | 8 |
| GN 506.2-10-M6 | 10 -0.1/-0.3 | M 6 | 20.5 | 13.8 | 5.2 | 10.2 | 1.5     | 10               | 8 |
| GN 506.2-10-M8 | 10 -0.1/-0.3 | M 8 | 20.5 | 13.8 | 5.2 | 10.2 | 1.5     | 10               | 7 |

## T-Nuts

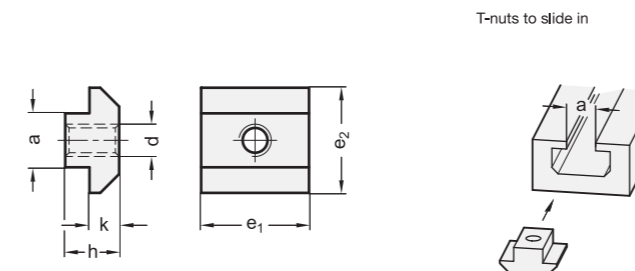
Accessory for profile systems

### SPECIFICATION

Steel  
zinc plated, blue passivated

### INFORMATION

T-Nuts GN 507 have been specially designed for use on extrusion rails.  
They are inserted from either end of the T-Slot.



T-nuts to slide in

### GN 507

| Description  | a -0.1/-0.3 | d   | e1 | e2   | h    | k +0.1 | ⚖  |
|--------------|-------------|-----|----|------|------|--------|----|
| GN 507-8-M4  | 8           | M 4 | 16 | 16   | 6    | 4.2    | 13 |
| GN 507-8-M5  | 8           | M 5 | 16 | 16   | 6    | 4.2    | 9  |
| GN 507-8-M6  | 8           | M 6 | 16 | 16   | 6    | 4.2    | 8  |
| GN 507-8-M8  | 8           | M 8 | 16 | 16   | 6    | 4.2    | 7  |
| GN 507-10-M4 | 10          | M 4 | 20 | 19.5 | 10.5 | 5.5    | 19 |
| GN 507-10-M5 | 10          | M 5 | 20 | 19.5 | 10.5 | 5.5    | 18 |
| GN 507-10-M6 | 10          | M 6 | 20 | 19.5 | 10.5 | 5.5    | 15 |
| GN 507-10-M8 | 10          | M 8 | 20 | 19.5 | 10.5 | 5.5    | 13 |

## Rhombus T-Nuts

### SPECIFICATION

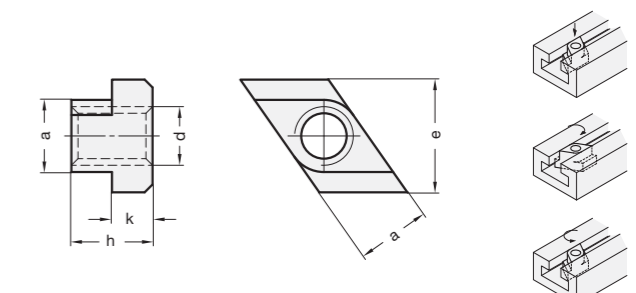
Heat-treatable Steel  
- Tensile strength class 10  
- blackened

### INFORMATION

Rhombus T-Nuts GN 508.1 can be inserted vertically into the T-Slot.

### TECHNICAL INFORMATION

- Strength values of nuts (see page A20)



### GN 508.1

| Description     | a -0.3/-0.5 | d    | e -0.5 | h  | k -0.5 | T-Slot width DIN 650 | ⚖  |
|-----------------|-------------|------|--------|----|--------|----------------------|----|
| GN 508.1-8-M6   | 8           | M 6  | 13     | 10 | 6      | 8                    | 5  |
| GN 508.1-10-M8  | 10          | M 8  | 15     | 12 | 6      | 10                   | 9  |
| GN 508.1-12-M10 | 12          | M 10 | 18     | 14 | 7      | 12                   | 13 |
| GN 508.1-14-M12 | 14          | M 12 | 22     | 16 | 8      | 14                   | 23 |
| GN 508.1-16-M14 | 16          | M 14 | 25     | 18 | 9      | 16                   | 32 |
| GN 508.1-18-M16 | 18          | M 16 | 28     | 20 | 10     | 18                   | 44 |
| GN 508.1-22-M20 | 22          | M 20 | 35     | 28 | 14     | 22                   | 97 |

## T-Slot bolts

### SPECIFICATION

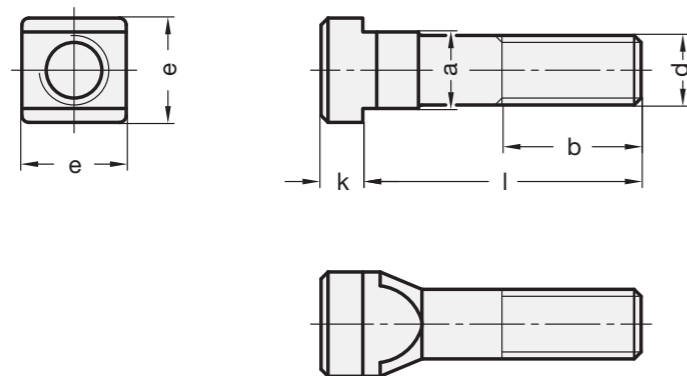
- Heat-treatable Steel
- Tensile strength class 8.8
- forged
- blackened
- Slot flats milled

### INFORMATION

The official standard sheet of screws for T-Nuts DIN 787 also lists the sizes 5, 36, 42, 48 and 54.

### TECHNICAL INFORMATION

- Strength values of screws (see page A20)



### DIN 787

| Description        | a -0.3/-0.5 | d    | l-b       | e        | k        | T-Slot width<br>DIN 650 | ⚖    |
|--------------------|-------------|------|-----------|----------|----------|-------------------------|------|
| DIN 787-6-M6-25    | 6           | M 6  | 25 - 15   | 10 - 0.5 | 4 - 0.5  | 6                       | 8    |
| DIN 787-6-M6-40    | 6           | M 6  | 40 - 28   | 10 - 0.5 | 4 - 0.5  | 6                       | 11   |
| DIN 787-6-M6-63    | 6           | M 6  | 63 - 40   | 10 - 0.5 | 4 - 0.5  | 6                       | 20   |
| DIN 787-8-M8-32    | 8           | M 8  | 32 - 22   | 13 - 0.5 | 6 - 0.5  | 8                       | 17   |
| DIN 787-8-M8-50    | 8           | M 8  | 50 - 35   | 13 - 0.5 | 6 - 0.5  | 8                       | 24   |
| DIN 787-10-M10-40  | 10          | M 10 | 40 - 30   | 15 - 0.5 | 6 - 0.5  | 10                      | 32   |
| DIN 787-10-M10-63  | 10          | M 10 | 63 - 45   | 15 - 0.5 | 6 - 0.5  | 10                      | 50   |
| DIN 787-10-M10-100 | 10          | M 10 | 100 - 60  | 15 - 0.5 | 6 - 0.5  | 10                      | 67   |
| DIN 787-12-M12-50  | 12          | M 12 | 50 - 35   | 18 - 0.5 | 7 - 0.5  | 12                      | 60   |
| DIN 787-12-M12-80  | 12          | M 12 | 80 - 55   | 18 - 0.5 | 7 - 0.5  | 12                      | 87   |
| DIN 787-12-M12-125 | 12          | M 12 | 125 - 75  | 18 - 0.5 | 7 - 0.5  | 12                      | 120  |
| DIN 787-14-M12-50  | 14          | M 12 | 50 - 35   | 22 - 0.5 | 8 - 0.5  | 14                      | 75   |
| DIN 787-14-M12-80  | 14          | M 12 | 80 - 55   | 22 - 0.5 | 8 - 0.5  | 14                      | 90   |
| DIN 787-14-M12-125 | 14          | M 12 | 125 - 75  | 22 - 0.5 | 8 - 0.5  | 14                      | 135  |
| DIN 787-14-M12-200 | 14          | M 12 | 200 - 120 | 22 - 0.5 | 8 - 0.5  | 14                      | 195  |
| DIN 787-18-M16-63  | 18          | M 16 | 63 - 45   | 28 - 0.5 | 10 - 0.5 | 18                      | 160  |
| DIN 787-18-M16-100 | 18          | M 16 | 100 - 63  | 28 - 0.5 | 10 - 0.5 | 18                      | 220  |
| DIN 787-18-M16-160 | 18          | M 16 | 160 - 100 | 28 - 0.5 | 10 - 0.5 | 18                      | 300  |
| DIN 787-18-M16-250 | 18          | M 16 | 250 - 150 | 28 - 0.5 | 10 - 0.5 | 18                      | 410  |
| DIN 787-22-M20-80  | 22          | M 20 | 80 - 55   | 35 - 0.5 | 14 - 0.5 | 22                      | 340  |
| DIN 787-22-M20-125 | 22          | M 20 | 125 - 85  | 35 - 0.5 | 14 - 0.5 | 22                      | 440  |
| DIN 787-22-M20-200 | 22          | M 20 | 200 - 125 | 35 - 0.5 | 14 - 0.5 | 22                      | 610  |
| DIN 787-28-M24-100 | 28          | M 24 | 100 - 70  | 44 - 1   | 18 - 1   | 28                      | 600  |
| DIN 787-28-M24-160 | 28          | M 24 | 160 - 110 | 44 - 1   | 18 - 1   | 28                      | 850  |
| DIN 787-28-M24-250 | 28          | M 24 | 250 - 150 | 44 - 1   | 18 - 1   | 28                      | 1020 |

## Shallow T-Nuts

### SPECIFICATION

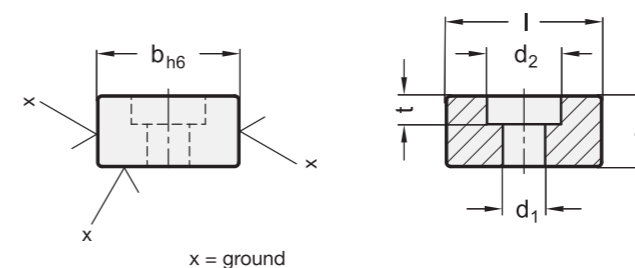
- Steel
- case hardened
- blackened

### INFORMATION

Shallow T-nuts GN 230 are used for aligning and positioning of jigs and fixtures on machining tables with T-slots DIN 650. For this purpose they are inserted into the aligning slots of the jig or fixture.

### TECHNICAL INFORMATION

- ISO-Fundamental Tolerances (see page A21)



### GN 230

| Description | b h6 | d1  | d2 | h  | l  | t   | For screws<br>DIN 84<br>DIN 912 | ⚖  |
|-------------|------|-----|----|----|----|-----|---------------------------------|----|
| GN 230-10   | 10   | 4.5 | 8  | 8  | 20 | 4.3 | M4 x 10                         | 10 |
| GN 230-12   | 12   | 5.5 | 10 | 8  | 20 | 5.3 | M5x12                           | 11 |
| GN 230-14   | 14   | 6.6 | 11 | 10 | 22 | 6.3 | M6x16                           | 19 |
| GN 230-16   | 16   | 6.6 | 11 | 10 | 22 | 6.3 | M6x16                           | 20 |
| GN 230-18   | 18   | 6.6 | 11 | 10 | 22 | 6.3 | M6x16                           | 25 |
| GN 230-20   | 20   | 6.6 | 11 | 10 | 22 | 6.3 | M6x16                           | 28 |
| GN 230-22   | 22   | 6.6 | 11 | 12 | 32 | 6.3 | M6x16                           | 59 |

## T-Nuts

### with slip proof

### SPECIFICATION

- Heat-treatable Steel
- Tensile strength class **8**
- zinc plated, blue passivated
- Tensile strength class **10**
- blackened

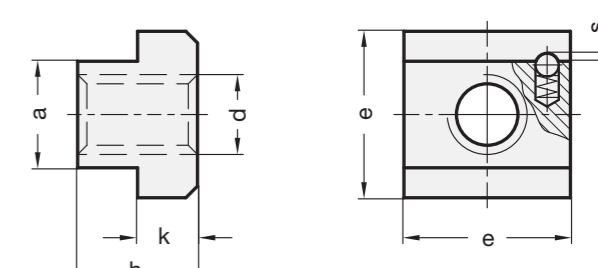
### INFORMATION

T-nuts GN 508.2 are dimensionally identical to DIN 508 (see page 977).

They are, however, fitted on the side with a spring loaded ball. This will prevent an unwanted movement of the nut, especially in a vertically mounted T-slot bed.

### TECHNICAL INFORMATION

- Strength values of nuts (see page A20)



### GN 508.2

| Description        | a -0.3/-0.5 | d    | e  | h  | k  | s    | T-Slot width<br>DIN 650 | ⚖   |
|--------------------|-------------|------|----|----|----|------|-------------------------|-----|
| GN 508.2-10-M8-8   | 10          | M 8  | 15 | 12 | 6  | 0.65 | 10                      | 14  |
| GN 508.2-10-M8-10  | 10          | M 8  | 15 | 12 | 6  | 0.65 | 10                      | 14  |
| GN 508.2-12-M10-8  | 12          | M 10 | 18 | 14 | 7  | 0.65 | 12                      | 22  |
| GN 508.2-12-M10-10 | 12          | M 10 | 18 | 14 | 7  | 0.65 | 12                      | 22  |
| GN 508.2-14-M12-8  | 14          | M 12 | 22 | 16 | 8  | 1    | 14                      | 34  |
| GN 508.2-14-M12-10 | 14          | M 12 | 22 | 16 | 8  | 1    | 14                      | 34  |
| GN 508.2-18-M16-8  | 18          | M 16 | 28 | 20 | 10 | 1    | 18                      | 68  |
| GN 508.2-18-M16-10 | 18          | M 16 | 28 | 20 | 10 | 1    | 18                      | 68  |
| GN 508.2-22-M20-8  | 22          | M 20 | 35 | 28 | 14 | 1.6  | 22                      | 155 |
| GN 508.2-22-M20-10 | 22          | M 20 | 35 | 28 | 14 | 1.6  | 22                      | 155 |



## Hexagon nuts

Steel / Stainless Steel, with spherical seating

### SPECIFICATION

#### Type

- Type **B**: with one-sided spherical seating

#### Version in Steel

Steel

- Tensile strength class 10  
- blackened

#### Version in Stainless Steel

Stainless Steel AISI 303 **NI**

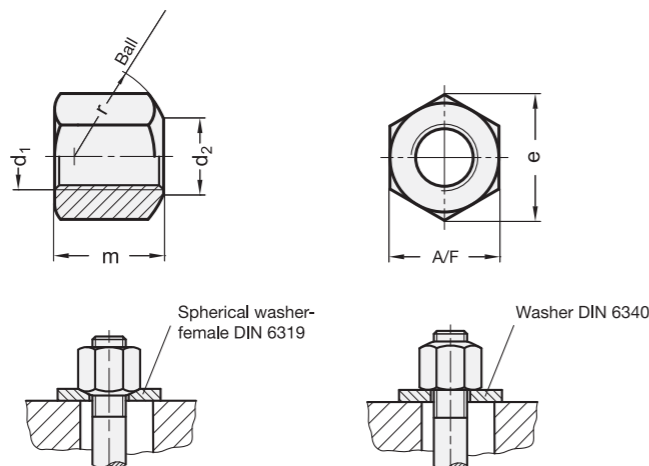
### INFORMATION

Hexagon nuts DIN 6330 are used on clamping, applications which require frequent clamping and unclamping ( $m = 1.5 \times d_1$ ).

The spherical seating together with female washers DIN 6319 (see page 962) allows excessive positional inaccuracies to be equalized.

### TECHNICAL INFORMATION

- ISO-Fundamental Tolerances (see page A21)  
- Stainless Steel characteristics (see page A26)  
- Strength values of nuts (see page A20)



#### DIN 6330

| Description    | d1   | d2 H14 | e min. | m  | A/F | r  | Δ   |
|----------------|------|--------|--------|----|-----|----|-----|
| DIN 6330-M8-B  | M 8  | 9      | 14.4   | 12 | 13  | 11 | 9   |
| DIN 6330-M10-B | M 10 | 11.5   | 17.8   | 15 | 16  | 15 | 20  |
| DIN 6330-M12-B | M 12 | 14     | 20     | 18 | 18  | 17 | 28  |
| DIN 6330-M14-B | M 14 | 16     | 24.6   | 21 | 22  | 20 | 45  |
| DIN 6330-M16-B | M 16 | 18     | 26.8   | 24 | 24  | 22 | 53  |
| DIN 6330-M20-B | M 20 | 22     | 33.5   | 30 | 30  | 27 | 110 |
| DIN 6330-M24-B | M 24 | 26     | 40     | 36 | 36  | 32 | 195 |
| DIN 6330-M30-B | M 30 | 32     | 51.3   | 45 | 46  | 41 | 401 |
| DIN 6330-M36-B | M 36 | 38     | 61.3   | 54 | 55  | 50 | 715 |

#### DIN 6330-NI

**STAINLESS STEEL**

| Description       | d1   | d2 H14 | e min. | m  | A/F | r  | Δ   |
|-------------------|------|--------|--------|----|-----|----|-----|
| DIN 6330-M8-B-NI  | M 8  | 9      | 14.4   | 12 | 13  | 11 | 9   |
| DIN 6330-M10-B-NI | M 10 | 11.5   | 17.8   | 15 | 16  | 15 | 9   |
| DIN 6330-M12-B-NI | M 12 | 14     | 20     | 18 | 18  | 17 | 29  |
| DIN 6330-M14-B-NI | M 14 | 16     | 24.6   | 21 | 22  | 20 | 32  |
| DIN 6330-M16-B-NI | M 16 | 18     | 26.8   | 24 | 24  | 22 | 57  |
| DIN 6330-M20-B-NI | M 20 | 22     | 33.5   | 30 | 30  | 27 | 114 |

## Hexagon nuts

with collar

### SPECIFICATION

Steel

- Tensile strength class 10  
- blackened

### INFORMATION

Hexagon nuts DIN 6331 are used on clamping applications which require frequent clamping and unclamping ( $m = 1.5 \times d_1$ ).

The collar of the nut eliminates the need for washers.

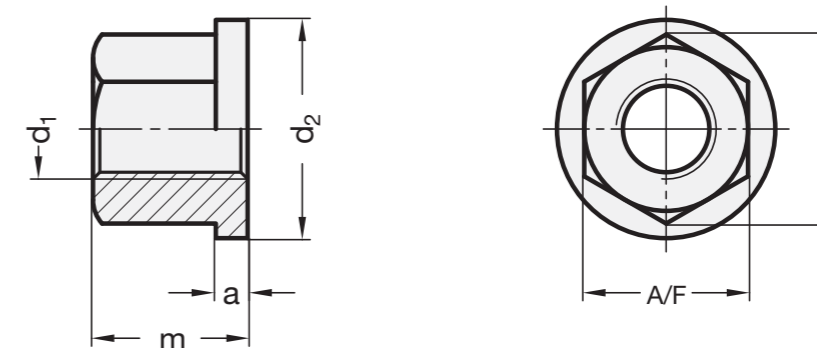
The official standard sheet specifies the additional sizes M 27, M 42 and M 48. But M 14 is not foreseen on the official standard sheet.

### ON REQUEST

Size M10 with A/F = 17

### TECHNICAL INFORMATION

- Strength values of nuts (see page A20)



#### DIN 6331

| Description  | d1   | d2 | a   | e min. | m  | A/F | Δ   |
|--------------|------|----|-----|--------|----|-----|-----|
| DIN 6331-M6  | M 6  | 14 | 3   | 11.5   | 9  | 10  | 9   |
| DIN 6331-M8  | M 8  | 18 | 3.5 | 14.4   | 12 | 13  | 13  |
| DIN 6331-M10 | M 10 | 22 | 4   | 17.8   | 15 | 16  | 20  |
| DIN 6331-M12 | M 12 | 25 | 4   | 20     | 18 | 18  | 32  |
| DIN 6331-M14 | M 14 | 28 | 4   | 24.6   | 21 | 22  | 51  |
| DIN 6331-M16 | M 16 | 31 | 5   | 26.8   | 24 | 24  | 71  |
| DIN 6331-M20 | M 20 | 37 | 6   | 33.5   | 30 | 30  | 115 |
| DIN 6331-M24 | M 24 | 45 | 6   | 40     | 36 | 36  | 220 |
| DIN 6331-M30 | M 30 | 58 | 8   | 51.3   | 45 | 46  | 410 |
| DIN 6331-M36 | M 36 | 68 | 10  | 61.3   | 54 | 55  | 810 |

## Slotted locknuts

Steel / Stainless Steel

### SPECIFICATION

#### Types

- Type **W**: Steel, not hardened
- Type **WNI**: Stainless Steel, not hardened
- Type **H**: Steel, hardened

#### Type W

Steel

- Tensile strength class 5
- not hardened
- blackened

#### Type WNI

Stainless Steel AISI 303

- not hardened

#### Type H

Steel

- Tensile strength class 5
- hardened HRC 60 ± 2 (thread not hardened)
- Mating surface ground or fine turned



### INFORMATION

On slotted locknuts DIN 1804 the ground surface d3 stands proud and should be used as a mating surface.

The sizes M45x1.5 to M60x1.5 have 6 slots.

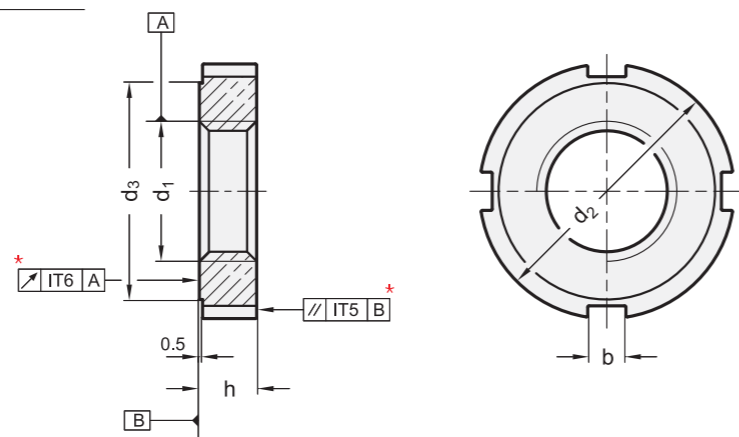
The official DIN standard sheets specifies additional sizes (up to M 200 x 3).

### TECHNICAL INFORMATION

- ISO-Fundamental tolerances (see page A21)
- Stainless Steel characteristics (see page A26)

### ACCESSORY

- C-Spanner DIN 1810 (Code no. see table) (see page 994)



### DIN 1804-WNI

STAINLESS STEEL

| Description          | d1      | d2 h11 | d3 | b  | h h14 | Code no. for C-Spanner | Δ   |
|----------------------|---------|--------|----|----|-------|------------------------|-----|
| DIN 1804-M16x1,5-WNI | M16x1.5 | 32     | 27 | 5  | 7     | DIN 1810-A30-32        | 30  |
| DIN 1804-M20x1,5-WNI | M20x1.5 | 36     | 30 | 6  | 8     | DIN 1810-A34-36        | 45  |
| DIN 1804-M24x1,5-WNI | M24x1.5 | 42     | 36 | 6  | 9     | DIN 1810-A40-42        | 60  |
| DIN 1804-M28x1,5-WNI | M28x1.5 | 50     | 43 | 7  | 10    | DIN 1810-A45-50        | 98  |
| DIN 1804-M30x1,5-WNI | M30x1.5 | 50     | 43 | 7  | 10    | DIN 1810-A45-50        | 92  |
| DIN 1804-M35x1,5-WNI | M35x1.5 | 55     | 48 | 7  | 11    | DIN 1810-A52-55        | 115 |
| DIN 1804-M40x1,5-WNI | M40x1.5 | 62     | 54 | 8  | 12    | DIN 1810-A58-62        | 156 |
| DIN 1804-M45x1,5-WNI | M45x1.5 | 68     | 60 | 8  | 12    | DIN 1810-A68-75        | 176 |
| DIN 1804-M50x1,5-WNI | M50x1.5 | 75     | 67 | 8  | 13    | DIN 1810-A68-75        | 235 |
| DIN 1804-M55x1,5-WNI | M55x1.5 | 80     | 70 | 10 | 13    | DIN 1810-A80-90        | 242 |
| DIN 1804-M60x1,5-WNI | M60x1.5 | 90     | 80 | 10 | 13    | DIN 1810-A80-90        | 340 |

\* Position tolerances apply to type H

### DIN 1804

| Description        | d1      | d2 h11 | d3 | b  | h h14 | Code no. for C-Spanner | Δ   |
|--------------------|---------|--------|----|----|-------|------------------------|-----|
| DIN 1804-M8x1-H    | M8x1    | 20     | 16 | 4  | 5     | DIN 1810-A16-20        | 10  |
| DIN 1804-M10x1-H   | M10x1   | 25     | 20 | 5  | 6     | DIN 1810-A25-28        | 17  |
| DIN 1804-M12x1,5-H | M12x1.5 | 28     | 23 | 5  | 6     | DIN 1810-A25-28        | 20  |
| DIN 1804-M14x1,5-H | M14x1.5 | 30     | 25 | 5  | 7     | DIN 1810-A30-32        | 28  |
| DIN 1804-M16x1,5-H | M16x1.5 | 32     | 27 | 5  | 7     | DIN 1810-A30-32        | 30  |
| DIN 1804-M18x1,5-H | M18x1.5 | 34     | 28 | 6  | 8     | DIN 1810-A34-36        | 30  |
| DIN 1804-M20x1,5-H | M20x1.5 | 36     | 30 | 6  | 8     | DIN 1810-A34-36        | 40  |
| DIN 1804-M22x1,5-H | M22x1.5 | 40     | 34 | 6  | 9     | DIN 1810-A40-42        | 56  |
| DIN 1804-M24x1,5-H | M24x1.5 | 42     | 36 | 6  | 9     | DIN 1810-A40-42        | 60  |
| DIN 1804-M26x1,5-H | M26x1.5 | 45     | 38 | 7  | 10    | DIN 1810-A45-50        | 75  |
| DIN 1804-M28x1,5-H | M28x1.5 | 50     | 43 | 7  | 10    | DIN 1810-A45-50        | 90  |
| DIN 1804-M30x1,5-H | M30x1.5 | 50     | 43 | 7  | 10    | DIN 1810-A45-50        | 95  |
| DIN 1804-M32x1,5-H | M32x1.5 | 52     | 45 | 7  | 11    | DIN 1810-A52-55        | 100 |
| DIN 1804-M35x1,5-H | M35x1.5 | 55     | 48 | 7  | 11    | DIN 1810-A52-55        | 113 |
| DIN 1804-M38x1,5-H | M38x1.5 | 58     | 50 | 8  | 11    | DIN 1810-A58-62        | 120 |
| DIN 1804-M40x1,5-H | M40x1.5 | 62     | 54 | 8  | 12    | DIN 1810-A58-62        | 140 |
| DIN 1804-M42x1,5-H | M42x1.5 | 62     | 54 | 8  | 12    | DIN 1810-A58-62        | 155 |
| DIN 1804-M45x1,5-H | M45x1.5 | 68     | 60 | 8  | 12    | DIN 1810-A68-75        | 175 |
| DIN 1804-M48x1,5-H | M48x1.5 | 75     | 67 | 8  | 13    | DIN 1810-A68-75        | 195 |
| DIN 1804-M50x1,5-H | M50x1.5 | 75     | 67 | 8  | 13    | DIN 1810-A68-75        | 230 |
| DIN 1804-M52x1,5-H | M52x1.5 | 80     | 70 | 10 | 13    | DIN 1810-A80-90        | 240 |
| DIN 1804-M55x1,5-H | M55x1.5 | 80     | 70 | 10 | 13    | DIN 1810-A80-90        | 260 |
| DIN 1804-M58x1,5-H | M58x1.5 | 90     | 80 | 10 | 13    | DIN 1810-A80-90        | 320 |
| DIN 1804-M60x1,5-H | M60x1.5 | 90     | 80 | 10 | 13    | DIN 1810-A80-90        | 345 |
| DIN 1804-M8x1-W    | M8x1    | 20     | 16 | 4  | 5     | DIN 1810-A16-20        | 16  |
| DIN 1804-M10x1-W   | M10x1   | 25     | 20 | 5  | 6     | DIN 1810-A25-28        | 16  |
| DIN 1804-M12x1,5-W | M12x1.5 | 28     | 23 | 5  | 6     | DIN 1810-A25-28        | 20  |
| DIN 1804-M14x1,5-W | M14x1.5 | 30     | 25 | 5  | 7     | DIN 1810-A30-32        | 28  |
| DIN 1804-M16x1,5-W | M16x1.5 | 32     | 27 | 5  | 7     | DIN 1810-A30-32        | 35  |
| DIN 1804-M18x1,5-W | M18x1.5 | 34     | 28 | 6  | 8     | DIN 1810-A34-36        | 38  |
| DIN 1804-M20x1,5-W | M20x1.5 | 36     | 30 | 6  | 8     | DIN 1810-A34-36        | 45  |
| DIN 1804-M22x1,5-W | M22x1.5 | 40     | 34 | 6  | 9     | DIN 1810-A40-42        | 50  |
| DIN 1804-M24x1,5-W | M24x1.5 | 42     | 36 | 6  | 9     | DIN 1810-A40-42        | 60  |
| DIN 1804-M26x1,5-W | M26x1.5 | 45     | 38 | 7  | 10    | DIN 1810-A45-50        | 75  |
| DIN 1804-M28x1,5-W | M28x1.5 | 50     | 43 | 7  | 10    | DIN 1810-A45-50        | 90  |
| DIN 1804-M30x1,5-W | M30x1.5 | 50     | 43 | 7  | 10    | DIN 1810-A45-50        | 95  |
| DIN 1804-M32x1,5-W | M32x1.5 | 52     | 45 | 7  | 11    | DIN 1810-A52-55        | 103 |
| DIN 1804-M35x1,5-W | M35x1.5 | 55     | 48 | 7  | 11    | DIN 1810-A52-55        | 110 |
| DIN 1804-M38x1,5-W | M38x1.5 | 58     | 50 | 8  | 11    | DIN 1810-A58-62        | 120 |
| DIN 1804-M40x1,5-W | M40x1.5 | 62     | 54 | 8  | 12    | DIN 1810-A58-62        | 140 |
| DIN 1804-M42x1,5-W | M42x1.5 | 62     | 54 | 8  | 12    | DIN 1810-A58-62        | 155 |
| DIN 1804-M45x1,5-W | M45x1.5 | 68     | 60 | 8  | 12    | DIN 1810-A68-75        | 175 |
| DIN 1804-M48x1,5-W | M48x1.5 | 75     | 67 | 8  | 13    | DIN 1810-A68-75        | 200 |
| DIN 1804-M50x1,5-W | M50x1.5 | 75     | 67 | 8  | 13    | DIN 1810-A68-75        | 220 |
| DIN 1804-M52x1,5-W | M52x1.5 | 80     | 70 | 10 | 13    | DIN 1810-A80-90        | 240 |
| DIN 1804-M55x1,5-W | M55x1.5 | 80     | 70 | 10 | 13    | DIN 1810-A80-90        | 260 |
| DIN 1804-M58x1,5-W | M58x1.5 | 90     | 80 | 10 | 13    | DIN 1810-A80-90        | 330 |
| DIN 1804-M60x1,5-W | M60x1.5 | 90     | 80 | 10 | 13    | DIN 1810-A80-90        | 345 |

\* Position tolerances apply to type H



## Slotted locknuts

self-locking, with polyamide insert

### SPECIFICATION

- Steel
- Tensile strength class 5
  - zinc plated, blue passivated

### INFORMATION

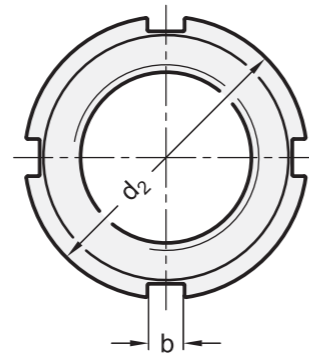
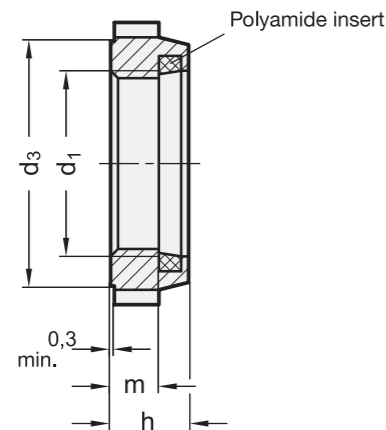
Slotted locknuts GN 1804.1 are self-locking owing to their polyamide insert. They can therefore also be used as a setting nut and may be used more than once. The thread series corresponds to roller bearing slotted locknuts DIN 981.

### TECHNICAL INFORMATION

- Metric ISO fine thread (see page A19)
- Plastic characteristics (see page A2)

### ACCESSORY

- C-Spanner DIN 1810 (Code no. see table) (see page 994)



### GN 1804.1

| Description        | d1 6H       | d2 | d3 | b | h    | m   | Number of slots | Code no. for C-Spanner | ⚖   |
|--------------------|-------------|----|----|---|------|-----|-----------------|------------------------|-----|
| GN 1804.1-M10x0,75 | M 10 x 0,75 | 18 | 15 | 3 | 7,5  | 4,5 | 4               | DIN 1810-A16-20        | 6   |
| GN 1804.1-M12x1    | M 12 x 1    | 21 | 18 | 3 | 7,5  | 4,5 | 4               | DIN 1810-A16-20        | 9   |
| GN 1804.1-M15x1    | M 15 x 1    | 24 | 21 | 4 | 8,5  | 5,5 | 4               | DIN 1810-A25-28        | 12  |
| GN 1804.1-M17x1    | M 17 x 1    | 28 | 24 | 4 | 8,5  | 5,5 | 4               | DIN 1810-A25-28        | 17  |
| GN 1804.1-M20x1    | M 20 x 1    | 32 | 27 | 4 | 9,5  | 6,5 | 4               | DIN 1810-A30-32        | 22  |
| GN 1804.1-M25x1,5  | M 25 x 1,5  | 38 | 33 | 5 | 10,5 | 6,5 | 4               | DIN 1810-A40-42        | 33  |
| GN 1804.1-M30x1,5  | M 30 x 1,5  | 44 | 38 | 5 | 11   | 6,5 | 4               | DIN 1810-A45-50        | 46  |
| GN 1804.1-M35x1,5  | M 35 x 1,5  | 50 | 44 | 5 | 11   | 7   | 4               | DIN 1810-A45-50        | 60  |
| GN 1804.1-M40x1,5  | M 40 x 1,5  | 56 | 50 | 6 | 12   | 8,2 | 4               | DIN 1810-A58-62        | 74  |
| GN 1804.1-M45x1,5  | M 45 x 1,5  | 62 | 55 | 6 | 12   | 8,2 | 4               | DIN 1810-A58-62        | 79  |
| GN 1804.1-M50x1,5  | M 50 x 1,5  | 68 | 61 | 6 | 13   | 8,5 | 4               | DIN 1810-A68-75        | 109 |
| GN 1804.1-M55x2    | M 55 x 2    | 75 | 68 | 7 | 13,5 | 8,5 | 6               | DIN 1810-A68-75        | 141 |
| GN 1804.1-M60x2    | M 60 x 2    | 80 | 73 | 7 | 13,5 | 8,5 | 6               | DIN 1810-A80-90        | 149 |



## Slotted locknuts

with thread locking

### SPECIFICATION

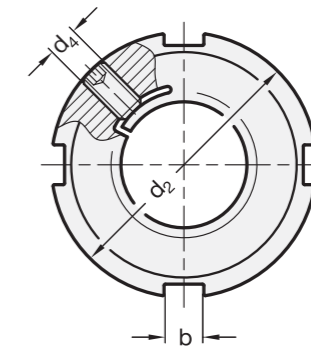
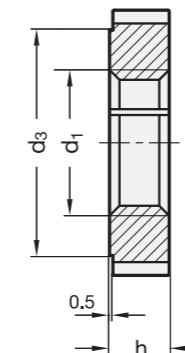
- Nut  
Steel **ST**
- Tensile strength class 5.8
  - blackened
- Set screw  
Steel, blackened

### INFORMATION

GN 1804.2 slotted locknuts with thread locking can be secured against twisting by twisting off the threaded shaft via a d4 set screw. The thread flanks of the nut ensure damage-free securing and can be used as often as needed. The d3 offset plane surface is intended as an axial contact surface.

### ACCESSORY

- C-Spanner DIN 1810 (Code no. see table) (see page 994)



### GN 1804.2

| Description          | d1      | d2 | d3 | d4 | b | h  | Code no. for C-Spanner | ⚖   |
|----------------------|---------|----|----|----|---|----|------------------------|-----|
| GN 1804.2-M12x1,5-ST | M12x1,5 | 28 | 23 | M4 | 5 | 6  | DIN 1810-A25-28        | 20  |
| GN 1804.2-M14x1,5-ST | M14x1,5 | 30 | 25 | M4 | 5 | 7  | DIN 1810-A30-32        | 26  |
| GN 1804.2-M16x1,5-ST | M16x1,5 | 32 | 27 | M5 | 5 | 7  | DIN 1810-A30-32        | 29  |
| GN 1804.2-M18x1,5-ST | M18x1,5 | 34 | 28 | M5 | 6 | 8  | DIN 1810-A34-36        | 35  |
| GN 1804.2-M20x1,5-ST | M20x1,5 | 36 | 30 | M5 | 6 | 8  | DIN 1810-A34-36        | 38  |
| GN 1804.2-M22x1,5-ST | M22x1,5 | 40 | 34 | M5 | 6 | 9  | DIN 1810-A40-42        | 55  |
| GN 1804.2-M24x1,5-ST | M24x1,5 | 42 | 36 | M5 | 6 | 9  | DIN 1810-A40-42        | 58  |
| GN 1804.2-M30x1,5-ST | M30x1,5 | 50 | 43 | M5 | 7 | 10 | DIN 1810-A45-50        | 58  |
| GN 1804.2-M35x1,5-ST | M35x1,5 | 55 | 48 | M6 | 7 | 11 | DIN 1810-A52-55        | 111 |
| GN 1804.2-M40x1,5-ST | M40x1,5 | 62 | 54 | M8 | 8 | 12 | DIN 1810-A58-62        | 150 |

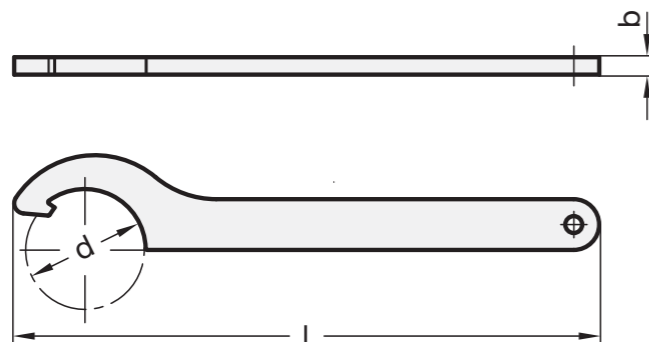
## C-Spanner

### SPECIFICATION

Steel  
blackened

### INFORMATION

- Levelling sets GN 350 (see page 1014)
- Levelling sets GN 350.1 (see page 1016)
- Levelling sets GN 350.2 (see page 1018)
- Slotted locknuts DIN 1804 (see page 990)
- Slotted locknuts GN 1804.1 (see page 992)



### DIN 1810

| Description     | d min. | d max. | l   | b | △   |
|-----------------|--------|--------|-----|---|-----|
| DIN 1810-A16-20 | A 16   | 20     | 110 | 3 | 23  |
| DIN 1810-A25-28 | A 25   | 28     | 136 | 4 | 46  |
| DIN 1810-A30-32 | A 30   | 32     | 136 | 4 | 49  |
| DIN 1810-A34-36 | A 34   | 36     | 170 | 5 | 92  |
| DIN 1810-A40-42 | A 40   | 42     | 170 | 5 | 100 |
| DIN 1810-A45-50 | A 45   | 50     | 206 | 6 | 161 |
| DIN 1810-A52-55 | A 52   | 55     | 206 | 6 | 162 |
| DIN 1810-A58-62 | A 58   | 62     | 240 | 7 | 258 |
| DIN 1810-A68-75 | A 68   | 75     | 240 | 7 | 261 |
| DIN 1810-A80-90 | A 80   | 90     | 280 | 8 | 426 |

## Feather keys

Steel / Stainless Steel

### SPECIFICATION

#### Type

- Type **A**: front rounded, long version

#### Version in Steel

Steel C45+C  
blank

#### Version in Stainless Steel

Stainless Steel AISI 316Ti **NI**

### INFORMATION

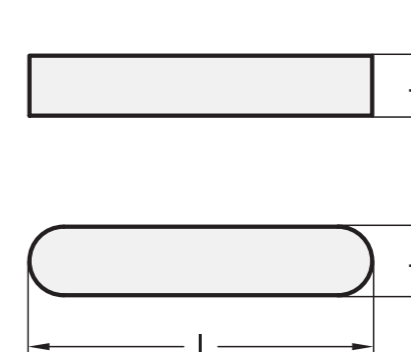
Feather keys DIN 6885 are only in packing units of 50 pieces for each size and length available.  
Stainless Steel-Feather keys DIN 6885 are only in packing units of 10 pieces for each size and length available.

### ON REQUEST

- b = 14, 16, 18, 20

### TECHNICAL INFORMATION

- ISO-Fundamental Tolerances (see page A21)
- Keyway type in the bore and the shaft (see page A16)
- Stainless Steel characteristics (see page A26)

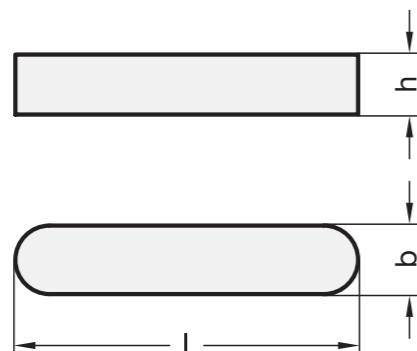


### DIN 6885

| Description       | b h9 | h | l  | For shaft-Ø from...to | △ |
|-------------------|------|---|----|-----------------------|---|
| DIN 6885-2-2-6-A  | 2    | 2 | 6  | 6...8                 | 1 |
| DIN 6885-2-2-8-A  | 2    | 2 | 8  | 6...8                 | 1 |
| DIN 6885-2-2-10-A | 2    | 2 | 10 | 6...8                 | 1 |
| DIN 6885-2-2-12-A | 2    | 2 | 12 | 6...8                 | 1 |
| DIN 6885-2-2-14-A | 2    | 2 | 14 | 6...8                 | 1 |
| DIN 6885-2-2-16-A | 2    | 2 | 16 | 6...8                 | 1 |
| DIN 6885-2-2-18-A | 2    | 2 | 18 | 6...8                 | 1 |
| DIN 6885-2-2-20-A | 2    | 2 | 20 | 6...8                 | 1 |
| DIN 6885-3-3-6-A  | 3    | 3 | 6  | 8...10                | 1 |
| DIN 6885-3-3-8-A  | 3    | 3 | 8  | 8...10                | 1 |
| DIN 6885-3-3-10-A | 3    | 3 | 10 | 8...10                | 1 |
| DIN 6885-3-3-12-A | 3    | 3 | 12 | 8...10                | 1 |
| DIN 6885-3-3-14-A | 3    | 3 | 14 | 8...10                | 1 |
| DIN 6885-3-3-16-A | 3    | 3 | 16 | 8...10                | 1 |
| DIN 6885-3-3-18-A | 3    | 3 | 18 | 8...10                | 1 |
| DIN 6885-3-3-20-A | 3    | 3 | 20 | 8...10                | 1 |
| DIN 6885-3-3-22-A | 3    | 3 | 22 | 8...10                | 2 |
| DIN 6885-3-3-25-A | 3    | 3 | 25 | 8...10                | 2 |
| DIN 6885-3-3-28-A | 3    | 3 | 28 | 8...10                | 2 |

### DIN 6885

| Description       | b h9 | h | l  | For shaft-Ø from...to | △ |
|-------------------|------|---|----|-----------------------|---|
| DIN 6885-3-3-30-A | 3    | 3 | 30 | 8...10                | 2 |
| DIN 6885-3-3-32-A | 3    | 3 | 32 | 8...10                | 2 |
| DIN 6885-3-3-35-A | 3    | 3 | 35 | 8...10                | 2 |
| DIN 6885-3-3-36-A | 3    | 3 | 36 | 8...10                | 3 |
| DIN 6885-4-4-6-A  | 4    | 4 | 6  | 10...12               | 3 |
| DIN 6885-4-4-8-A  | 4    | 4 | 8  | 10...12               | 3 |
| DIN 6885-4-4-10-A | 4    | 4 | 10 | 10...12               | 3 |
| DIN 6885-4-4-12-A | 4    | 4 | 12 | 10...12               | 3 |
| DIN 6885-4-4-14-A | 4    | 4 | 14 | 10...12               | 3 |
| DIN 6885-4-4-16-A | 4    | 4 | 16 | 10...12               | 3 |
| DIN 6885-4-4-18-A | 4    | 4 | 18 | 10...12               | 3 |
| DIN 6885-4-4-20-A | 4    | 4 | 20 | 10...12               | 3 |
| DIN 6885-4-4-22-A | 4    | 4 | 22 | 10...12               | 3 |
| DIN 6885-4-4-25-A | 4    | 4 | 25 | 10...12               | 3 |
| DIN 6885-4-4-28-A | 4    | 4 | 28 | 10...12               | 4 |
| DIN 6885-4-4-32-A | 4    | 4 | 32 | 10...12               | 4 |
| DIN 6885-4-4-36-A | 4    | 4 | 36 | 10...12               | 5 |
| DIN 6885-4-4-40-A | 4    | 4 | 40 | 10...12               | 5 |
| DIN 6885-4-4-45-A | 4    | 4 | 45 | 10...12               | 6 |



DIN 6885

| Description       | b h9 | h | l  | For shaft-Ø from...to | ⚖  |
|-------------------|------|---|----|-----------------------|----|
| DIN 6885-5-5-8-A  | 5    | 5 | 8  | 12...17               | 2  |
| DIN 6885-5-5-10-A | 5    | 5 | 10 | 12...17               | 2  |
| DIN 6885-5-5-12-A | 5    | 5 | 12 | 12...17               | 2  |
| DIN 6885-5-5-14-A | 5    | 5 | 14 | 12...17               | 2  |
| DIN 6885-5-5-16-A | 5    | 5 | 16 | 12...17               | 3  |
| DIN 6885-5-5-18-A | 5    | 5 | 18 | 12...17               | 4  |
| DIN 6885-5-5-20-A | 5    | 5 | 20 | 12...17               | 4  |
| DIN 6885-5-5-22-A | 5    | 5 | 22 | 12...17               | 4  |
| DIN 6885-5-5-25-A | 5    | 5 | 25 | 12...17               | 5  |
| DIN 6885-5-5-28-A | 5    | 5 | 28 | 12...17               | 5  |
| DIN 6885-5-5-32-A | 5    | 5 | 32 | 12...17               | 6  |
| DIN 6885-5-5-36-A | 5    | 5 | 36 | 12...17               | 7  |
| DIN 6885-5-5-40-A | 5    | 5 | 40 | 12...17               | 7  |
| DIN 6885-5-5-45-A | 5    | 5 | 45 | 12...17               | 8  |
| DIN 6885-5-5-50-A | 5    | 5 | 50 | 12...17               | 9  |
| DIN 6885-6-6-12-A | 6    | 6 | 12 | 17...22               | 3  |
| DIN 6885-6-6-14-A | 6    | 6 | 14 | 17...22               | 3  |
| DIN 6885-6-6-16-A | 6    | 6 | 16 | 17...22               | 4  |
| DIN 6885-6-6-18-A | 6    | 6 | 18 | 17...22               | 5  |
| DIN 6885-6-6-20-A | 6    | 6 | 20 | 17...22               | 5  |
| DIN 6885-6-6-22-A | 6    | 6 | 22 | 17...22               | 6  |
| DIN 6885-6-6-25-A | 6    | 6 | 25 | 17...22               | 6  |
| DIN 6885-6-6-28-A | 6    | 6 | 28 | 17...22               | 7  |
| DIN 6885-6-6-32-A | 6    | 6 | 32 | 17...22               | 8  |
| DIN 6885-6-6-36-A | 6    | 6 | 36 | 17...22               | 10 |
| DIN 6885-6-6-40-A | 6    | 6 | 40 | 17...22               | 10 |
| DIN 6885-6-6-45-A | 6    | 6 | 45 | 17...22               | 13 |
| DIN 6885-6-6-50-A | 6    | 6 | 50 | 17...22               | 14 |
| DIN 6885-6-6-56-A | 6    | 6 | 56 | 17...22               | 15 |
| DIN 6885-6-6-63-A | 6    | 6 | 63 | 17...22               | 17 |
| DIN 6885-8-7-12-A | 8    | 7 | 12 | 22...30               | 4  |
| DIN 6885-8-7-14-A | 8    | 7 | 14 | 22...30               | 6  |
| DIN 6885-8-7-16-A | 8    | 7 | 16 | 22...30               | 6  |
| DIN 6885-8-7-18-A | 8    | 7 | 18 | 22...30               | 7  |
| DIN 6885-8-7-20-A | 8    | 7 | 20 | 22...30               | 8  |
| DIN 6885-8-7-22-A | 8    | 7 | 22 | 22...30               | 9  |
| DIN 6885-8-7-25-A | 8    | 7 | 25 | 22...30               | 10 |
| DIN 6885-8-7-28-A | 8    | 7 | 28 | 22...30               | 11 |
| DIN 6885-8-7-32-A | 8    | 7 | 32 | 22...30               | 13 |
| DIN 6885-8-7-36-A | 8    | 7 | 36 | 22...30               | 15 |
| DIN 6885-8-7-40-A | 8    | 7 | 40 | 22...30               | 18 |

DIN 6885

| Description         | b h9 | h | l   | For shaft-Ø from...to | ⚖  |
|---------------------|------|---|-----|-----------------------|----|
| DIN 6885-8-7-45-A   | 8    | 7 | 45  | 22...30               | 18 |
| DIN 6885-8-7-50-A   | 8    | 7 | 50  | 22...30               | 21 |
| DIN 6885-8-7-56-A   | 8    | 7 | 56  | 22...30               | 23 |
| DIN 6885-8-7-63-A   | 8    | 7 | 63  | 22...30               | 27 |
| DIN 6885-8-7-70-A   | 8    | 7 | 70  | 22...30               | 29 |
| DIN 6885-8-7-80-A   | 8    | 7 | 80  | 22...30               | 34 |
| DIN 6885-8-7-90-A   | 8    | 7 | 90  | 22...30               | 38 |
| DIN 6885-10-8-16-A  | 10   | 8 | 16  | 30...38               | 10 |
| DIN 6885-10-8-18-A  | 10   | 8 | 18  | 30...38               | 11 |
| DIN 6885-10-8-20-A  | 10   | 8 | 20  | 30...38               | 13 |
| DIN 6885-10-8-22-A  | 10   | 8 | 22  | 30...38               | 14 |
| DIN 6885-10-8-25-A  | 10   | 8 | 25  | 30...38               | 16 |
| DIN 6885-10-8-28-A  | 10   | 8 | 28  | 30...38               | 16 |
| DIN 6885-10-8-32-A  | 10   | 8 | 32  | 30...38               | 18 |
| DIN 6885-10-8-36-A  | 10   | 8 | 36  | 30...38               | 21 |
| DIN 6885-10-8-40-A  | 10   | 8 | 40  | 30...38               | 23 |
| DIN 6885-10-8-45-A  | 10   | 8 | 45  | 30...38               | 28 |
| DIN 6885-10-8-50-A  | 10   | 8 | 50  | 30...38               | 29 |
| DIN 6885-10-8-56-A  | 10   | 8 | 56  | 30...38               | 33 |
| DIN 6885-10-8-63-A  | 10   | 8 | 63  | 30...38               | 37 |
| DIN 6885-10-8-70-A  | 10   | 8 | 70  | 30...38               | 42 |
| DIN 6885-10-8-80-A  | 10   | 8 | 80  | 30...38               | 50 |
| DIN 6885-10-8-90-A  | 10   | 8 | 90  | 30...38               | 54 |
| DIN 6885-10-8-100-A | 10   | 8 | 100 | 30...38               | 61 |
| DIN 6885-10-8-110-A | 10   | 8 | 110 | 30...38               | 67 |
| DIN 6885-12-8-20-A  | 12   | 8 | 20  | 38...44               | 15 |
| DIN 6885-12-8-25-A  | 12   | 8 | 25  | 38...44               | 16 |
| DIN 6885-12-8-28-A  | 12   | 8 | 28  | 38...44               | 19 |
| DIN 6885-12-8-32-A  | 12   | 8 | 32  | 38...44               | 21 |
| DIN 6885-12-8-36-A  | 12   | 8 | 36  | 38...44               | 27 |
| DIN 6885-12-8-40-A  | 12   | 8 | 40  | 38...44               | 27 |
| DIN 6885-12-8-45-A  | 12   | 8 | 45  | 38...44               | 31 |
| DIN 6885-12-8-50-A  | 12   | 8 | 50  | 38...44               | 35 |
| DIN 6885-12-8-56-A  | 12   | 8 | 56  | 38...44               | 39 |
| DIN 6885-12-8-63-A  | 12   | 8 | 63  | 38...44               | 45 |
| DIN 6885-12-8-70-A  | 12   | 8 | 70  | 38...44               | 50 |
| DIN 6885-12-8-80-A  | 12   | 8 | 80  | 38...44               | 60 |
| DIN 6885-12-8-90-A  | 12   | 8 | 90  | 38...44               | 68 |
| DIN 6885-12-8-100-A | 12   | 8 | 100 | 38...44               | 75 |
| DIN 6885-12-8-125-A | 12   | 8 | 125 | 38...44               | 94 |

DIN 6885-NI

STAINLESS STEEL

| Description          | b h9 | h | l  | For shaft-Ø from...to | ⚖  |
|----------------------|------|---|----|-----------------------|----|
| DIN 6885-3-3-6-A-NI  | 3    | 3 | 6  | 8...10                | 1  |
| DIN 6885-3-3-8-A-NI  | 3    | 3 | 8  | 8...10                | 1  |
| DIN 6885-3-3-10-A-NI | 3    | 3 | 10 | 8...10                | 1  |
| DIN 6885-3-3-12-A-NI | 3    | 3 | 12 | 8...10                | 1  |
| DIN 6885-3-3-14-A-NI | 3    | 3 | 14 | 8...10                | 1  |
| DIN 6885-3-3-16-A-NI | 3    | 3 | 16 | 8...10                | 1  |
| DIN 6885-3-3-18-A-NI | 3    | 3 | 18 | 8...10                | 1  |
| DIN 6885-3-3-20-A-NI | 3    | 3 | 20 | 8...10                | 1  |
| DIN 6885-4-4-10-A-NI | 4    | 4 | 10 | 10...12               | 1  |
| DIN 6885-4-4-12-A-NI | 4    | 4 | 12 | 10...12               | 2  |
| DIN 6885-4-4-14-A-NI | 4    | 4 | 14 | 10...12               | 2  |
| DIN 6885-4-4-16-A-NI | 4    | 4 | 16 | 10...12               | 2  |
| DIN 6885-4-4-18-A-NI | 4    | 4 | 18 | 10...12               | 2  |
| DIN 6885-4-4-20-A-NI | 4    | 4 | 20 | 10...12               | 3  |
| DIN 6885-4-4-22-A-NI | 4    | 4 | 22 | 10...12               | 4  |
| DIN 6885-4-4-25-A-NI | 4    | 4 | 25 | 10...12               | 4  |
| DIN 6885-4-4-28-A-NI | 4    | 4 | 28 | 10...12               | 4  |
| DIN 6885-4-4-32-A-NI | 4    | 4 | 32 | 10...12               | 4  |
| DIN 6885-5-5-10-A-NI | 5    | 5 | 10 | 12...17               | 2  |
| DIN 6885-5-5-12-A-NI | 5    | 5 | 12 | 12...17               | 2  |
| DIN 6885-5-5-14-A-NI | 5    | 5 | 14 | 12...17               | 2  |
| DIN 6885-5-5-16-A-NI | 5    | 5 | 16 | 12...17               | 3  |
| DIN 6885-5-5-18-A-NI | 5    | 5 | 18 | 12...17               | 4  |
| DIN 6885-5-5-20-A-NI | 5    | 5 | 20 | 12...17               | 4  |
| DIN 6885-5-5-22-A-NI | 5    | 5 | 22 | 12...17               | 4  |
| DIN 6885-5-5-25-A-NI | 5    | 5 | 25 | 12...17               | 5  |
| DIN 6885-5-5-28-A-NI | 5    | 5 | 28 | 12...17               | 6  |
| DIN 6885-5-5-32-A-NI | 5    | 5 | 32 | 12...17               | 6  |
| DIN 6885-5-5-36-A-NI | 5    | 5 | 36 | 12...17               | 7  |
| DIN 6885-5-5-40-A-NI | 5    | 5 | 40 | 12...17               | 8  |
| DIN 6885-5-5-45-A-NI | 5    | 5 | 45 | 12...17               | 9  |
| DIN 6885-5-5-50-A-NI | 5    | 5 | 50 | 12...17               | 10 |
| DIN 6885-6-6-14-A-NI | 6    | 6 | 14 | 17...22               | 4  |
| DIN 6885-6-6-16-A-NI | 6    | 6 | 16 | 17...22               | 5  |
| DIN 6885-6-6-18-A-NI | 6    | 6 | 18 | 17...22               | 5  |
| DIN 6885-6-6-20-A-NI | 6    | 6 | 20 | 17...22               | 6  |
| DIN 6885-6-6-22-A-NI | 6    | 6 | 22 | 17...22               | 6  |
| DIN 6885-6-6-25-A-NI | 6    | 6 | 25 | 17...22               | 7  |
| DIN 6885-6-6-28-A-NI | 6    | 6 | 28 | 17...22               | 8  |
| DIN 6885-6-6-32-A-NI | 6    | 6 | 32 | 17...22               | 9  |
| DIN 6885-6-6-36-A-NI | 6    | 6 | 36 | 17...22               | 10 |
| DIN 6885-6-6-40-A-NI | 6    | 6 | 40 | 17...22               | 11 |
| DIN 6885-6-6-45-A-NI | 6    | 6 | 45 | 17...22               | 12 |
| DIN 6885-6-6-50-A-NI | 6    | 6 | 50 | 17...22               | 14 |

DIN 6885-NI

STAINLESS STEEL

| Description            | b h9 | h | l   | For shaft-Ø from...to | ⚖  |
|------------------------|------|---|-----|-----------------------|----|
| DIN 6885-6-6-56-A-NI   | 6    | 6 | 56  | 17...22               | 16 |
| DIN 6885-6-6-63-A-NI   | 6    | 6 | 63  | 17...22               | 18 |
| DIN 6885-8-7-16-A-NI   | 8    | 7 | 16  | 22...30               | 7  |
| DIN 6885-8-7-18-A-NI   | 8    | 7 | 18  | 22...30               | 8  |
| DIN 6885-8-7-20-A-NI   | 8    | 7 | 20  | 22...30               | 9  |
| DIN 6885-8-7-22-A-NI   | 8    | 7 | 22  | 22...30               | 10 |
| DIN 6885-8-7-24-A-NI   | 8    | 7 | 24  | 22...30               | 11 |
| DIN 6885-8-7-25-A-NI   | 8    | 7 | 25  | 22...30               | 11 |
| DIN 6885-8-7-28-A-NI   | 8    | 7 | 28  | 22...30               | 12 |
| DIN 6885-8-7-32-A-NI   | 8    | 7 | 32  | 22...30               | 14 |
| DIN 6885-8-7-36-A-NI   | 8    | 7 | 36  | 22...30               | 16 |
| DIN 6885-8-7-40-A-NI   | 8    | 7 | 40  | 22...30               | 18 |
| DIN 6885-8-7-45-A-NI   | 8    | 7 | 45  | 22...30               | 20 |
| DIN 6885-8-7-50-A-NI   | 8    | 7 | 50  | 22...30               | 22 |
| DIN 6885-8-7-56-A-NI   | 8    | 7 | 56  | 22...30               | 25 |
| DIN 6885-8-7-63-A-NI   | 8    | 7 | 63  | 22...30               | 28 |
| DIN 6885-10-8-20-A-NI  | 10   | 8 | 20  | 30...38               | 13 |
| DIN 6885-10-8-22-A-NI  | 10   | 8 | 22  | 30...38               | 14 |
| DIN 6885-10-8-25-A-NI  | 10   | 8 | 25  | 30...38               | 16 |
| DIN 6885-10-8-28-A-NI  | 10   | 8 | 28  | 30...38               | 18 |
| DIN 6885-10-8-32-A-NI  | 10   | 8 | 32  | 30...38               | 20 |
| DIN 6885-10-8-36-A-NI  | 10   | 8 | 36  | 30...38               | 23 |
| DIN 6885-10-8-40-A-NI  | 10   | 8 | 40  | 30...38               | 25 |
| DIN 6885-10-8-45-A-NI  | 10   | 8 | 45  | 30...38               | 28 |
| DIN 6885-10-8-50-A-NI  | 10   | 8 | 50  | 30...38               | 31 |
| DIN 6885-10-8-56-A-NI  | 10   | 8 | 56  | 30...38               | 35 |
| DIN 6885-10-8-63-A-NI  | 10   | 8 | 63  | 30...38               | 40 |
| DIN 6885-10-8-70-A-NI  | 10   | 8 | 70  | 30...38               | 44 |
| DIN 6885-10-8-80-A-NI  | 10   | 8 | 80  | 30...38               | 50 |
| DIN 6885-10-8-90-A-NI  | 10   | 8 | 90  | 30...38               | 57 |
| DIN 6885-12-8-25-A-NI  | 12*  | 8 | 25  | 38...44               | 18 |
| DIN 6885-12-8-28-A-NI  | 12*  | 8 | 28  | 38...44               | 21 |
| DIN 6885-12-8-32-A-NI  | 12*  | 8 | 32  | 38...44               | 24 |
| DIN 6885-12-8-36-A-NI  | 12*  | 8 | 36  | 38...44               | 27 |
| DIN 6885-12-8-40-A-NI  | 12*  | 8 | 40  | 38...44               | 20 |
| DIN 6885-12-8-45-A-NI  | 12*  | 8 | 45  | 38...44               | 34 |
| DIN 6885-12-8-50-A-NI  | 12*  | 8 | 50  | 38...44               | 38 |
| DIN 6885-12-8-56-A-NI  | 12*  | 8 | 56  | 38...44               | 42 |
| DIN 6885-12-8-63-A-NI  | 12*  | 8 | 63  | 38...44               | 48 |
| DIN 6885-12-8-70-A-NI  | 12*  | 8 | 70  | 38...44               | 53 |
| DIN 6885-12-8-80-A-NI  | 12*  | 8 | 80  | 38...44               | 60 |
| DIN 6885-12-8-90-A-NI  | 12*  | 8 | 90  | 38...44               | 68 |
| DIN 6885-12-8-100-A-NI | 12*  | 8 | 100 | 38...44               | 75 |

\* not available from stock, requires a minimum order quantity

# Assembly sets for profile systems 30 / 40

for slot width 6 / 8, assembly with T-Nuts GN 506

## SPECIFICATION

### Types

- Type **A**: with cylinder head screw DIN 912
- Type **B**: with countersunk screw DIN 7991
- Type **C**: with lens screw ISO 7380
- Type **D**: with cylinder head screw DIN 7984

T-Nuts GN 506 (see page 982)

Steel

- zinc plated, blue passivated
- Ball / Spring Stainless Steel

Cylinder heads screws DIN 912

Countersunk screws DIN 7991

Lens screws ISO 7380

Cylinder head screws DIN 7984

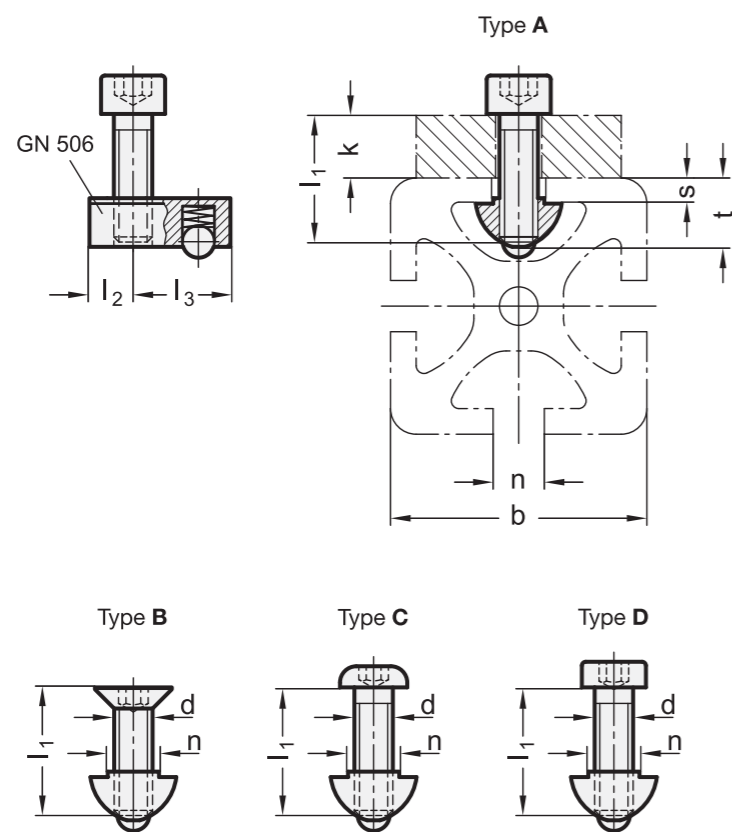
Steel zinc plated, blue passivated



## INFORMATION

Assembly sets GN 965 allow different standard element to be attached to the most common profile systems. Each set includes one T-nut GN 506 (see page 982) and one screw.

- Explanation (see page A44)
- Overview to appropriate standards of the assembly sets GN 965 (see page A45)



## GN 965

| Description      | b  | n | d  | l1 | k ≈     | l2 | l3 | s ≈ | t ≈  | Δ  |
|------------------|----|---|----|----|---------|----|----|-----|------|----|
| GN 965-6-M4-10-A | 30 | 6 | M4 | 10 | ...4    | 5  | 12 | 2.9 | 8.9  | 10 |
| GN 965-6-M4-12-A | 30 | 6 | M4 | 12 | 1...6   | 5  | 12 | 2.9 | 8.9  | 12 |
| GN 965-6-M4-16-A | 30 | 6 | M4 | 16 | 5...10  | 5  | 12 | 2.9 | 8.9  | 12 |
| GN 965-6-M5-10-A | 30 | 6 | M5 | 10 | ...3    | 5  | 12 | 2.9 | 8.9  | 6  |
| GN 965-6-M5-12-A | 30 | 6 | M5 | 12 | 1...5   | 5  | 12 | 2.9 | 8.9  | 6  |
| GN 965-6-M5-14-A | 30 | 6 | M5 | 14 | 3...7   | 5  | 12 | 2.9 | 8.9  | 8  |
| GN 965-6-M5-16-A | 30 | 6 | M5 | 16 | 5...9   | 5  | 12 | 2.9 | 8.9  | 9  |
| GN 965-6-M5-18-A | 30 | 6 | M5 | 18 | 7...11  | 5  | 12 | 2.9 | 8.9  | 9  |
| GN 965-6-M5-22-A | 30 | 6 | M5 | 22 | 11...15 | 5  | 12 | 2.9 | 8.9  | 10 |
| GN 965-6-M6-12-A | 30 | 6 | M6 | 12 | 1...4   | 5  | 12 | 2.9 | 8.9  | 9  |
| GN 965-6-M6-14-A | 30 | 6 | M6 | 14 | 3...6   | 5  | 12 | 2.9 | 8.9  | 9  |
| GN 965-6-M6-16-A | 30 | 6 | M6 | 16 | 5...8   | 5  | 12 | 2.9 | 8.9  | 10 |
| GN 965-6-M6-20-A | 30 | 6 | M6 | 20 | 9...12  | 5  | 12 | 2.9 | 8.9  | 10 |
| GN 965-6-M6-25-A | 30 | 6 | M6 | 25 | 14...17 | 5  | 12 | 2.9 | 8.9  | 10 |
| GN 965-8-M4-12-A | 40 | 8 | M4 | 12 | ...5    | 7  | 15 | 4.6 | 11.4 | 10 |
| GN 965-8-M4-14-A | 40 | 8 | M4 | 14 | 1...7   | 7  | 15 | 4.6 | 11.4 | 10 |
| GN 965-8-M4-20-A | 40 | 8 | M4 | 20 | 7...13  | 7  | 15 | 4.6 | 11.4 | 13 |
| GN 965-8-M5-12-A | 40 | 8 | M5 | 12 | ...4    | 7  | 15 | 4.6 | 11.4 | 13 |
| GN 965-8-M5-14-A | 40 | 8 | M5 | 14 | 1...6   | 7  | 15 | 4.6 | 11.4 | 14 |
| GN 965-8-M5-16-A | 40 | 8 | M5 | 16 | 3...8   | 7  | 15 | 4.6 | 11.4 | 14 |
| GN 965-8-M5-18-A | 40 | 8 | M5 | 18 | 5...10  | 7  | 15 | 4.6 | 11.4 | 14 |
| GN 965-8-M5-20-A | 40 | 8 | M5 | 20 | 7...12  | 7  | 15 | 4.6 | 11.4 | 15 |
| GN 965-8-M5-22-A | 40 | 8 | M5 | 22 | 9...14  | 7  | 15 | 4.6 | 11.4 | 15 |
| GN 965-8-M5-25-A | 40 | 8 | M5 | 25 | 12...17 | 7  | 15 | 4.6 | 11.4 | 15 |
| GN 965-8-M6-14-A | 40 | 8 | M6 | 14 | 1...5   | 7  | 15 | 4.6 | 11.4 | 10 |
| GN 965-8-M6-16-A | 40 | 8 | M6 | 16 | 3...7   | 7  | 15 | 4.6 | 11.4 | 10 |
| GN 965-8-M6-18-A | 40 | 8 | M6 | 18 | 5...9   | 7  | 15 | 4.6 | 11.4 | 10 |
| GN 965-8-M6-22-A | 40 | 8 | M6 | 22 | 9...13  | 7  | 15 | 4.6 | 11.4 | 14 |
| GN 965-8-M6-28-A | 40 | 8 | M6 | 28 | 15...19 | 7  | 15 | 4.6 | 11.4 | 20 |
| GN 965-8-M8-14-A | 40 | 8 | M8 | 14 | 1...4   | 7  | 15 | 4.6 | 11.4 | 20 |
| GN 965-8-M8-16-A | 40 | 8 | M8 | 16 | 3...6   | 7  | 15 | 4.6 | 11.4 | 20 |
| GN 965-8-M8-18-A | 40 | 8 | M8 | 18 | 5...8   | 7  | 15 | 4.6 | 11.4 | 21 |
| GN 965-8-M8-20-A | 40 | 8 | M8 | 20 | 7...10  | 7  | 15 | 4.6 | 11.4 | 22 |
| GN 965-8-M8-28-A | 40 | 8 | M8 | 28 | 15...18 | 7  | 15 | 4.6 | 11.4 | 24 |
| GN 965-6-M4-10-B | 30 | 6 | M4 | 10 | ...4    | 5  | 12 | 2.9 | 8.9  | 14 |
| GN 965-6-M5-12-B | 30 | 6 | M5 | 12 | 1...5   | 5  | 12 | 2.9 | 8.9  | 16 |
| GN 965-6-M6-12-B | 30 | 6 | M6 | 12 | 1...4   | 5  | 12 | 2.9 | 8.9  | 18 |
| GN 965-6-M6-14-B | 30 | 6 | M6 | 14 | 3...6   | 5  | 12 | 2.9 | 8.9  | 19 |
| GN 965-6-M6-16-B | 30 | 6 | M6 | 16 | 5...8   | 5  | 12 | 2.9 | 8.9  | 20 |
| GN 965-6-M6-18-B | 30 | 6 | M6 | 18 | 7...10  | 5  | 12 | 2.9 | 8.9  | 20 |
| GN 965-8-M5-14-B | 40 | 8 | M5 | 14 | 1...6   | 7  | 15 | 4.6 | 11.4 | 13 |
| GN 965-8-M6-14-B | 40 | 8 | M6 | 14 | 1...5   | 7  | 15 | 4.6 | 11.4 | 13 |
| GN 965-8-M6-16-B | 40 | 8 | M6 | 16 | 3...7   | 7  | 15 | 4.6 | 11.4 | 13 |
| GN 965-8-M6-18-B | 40 | 8 | M6 | 18 | 5...9   | 7  | 15 | 4.6 | 11.4 | 13 |
| GN 965-8-M6-20-B | 40 | 8 | M6 | 20 | 7...11  | 7  | 15 | 4.6 | 11.4 | 13 |
| GN 965-8-M8-16-B | 40 | 8 | M8 | 16 | 3...6   | 7  | 15 | 4.6 | 11.4 | 18 |
| GN 965-6-M6-14-C | 30 | 6 | M6 | 14 | 3...6   | 5  | 12 | 2.9 | 8.9  | 20 |
| GN 965-8-M6-16-C | 40 | 8 | M6 | 16 | 3...7   | 7  | 15 | 4.6 | 11.4 | 14 |
| GN 965-8-M6-22-C | 40 | 8 | M6 | 22 | 9...13  | 7  | 15 | 4.6 | 11.4 | 20 |
| GN 965-8-M8-16-C | 40 | 8 | M8 | 16 | 3...6   | 7  | 15 | 4.6 | 11.4 | 17 |
| GN 965-8-M8-18-C | 40 | 8 | M8 | 18 | 5...8   | 7  | 15 | 4.6 | 11.4 | 18 |
| GN 965-6-M6-10-D | 30 | 6 | M6 | 10 | ...3    | 5  | 12 | 2.9 | 8.9  | 8  |
| GN 965-8-M6-14-D | 40 | 8 | M6 | 14 | 1...5   | 7  | 15 | 4.6 | 11.4 | 10 |

## Angle pieces / Shackles

for profile systems

### SPECIFICATION

#### Types

- Type **F**: Shackle
- Type **L**: Angle

#### Identification no.

- No. **1** with bore for countersunk screws DIN 7991
- No. **2** with bore without countersunk

Sheet metal

zinc plated, blue passivated **ZB**

plastic coated

black, RAL 9005, textured finish **SW**

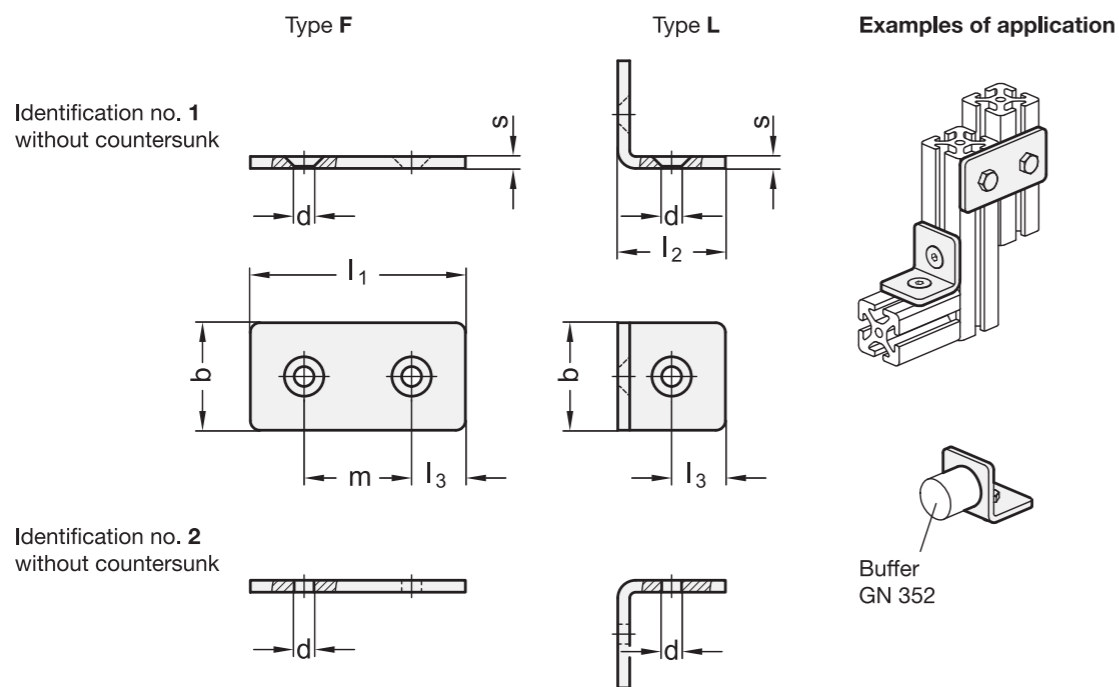
silver, RAL 9006, textured finish **SR**

### INFORMATION

Angle pieces and shackles GN 967 are preferably used in connection with profile section systems. Square connections or connections with same contact area can so be realised in the smallest of spaces and with a high degree of stability.

Over and above the profile system configurations, the angle pieces and shackles can also be used for a wide variety of different fixing and retaining tasks, for instance in the design of jigs and fixtures.

In the version with identification no. 2 the drill holes are designed without countersunk hole to allow fixing with cylinder head screws, nuts or rivets.



### GN 967

| Description         | b  | l1 | l2 | l3   | m  | d   | s | △   |
|---------------------|----|----|----|------|----|-----|---|-----|
| GN 967-20-40-F-1-SR | 20 | 40 | -  | 10   | 20 | 5.2 | 3 | 16  |
| GN 967-20-40-F-1-SW | 20 | 40 | -  | 10   | 20 | 5.2 | 3 | 16  |
| GN 967-20-40-F-1-ZB | 20 | 40 | -  | 10   | 20 | 5.2 | 3 | 16  |
| GN 967-30-60-F-1-SR | 30 | 60 | -  | 15   | 30 | 6.3 | 4 | 53  |
| GN 967-30-60-F-1-SW | 30 | 60 | -  | 15   | 30 | 6.3 | 4 | 53  |
| GN 967-30-60-F-1-ZB | 30 | 60 | -  | 15   | 30 | 6.3 | 4 | 53  |
| GN 967-40-80-F-1-SR | 40 | 80 | -  | 20   | 40 | 8.3 | 5 | 114 |
| GN 967-40-80-F-1-SW | 40 | 80 | -  | 20   | 40 | 8.3 | 5 | 114 |
| GN 967-40-80-F-1-ZB | 40 | 80 | -  | 20   | 40 | 8.3 | 5 | 114 |
| GN 967-45-90-F-1-SR | 45 | 90 | -  | 22.5 | 45 | 8.3 | 5 | 147 |
| GN 967-45-90-F-1-SW | 45 | 90 | -  | 22.5 | 45 | 8.3 | 5 | 148 |
| GN 967-45-90-F-1-ZB | 45 | 90 | -  | 22.5 | 45 | 8.3 | 5 | 149 |
| GN 967-20-20-L-1-SR | 20 | -  | 20 | 10   | 20 | 5.2 | 3 | 14  |
| GN 967-20-20-L-1-SW | 20 | -  | 20 | 10   | 20 | 5.2 | 3 | 14  |
| GN 967-20-20-L-1-ZB | 20 | -  | 20 | 10   | 20 | 5.2 | 3 | 14  |
| GN 967-30-30-L-1-SR | 30 | -  | 30 | 15   | 30 | 6.3 | 4 | 45  |
| GN 967-30-30-L-1-SW | 30 | -  | 30 | 15   | 30 | 6.3 | 4 | 45  |
| GN 967-30-30-L-1-ZB | 30 | -  | 30 | 15   | 30 | 6.3 | 4 | 45  |
| GN 967-40-40-L-1-SR | 40 | -  | 40 | 20   | 40 | 8.3 | 5 | 102 |
| GN 967-40-40-L-1-SW | 40 | -  | 40 | 20   | 40 | 8.3 | 5 | 102 |
| GN 967-40-40-L-1-ZB | 40 | -  | 40 | 20   | 40 | 8.3 | 5 | 102 |
| GN 967-45-45-L-1-SR | 45 | -  | 45 | 22.5 | 45 | 8.3 | 5 | 131 |
| GN 967-45-45-L-1-SW | 45 | -  | 45 | 22.5 | 45 | 8.3 | 5 | 133 |
| GN 967-45-45-L-1-ZB | 45 | -  | 45 | 22.5 | 45 | 8.3 | 5 | 132 |
| GN 967-20-40-F-2-SR | 20 | 40 | -  | 10   | 20 | 5.2 | 3 | 17  |
| GN 967-20-40-F-2-SW | 20 | 40 | -  | 10   | 20 | 5.2 | 3 | 17  |
| GN 967-20-40-F-2-ZB | 20 | 40 | -  | 10   | 20 | 5.2 | 3 | 17  |
| GN 967-30-60-F-2-SR | 30 | 60 | -  | 15   | 30 | 6.3 | 4 | 54  |
| GN 967-30-60-F-2-SW | 30 | 60 | -  | 15   | 30 | 6.3 | 4 | 54  |
| GN 967-30-60-F-2-ZB | 30 | 60 | -  | 15   | 30 | 6.3 | 4 | 54  |
| GN 967-40-80-F-2-SR | 40 | 80 | -  | 20   | 40 | 8.3 | 5 | 121 |
| GN 967-40-80-F-2-SW | 40 | 80 | -  | 20   | 40 | 8.3 | 5 | 121 |
| GN 967-40-80-F-2-ZB | 40 | 80 | -  | 20   | 40 | 8.3 | 5 | 121 |
| GN 967-45-90-F-2-SR | 45 | 90 | -  | 22.5 | 45 | 8.3 | 5 | 152 |
| GN 967-45-90-F-2-SW | 45 | 90 | -  | 22.5 | 45 | 8.3 | 5 | 152 |
| GN 967-45-90-F-2-ZB | 45 | 90 | -  | 22.5 | 45 | 8.3 | 5 | 152 |
| GN 967-20-20-L-2-SR | 20 | -  | 20 | 10   | 20 | 5.2 | 3 | 15  |
| GN 967-20-20-L-2-SW | 20 | -  | 20 | 10   | 20 | 5.2 | 3 | 15  |
| GN 967-20-20-L-2-ZB | 20 | -  | 20 | 10   | 20 | 5.2 | 3 | 15  |
| GN 967-30-30-L-2-SR | 30 | -  | 30 | 15   | 30 | 6.3 | 4 | 48  |
| GN 967-30-30-L-2-SW | 30 | -  | 30 | 15   | 30 | 6.3 | 4 | 48  |
| GN 967-30-30-L-2-ZB | 30 | -  | 30 | 15   | 30 | 6.3 | 4 | 48  |
| GN 967-40-40-L-2-SR | 40 | -  | 40 | 20   | 40 | 8.3 | 5 | 106 |
| GN 967-40-40-L-2-SW | 40 | -  | 40 | 20   | 40 | 8.3 | 5 | 106 |
| GN 967-40-40-L-2-ZB | 40 | -  | 40 | 20   | 40 | 8.3 | 5 | 106 |
| GN 967-45-45-L-2-SR | 45 | -  | 45 | 22.5 | 45 | 8.3 | 5 | 137 |
| GN 967-45-45-L-2-SW | 45 | -  | 45 | 22.5 | 45 | 8.3 | 5 | 137 |
| GN 967-45-45-L-2-ZB | 45 | -  | 45 | 22.5 | 45 | 8.3 | 5 | 137 |

# Installation brackets

equal / unequal sides

**SPECIFICATION**

**Version with equal sides**

**Types**

- Type **A**: without bores
- Type **B**: with bores

**Version with unequal sides**

**Types**

- Type **A**: without bores
- Type **C**: with bores and slotted holes

Structural Steel **STB**  
drawn, with sharp edges  
blackened

Aluminium **ALM**  
pressed  
matt, ground

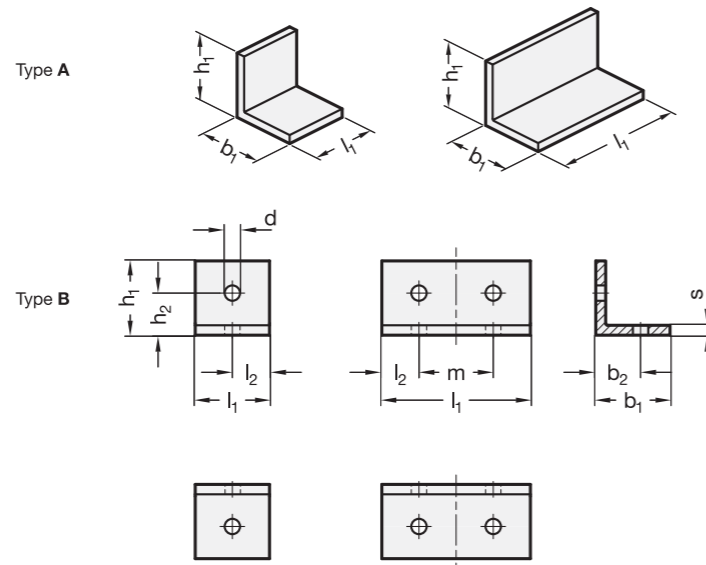


**INFORMATION**

GN 970 installation brackets are used universally for right-angle connecting and fastening of, e.g. base plates or covers.

Type A allows for the use of drilling templates specific to the application as well as fastening by welding.

Type C installation brackets have one or two combinations of a hole and an elongated hole depending on the length  $l_1$ .



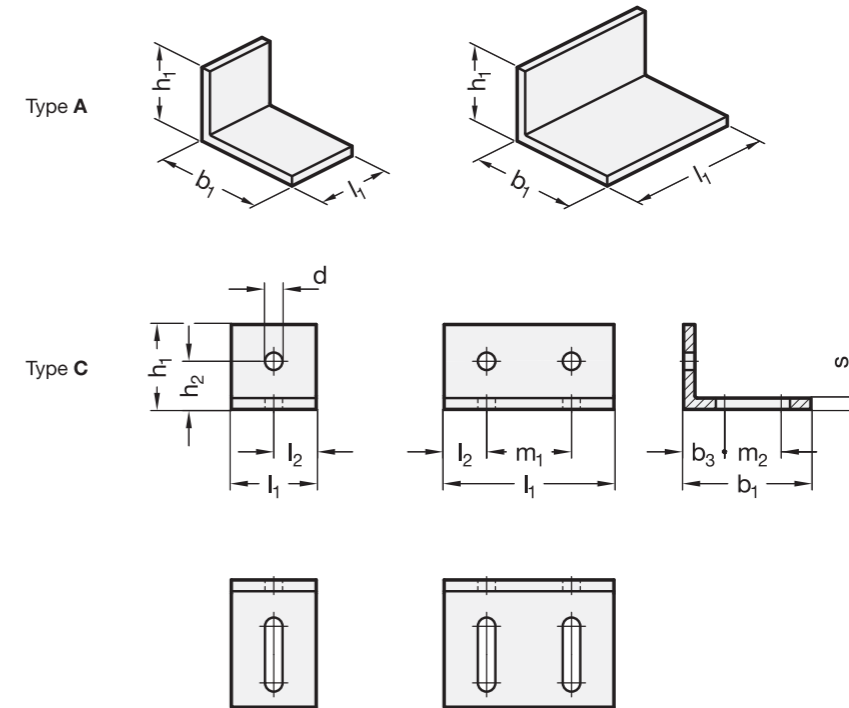
\*Complete with material index of the Installation brackets

**STB**      **ALM**  
Structural Steel      Aluminium

**GN 970-equal sides**

| Description          | h1 | b1   | l1  | b2 | d    | h2 | l2 | m  | s | ⚖️ |
|----------------------|----|------|-----|----|------|----|----|----|---|----|
| GN 970-*-30-30-30-A  | 30 | 30   | 30  | -  | 6.2  | 18 | 15 | -  | 4 | 17 |
| GN 970-*-30-30-60-A  | 30 | 30   | 60  | -  | 6.2  | 18 | 15 | -  | 4 | 27 |
| GN 970-*-40-40-40-A  | 40 | 40   | 40  | -  | 8.2  | 24 | 20 | -  | 5 | 55 |
| GN 970-*-40-40-80-A  | 40 | 40   | 80  | -  | 8.2  | 24 | 20 | -  | 5 | 75 |
| GN 970-*-50-50-50-A  | 50 | 50** | 50  | -  | 10.2 | 30 | 25 | -  | 6 | 75 |
| GN 970-*-50-50-100-A | 50 | 50** | 100 | -  | 10.2 | 30 | 25 | -  | 6 | 85 |
| GN 970-*-30-30-30-B  | 30 | 30   | 30  | 18 | 6.2  | 18 | 15 | -  | 4 | 17 |
| GN 970-*-30-30-60-B  | 30 | 30   | 60  | 18 | 6.2  | 18 | 15 | 30 | 4 | 30 |
| GN 970-*-40-40-40-B  | 40 | 40   | 40  | 24 | 8.2  | 24 | 20 | -  | 5 | 45 |
| GN 970-*-40-40-80-B  | 40 | 40   | 80  | 24 | 8.2  | 24 | 20 | 40 | 5 | 45 |
| GN 970-*-50-50-50-B  | 50 | 50** | 50  | 30 | 10.2 | 30 | 25 | -  | 6 | 72 |
| GN 970-*-50-50-100-B | 50 | 50** | 100 | 30 | 10.2 | 30 | 25 | 50 | 6 | 85 |

\*\* only available in ALM



\*Complete with material index of the Installation brackets

**STB**      **ALM**  
Structural Steel      Aluminium

**GN 970-unequal sides**

| Description          | h1 | b1   | l1  | b3 | d    | h2 | l2 | m1 | m2 | s | ⚖️  |
|----------------------|----|------|-----|----|------|----|----|----|----|---|-----|
| GN 970-*-30-45-30-A  | 30 | 45   | 30  | -  | 6.2  | 18 | 15 | -  | -  | 4 | 22  |
| GN 970-*-30-45-60-A  | 30 | 45   | 60  | -  | 6.2  | 18 | 15 | -  | -  | 4 | 35  |
| GN 970-*-40-60-40-A  | 40 | 60   | 40  | -  | 8.2  | 24 | 20 | -  | -  | 5 | 51  |
| GN 970-*-40-60-80-A  | 40 | 60   | 80  | -  | 8.2  | 24 | 20 | -  | -  | 5 | 100 |
| GN 970-*-50-75-50-A  | 50 | 75** | 50  | -  | 10.2 | 30 | 25 | -  | -  | 6 | 94  |
| GN 970-*-50-75-100-A | 50 | 75** | 100 | -  | 10.2 | 30 | 25 | -  | -  | 6 | 187 |
| GN 970-*-30-45-30-C  | 30 | 45   | 30  | 18 | 6.2  | 18 | 15 | -  | 20 | 4 | 20  |
| GN 970-*-30-45-60-C  | 30 | 45   | 60  | 18 | 6.2  | 18 | 15 | 30 | 20 | 4 | 30  |
| GN 970-*-40-60-40-C  | 40 | 60   | 40  | 24 | 8.2  | 24 | 20 | -  | 25 | 5 | 45  |
| GN 970-*-40-60-80-C  | 40 | 60   | 80  | 24 | 8.2  | 24 | 20 | 40 | 25 | 5 | 57  |
| GN 970-*-50-75-50-C  | 50 | 75** | 50  | 30 | 10.2 | 30 | 25 | -  | 30 | 6 | 86  |
| GN 970-*-50-75-100-C | 50 | 75** | 100 | 30 | 10.2 | 30 | 25 | 50 | 30 | 6 | 100 |

\*\* only available in ALM



## Assembly sets for profile systems 30 / 40 / 45

for slot width 8 / 10, assembly with T-Nuts GN 505

### SPECIFICATION

#### Types

- Type **A**: with cylinder head screw DIN 912
- Type **B**: with countersunk screw DIN 7991
- Type **C**: with lens screw ISO 7380
- Type **D**: with cylinder head screw DIN 7984

T-Nuts GN 505 (see page 979)

Steel  
with increased torque (Type MB)  
zinc plated, blue passivated

Cylinder head screws DIN 912

Countersunk screws DIN 7991

Lens screws ISO 7380

Cylinder head screws DIN 7984

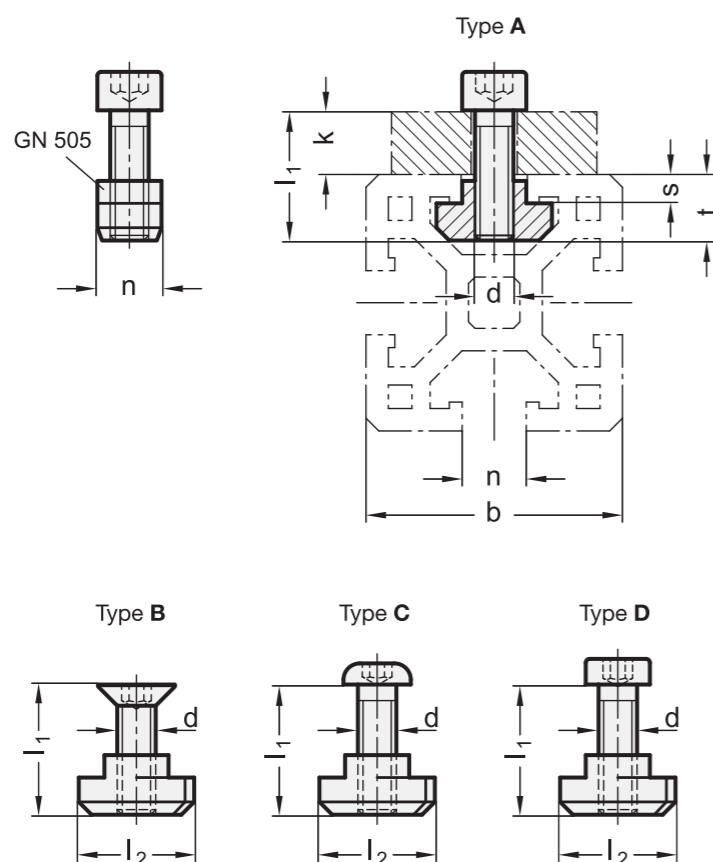
Steel  
zinc plated, blue passivated



### INFORMATION

Assembly sets GN 968 allow different standard element to be attached to the most common profile systems. Each set includes one T-nut GN 505 (see page 979) and one screw.

- Explanation (see page A44)
- Overview to appropriate standards of the assembly sets GN 968 (see page A45)



### GN 968

| Description       | b       | n  | d  | l1 | k ≈     | l2 ±0.5 | s ≈ | t ≈  | ⚖  |
|-------------------|---------|----|----|----|---------|---------|-----|------|----|
| GN 968-8-M4-10-A  | 30      | 8  | M4 | 10 | ...6    | 16      | 2.2 | 7.2  | 5  |
| GN 968-8-M4-12-A  | 30      | 8  | M4 | 12 | 2...8   | 16      | 2.2 | 7.2  | 5  |
| GN 968-8-M4-16-A  | 30      | 8  | M4 | 16 | 6...12  | 16      | 2.2 | 7.2  | 6  |
| GN 968-8-M5-10-A  | 30      | 8  | M5 | 10 | ...5    | 16      | 2.2 | 7.2  | 7  |
| GN 968-8-M5-12-A  | 30      | 8  | M5 | 12 | 2...7   | 16      | 2.2 | 7.2  | 7  |
| GN 968-8-M5-14-A  | 30      | 8  | M5 | 14 | 4...9   | 16      | 2.2 | 7.2  | 7  |
| GN 968-8-M5-18-A  | 30      | 8  | M5 | 18 | 8...13  | 16      | 2.2 | 7.2  | 7  |
| GN 968-8-M5-20-A  | 30      | 8  | M5 | 20 | 10...15 | 16      | 2.2 | 7.2  | 7  |
| GN 968-8-M5-22-A  | 30      | 8  | M5 | 22 | 12...17 | 16      | 2.2 | 7.2  | 8  |
| GN 968-8-M6-10-A  | 30      | 8  | M6 | 10 | ...4    | 16      | 2.2 | 7.2  | 8  |
| GN 968-8-M6-12-A  | 30      | 8  | M6 | 12 | 2...6   | 16      | 2.2 | 7.2  | 8  |
| GN 968-8-M6-14-A  | 30      | 8  | M6 | 14 | 4...8   | 16      | 2.2 | 7.2  | 8  |
| GN 968-8-M6-16-A  | 30      | 8  | M6 | 16 | 6...10  | 16      | 2.2 | 7.2  | 8  |
| GN 968-8-M6-20-A  | 30      | 8  | M6 | 20 | 10...14 | 16      | 2.2 | 7.2  | 9  |
| GN 968-8-M6-25-A  | 30      | 8  | M6 | 25 | 15...19 | 16      | 2.2 | 7.2  | 10 |
| GN 968-10-M4-14-A | 40 / 45 | 10 | M4 | 14 | ...8    | 19      | 6   | 11.8 | 10 |
| GN 968-10-M5-12-A | 40 / 45 | 10 | M5 | 12 | ...5    | 19      | 6   | 11.8 | 10 |
| GN 968-10-M5-14-A | 40 / 45 | 10 | M5 | 14 | ...7    | 19      | 6   | 11.8 | 10 |
| GN 968-10-M5-16-A | 40 / 45 | 10 | M5 | 16 | 3...9   | 19      | 6   | 11.8 | 10 |
| GN 968-10-M5-18-A | 40 / 45 | 10 | M5 | 18 | 5...11  | 19      | 6   | 11.8 | 10 |
| GN 968-10-M5-20-A | 40 / 45 | 10 | M5 | 20 | 7...13  | 19      | 6   | 11.8 | 10 |
| GN 968-10-M5-25-A | 40 / 45 | 10 | M5 | 25 | 12...18 | 19      | 6   | 11.8 | 10 |
| GN 968-10-M6-14-A | 40 / 45 | 10 | M6 | 14 | ...6    | 19      | 6   | 11.8 | 10 |
| GN 968-10-M6-16-A | 40 / 45 | 10 | M6 | 16 | 3...8   | 19      | 6   | 11.8 | 10 |
| GN 968-10-M6-18-A | 40 / 45 | 10 | M6 | 18 | 5...10  | 19      | 6   | 11.8 | 10 |
| GN 968-10-M6-20-A | 40 / 45 | 10 | M6 | 20 | 7...12  | 19      | 6   | 11.8 | 10 |
| GN 968-10-M6-22-A | 40 / 45 | 10 | M6 | 22 | 9...14  | 19      | 6   | 11.8 | 13 |
| GN 968-10-M6-28-A | 40 / 45 | 10 | M6 | 28 | 15...20 | 19      | 6   | 11.8 | 13 |
| GN 968-10-M8-14-A | 40 / 45 | 10 | M8 | 14 | ...5    | 19      | 6   | 11.8 | 15 |
| GN 968-10-M8-16-A | 40 / 45 | 10 | M8 | 16 | 3...7   | 19      | 6   | 11.8 | 16 |
| GN 968-10-M8-18-A | 40 / 45 | 10 | M8 | 18 | 5...9   | 19      | 6   | 11.8 | 17 |
| GN 968-10-M8-20-A | 40 / 45 | 10 | M8 | 20 | 7...11  | 19      | 6   | 11.8 | 19 |
| GN 968-10-M8-28-A | 40 / 45 | 10 | M8 | 28 | 15...19 | 19      | 6   | 11.8 | 20 |
| GN 968-8-M5-12-B  | 30      | 8  | M5 | 12 | 2...7   | 16      | 2.2 | 7.2  | 6  |
| GN 968-8-M6-12-B  | 30      | 8  | M6 | 12 | 2...6   | 16      | 2.2 | 7.2  | 6  |
| GN 968-8-M6-14-B  | 30      | 8  | M6 | 14 | 4...8   | 16      | 2.2 | 7.2  | 6  |
| GN 968-8-M6-16-B  | 30      | 8  | M6 | 16 | 6...10  | 16      | 2.2 | 7.2  | 6  |
| GN 968-8-M6-18-B  | 30      | 8  | M6 | 18 | 8...12  | 16      | 2.2 | 7.2  | 6  |
| GN 968-10-M5-14-B | 40 / 45 | 10 | M5 | 14 | ...7    | 19      | 6   | 11.8 | 10 |
| GN 968-10-M6-14-B | 40 / 45 | 10 | M6 | 14 | ...6    | 19      | 6   | 11.8 | 10 |
| GN 968-10-M6-18-B | 40 / 45 | 10 | M6 | 18 | 5...10  | 19      | 6   | 11.8 | 10 |
| GN 968-10-M6-20-B | 40 / 45 | 10 | M6 | 20 | 7...12  | 19      | 6   | 11.8 | 10 |
| GN 968-10-M6-22-B | 40 / 45 | 10 | M6 | 22 | 9...14  | 19      | 6   | 11.8 | 10 |
| GN 968-10-M8-16-B | 40 / 45 | 10 | M8 | 16 | 3...7   | 19      | 6   | 11.8 | 16 |
| GN 968-8-M6-14-C  | 30      | 8  | M6 | 14 | 4...8   | 16      | 2.2 | 7.2  | 16 |
| GN 968-10-M6-18-C | 40 / 45 | 10 | M6 | 18 | 5...10  | 19      | 6   | 11.8 | 10 |
| GN 968-10-M6-22-C | 40 / 45 | 10 | M6 | 22 | 9...14  | 19      | 6   | 11.8 | 10 |
| GN 968-10-M8-16-C | 40 / 45 | 10 | M8 | 16 | 3...7   | 19      | 6   | 11.8 | 16 |
| GN 968-10-M8-18-C | 40 / 45 | 10 | M8 | 18 | 5...9   | 19      | 6   | 11.8 | 17 |
| GN 968-8-M6-10-D  | 30      | 8  | M6 | 10 | ...4    | 16      | 2.2 | 7.2  | 8  |
| GN 968-10-M6-14-D | 40 / 45 | 10 | M6 | 14 | ...6    | 19      | 6   | 11.8 | 8  |



**Advantages**

- Impossible to rotate nut and cage.
- Can be installed in the cutout without tools from the front as well as from behind.
- Cage made of PA is flexible and thus easy to install.
- Secure fit of the cage in the cutout through fitted square.
- Seismic-proof according to GR-63-CORE, Issue 4.
- Vibration-proof according to DIN EN 61373.
- Clamping range 1-4mm.
- For cutouts □9.5 and □9.2mm.
- Suitable for high torque and high tensile forces of up to 8 nm.

**Materials**

- **Cage:** PA, black
- **Nut:** steel, zinc plated white

**Remarks**

Installation description (1. - 6.) see www.DIRAK.com  
 a) + b) configure the cage a) with the nut b).  
 c) cages and nuts are packed pre-assembled per 100 in a bag.



**Advantages**

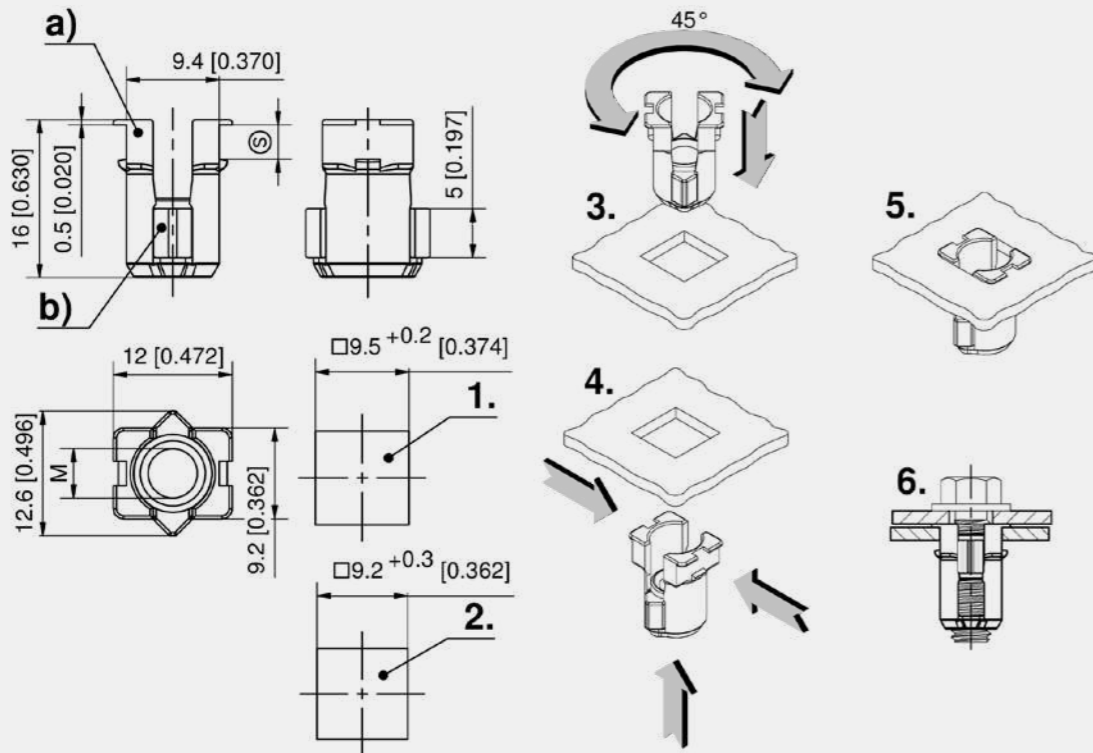
- For the secure joining of metal sheets.
- With grounding nut M6.
- Tested according to DIN EN 61439-1 (VDE 0660 part 600): 2012-06.
- Can be installed in the cutout without tools from the front as well as from behind.
- Secure fit of the cage in the cutout through fitted square.
- For cutouts □9.5 and □9.2mm.
- Suitable for high torque and high tensile force from 3 up to 8 nm.
- Cage and grounding nut packed in bulk.

**Materials**

- **Cage:** PA, black
- **Grounding nut:** steel, zinc plated white

**Remarks**

Installation description (1. - 7.) see www.DIRAK.com  
**Attention:** The contact points must be designed in such a way that the contact pressure will not be transferred through the PA cage.  
 Configure the cage a) with the grounding nut b).

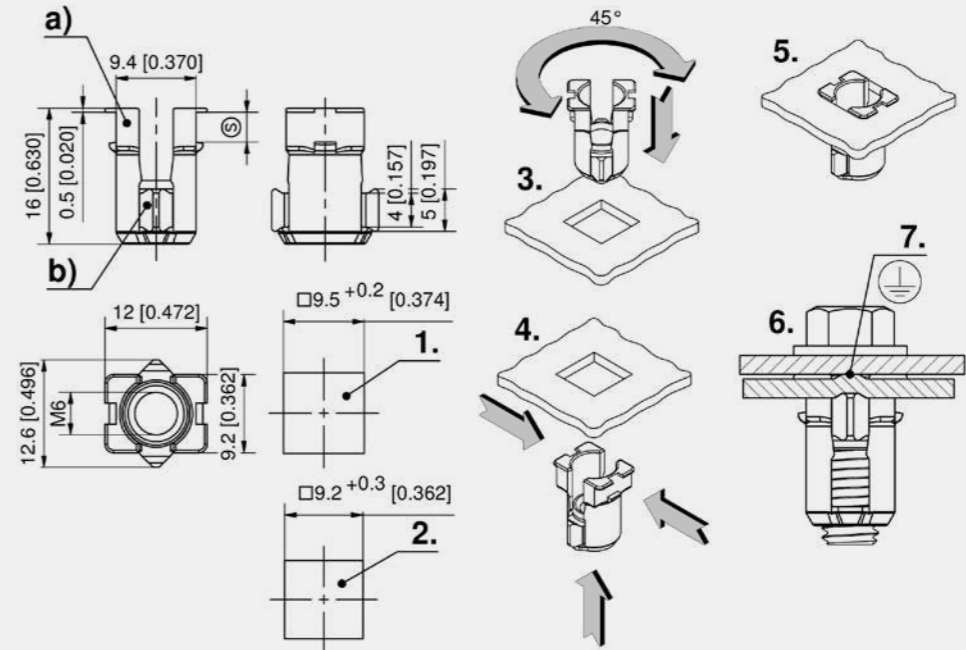


Cage nut, unmounted

| Part Number          | Name         | Clamping range (S) | Delivery Unit |
|----------------------|--------------|--------------------|---------------|
| a) 203-1901.06-00095 | Cage for Nut | 1 - 4 mm           | 2000 pcs.     |
| b) 203-1902.15-00006 | Nut M6       |                    | 2000 pcs.     |

Cage nut, pre-assembled

| Part Number          | Thread size | Clamping range (S) | Delivery Unit |
|----------------------|-------------|--------------------|---------------|
| c) 203-9002.00-00000 | M6          | 1 - 4 mm           | 100 pcs.      |



Cage nut, unmounted

| Part Number          | Name             | Clamping range (S) | Delivery Unit |
|----------------------|------------------|--------------------|---------------|
| a) 203-1901.06-00095 | Cage for Nut     | 1 - 4 mm           | 2000 pcs.     |
| b) 203-1904.15-00006 | Grounding nut M6 |                    | 2000 pcs.     |





DIN 61373

RoHS WEEE



**Advantages**

- Ensures fixed connection of two metal sheets.
- Easy installation by pressing in square cutouts.
- Nut is moveable and adjustable in the cage until final fixing by screw.
- Seismic-proof according to GR-63-CORE, Issue 4.
- Vibration-proof according to DIN EN 61373.

**Materials**

- Cage:** steel, zinc plated or stainless steel AISI 304
- Nut:** steel, zinc plated or stainless steel AISI 316

**Advantages**

- Ensures fixed connection of two metal sheets.
- Easy installation by pressing into square cutouts.
- Nut is moveable and adjustable in the cage until final fixing by screw.
- c) and d) special design of the cage prevents from falling out of the cutout.
- Seismic-proof according to GR-63-CORE, Issue 4.
- Vibration-proof according to DIN EN 61373.

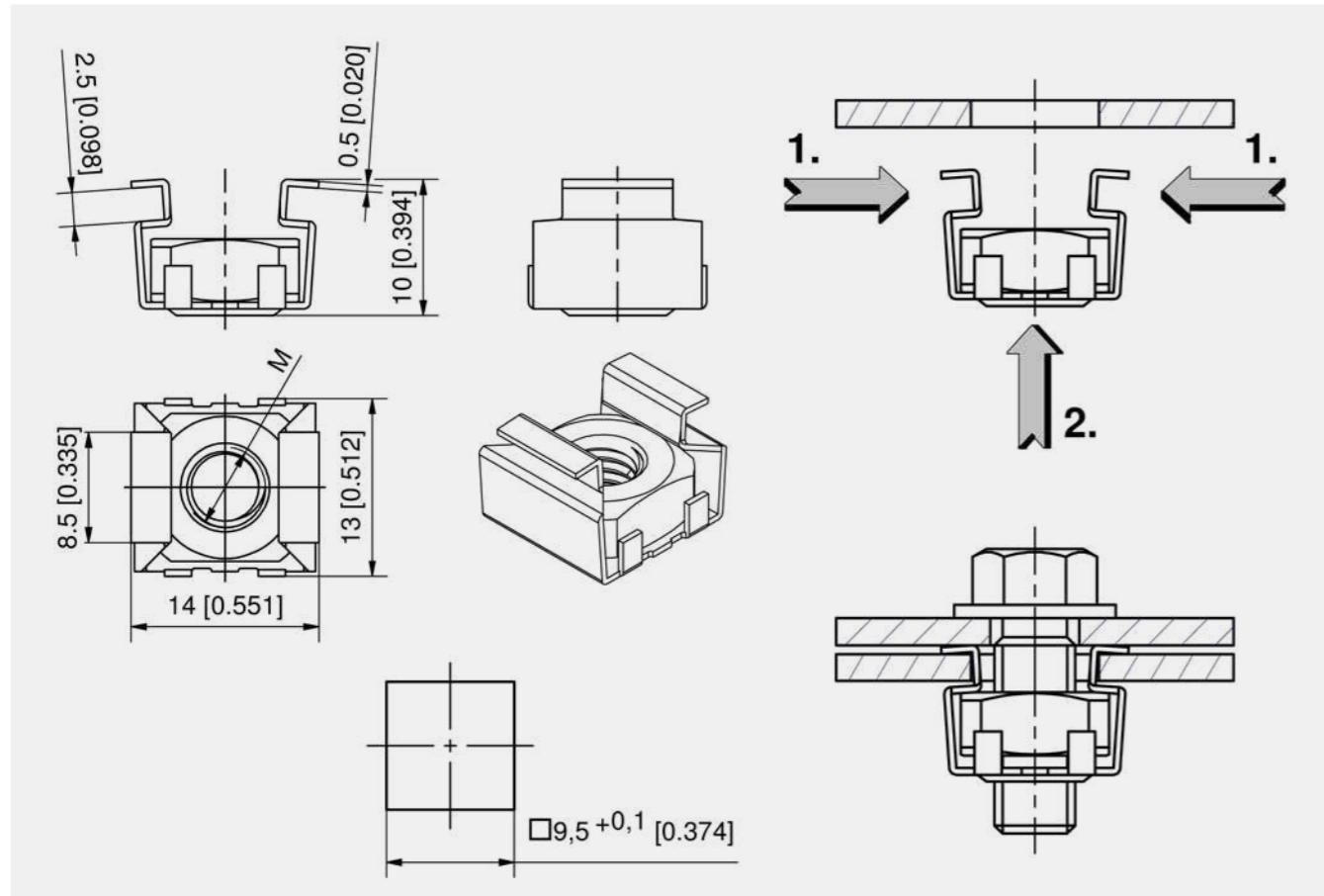
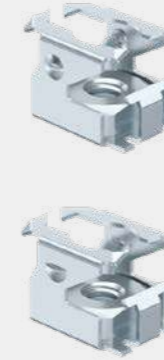
**Materials**

- Cage and nut:** steel, zinc plated



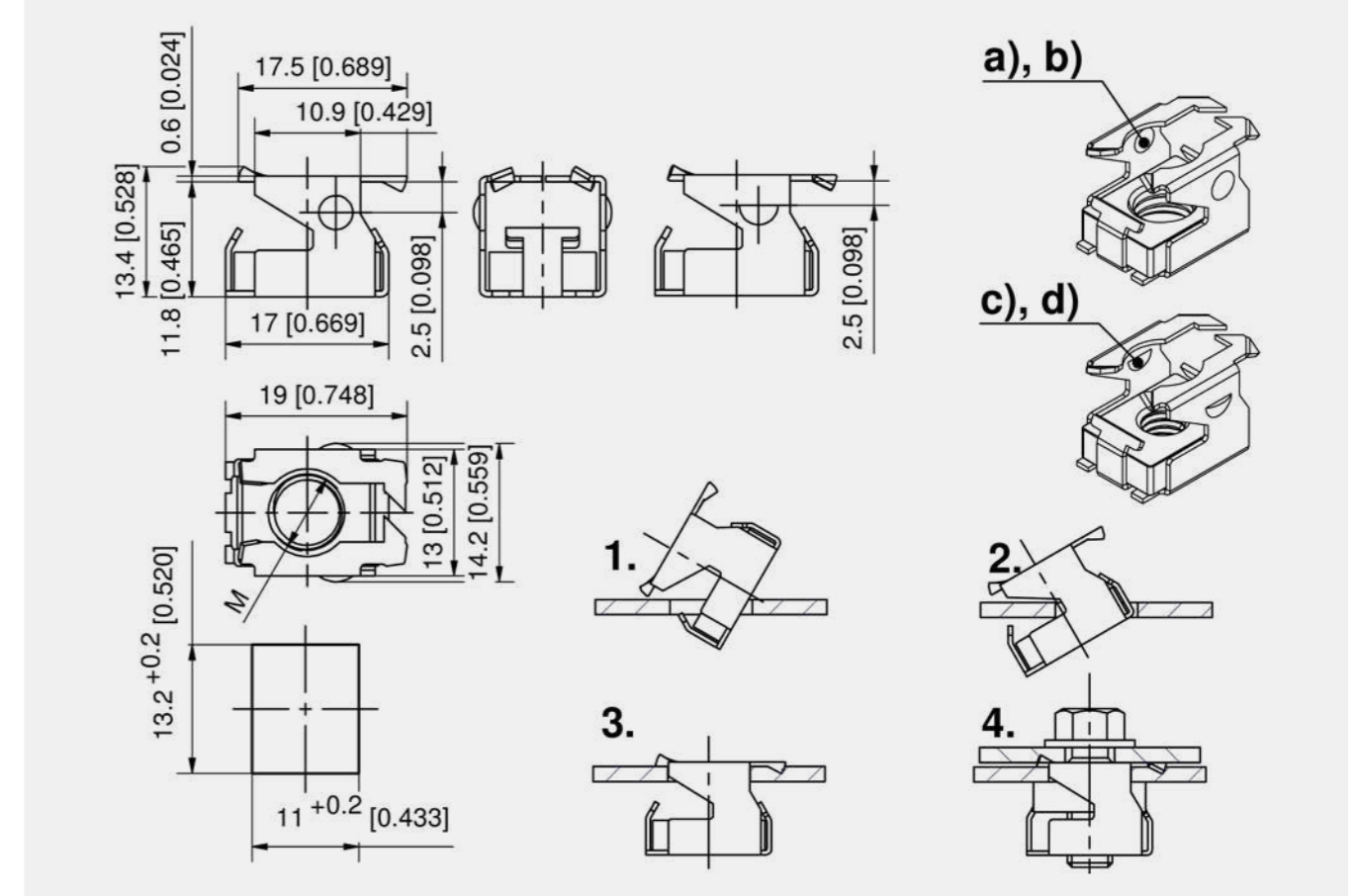
DIN 61373

RoHS WEEE



Cage nuts

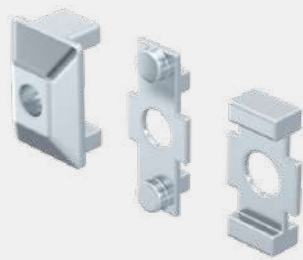
| Part Number       | Thread size | Material | Surface     | Delivery Unit |
|-------------------|-------------|----------|-------------|---------------|
| 359-0250.06-00000 | M5          | steel    | zinc plated | 200 pcs.      |
| 353-2010.00-00000 | M5          | AISI 304 |             | 200 pcs.      |
| 359-0206.06-00000 | M6          | steel    | zinc plated | 200 pcs.      |



Cage nuts

|    | Part Number       | Thread size | Delivery Unit |
|----|-------------------|-------------|---------------|
| a) | 350-2004.00-00000 | M8          | 200 pcs.      |
| b) | 350-2005.00-00000 | M6          | 200 pcs.      |
| c) | 350-2046.00-00000 | M6          | 200 pcs.      |
| d) | 350-2096.00-00000 | 1/4-20UNC   | 200 pcs.      |



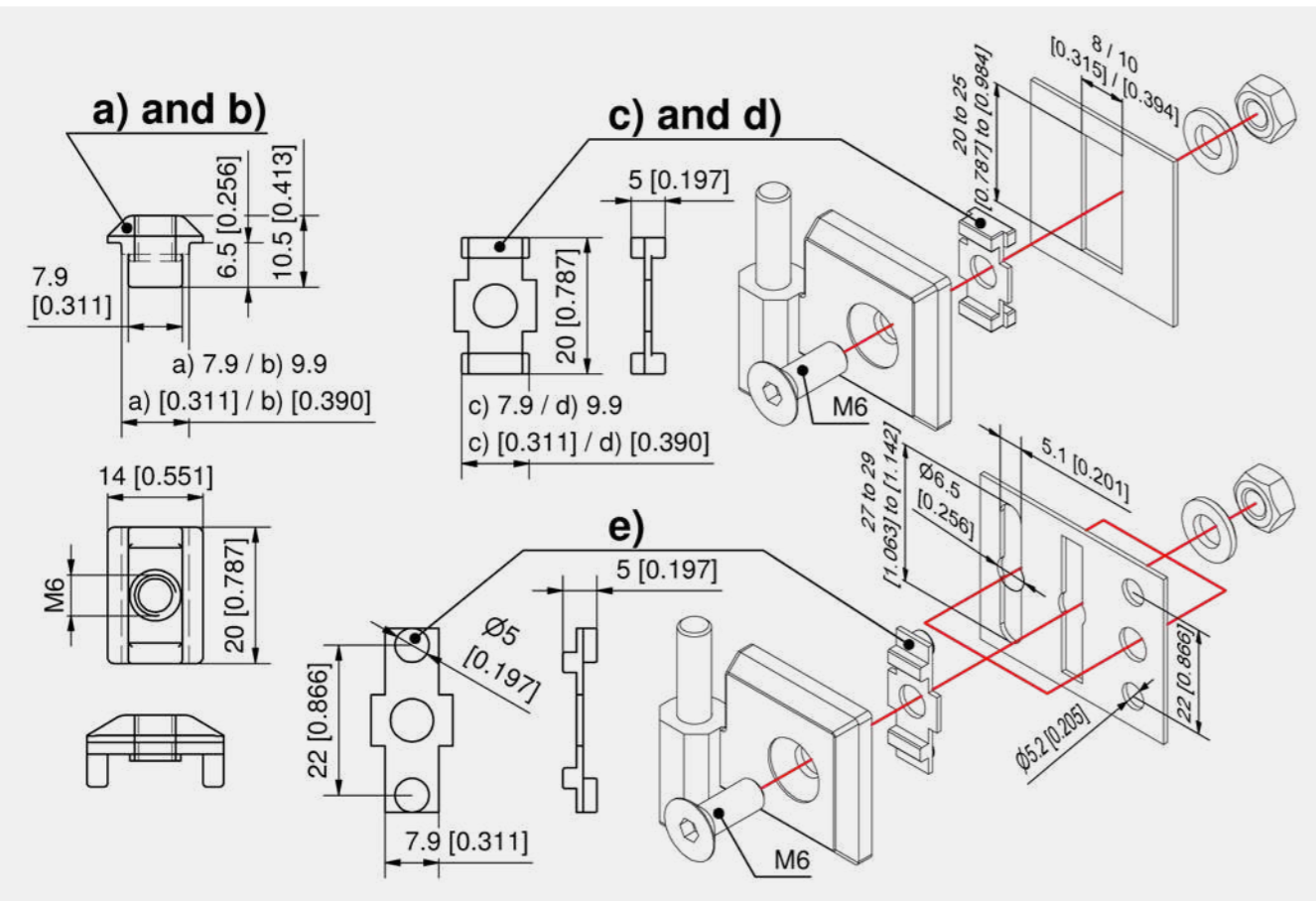


**Advantages**

- For application with hinges 4-247 and 4-247.01.
- Tenon blocks for 8 or 10mm groove.
- Fastening by M6.
- Anti-twist protection for sheet metal construction.
- For vertical or horizontal applications.
- Tolerance compensation possible by oblong holes.

**Materials**

- **Tenon blocks and anti-twist protection:** zinc die, untreated



Tenon blocks and anti-twist protection

|    | Part Number       | Name                                    | Groove width | Cutout                 | Thread size | Door-thickness (S) | Delivery Unit |
|----|-------------------|---|--------------|------------------------|-------------|--------------------|---------------|
| a) | 265-1001.00-00000 | Tenon blocks with anti-twist protection | 8 mm         | 8 x 20 to 25 mm        | M6          | 0 - 3.2 mm         | 10 pcs.       |
| b) | 265-1002.00-00000 | Tenon blocks with anti-twist protection | 10 mm        | 10 x 20 to 25 mm       | M6          | 0 - 3.2 mm         | 10 pcs.       |
| c) | 265-1101.00-00000 | Anti-twist protection for square        | 8 mm         | 8 x 20 to 25 mm        |             |                    | 10 pcs.       |
| d) | 265-1102.00-00000 | Anti-twist protection for square        | 10 mm        | 10 x 20 to 25 mm       |             |                    | 10 pcs.       |
| e) | 265-1103.00-00000 | Anti-twist protection for drill-holes   |              | 3 options, see drawing |             |                    | 10 pcs.       |



all product details on DIRAK.com



**Advantages**

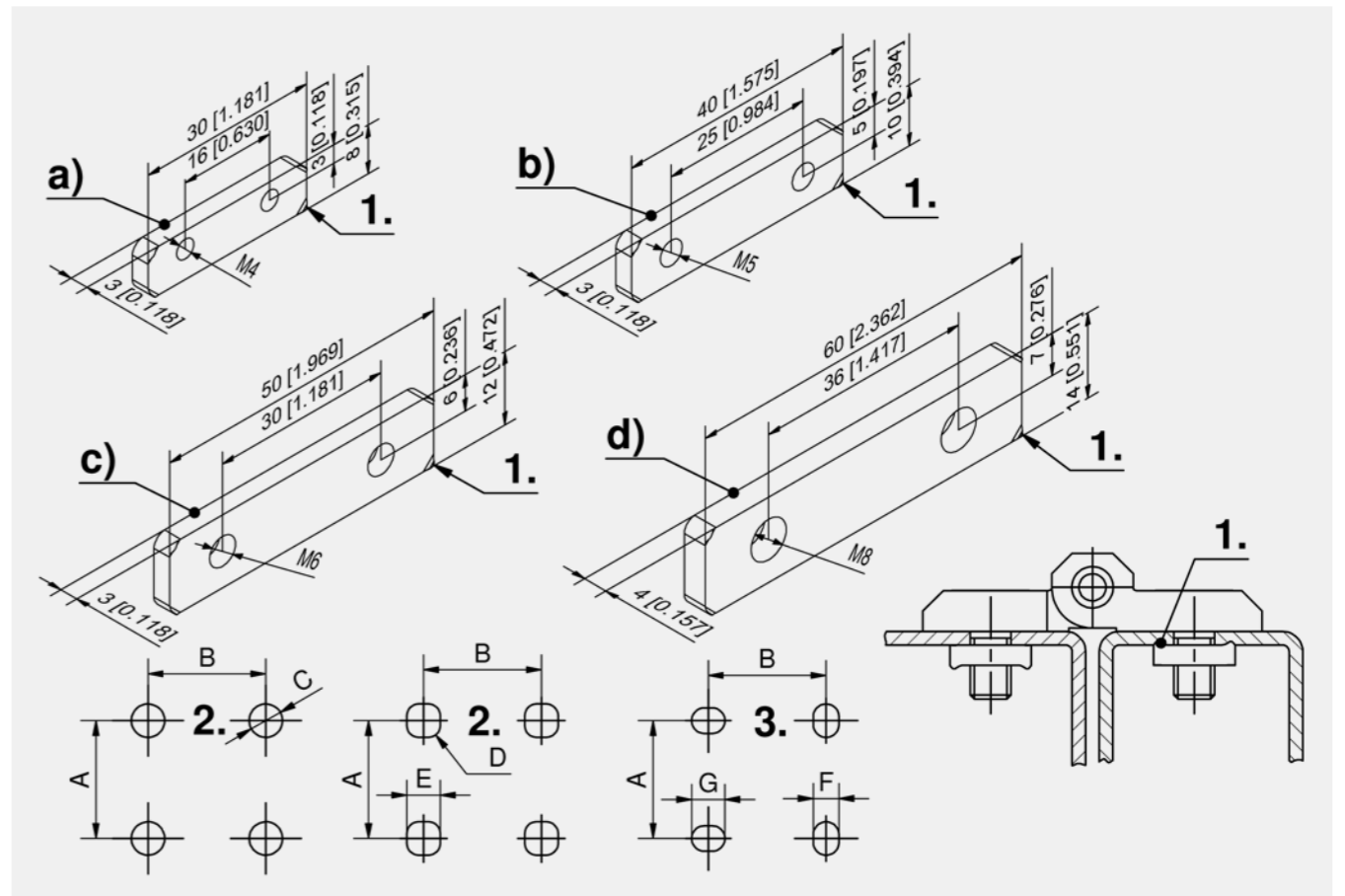
- The nut plates have been designed to allow an easy installation of the hinges in our 218-series. Tightening the screws from the outside only.
- Elimination of the time-consuming fitting of small single nuts in often quite difficult accessible corners.
- Oversized holes/cutouts allow for horizontal and/or vertical adjusting.
- Adjustment and alignment with just one tool, only from outside.
- The teeth (1.) on all 4 corners create enough friction to simplify installation and adjusting.
- If this friction is not wanted: these teeth can also point away from the inner skin of the door/frame.

**Materials**

- **Nut plate:** steel, zinc plated

**Remarks**

2. cutout for horizontal and vertical adjustment
3. cutout for horizontal and/or vertical adjustment



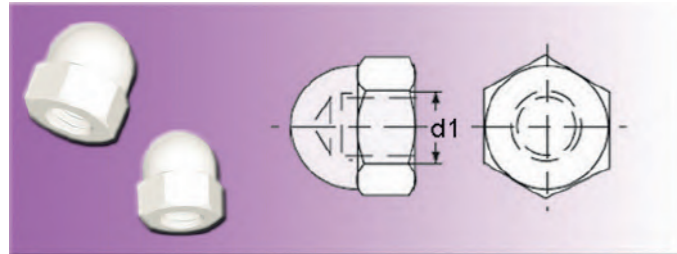
Nut plates

|    | Part Number       | Thread size | A     | B     | C       | D      | e       | f      | G       | Delivery Unit |
|----|-------------------|-------------|-------|-------|---------|--------|---------|--------|---------|---------------|
| a) | 218-0907.15-00000 | M4          | 16 mm | 18 mm | 6.5 mm  | 2 mm   | 6.5 mm  | 4.5 mm | 6.5 mm  | 10 pcs.       |
| b) | 218-0908.15-00000 | M5          | 25 mm | 25 mm | 7.5 mm  | 2.5 mm | 7.5 mm  | 5.5 mm | 7.5 mm  | 10 pcs.       |
| c) | 218-0909.15-00000 | M6          | 30 mm | 30 mm | 8.5 mm  | 3 mm   | 8.5 mm  | 6.5 mm | 8.5 mm  | 10 pcs.       |
| d) | 218-0910.15-00000 | M8          | 36 mm | 36 mm | 10.5 mm | 4 mm   | 10.5 mm | 8.5 mm | 10.5 mm | 10 pcs.       |



all product details on DIRAK.com

Nuts according to DIN of plastic | Hexagon cap nuts ~DIN 1587 PA



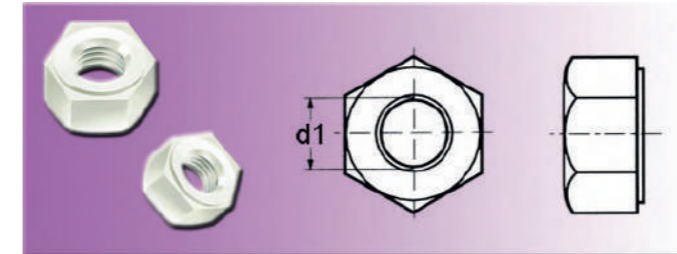
Hexagon cap nuts, tall type ~DIN 1587

Material: PA 6.6  
Colour: natural

Further types on written request.

| Part no. | d1 | Part no. | d1  | Part no. | d1  |
|----------|----|----------|-----|----------|-----|
| 0520300  | M3 | 0520600  | M6  | 0521200  | M12 |
| 0520400  | M4 | 0520800  | M8  |          |     |
| 0520500  | M5 | 0521000  | M10 |          |     |

Nuts according to DIN of plastic | Hexagon nuts ~DIN 934 PP

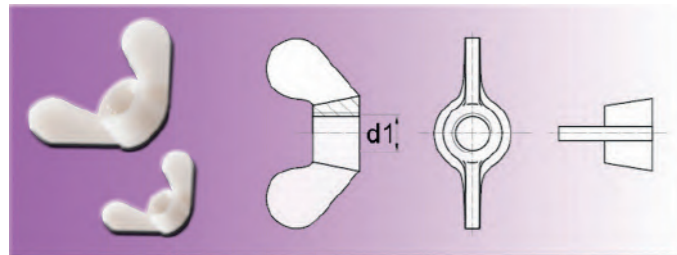


Hexagon nuts ~DIN 934 (~DIN 34814)

Material: PP  
Colour: natural

| Part no.  | d1 | Part no.  | d1  | Part no.  | d1  |
|-----------|----|-----------|-----|-----------|-----|
| 0510400PP | M4 | 0510800PP | M8  | 0511600PP | M16 |
| 0510500PP | M5 | 0511000PP | M10 |           |     |
| 0510600PP | M6 | 0511200PP | M12 |           |     |

Nuts according to DIN of plastic | Wing nuts ~DIN 315 PA



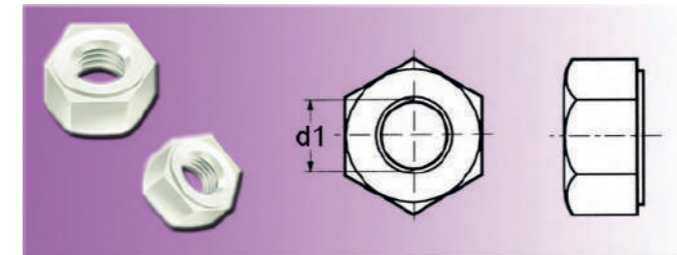
Wing nuts with round wings ~DIN 315

Material: PA 6.6  
Colour: natural

Further types on written request.

| Part no. | d1 | Part no. | d1 | Part no. | d1  |
|----------|----|----------|----|----------|-----|
| 0530401  | M4 | 0530601  | M6 | 0531001  | M10 |
| 0530501  | M5 | 0530801  | M8 |          |     |

Nuts according to DIN of plastic | Hexagon nuts ~DIN 934 PVDF

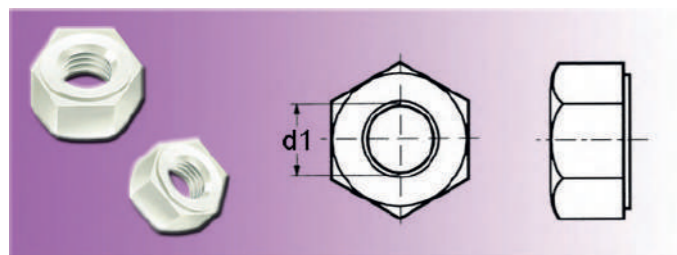


Hexagon nuts ~DIN 934 (~DIN 34814)

Material: PVDF  
Colour: natural

| Part no.    | d1                   | Part no.    | d1  | Part no.    | d1  |
|-------------|----------------------|-------------|-----|-------------|-----|
| 0510300PVDF | no longer available! | 0510600PVDF | M6  | 0511200PVDF | M12 |
| 0510400PVDF | M4                   | 0510800PVDF | M8  | 0511600PVDF | M16 |
| 0510500PVDF | M5                   | 0511000PVDF | M10 |             |     |

Nuts according to DIN of plastic | Hexagon nuts ~DIN 934 PA

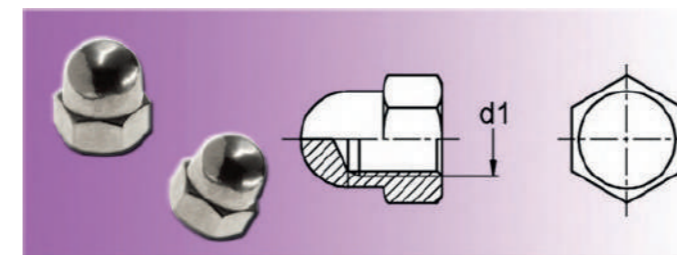


Hexagon nuts ~DIN 934 (~DIN 34814)

Material: PA 6.6  
Colour: natural (black on request)

| Part no. | d1 | Part no. | d1  | Part no. | d1  |
|----------|----|----------|-----|----------|-----|
| 0510300  | M3 | 0510600  | M6  | 0511200  | M12 |
| 0510400  | M4 | 0510800  | M8  | 0511400  | M14 |
| 0510500  | M5 | 0511000  | M10 | 0511600  | M16 |

Nuts according to DIN of metal | Hexagon cap nuts ~DIN 1587 stainless steel

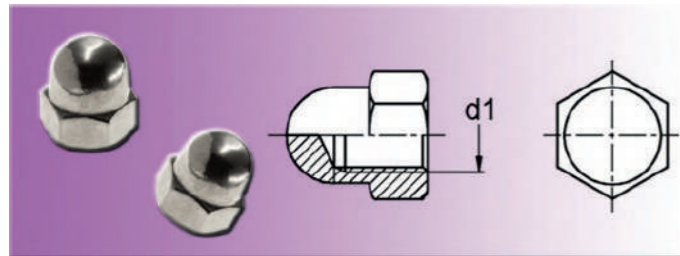


Hexagon cap nuts - metal  
~DIN 1587

Material: stainless steel A2

| Part no.  | d1 | Part no.  | d1 | Part no.  | d1 |
|-----------|----|-----------|----|-----------|----|
| 452030153 | M3 | 452050053 | M5 | 452080053 | M8 |
| 452040053 | M4 | 452060053 | M6 |           |    |

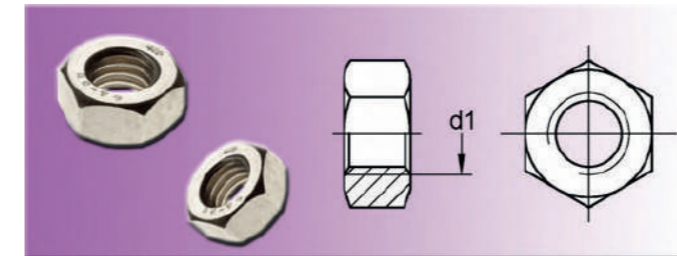
Nuts according to DIN of metal | Hexagon cap nuts ~DIN 1587 machining steel



Hexagon cap nuts - metal  
~DIN 1587  
Material: machining steel 4.8 zinc-plated

| Part no.  | d1 | Part no.  | d1 | Part no.  | d1 |
|-----------|----|-----------|----|-----------|----|
| 452030152 | M3 | 452050052 | M5 | 452080052 | M8 |
| 452040052 | M4 | 452060052 | M6 |           |    |

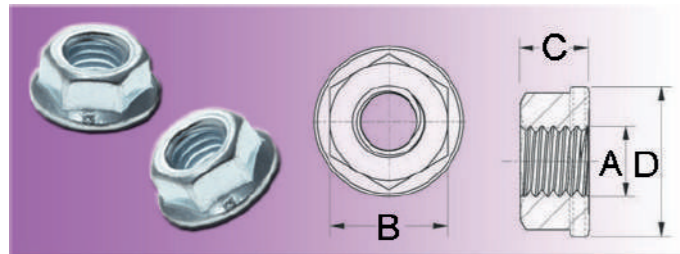
Nuts according to DIN of metal | Hexagon nuts ~DIN 934 machining steel



Hexagon nuts - metal  
~DIN 934 (~DIN EN ISO 4032)  
Material: machining steel 4.8 zinc-plated

| Part no.  | d1   | Part no.  | d1 | Part no.  | d1 |
|-----------|------|-----------|----|-----------|----|
| 451020052 | M2   | 451040052 | M4 | 451080052 | M8 |
| 451025052 | M2,5 | 451050052 | M5 |           |    |
| 451030052 | M3   | 451060052 | M6 |           |    |

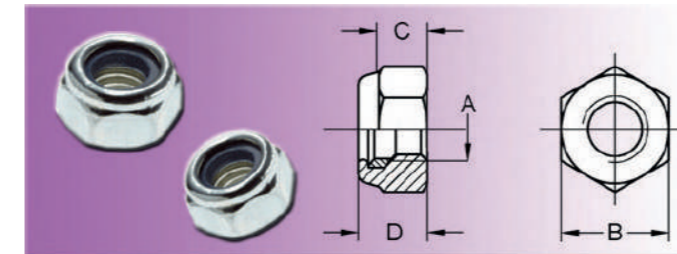
Nuts according to DIN of metal | Hexagon nuts ~ DIN 6923 machining steel



Hexagon nuts with flange - metal  
~DIN 6923 without lock toothing (~DIN EN 1661)  
Material: machining steel 4.8 zinc-plated

| Part no.  | A  | B   | C   | D    | Part no.  | A  | B    | C   | D    |
|-----------|----|-----|-----|------|-----------|----|------|-----|------|
| 449030052 | M3 | 5,5 | 4,0 | 8,0  | 449060052 | M6 | 10,0 | 6,0 | 14,2 |
| 449040052 | M4 | 7,0 | 4,6 | 10,0 | 449080052 | M8 | 13,0 | 8,0 | 17,9 |
| 449050052 | M5 | 8,0 | 5,0 | 11,8 |           |    |      |     |      |

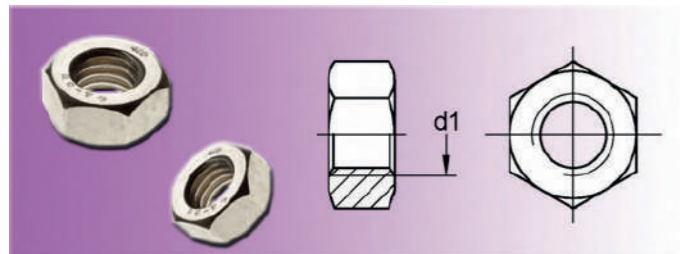
Nuts according to DIN of metal | Hexagon nuts ~DIN 985 stainless steel



Hexagon nuts, self-locking  
~DIN 985 low type (with non-metallic insert) (~DIN EN ISO 10511)  
Material: stainless steel A2

| Part no.  | A  | B    | C   | D   | Part no.  | A   | B    | C    | D    |
|-----------|----|------|-----|-----|-----------|-----|------|------|------|
| 448060053 | M6 | 10,0 | 4,5 | 6,0 | 448120053 | M12 | 19,0 | 8,0  | 12,0 |
| 448080053 | M8 | 13,0 | 6,0 | 8,0 | 448140053 | M14 | 22,0 | 10,0 | 14,0 |

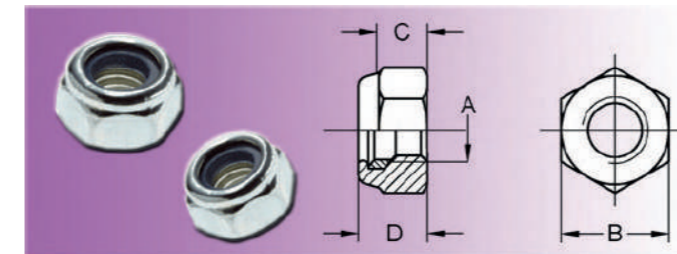
Nuts according to DIN of metal | Hexagon nuts ~DIN 934 stainless steel



Hexagon nuts - metal  
~DIN 934 (~DIN EN ISO 4032)  
Material: stainless steel A2

| Part no.  | d1   | Part no.  | d1 | Part no.  | d1 |
|-----------|------|-----------|----|-----------|----|
| 451020053 | M2   | 451040053 | M4 | 451080053 | M8 |
| 451025053 | M2,5 | 451050053 | M5 |           |    |
| 451030053 | M3   | 451060053 | M6 |           |    |

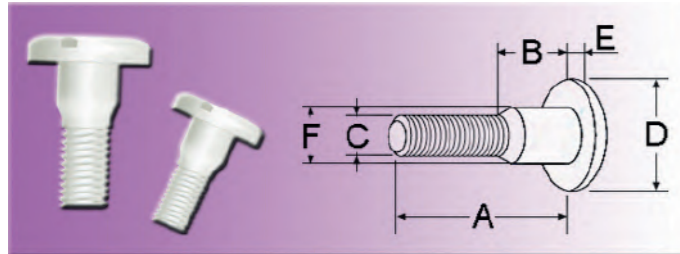
Nuts according to DIN of metal | Hexagon nuts ~DIN 985 machining steel



Hexagon nuts, self-locking  
~DIN 985 low type (with non-metallic insert) (~DIN EN ISO 10511)  
Material: machining steel 4.8 zinc-plated

| Part no.  | A  | B    | C   | D   | Part no.  | A   | B    | C    | D    |
|-----------|----|------|-----|-----|-----------|-----|------|------|------|
| 448060052 | M6 | 10,0 | 4,5 | 6,0 | 448120052 | M12 | 19,0 | 8,0  | 12,0 |
| 448080052 | M8 | 13,0 | 6,0 | 8,0 | 448140052 | M14 | 22,0 | 10,0 | 14,0 |

Screws without DIN of plastic | Binding screws



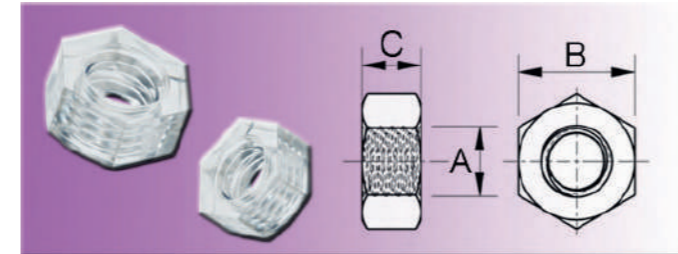
Suitable for the connection of pattern books, colour fans etc.  
To be used with appropriate female part of series 081, page 298.

Material: PA 6  
Colours:  
Last digits 500 = white  
Last digits 599 = black

| Part no.   | A    | B    | C  | D    | E   | F   |
|------------|------|------|----|------|-----|-----|
| 0820410500 | 10,0 | -    | M4 | 12,0 | 2,5 | 6,0 |
| 0820410599 | 10,0 | -    | M4 | 12,0 | 2,5 | 6,0 |
| 0820510500 | 10,0 | -    | M5 | 14,0 | 2,5 | 7,0 |
| 0820510599 | 10,0 | -    | M5 | 14,0 | 2,5 | 7,0 |
| 0820515500 | 15,0 | 5,0  | M5 | 14,0 | 2,5 | 7,0 |
| 0820515599 | 15,0 | 5,0  | M5 | 14,0 | 2,5 | 7,0 |
| 0820520500 | 20,0 | 10,0 | M5 | 14,0 | 2,5 | 7,0 |
| 0820520599 | 20,0 | 10,0 | M5 | 14,0 | 2,5 | 7,0 |
| 0820526500 | 25,0 | 15,0 | M5 | 14,0 | 2,5 | 7,0 |
| 0820526599 | 25,0 | 15,0 | M5 | 14,0 | 2,5 | 7,0 |
| 0820530500 | 30,0 | 20,0 | M5 | 14,0 | 2,5 | 7,0 |
| 0820530599 | 30,0 | 20,0 | M5 | 14,0 | 2,5 | 7,0 |
| 0820540500 | 40,0 | 30,0 | M5 | 14,0 | 2,5 | 7,0 |
| 0820540599 | 40,0 | 30,0 | M5 | 14,0 | 2,5 | 7,0 |

| Part no.   | A    | B   | C  | D    | E   | F   |
|------------|------|-----|----|------|-----|-----|
| 0820610500 | 10,0 | -   | M6 | 16,0 | 3,0 | 8,0 |
| 0820610599 | 10,0 | -   | M6 | 16,0 | 3,0 | 8,0 |
| 0820618500 | 18,0 | 8,0 | M6 | 16,0 | 3,0 | 8,0 |
| 0820618599 | 18,0 | 8,0 | M6 | 16,0 | 3,0 | 8,0 |
| 0820625500 | 25,0 | 8,0 | M6 | 16,0 | 3,0 | 8,0 |
| 0820625599 | 25,0 | 8,0 | M6 | 16,0 | 3,0 | 8,0 |
| 0820630500 | 30,0 | 8,0 | M6 | 16,0 | 3,0 | 8,0 |
| 0820630599 | 30,0 | 8,0 | M6 | 16,0 | 3,0 | 8,0 |
| 0820636500 | 36,0 | 8,0 | M6 | 16,0 | 3,0 | 8,0 |
| 0820636599 | 36,0 | 8,0 | M6 | 16,0 | 3,0 | 8,0 |
| 0820639500 | 39,0 | 8,0 | M6 | 16,0 | 3,0 | 8,0 |
| 0820639599 | 39,0 | 8,0 | M6 | 16,0 | 3,0 | 8,0 |
| 0820648500 | 48,0 | 8,0 | M6 | 16,0 | 3,0 | 8,0 |
| 0820648599 | 48,0 | 8,0 | M6 | 16,0 | 3,0 | 8,0 |

Nuts without DIN of plastic | Hexagon nuts PC



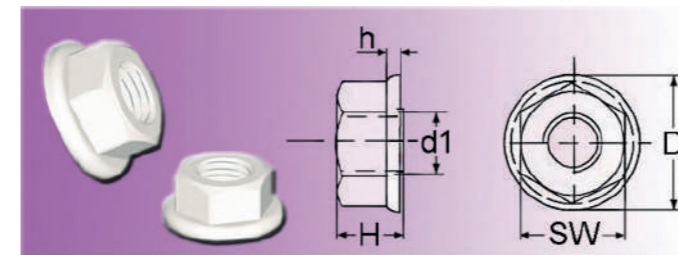
Material: PC  
Colour: transparent

| Part no. | A  | B   | C   |
|----------|----|-----|-----|
| 2710002  | M2 | 4,0 | 1,6 |
| 2710003  | M3 | 5,5 | 2,4 |

| Part no. | A  | B   | C   |
|----------|----|-----|-----|
| 2710004  | M4 | 7,0 | 3,2 |
| 2710005  | M5 | 8,0 | 4,0 |

| Part no. | A  | B    | C   |
|----------|----|------|-----|
| 2710006  | M6 | 10,0 | 5,0 |
| 2710008  | M8 | 13,0 | 6,5 |

Nuts without DIN of plastic | Hexagon nuts with flange

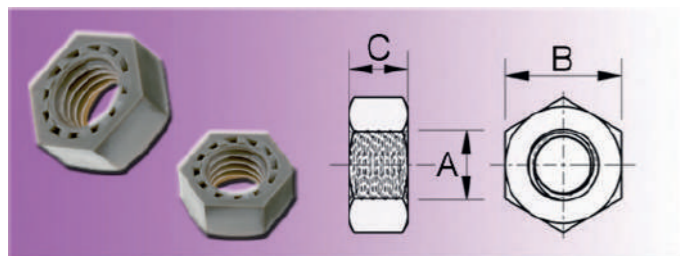


Material: PA  
Colour: natural

| Part no. | d1  | D    | SW   | H    | h   |
|----------|-----|------|------|------|-----|
| 0880400  | M4  | 9,5  | 7,0  | 4,2  | 1,1 |
| 0880500  | M5  | 11,0 | 8,0  | 5,2  | 1,0 |
| 0880600  | M6  | 13,0 | 10,0 | 6,0  | 1,2 |
| 0880800  | M8  | 16,8 | 13,0 | 7,35 | 1,4 |
| 0881000  | M10 | 21,7 | 16,0 | 9,5  | 1,8 |

| Part no. | d1  | D    | SW   | H    | h   |
|----------|-----|------|------|------|-----|
| 0881200  | M12 | 27,1 | 18,0 | 12,7 | 3,0 |
| 0881600  | M16 | 35,0 | 24,0 | 16,6 | 3,0 |
| 0882000  | M20 | 44,0 | 30,0 | 20,0 | 3,5 |
| 0882400  | M24 | 53,0 | 36,0 | 23,8 | 4,0 |

Nuts without DIN of plastic | Hexagon nuts PEEK



Material: PEEK  
Colour: light brown

- Temperature: max. 180°C
- High-strength and excellent form stability
- High modulus of elasticity and excellent creep resistance
- Resistant to many chemicals
- Flammability rating: UL94 V0
- Further PEEK products: series 280 to series 285

| Part no. | A  | B   | C   |
|----------|----|-----|-----|
| 2840300  | M3 | 5,5 | 2,4 |
| 2840400  | M4 | 7,0 | 3,2 |

| Part no. | A  | B    | C   |
|----------|----|------|-----|
| 2840500  | M5 | 8,0  | 4,0 |
| 2840600  | M6 | 10,0 | 5,0 |

| Part no. | A   | B    | C   |
|----------|-----|------|-----|
| 2840800  | M8  | 13,0 | 6,5 |
| 2841000  | M10 | 17,0 | 8,0 |

Nuts without DIN of plastic | Wing nuts type 26



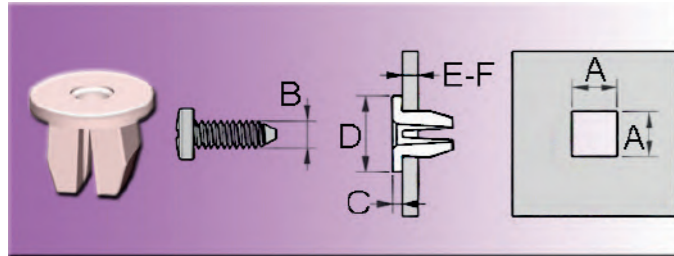
Material: PA 6.6  
Colour: natural

Further types on written request.

| Part no. | d1 |
|----------|----|
| 0530400  | M4 |
| 0530500  | M5 |

| Part no. | d1 |
|----------|----|
| 0530600  | M6 |
| 0530800  | M8 |

Nuts without DIN of plastic | Grommet nuts



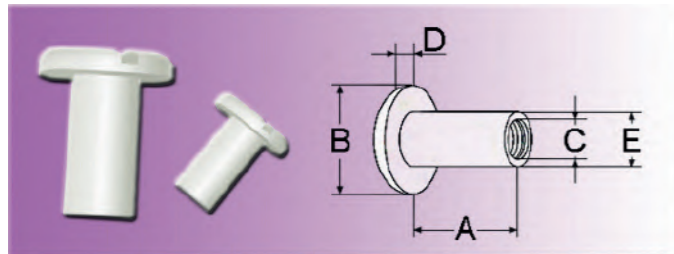
For a long-lasting and secure thread connection between thin steel plates. Easy and quick mounting. Isolates vibrations and avoids anodic corrosion. Prevents threads from stripping. Suitable in connection with pan head screw with cross slot DIN 7981 / ISO 7049. Dimension B indicates the size of the appropriate pan head screw (DIN 7981).

Material: PA 6.6  
Colour: natural

| Part no.   | A   | B   | C   | D    | E   | F   |
|------------|-----|-----|-----|------|-----|-----|
| 2625013000 | 5,0 | 2,9 | 1,3 | 8,0  | 0,8 | 2,5 |
| 2626014000 | 6,0 | 3,5 | 1,4 | 10,0 | 0,8 | 3,0 |

| Part no.   | A   | B   | C   | D    | E   | F   |
|------------|-----|-----|-----|------|-----|-----|
| 2627015000 | 7,0 | 4,2 | 1,5 | 12,0 | 0,8 | 4,0 |
| 2628016000 | 8,0 | 4,8 | 1,6 | 14,0 | 0,8 | 5,0 |

Nuts without DIN of plastic | Book screw nuts



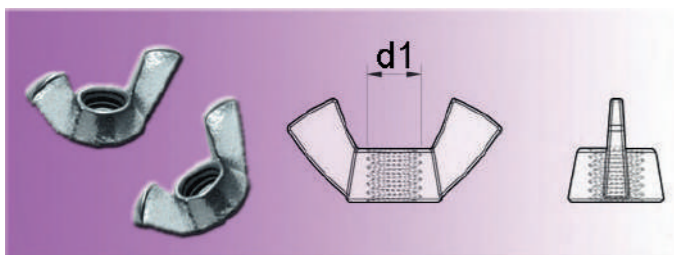
Suitable for screwing of sample books, colour fans etc. To be used with adequate male part of series 082, page 296.

Material: PA 6  
Colours:  
Last digits 500 = white  
Last digits 599 = black

| Part no.   | A    | B    | C  | D   | E   |
|------------|------|------|----|-----|-----|
| 0810410500 | 10,0 | 12,0 | M4 | 2,2 | 6,0 |
| 0810410599 | 10,0 | 12,0 | M4 | 2,2 | 6,0 |
| 0810415500 | 15,0 | 12,0 | M4 | 2,2 | 6,0 |
| 0810415599 | 15,0 | 12,0 | M4 | 2,2 | 6,0 |
| 0810420500 | 20,0 | 12,0 | M4 | 2,2 | 6,0 |
| 0810420599 | 20,0 | 12,0 | M4 | 2,2 | 6,0 |
| 0810425500 | 25,0 | 12,0 | M4 | 2,2 | 6,0 |

| Part no.   | A    | B    | C  | D   | E   |
|------------|------|------|----|-----|-----|
| 0810425599 | 25,0 | 12,0 | M4 | 2,2 | 6,0 |
| 0810430500 | 30,0 | 12,0 | M4 | 2,2 | 6,0 |
| 0810430599 | 30,0 | 12,0 | M4 | 2,2 | 6,0 |
| 0810510500 | 10,0 | 14,0 | M5 | 2,5 | 7,0 |
| 0810510599 | 10,0 | 14,0 | M5 | 2,5 | 7,0 |
| 0810610500 | 10,0 | 16,0 | M6 | 3,0 | 8,0 |
| 0810616599 | 16,0 | 16,0 | M6 | 3,0 | 8,0 |

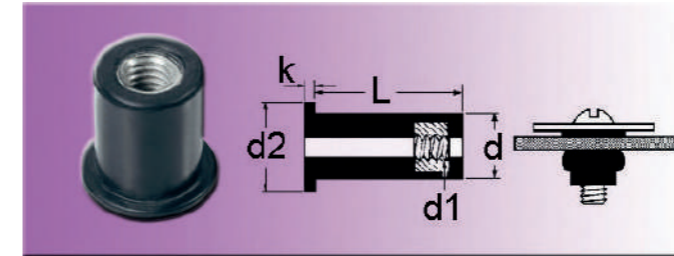
Nuts without DIN of metal | Wing nuts of machining steel



Material: machining steel  
Colour: zinc-plated

| Part no.  | d1 | Part no.  | d1 | Part no.  | d1 |
|-----------|----|-----------|----|-----------|----|
| 453030152 | M3 | 453050152 | M5 | 453080152 | M8 |
| 453040152 | M4 | 453060152 | M6 |           |    |

Nuts without DIN of plastic | ISO box nuts



Quick and easy assembly. Neoprene rivet body, electrically non-conductive. Temperature-resistant from -40°C to +90°C. Oil and corrosion resistant.

Material: EPDM (\* = neoprene)  
Colour: black

S = material thickness

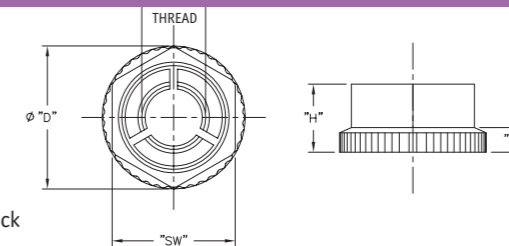
Example of use:  
Drill or blank mounting hole. Stick in ISO box nut. Turn the screw with the part you want to attach into the ISO box nut with moderate force. By turning the screw the rivet body bellies out and forms a safe and tight closing head. In the case of a blind bore the elastic rivet body fixes itself by frictional connection.

| Part no. | d1  | d2   | d    | k   | L    | Nm        | S         |
|----------|-----|------|------|-----|------|-----------|-----------|
| 2553004  | M3  | 11,0 | 7,9  | 1,2 | 11,4 | 0,25-0,50 | 0,4-4,0   |
| 2554039  | M4  | 11,0 | 7,9  | 1,2 | 11,4 | 0,25-0,40 | 0,4-4,0   |
| 2555049  | M5  | 12,7 | 9,6  | 0,9 | 13,2 | 0,34-0,50 | 0,4-4,9   |
| 2555057  | M5  | 19,0 | 9,6  | 2,0 | 16,0 | 0,29-0,69 | 0,8-5,8   |
| 2555059  | M5  | 14,0 | 9,6  | 1,0 | 16,0 | 0,29-0,69 | 0,85-5,9  |
| 2555114* | M5  | 14,0 | 9,5  | 0,9 | 20,6 | 0,34      | 4,0-10,0  |
| 2555163  | M5  | 14,0 | 9,6  | 1,3 | 25,2 | 0,30-0,70 | 7,9-15,0  |
| 2555164* | M5  | 14,3 | 9,5  | 1,3 | 25,4 | 0,34      | 7,9-16,3  |
| 2555290  | M5  | 14,0 | 9,6  | 1,3 | 37,7 | 0,60-1,00 | 20,5-30,0 |
| 2556028  | M6  | 16,0 | 12,7 | 1,3 | 14,7 | 0,60-1,00 | 0,4-4,0   |
| 2556047  | M6  | 19,1 | 12,7 | 4,8 | 16,3 | 0,80-1,00 | 0,8-4,7   |
| 2556116  | M6  | 16,3 | 12,7 | 2,0 | 24,7 | 0,80-1,00 | 6,4-11,5  |
| 2558047  | M8  | 21,5 | 15,9 | 3,2 | 15,1 | 1,00-1,50 | 0,4-4,0   |
| 2558095  | M8  | 21,5 | 15,9 | 5,7 | 22,2 | 1,00-1,60 | 3,9-9,5   |
| 2558390  | M8  | 20,0 | 18,0 | 1,6 | 48,4 | 3,00-4,00 | 15,0-35,0 |
| 2551040  | M10 | 22,5 | 20,0 | 1,3 | 53,7 | 4,50-5,50 | 19,0-38,0 |
| 2551264  | M12 | 27,0 | 24,0 | 1,3 | 77,7 | 6,00-7,00 | 38,0-56,0 |

Nuts without DIN of plastic | Kwik Nut Fastener

KNF  
Black Nylon 6/6, RMS-48

- To press fit over a threaded stud.
- To install, push down the length of the threaded fastener to desired location and lock with a 180° turn



| Part Number | Dimensions (mm) |      |      |     |      | Standard Pack Quantity |
|-------------|-----------------|------|------|-----|------|------------------------|
|             | Thread          | "SW" | "D"  | "H" | "H1" |                        |
| 1442504     | M3              | 7.0  | 8.2  | 4   | 1.5  | 1000                   |
| 1442505     | M4              | 8.0  | 9.4  | 4.7 | 1.5  | 1000                   |
| 1442506     | M5              | 10.0 | 12.0 | 5.8 | 2.5  | 1000                   |
| 1442507     | M6              | 12.7 | 15.0 | 6.9 | 2.5  | 1000                   |



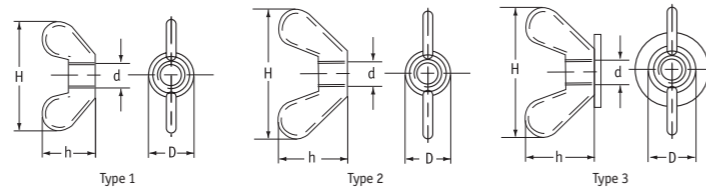
Nuts without DIN of plastic | Wing nuts

**Wing Nuts**

SR 1956

Natural Nylon 6.6

- Type 1 – small head
- Type 2 – larger wings for ease of turning
- Type 3 – includes washer



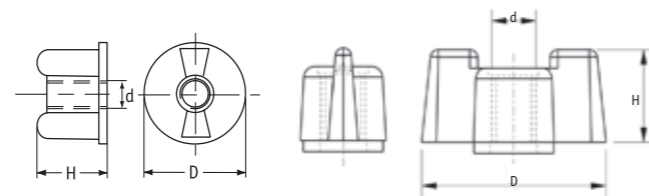
| Part Number  | Type | Dimensions (mm) |      |      |      | Standard Pack Quantity |
|--------------|------|-----------------|------|------|------|------------------------|
|              |      | d               | D    | H    | h    |                        |
| 0480510000VR | 1    | M3 x 0.5        | 10.0 | 25.0 | 12.0 | 1000                   |
| 0480520000VR | 1    | M4 x 0.7        | 10.0 | 25.0 | 12.0 | 1000                   |
| 0480530000VR | 1    | M5 x 0.8        | 10.0 | 25.0 | 12.0 | 1000                   |
| 0480540000VR | 1    | M6 x 1.0        | 10.0 | 25.0 | 12.0 | 1000                   |
| 0500020000VR | 2    | M4 x 0.7        | 14.0 | 35.0 | 22.0 | 1000                   |
| 0500030000VR | 2    | M5 x 0.8        | 14.0 | 35.0 | 22.0 | 1000                   |
| 0500040000VR | 2    | M6 x 1.0        | 14.0 | 35.0 | 22.0 | 1000                   |
| 0500050000VR | 2    | M8 x 1.25       | 14.0 | 35.0 | 22.0 | 1000                   |
| 467000       | 2    | M10 x 1.5       | 17.0 | 41.0 | 25.0 | 1000                   |
| 0510020000VR | 3    | M4 x 0.7        | 24.0 | 35.0 | 24.0 | 1000                   |
| 0510030000VR | 3    | M5 x 0.8        | 24.0 | 35.0 | 24.0 | 1000                   |
| 0510040000VR | 3    | M6 x 1.0        | 24.0 | 35.0 | 24.0 | 1000                   |
| 0510050000VR | 3    | M8 x 1.25       | 24.0 | 35.0 | 24.0 | 1000                   |



Nuts without DIN of plastic | Fly Nuts

**Wing Nuts**

Natural Nylon



| Part Number   | Dimensions (mm) |    |    | Type | Standard Pack Quantity |
|---------------|-----------------|----|----|------|------------------------|
|               | d               | D  | H  |      |                        |
| 0680020000VR  | M4              | 22 | 13 | 1    | 1000                   |
| 0680030000VR  | M5              | 22 | 13 | 1    | 1000                   |
| 0680100000VR  | M6              | 22 | 13 | 1    | 1000                   |
| 467001        | M8              | 22 | 13 | 1    | 1000                   |
| 053040060002* | M4              | 25 | 14 | 2    | 100                    |
| 053050060002* | M5              | 25 | 14 | 2    | 100                    |
| 053060060002* | M6              | 25 | 14 | 2    | 100                    |
| 053080000002  | M8              | 26 | 16 | 2    | 100                    |

\*White in Colour – RAL 9010



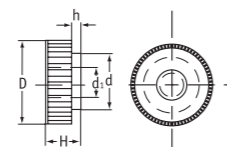
Type 1

Type 2

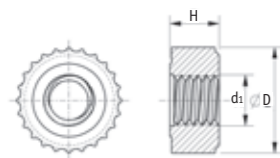
Nuts without DIN of plastic | Black Knurled Nuts

Black Nylon 6.6

- Type 1 – 30% Glass filled Nylon 6.6
- Type 2 – Nylon 6.6



Type 2



Type 1

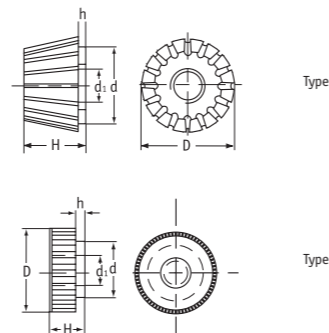


| Part Number  | Dimensions (mm) |      |      |     |     | Type | Standard Pack Quantity |
|--------------|-----------------|------|------|-----|-----|------|------------------------|
|              | d               | D    | d1   | H   | h   |      |                        |
| 141004069916 | M4              | 13.0 | -    | 4.0 | -   | 1    | 100                    |
| 141005069916 | M5              | 13.0 | -    | 5.0 | -   | 1    | 100                    |
| 141006069916 | M6              | 13.0 | -    | 6.0 | -   | 1    | 100                    |
| 0660020001VR | M4              | 16.0 | 10.0 | 6.0 | 1.4 | 2    | 100                    |
| 0660030001VR | M5              | 16.0 | 10.0 | 6.0 | 1.4 | 2    | 100                    |
| 0660040001VR | M6              | 16.0 | 10.0 | 6.0 | 1.4 | 2    | 100                    |

**Knurled Nuts**

Natural Nylon 6.6

- Type 1 – conical
- Type 2 – standard



Type 1

Type 2



**Type 1**

| Part Number  | Dimensions (mm) |      |      |      |     | Standard Pack Quantity |
|--------------|-----------------|------|------|------|-----|------------------------|
|              | d               | D    | d1   | H    | h   |                        |
| 0580020000VR | M4 x 0.7        | 16.0 | 14.0 | 12.0 | 1.0 | 1000                   |
| 0580030000VR | M5 x 0.8        | 16.0 | 14.0 | 12.0 | 1.0 | 1000                   |
| 0580040000VR | M6 x 1.0        | 16.0 | 14.0 | 12.0 | 1.0 | 1000                   |
| 0580050000VR | M8 x 1.25       | 16.0 | 14.0 | 12.0 | 1.0 | 1000                   |

**Type 2**

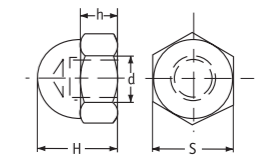
| Part Number  | Dimensions (mm) |      |      |     |     | Standard Pack Quantity |
|--------------|-----------------|------|------|-----|-----|------------------------|
|              | d               | D    | d1   | H   | h   |                        |
| 0760040000VR | M4 x 0.7        | 16.0 | 10.0 | 8.0 | 3.5 | 1000                   |
| 0760050000VR | M5 x 0.8        | 16.0 | 10.0 | 8.0 | 3.5 | 1000                   |
| 0760060000VR | M6 x 1.0        | 16.0 | 10.0 | 8.0 | 3.5 | 1000                   |
| 0660020000VR | M4 x 0.7        | 16.0 | 10.0 | 6.0 | 1.4 | 1000                   |
| 0660030000VR | M5 x 0.8        | 16.0 | 10.0 | 6.0 | 1.4 | 1000                   |
| 0660040000VR | M6 x 1.0        | 16.0 | 10.0 | 6.0 | 1.4 | 1000                   |
| 0770040000VR | M4 x 0.7        | 20.0 | 10.0 | 8.0 | 3.5 | 1000                   |
| 0770050000VR | M5 x 0.8        | 20.0 | 10.0 | 8.0 | 3.5 | 1000                   |
| 0770060000VR | M6 x 1.0        | 20.0 | 10.0 | 8.0 | 3.5 | 1000                   |
| 0770080000VR | M8 x 1.25       | 20.0 | 10.0 | 8.0 | 3.5 | 1000                   |

Nuts without DIN of plastic

**Dome Nuts**

Natural Nylon 6.6

- Refer to standard NF E 27-453, DIN 1587 for guidance purposes only



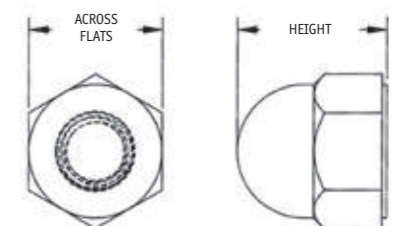
| Part Number  |              | Dimensions (mm) |      |      |      | Standard Pack Quantity |
|--------------|--------------|-----------------|------|------|------|------------------------|
| White        | Black        | d               | H    | h    | s    |                        |
| 0550010000VR | 0550010001VR | M3x0.5          | 6.0  | 3.0  | 5.5  | 1000                   |
| NNE-1587-M4  | -            | M4x0.7          | 8.0  | 3.2  | 7.0  | 1000                   |
| 0550030000VR | 0550030001VR | M5x0.8          | 10.0 | 4.0  | 8.0  | 1000                   |
| 0550040000VR | 0550040001VR | M6x1.0          | 12.0 | 5.0  | 10.0 | 1000                   |
| 0550050000VR | 0550050001VR | M8x1.25         | 15.0 | 6.5  | 13.0 | 1000                   |
| 0550060000VR | 0550060001VR | M10x1.5         | 18.0 | 8.0  | 17.0 | 1000                   |
| 0550070000VR | 0550070001VR | M12x1.75        | 22.0 | 10.0 | 19.0 | 500                    |

Nuts without DIN of plastic | Locking Dome Nuts

**Locking Dome Nuts**

Natural PA 6.6

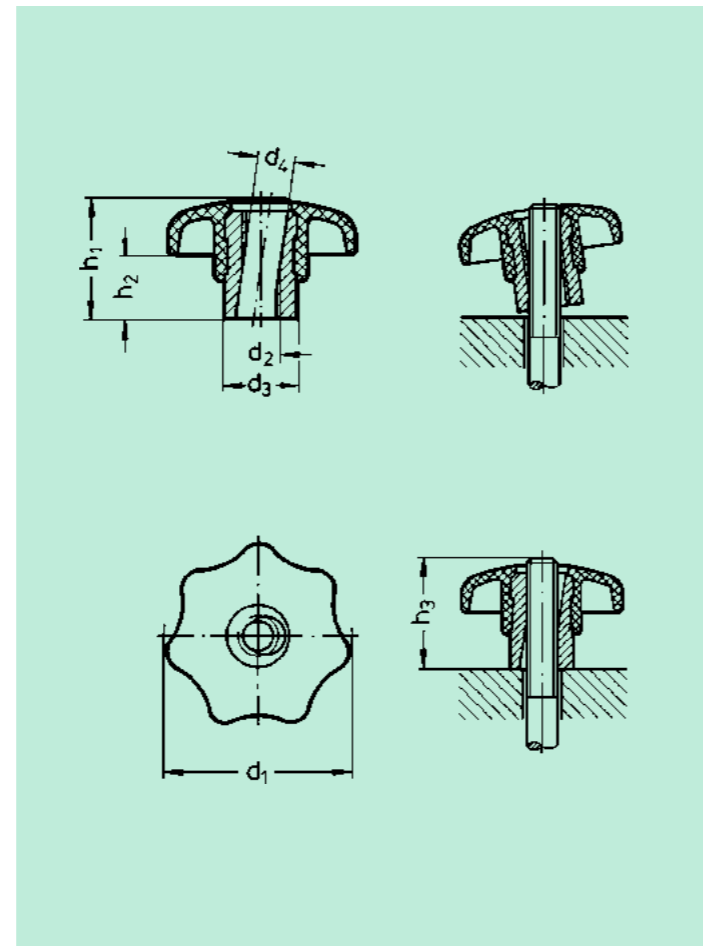
- Protective locking cap for screw heads
- Locks tightly into place



| Part Number  | Dimensions (mm) |        |              |        | Standard Pack Quantity |
|--------------|-----------------|--------|--------------|--------|------------------------|
|              | Screw Size      | Thread | Across Flats | Height |                        |
| 05M040070LCN | M4              | 0.7    | 7.0          | 8.0    | 1000                   |
| 05M050080LCN | M5              | 0.8    | 8.0          | 10.0   | 1000                   |
| 05M060100LCN | M6              | 1.0    | 10.0         | 12.0   | 1000                   |

## Quick Acting Star Knobs

24



Quick acting star knobs are used in such applications where the knob has to be completely removed after the releasing operation and refitted very rapidly for re-clamping. The knob is tilted over the threaded spindle. When in position, the knob is brought into a straight position for meshing of the two threads on nut and spindle. The knob will then have to be turned only by fraction of a rotation to achieve clamping. The use of this knob is, however, limited to such applications where relatively low clamping forces are required.

**Model:** Body from reinforced polyamide, black matt. Bush from steel, zinc-plated.

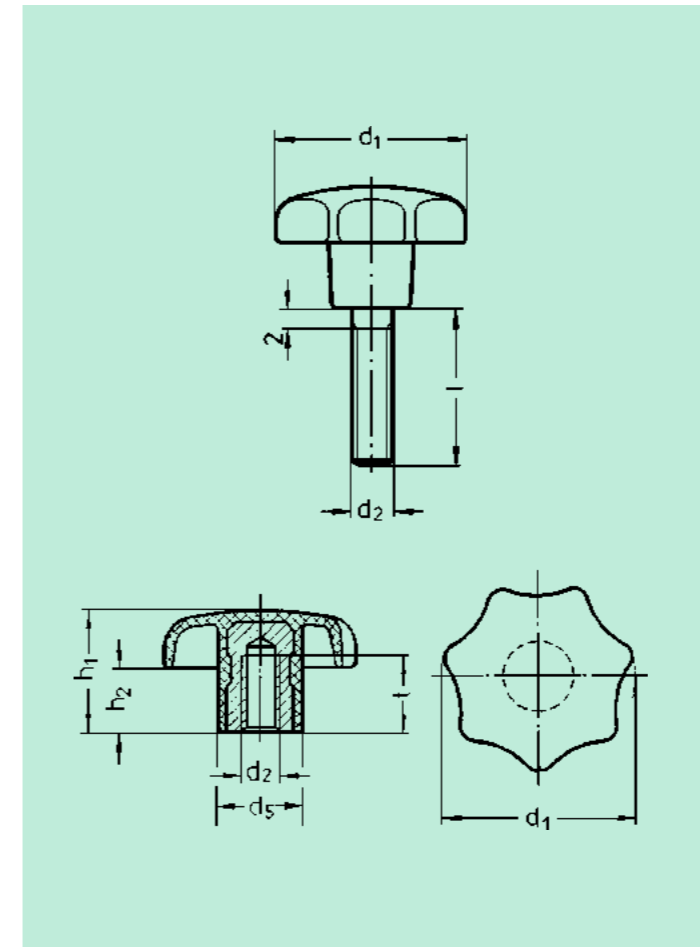
### Quick Acting Star Knobs

| Order No. | Internal Thread d <sub>2</sub> | Size d <sub>1</sub> mm | d <sub>4</sub> mm | d <sub>5</sub> mm | h <sub>1</sub> mm | h <sub>2</sub> ⊕ mm | h <sub>3</sub> min. mm | Weight approx. g |
|-----------|--------------------------------|------------------------|-------------------|-------------------|-------------------|---------------------|------------------------|------------------|
| 25 40 08  | M 8                            | 40                     | 8,4               | 16                | 26                | 13                  | 24                     | 31               |
| 25 50 10  | M 10                           | 50                     | 10,5              | 20                | 34                | 17                  | 30                     | 61               |
| 25 63 12  | M 12                           | 63                     | 13                | 26                | 42                | 21                  | 37                     | 130              |

## Star Knobs

similar to DIN 6336

25



Zimmermann Star Knobs for various applications and individual solutions. Zimmermann star knobs offer high flexibility and captivate by their modern design and nice surface finish.

**Model:** Body from reinforced polyamide, black matt. Bush resp. screw from steel, zinc-plated.

Star knobs with fitting hole H7 and star knobs from cast iron or aluminium are available on request.

### Star Knobs similar to DIN 6336

| Order No. | Internal Thread d <sub>2</sub> | t mm | Weight approx. g | Order No.    | External Thread d <sub>2</sub> | Length of Screw l (mm) |    |    |    | Size d <sub>1</sub> mm | d <sub>5</sub> mm | h <sub>1</sub> mm | h <sub>2</sub> mm |    |
|-----------|--------------------------------|------|------------------|--------------|--------------------------------|------------------------|----|----|----|------------------------|-------------------|-------------------|-------------------|----|
| 24 25 04  | M 4                            | 7,5  |                  | 24 25 05 ... | M 5                            | 10                     | 15 | 20 | 25 | 30                     | 25                | 12                | 16                | 8  |
| 24 25 05  | M 5                            | 8,5  | 5                | 24 25 06 ... | M 6                            | 10                     | 15 | 20 | 25 | 30                     |                   |                   |                   |    |
| 24 25 06  | M 6                            | 9    |                  | 24 32 05 ... | M 5                            | 11                     | 16 | 21 | 26 | 31                     | 32                | 14                | 20                | 10 |
| 24 32 05  | M 5                            | 8,5  |                  | 24 32 08 ... | M 8                            | 15                     | 20 | 25 | 30 | 40                     |                   |                   |                   |    |
| 24 32 06  | M 6                            | 9    | 8                | 24 40 05 ... | M 5                            | 15                     | 20 | 25 | 30 | 40                     | 40                | 18                | 25                | 13 |
| 24 40 05  | M 5                            | 8,5  | 15               | 24 40 06 ... | M 6                            | 14                     | 19 | 24 | 29 | 39                     |                   |                   |                   |    |
| 24 40 06  | M 6                            | 9    | 16               | 24 50 08 ... | M 8                            | 20                     | 25 | 30 | 40 | 50                     | 50                | 22                | 32                | 17 |
| 24 40 08  | M 8                            | 14   | 17               | 24 50 10 ... | M 10                           | 20                     | 30 | 40 | 50 |                        |                   |                   |                   |    |
| 24 50 08  | M 8                            | 14   | 31               | 24 63 10 ... | M 10                           | 25                     | 30 | 40 | 60 |                        | 63                | 26                | 40                | 21 |
| 24 50 10  | M 10                           | 21   | 30               | 24 63 12 ... | M 12                           | 25                     | 30 | 40 |    |                        |                   |                   |                   |    |
| 24 63 10  | M 10                           | 23   | 85               |              |                                |                        |    |    |    |                        |                   |                   |                   |    |
| 24 63 12  | M 12                           | 23   | 82               |              |                                |                        |    |    |    |                        |                   |                   |                   |    |

... Please indicate here the desired length of screw e.g. 025 for l = 25 mm.

## Star Knobs

with Projecting Steel or  
Stainless Steel Bush

INOX

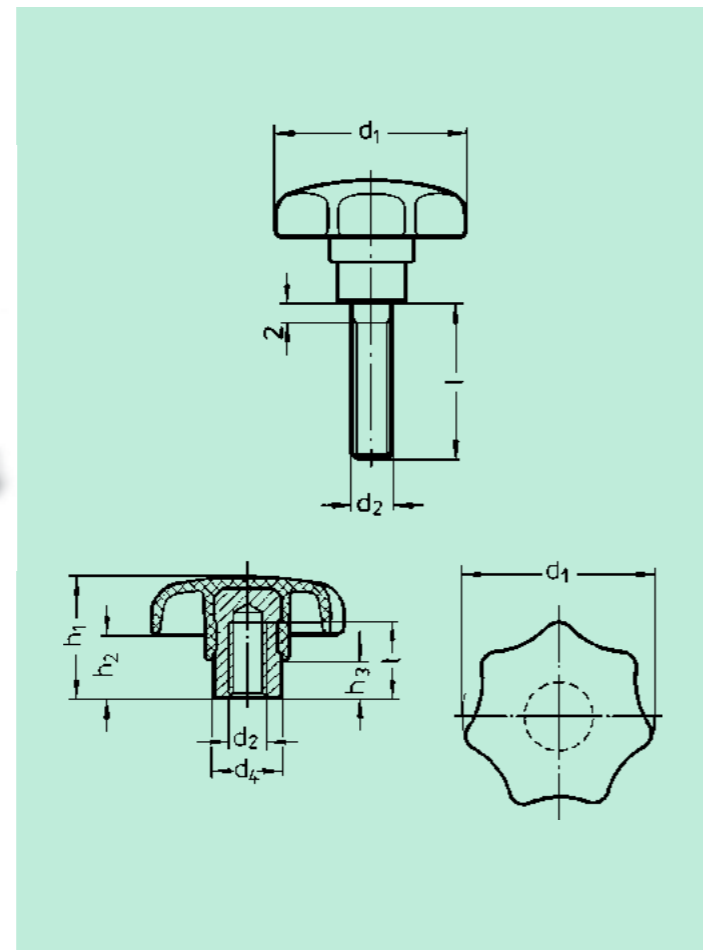
26



Zimmermann Star Knobs with projecting steel bush. Especially suitable for cross pin connections.

**Model:** Body from reinforced polyamide, black matt. Bush resp. screw from steel, zinc-plated resp. from stainless steel, material no. 1.4305.

Star knobs with fitting hole H7 are available on request.



### Star Knobs with Projecting Bush - Steel

| Order No.       | Internal Thread | t  | Order No.       | External Thread | Length of Screw l (mm) | Size | d <sub>1</sub> | d <sub>4</sub> | h <sub>1</sub> | h <sub>2</sub> | h <sub>3</sub> |
|-----------------|-----------------|----|-----------------|-----------------|------------------------|------|----------------|----------------|----------------|----------------|----------------|
| Internal Thread | d <sub>2</sub>  | mm | External Thread | d <sub>2</sub>  |                        | mm   | mm             | mm             | mm             | mm             | mm             |
| 26 32 06        | M 6             | 12 | 26 32 06 ...    | M 6             | 16 25 30               | 32   | 12             | 21             | 11             | 8,5            |                |
| 26 40 06        | M 6             | 14 |                 |                 |                        | 40   | 14             | 26             | 14             | 10             |                |
| 26 40 08        | M 8             |    | 26 40 08 ...    | M 8             | 16 30 40               |      |                |                |                |                |                |
| 26 50 08        | M 8             | 18 |                 |                 |                        | 50   | 18             | 32             | 17             | 10             |                |
| 26 50 10        | M 10            |    | 26 50 10 ...    | M 10            | 25 35 55               |      |                |                |                |                |                |
| 26 63 10        | M 10            | 22 |                 |                 |                        | 63   | 20             | 40             | 21             | 14             |                |
| 26 63 12        | M 12            |    | 26 63 12 ...    | M 12            | 30 60                  |      |                |                |                |                |                |

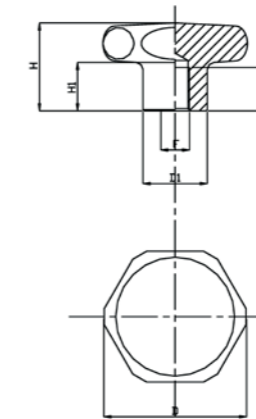
... Please indicate here the desired length of screw e.g. 025 for l = 25 mm.

### Star Knobs with Projecting Bush - Stainless Steel

| Order No.    | Internal Thread | t  | Size | d <sub>1</sub> | d <sub>4</sub> | h <sub>1</sub> | h <sub>2</sub> | h <sub>3</sub> |
|--------------|-----------------|----|------|----------------|----------------|----------------|----------------|----------------|
|              | d <sub>2</sub>  | mm | mm   | mm             | mm             | mm             | mm             | mm             |
| 26 32 06 E0A | M 6             | 12 | 32   | 12             | 21             | 11             | 8,5            |                |
| 26 40 08 E0A | M 8             | 14 | 40   | 14             | 26             | 14             | 10             |                |
| 26 50 10 E0A | M 10            | 18 | 50   | 18             | 32             | 17             | 10             |                |
| 26 63 12 E0A | M 12            | 22 | 63   | 22             | 40             | 21             | 14             |                |

**Martin**  
Levelling Components

## Star Knobs



27

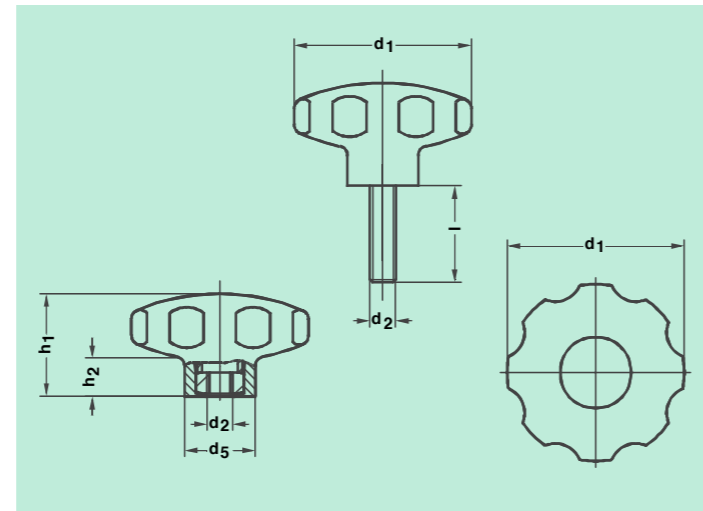
VOLANINI INOX A LOBI - FILETTO FEMMINA  
STAINLESS STEEL KNOBS - FEMALE

| CODICE - CODE | descrizione - description | DIMENSIONI PRINCIPALI - MAIN DIMENSIONS |    |    |      |    |     |
|---------------|---------------------------|---|----|----|------|----|-----|
|               |                           | D                                       | D1 | H  | H1   | G  | F   |
| 30000E/27     | VOLANTINO D27 M5          | 27                                      | 15 | 19 | 10   | 10 | M5  |
| 30010E/33     | VOLANTINO D33 M6          | 33                                      | 19 | 23 | 12   | 12 | M6  |
| 30020E/40     | VOLANTINO D40 M8          | 40                                      | 21 | 27 | 15   | 13 | M8  |
| 30030E/50     | VOLANTINO D50 M10         | 50                                      | 25 | 33 | 17,5 | 17 | M10 |
| 30040E/60     | VOLANTINO D60 M12         | 60                                      | 27 | 37 | 20   | 20 | M12 |

- Knobs for pharmaceutical, chimica, berage and food industry
- Material: stainless steel 1.4305 (1.4301 and 1.4401 on request)

## Star Knobs

### Closed Shape



28

Due to their closed shape and smooth surface these star knobs meet great demands on hygiene. Knobs size 55 are also available as safety star knobs.

**Model:** Body from glass-fibre reinforced polyamide, black matt. Nut resp. screw acc. to DIN 934.

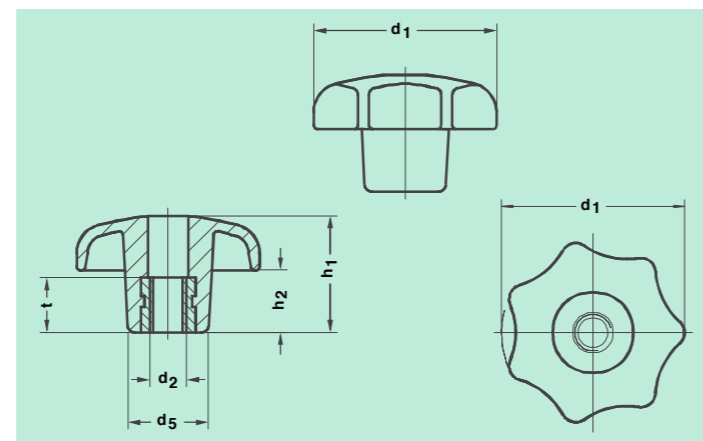
Knobs are also available disassembled or without nuts/screws.

### Star Knobs closed shape

| Order No.       | Internal Thread | Order No.       | External Thread | Length of Screw l (mm) |    |    | Size              | d <sub>5</sub> | h <sub>1</sub> | h <sub>2</sub> |
|-----------------|-----------------|-----------------|-----------------|------------------------|----|----|-------------------|----------------|----------------|----------------|
| Internal Thread | d <sub>2</sub>  | External Thread | d <sub>2</sub>  |                        |    |    | d <sub>1</sub> mm | mm             | mm             | mm             |
| 29 32 05        | M 5             | 29 32 05 ...    | M 5             | 10                     | 14 | 28 | 32                | 19             | 19             | 10             |
| 29 32 06        | M 6             | 29 32 06 ...    | M 6             | 14                     | 23 | 28 |                   |                |                |                |
| 29 39 06        | M 6             | 29 39 06 ...    | M 6             | 14                     | 23 | 28 | 39                | 23             | 27             | 11             |
| 29 39 08        | M 8             | 29 39 08 ...    | M 8             | 18                     | 23 | 33 | 38                |                |                |                |
| 29 55 08        | M 8             | 29 55 08 ...    | M 8             | 18                     | 23 | 33 | 55                | 22             | 32             | 13             |

... Please indicate here the desired length of screw e.g. 023 for l = 23 mm.

### similar to DIN 6336 threaded through-bore



**Model:** Body from glass-fibre reinforced polyamide, black matt. Bush from steel, zinc-plated.

### Star Knobs similar to DIN 6336, threaded through-bore

| Order No. | Internal Thread | t  | Size              | d <sub>5</sub> | h <sub>1</sub> | h <sub>2</sub> | Weight approx. g |
|-----------|-----------------|----|-------------------|----------------|----------------|----------------|------------------|
|           | d <sub>2</sub>  | mm | d <sub>1</sub> mm | mm             | mm             | mm             |                  |
| 71 32 06  | M 6             | 11 | 32                | 14             | 20             | 10             | 9                |
| 71 40 08  | M 8             | 14 | 40                | 18             | 25             | 13             | 17               |
| 71 50 10  | M 10            | 15 | 50                | 22             | 32             | 17             | 33               |
| 71 63 12  | M 12            | 20 | 63                | 26             | 40             | 21             | 60               |

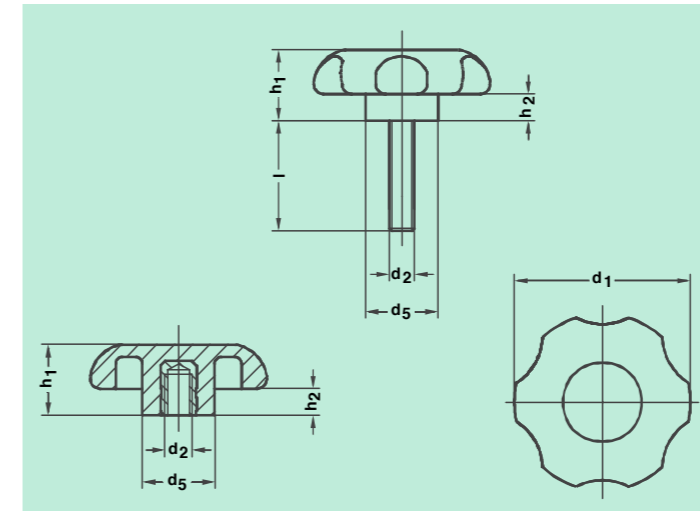
## Star Knobs



At excellent prices.

**Model:** Body from polyamide, black. Bush resp. screw from steel, zinc-plated.

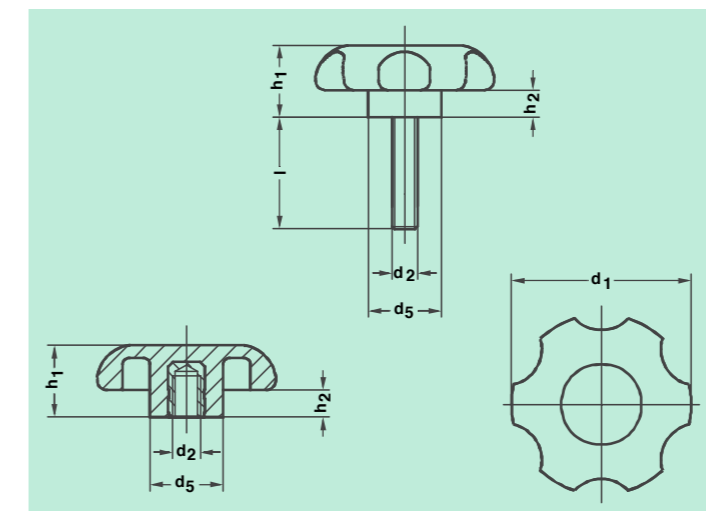
29



### Star Knobs

| Order No.       | Internal Thread | t  | Order No.       | External Thread | Length of Screw l (mm) |    |                   | Size | d <sub>5</sub> | h <sub>1</sub> | h <sub>2</sub> |
|-----------------|-----------------|----|-----------------|-----------------|------------------------|----|-------------------|------|----------------|----------------|----------------|
| Internal Thread | d <sub>2</sub>  | mm | External Thread | d <sub>2</sub>  |                        |    | d <sub>1</sub> mm | mm   | mm             | mm             |                |
| 68 32 06        | M 6             | 9  | 68 32 06 ...    | M 6             | 15                     | 20 | 30                | 32   | 12             | 16             | 5              |
| 68 32 08        | M 8             |    | 68 32 08 ...    | M 8             | 15                     | 20 | 30                |      |                |                |                |
| 68 40 06        | M 6             | 15 | 68 40 06 ...    | M 6             | 18                     | 28 | 40                | 17   | 25             | 10             |                |
| 68 40 08        | M 8             |    | 68 40 08 ...    | M 8             | 18                     | 28 |                   |      |                |                |                |

... Please indicate here the desired length of screw e.g. 020 for l = 20 mm.



## Star Knobs



At excellent prices.

**Model:** Body from polyamide, black. Bush resp. screw from steel, zinc-plated.

### Star Knobs

| Order No.       | Internal Thread | t  | Order No.       | External Thread | Length of Screw l (mm) |    |                   | Size | d <sub>5</sub> | h <sub>1</sub> | h <sub>2</sub> |
|-----------------|-----------------|----|-----------------|-----------------|------------------------|----|-------------------|------|----------------|----------------|----------------|
| Internal Thread | d <sub>2</sub>  | mm | External Thread | d <sub>2</sub>  |                        |    | d <sub>1</sub> mm | mm   | mm             | mm             |                |
| 69 55 06        | M 6             | 9  | 69 55 06 ...    | M 6             | 17                     | 22 | 32                | 55   | 22,5           | 22,5           | 9              |
| 69 55 08        | M 8             | 15 | 69 55 08 ...    | M 8             | 17                     | 32 | 47                | 55   | 22,5           | 22,5           | 9              |
| 69 55 10        | M 10            | 15 | 69 55 10 ...    | M 10            | 32                     | 42 | 47                | 55   | 22,5           | 22,5           | 9              |

... Please indicate here the desired length of screw e.g. 032 for l = 32 mm.

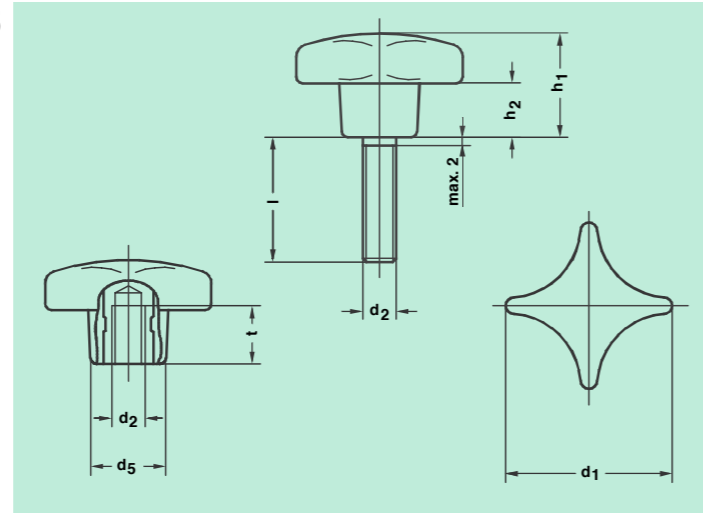
## Cross Knobs similar to DIN 6335

30



**Model:** Body from duroplastic FS 31.  
Bush resp. screw from steel, zinc-plated.

Cross knobs from cast iron or aluminium are available on request.



### Cross Knobs similar to DIN 6335

| Order No.       | Internal Thread | t    | Weight approx. kg | Order No.       | External Thread | Length of Screw l (mm) |    |    |    | Size | d1 | d5 | h1 | h2 |
|-----------------|-----------------|------|-------------------|-----------------|-----------------|------------------------|----|----|----|------|----|----|----|----|
| Internal Thread | d2              | mm   |                   | External Thread | d2              |                        |    |    |    | mm   | mm | mm | mm |    |
| 21 25 05        | M 5             | 10,5 | 0,006             | 21 25 05 ...    | M 5             | 10                     | 15 | 20 |    | 25   | 11 | 17 | 9  |    |
| 21 32 06        | M 6             | 13,5 | 0,010             | 21 32 06 ...    | M 6             |                        | 15 | 20 | 30 | 32   | 14 | 20 | 10 |    |
| 21 40 08        | M 8             | 16   | 0,018             | 21 40 08 ...    | M 8             |                        | 15 | 20 | 30 | 40   | 18 | 26 | 15 |    |
| 21 50 10        | M 10            | 21   | 0,033             | 21 50 10 ...    | M 10            |                        |    | 20 | 30 | 40   | 22 | 23 | 20 |    |
| 21 63 12        | M 12            | 25   | 0,061             | 21 63 12 ...    | M 12            |                        |    | 25 | 40 | 63   | 27 | 40 | 23 |    |

... Please indicate here the desired length of screw e.g. 020 for l = 20 mm.

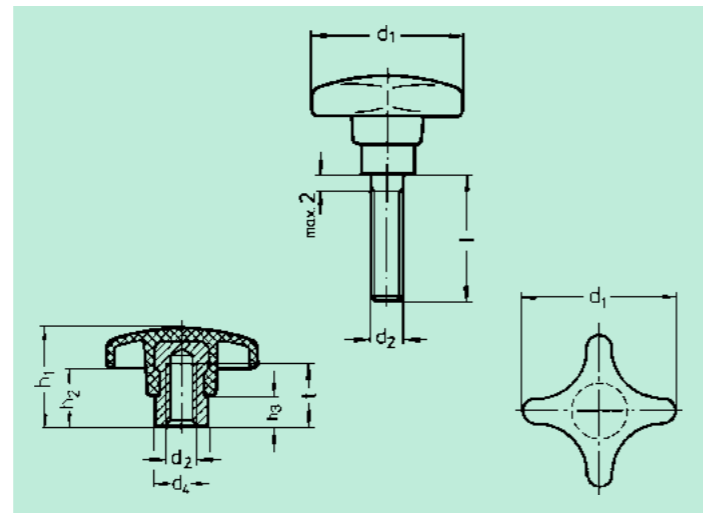
## Cross Knobs

### with Projecting Steel Bush



Cross Knobs with projecting steel bush.  
Especially suitable for cross pin connections.

**Model:** Body from polyamide, black matt. Bush resp. screw from steel, zinc-plated.



Cross Knobs with fitting hole H7 are available on request.

### Cross Knobs with Projecting Steel Bush

| Order No.       | Internal Thread | t  | Order No.       | External Thread | Length of Screw l (mm) |    |    |  | Size | d1 | d4 | h1 | h2 | h3 |
|-----------------|-----------------|----|-----------------|-----------------|------------------------|----|----|--|------|----|----|----|----|----|
| Internal Thread | d2              | mm | External Thread | d2              |                        |    |    |  | mm   | mm | mm | mm | mm |    |
| 23 32 06        | M 6             | 12 | 23 32 06 ...    | M 6             | 16                     | 20 | 30 |  | 32   | 12 | 20 | 10 | 9  |    |
| 23 40 08        | M 8             | 14 | 23 40 08 ...    | M 8             | 16                     | 25 | 40 |  | 40   | 14 | 25 | 13 | 10 |    |
| 23 50 10        | M 10            | 18 | 23 50 10 ...    | M 10            | 25                     | 35 | 55 |  | 50   | 18 | 32 | 20 | 12 |    |
| 23 63 12        | M 12            | 22 | 23 63 12 ...    | M 12            |                        |    | 60 |  | 63   | 20 | 40 | 25 | 14 |    |

... Please indicate here the desired length of screw e.g. 020 for l = 20 mm.

## Ball Knobs

### similar to DIN 319

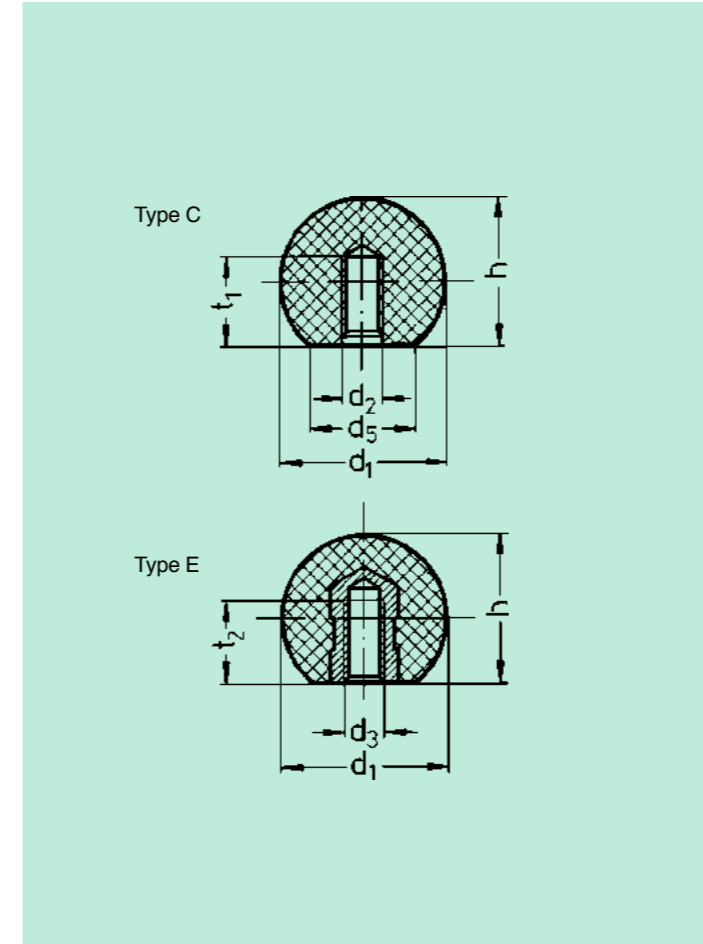
31



**Model:** Duroplastic FS 31, black, deburred and polished. Bush from steel, zinc plated.

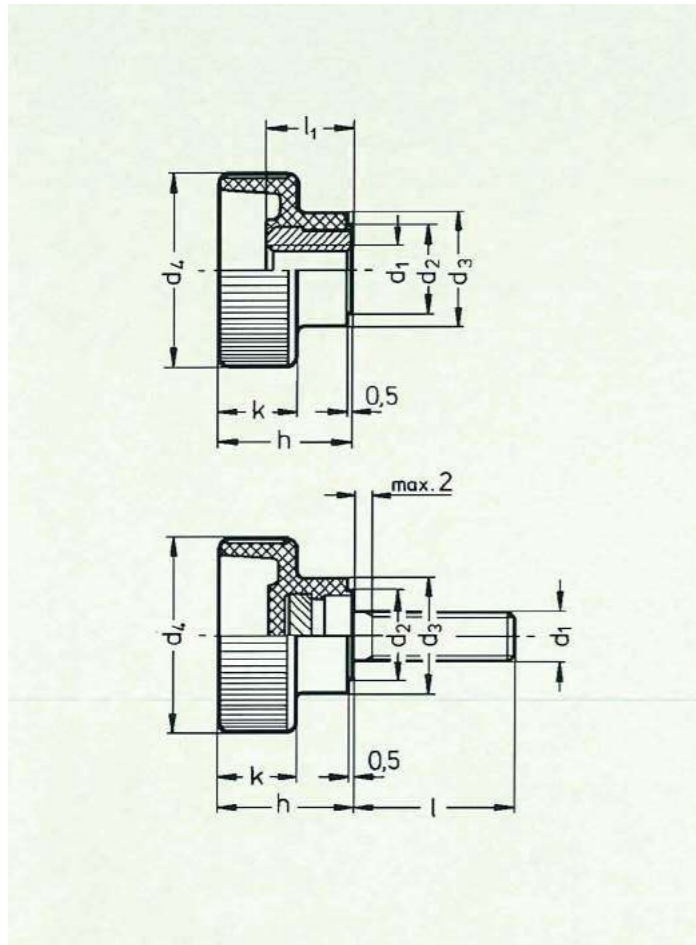
**Type C:** with plastic thread.

**Type E:** with bush thread.



### Ball Knobs similar to DIN 319

| Order No.    | Thread | t1   | Order No.  | Thread | t2   | Size | d1 | d5   | h  |
|--------------|--------|------|------------|--------|------|------|----|------|----|
| Type C       | d2     | mm   | Type E     | d3     | mm   | mm   | mm | mm   | mm |
| * 20 10 03 C | M 3    | 5    |            |        |      | 10   | 5  | 9,5  |    |
| 20 12 04 C   | M 4    | 8    |            |        |      | 12   | 6  | 11   |    |
| 20 16 04 C   | M 4    | 8    |            |        |      | 16   | 8  | 15   |    |
| 20 20 05 C   | M 5    | 10,5 | 20 20 05 E | M 5    | 10,5 | 20   | 12 | 18   |    |
| 20 20 06 C   | M 6    | 13,5 |            |        |      |      |    |      |    |
| 20 25 06 C   | M 6    | 13,5 | 20 25 06 E | M 6    | 13,5 | 25   | 15 | 22,5 |    |
| 20 25 08 C   | M 8    | 16   |            |        |      |      |    |      |    |
| 20 32 06 C   | M 6    | 13,5 |            |        |      |      |    |      |    |
| 20 32 08 C   | M 8    | 16   | 20 32 08 E | M 8    | 16   | 32   | 18 | 29   |    |
| 20 32 10 C   | M 10   | 21   |            |        |      |      |    |      |    |
| 20 36 08 C   | M 8    | 16   | 20 36 08 E | M 8    | 16   | 36   | 16 | 34   |    |
| 20 36 10 C   | M 10   | 21   | 20 36 10 E | M 10   | 21   |      |    |      |    |
| 20 40 10 C   | M 10   | 21   | 20 40 10 E | M 10   | 21   | 40   | 22 | 37   |    |
| 20 40 12 C   | M 12   | 25   | 20 40 12 E | M 12   | 25   |      |    |      |    |
| 20 50 12 C   | M 12   | 25   | 20 50 12 E | M 12   | 25   | 50   | 29 | 46   |    |



## Knurl Nuts / Screws



**Model:** Body Termoplast (Polyamid)  
Black, Polished

Socket Screw made of galvanized steel or stainless steel  
Nirosta 1.4305.

### Knurl Nuts / Screws

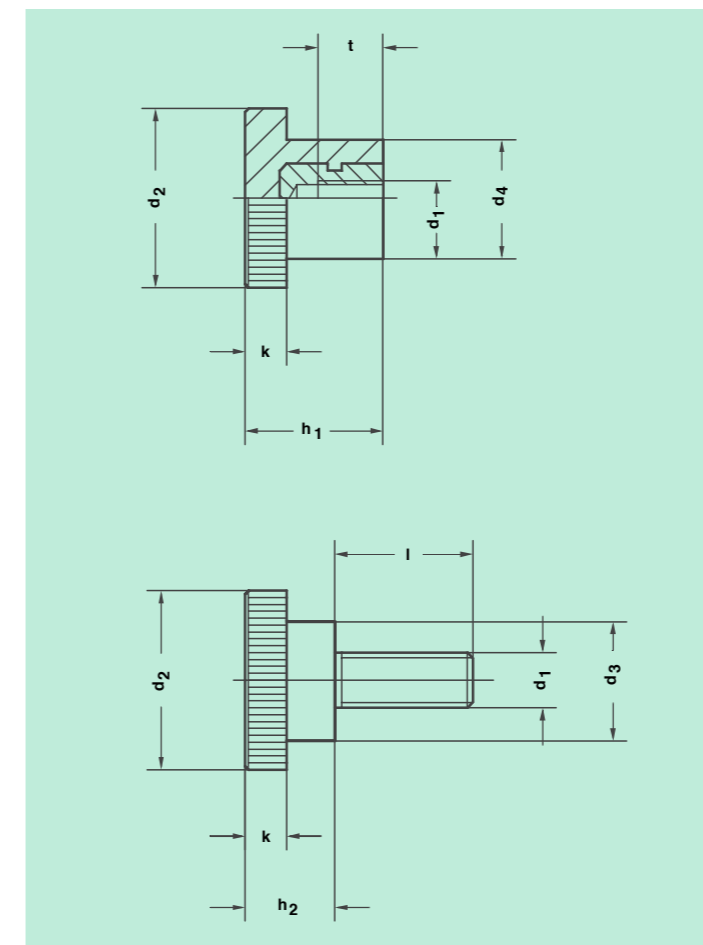
| Order No.<br>Internal Thread | Internal Thread<br>d <sub>1</sub> | l <sub>1</sub><br>mm | Order No.<br>External Thread | External Thread<br>d <sub>1</sub> | Length of Screw l (mm) |    |             |    | d <sub>2</sub><br>mm | d <sub>3</sub><br>mm | d <sub>4</sub><br>mm | h<br>mm | k<br>mm |
|------------------------------|-----------------------------------|----------------------|------------------------------|-----------------------------------|------------------------|----|-------------|----|----------------------|----------------------|----------------------|---------|---------|
| 33 19 04                     | M 4                               | 9                    | 33 19 04 ...                 | M 4                               | 10                     | 15 | 20          | 9  | 12                   | 19                   | 14                   | 8       |         |
| 33 19 05                     | M 5                               |                      | 33 19 05 ...                 | M 5                               | 10                     | 15 | 20 25       |    |                      |                      |                      |         |         |
| 33 24 06                     | M 6                               | 10,5                 | 33 24 06 ...                 | M 6                               | 10                     | 16 | 20 25 30    | 11 | 14                   | 24                   | 16,5                 | 9,5     |         |
| 33 30 08                     | M 8                               | 11,5                 | 33 30 08 ...                 | M 8                               |                        | 16 | 20 25 30 40 | 13 | 16                   | 30                   | 19,5                 | 11      |         |
| 33 36 10                     | M 10                              | 14                   | 33 36 10 ...                 | M 10                              |                        | 20 | 25 30 40    | 15 | 18                   | 36                   | 22,5                 | 12,5    |         |

... Please indicate here the desired length of screw e.g. 020 for l = 20 mm.

### Knurl Nuts / Screws - Nirosta - Stainless steel

| Order No.<br>Internal Thread | Internal Thread<br>d <sub>1</sub> | l <sub>1</sub><br>mm | Order No.<br>External Thread | External Thread<br>d <sub>1</sub> | Length of Screw l (mm) |    |       |    | d <sub>2</sub><br>mm | d <sub>3</sub><br>mm | d <sub>4</sub><br>mm | h<br>mm | k<br>mm |
|------------------------------|-----------------------------------|----------------------|------------------------------|-----------------------------------|------------------------|----|-------|----|----------------------|----------------------|----------------------|---------|---------|
| 33 19 05 E0A                 | M 5                               | 9                    | 33 19 05 ... E0A             | M 5                               | 10                     | 15 | 25    | 9  | 12                   | 19                   | 14                   | 8       |         |
| 33 24 06 E0A                 | M 6                               | 10,5                 | 33 24 06 ... E0A             | M 6                               |                        | 16 | 20 30 | 11 | 14                   | 24                   | 16,5                 | 9,5     |         |
| 33 30 08 E0A                 | M 8                               | 11,5                 | 33 30 08 ... E0A             | M 8                               |                        | 20 | 25 30 | 13 | 16                   | 30                   | 19,5                 | 11      |         |

... Please indicate here the desired length of screw e.g. 020 for l = 20 mm.



## Knurl Nuts/Screws



**Model:** Body from duroplastic FS 31, black. Bush  
resp. screw from steel, zinc-plated.

### Knurl Nuts/Screws

| Order No.<br>Internal Thread | Internal Thread<br>d <sub>1</sub> | t<br>mm | d <sub>4</sub><br>mm | h <sub>1</sub><br>mm | Order No.<br>External Thread | External Thread<br>d <sub>1</sub> | Length of Screw l (mm) |    |       | l max<br>mm | Size<br>d <sub>2</sub><br>mm | d <sub>3</sub><br>mm | h <sub>2</sub><br>mm | k<br>mm |
|------------------------------|-----------------------------------|---------|----------------------|----------------------|------------------------------|-----------------------------------|------------------------|----|-------|-------------|------------------------------|----------------------|----------------------|---------|
|                              |                                   |         |                      |                      | 67 18 04 ...                 | M 4                               | 12                     |    |       | 45          | 18                           | 10                   | 12                   | 5,5     |
|                              |                                   |         |                      |                      | 67 22 05 ...                 | M 5                               | 10                     | 15 | 20    | 70          | 22                           | 12                   | 13                   | 6       |
|                              |                                   |         |                      |                      | 67 22 06 ...                 | M 6                               |                        | 15 | 20 30 |             |                              |                      |                      |         |
| 67 26 06                     | M 6                               | 13,5    | 17                   | 20                   | 67 26 06 ...                 | M 6                               |                        | 15 | 20 30 | 70          | 26                           | 15                   | 13                   | 6       |
| 67 26 08                     | M 8                               | 11      | 17                   | 20                   | 67 26 08 ...                 | M 8                               |                        | 15 | 20 30 |             |                              |                      |                      |         |

... Please indicate here the desired length of screw e.g. 020 for l = 20 mm.

## Knurl Nuts

DIN 6303 from Steel respectively  
Stainless Steel

34

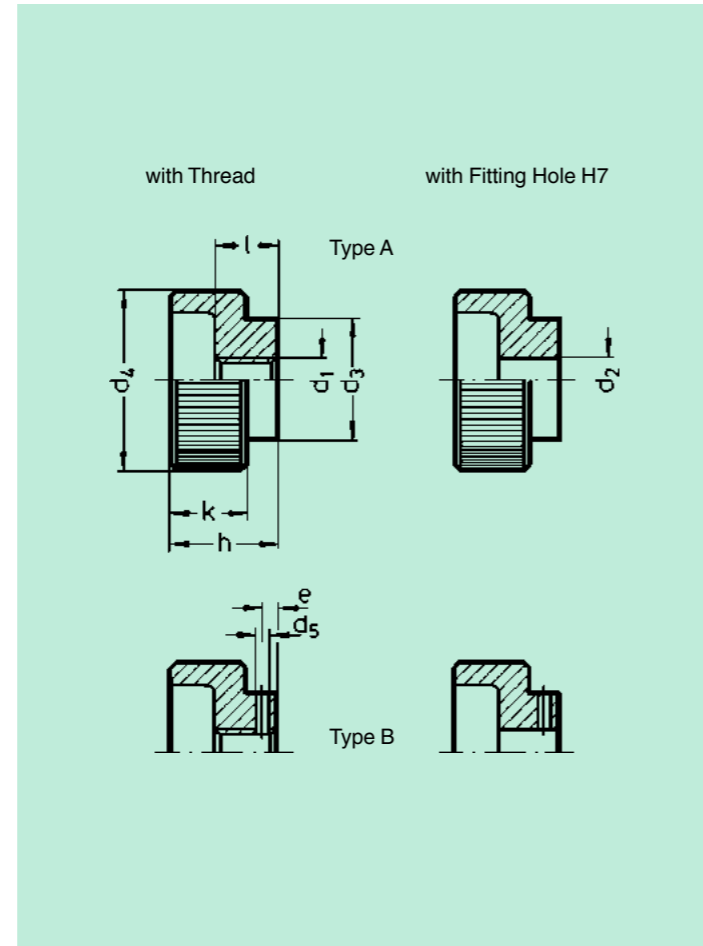
INOX



**Model:** Steel black oxide finished resp. stainless steel. With thread or fitting hole H7.

**Type A:** without Pin Hole.

**Type B:** with Pin Hole.



### Knurl Nuts DIN 6303 with Thread

| Order No.<br>Steel<br>Type A | Order No.<br>Steel<br>Type B | Order No.<br>Stainless Steel,<br>Material No. 1.4305<br>Type A | Thread<br>d <sub>1</sub><br>mm | d <sub>3</sub><br>mm | d <sub>4</sub><br>mm | d <sub>5</sub> H11<br>mm | e<br>mm | h<br>mm | k<br>mm | l<br>mm |
|------------------------------|------------------------------|--|--------------------------------|----------------------|----------------------|--------------------------|---------|---------|---------|---------|
| 32 20 05 A                   | 32 20 05 B                   | 32 20 05 A E0A   | M 5                            | 14                   | 20                   | 1,5                      | 2,5     | 12      | 8       | 7       |
| 32 24 06 A                   | 32 24 06 B                   | 32 24 06 A E0A   | M 6                            | 16                   | 24                   | 1,5                      | 2,5     | 14      | 10      | 8       |
| 32 30 08 A                   | 32 30 08 B                   | 32 30 08 A E0A   | M 8                            | 20                   | 30                   | 2                        | 3       | 17      | 12      | 10      |
| 32 36 10 A                   | 32 36 10 B                   | 32 36 10 A E0A   | M 10                           | 28                   | 36                   | 3                        | 4       | 20      | 14      | 12      |
| 32 40 12 A                   | 32 40 12 B                   |  | M 12                           | 32                   | 40                   | 4                        | 4       | 24      | 16      | 14      |

### Knurl Nuts DIN 6303 with Fitting Hole H7

| Order No.<br>Steel<br>Type A | Order No.<br>Steel<br>Type B | Fitting Hole<br>d <sub>2</sub> H7<br>mm | d <sub>3</sub><br>mm | d <sub>4</sub><br>mm | d <sub>5</sub> H11<br>mm | e<br>mm | h<br>mm | k<br>mm | l<br>mm |
|------------------------------|------------------------------|---|----------------------|----------------------|--------------------------|---------|---------|---------|---------|
| 32 20 05 PBGA                | 32 20 05 PBGB                | B 5                                     | 14                   | 20                   | 1,5                      | 2,5     | 12      | 8       | 7       |
| 32 24 06 PBGA                | 32 24 06 PBGB                | B 6                                     | 16                   | 24                   | 1,5                      | 2,5     | 14      | 10      | 8       |
| 32 30 08 PBGA                | 32 30 08 PBGB                | B 8                                     | 20                   | 30                   | 2                        | 3       | 17      | 12      | 10      |
| 32 36 10 PBGA                | 32 36 10 PBGB                | B 10                                    | 28                   | 36                   | 3                        | 4       | 20      | 14      | 12      |
| 32 40 12 PBGA                | 32 40 12 PBGB                | B 12                                    | 32                   | 40                   | 4                        | 4       | 24      | 16      | 14      |

## Flat Knurl Nuts/Screws

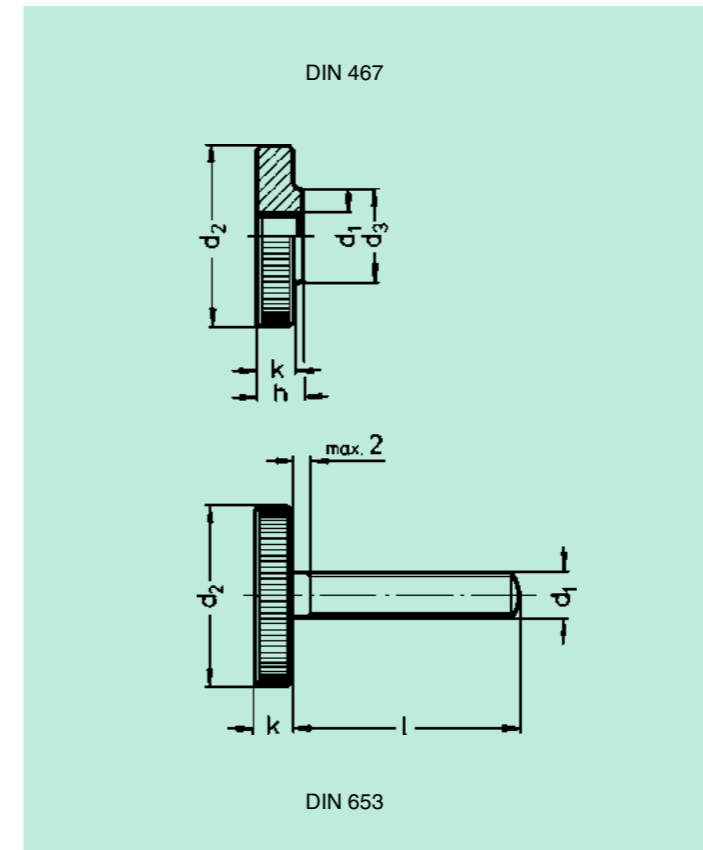
DIN 467 resp. DIN 653

35



**Model:** Steel, stability class 5.8, visible fine turning end surface, black oxide finished.

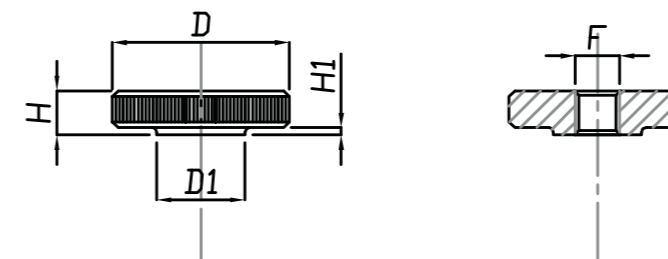
Also available from polyamide.



### Flat Knurl Nuts/Screws

| Order No.<br>Internal Thread | Internal Thread<br>d <sub>1</sub> | Order No.<br>External Thread | External Thread<br>d <sub>1</sub> | Length of Screw l (mm) |    |    |    | Size<br>d <sub>2</sub><br>mm | d <sub>3</sub><br>mm | h<br>mm | k<br>mm |
|------------------------------|-----------------------------------|------------------------------|-----------------------------------|------------------------|----|----|----|------------------------------|----------------------|---------|---------|
| 52 12 03                     | M 3                               | 52 12 03 ...                 | M 3                               | 6                      | 10 | 16 |    | 12                           | 6                    | 3       | 2,5     |
| 52 16 04                     | M 4                               | 52 16 04 ...                 | M 4                               | 8                      | 10 | 12 | 16 | 16                           | 8                    | 4       | 3,5     |
| 52 20 05                     | M 5                               | 52 20 05 ...                 | M 5                               | 10                     | 12 | 16 | 20 | 20                           | 10                   | 5       | 4       |
| 52 24 06                     | M 6                               | 52 24 06 ...                 | M 6                               | 12                     | 16 | 20 | 30 | 24                           | 12                   | 6       | 5       |
| 52 30 08                     | M 8                               | 52 30 08 ...                 | M 8                               | 16                     | 20 | 25 | 30 | 30                           | 16                   | 8       | 6       |
| 52 36 10                     | M 10                              | 52 36 10 ...                 | M 10                              | 20                     | 25 | 30 | 40 | 36                           | 20                   | 10      | 8       |

... Please indicate here the desired length of screw e.g. 020 for l = 20 mm.



| CODICE - CODE | descrizione - description | DIMENSIONI PRINCIPALI - MAIN DIMENSIONS |    |    |    |   |
|---------------|---------------------------|---|----|----|----|---|
|               |                           | D                                       | D1 | F  | H1 | H |
| 3034          | VOLANTINO FEMMINA M5      | 20                                      | 10 | M5 | 1  | 5 |
| 3035          | VOLANTINO FEMMINA M6      | 24                                      | 12 | M6 | 1  | 6 |
| 3036          | VOLANTINO FEMMINA M8      | 30                                      | 16 | M8 | 2  | 8 |

• Material: stainless steel 1.4305 (1.4301 and 1.4401 on request)

## Elevated Knurl Nuts/Screws

from Steel resp. Stainless Steel  
DIN 466 resp. 464

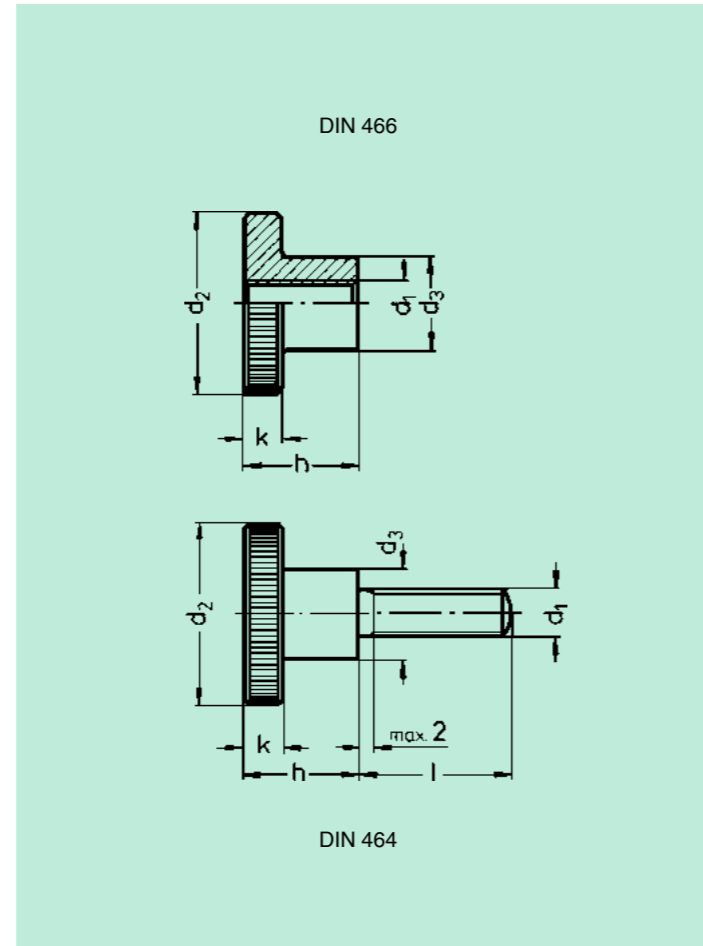
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INOX



**Model:** Steel, stability class 5.8, visible fine turning end surface, black oxide finished. Stainless steel 1.4305, matt finished.

Also available from polyamide.



### Elevated Knurl Nuts/Screws - Steel

| Order No. | Internal Thread | Order No.    | External Thread | Length of Screw l (mm) | Size d <sub>2</sub> mm | d <sub>3</sub> mm | h mm | k mm |
|-----------|-----------------|--------------|-----------------|------------------------|------------------------|-------------------|------|------|
| 36 12 03  | M 3             | 36 12 03 ... | M 3             | 6                      | 12                     | 6                 | 7,5  | 2,5  |
| 36 16 04  | M 4             | 36 16 04 ... | M 4             | 5                      | 16                     | 8                 | 9,5  | 3,5  |
| 36 20 05  | M 5             | 36 20 05 ... | M 5             | 6                      | 20                     | 10                | 11,5 | 4    |
| 36 24 06  | M 6             | 36 24 06 ... | M 6             | 8                      | 24                     | 12                | 16   | 5    |
| 36 30 08  | M 8             | 36 30 08 ... | M 8             | 12                     | 30                     | 16                | 18   | 6    |
| 36 36 10  | M 10            | 36 36 10 ... | M 10            | 16                     | 36                     | 20                | 23   | 8    |

... Please indicate here the desired length of screw e.g. 020 for l = 20 mm.

### Elevated Knurl Nuts/Screws - Stainless Steel

| Order No.    | Internal Thread | Order No.        | External Thread | Length of Screw l (mm) | Size d <sub>2</sub> mm | d <sub>3</sub> mm | h mm | k mm |
|--------------|-----------------|------------------|-----------------|------------------------|------------------------|-------------------|------|------|
| 36 16 04 E0A | M 4             | 36 16 04 ... E0A | M 4             | 8                      | 16                     | 8                 | 9,5  | 3,5  |
| 36 20 05 E0A | M 5             | 36 20 05 ... E0A | M 5             | 10                     | 20                     | 10                | 11,5 | 4    |
| 36 24 06 E0A | M 6             | 36 24 06 ... E0A | M 6             | 12                     | 24                     | 12                | 16   | 5    |
| 36 30 08 E0A | M 8             | 36 30 08 ... E0A | M 8             | 16                     | 30                     | 16                | 18   | 6    |

... Please indicate here the desired length of screw e.g. 020 for l = 20 mm.

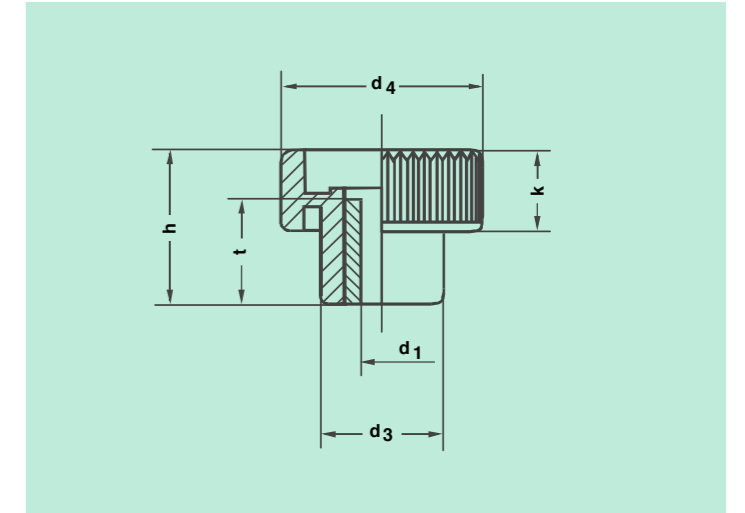
## Knurl Nuts

threaded through-bore

INOX



**Model:** Body from polyamide PA 6. Bush from brass resp. from stainless steel.



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### Knurl Nuts threaded through-bore

| Order No. Bush from brass | Order No. Bush from Stainless Steel | Internal Thread d <sub>1</sub> | d <sub>3</sub> mm | d <sub>4</sub> mm | h mm | t mm | k mm |
|---------------------------|-------------------------------------|--------------------------------|-------------------|-------------------|------|------|------|
| 57 20 04 E5A              |                                     | M 4                            | 12                | 20                | 13   | 11   | 8    |
| 57 20 05 E5A              | 57 20 05 E0A                        | M 5                            |                   |                   |      |      |      |
| 57 25 06 E5A              | 57 25 06 E0A                        | M 6                            | 15                | 25                | 19   | 14   | 9    |
| 57 30 08 E5A              | 57 30 08 E0A                        | M 8                            | 18                | 30                | 21   | 14   | 11   |
| 57 35 10 E5A              | 57 35 10 E0A                        | M 10                           | 21                | 35                | 28   | 17   | 13   |

## Knurl Nuts/Screws

resp. Height Adjusters rough



**Model:** Body from plastic PA 6, black polished. Bush from brass. Screw from steel, zinc-plated.

Other colours on request.

### Knurl Nuts/Screws resp. Height Adjusters, rough knurl

| Order No. Internal Thread | Internal Thread d <sub>2</sub> | Thread Depth t | d <sub>3</sub> mm | h mm | Order No. External Thread | External Thread d <sub>1</sub> | Length of Screw l (mm) | Size d <sub>4</sub> mm | k mm |
|---------------------------|--------------------------------|----------------|-------------------|------|---------------------------|--------------------------------|------------------------|------------------------|------|
|                           |                                |                |                   |      | 27 30 05 ... A            | M 5                            | 20                     | 30                     | 10   |
| 27 30 06 A                | M 6                            | 9              | 16                | 14   | 27 30 06 ... A            | M 6                            | 16                     | 20                     | 30   |
| 27 30 08 A                | M 8                            | 12             | 16                | 14   | 27 30 08 ... A            | M 8                            | 16                     | 20                     | 30   |

... Please indicate here the desired length of screw e.g. 020 for l = 20 mm.