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From more than 300 different standard types of fixing for assembly of the heat sink and for assembly of your components, you can find economical solutions here.

Spacer bolts, clips and heat-conducting adhesives for fixing semiconductors offer you secure and simple means of fixing assemblies.

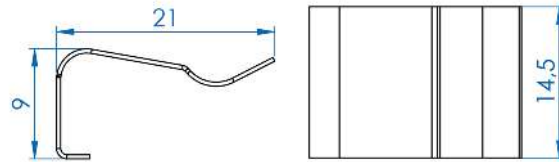
If you are unable to find the solution you are looking for in this catalogue, please call us up.

We are constantly expanding our range of products, and you can also get the latest information by visiting our website at [www.alutronic.de](http://www.alutronic.de)

Alutronic mounting clips are particularly beneficial if you are fixing electronic components on heat sinks in constrained installation situations. Another significant benefit is the shorter installation time compared to screw assembly and the uniform, central contact pressure of the semiconductor on the heat sink. This ensures optimal heat transfer as a result of which local temperature differences can be reduced in the semiconductor. Unequal distribution of force by the centrally applied force of the screw connection is avoided, as a result of which stresses in the semiconductor housing are minimised.

### MC 797

Fits to all Alutronic heat sink with clip groove.



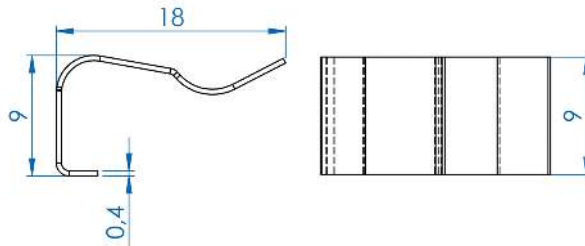
For Casing: **TO 218, TOP 3**

Material: **Spring steel**

Surface: **burnished**

### MC 725

Fits to all Alutronic heat sink with clip groove.



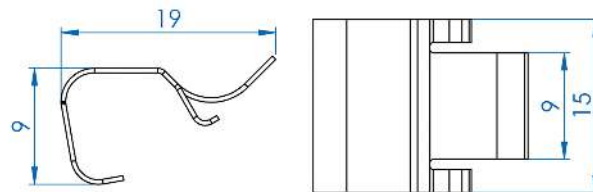
For Casing: **TO 220**

Material: **Spring steel**

Surface: **burnished**

### MC 726

Fits to all Alutronic heat sink with clip groove.



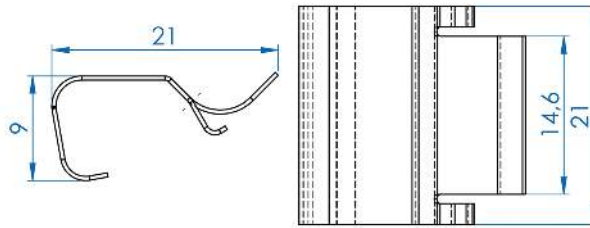
For Casing: **TO 220**

Material: **Spring steel**

Surface: **burnished**

## MC 773

Fits to all Alutronic heat sink with clip groove.



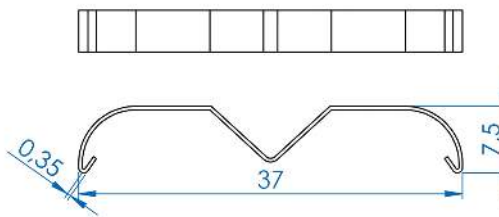
For Casing: **TO 218, TOP 3**

Material: **Spring steel**

Surface: **burnished**

## MC 28

Mounting Clip for heat sink PR 28

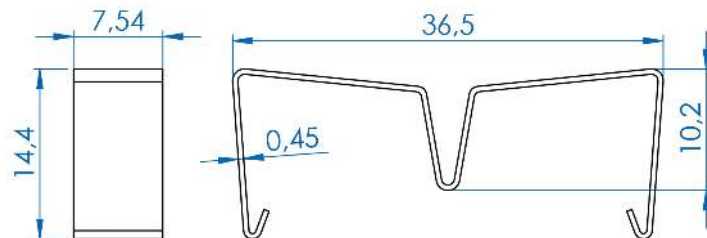


Material: **Spring steel**

Surface: **burnished**

## MC 31

Mounting Clip for heat sink PR 31

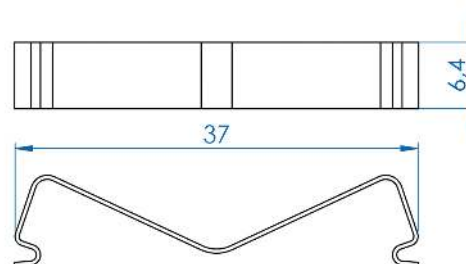


Material: **Spring steel**

Surface: **galvanized**

## MC 32

Mounting Clip for heat sink PR 32

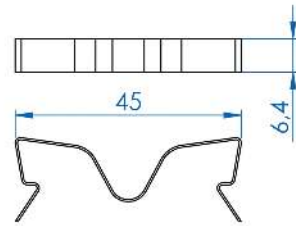
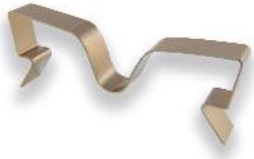


Material: **Spring steel**

Surface: **burnished**

## MC 33

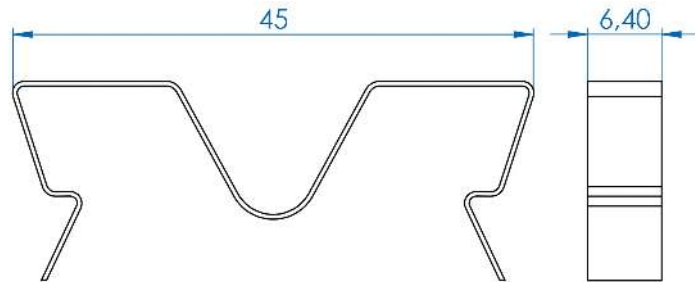
Mounting Clip for heatsink PR 33



Material: **Spring steel**

Surface: **burnished**

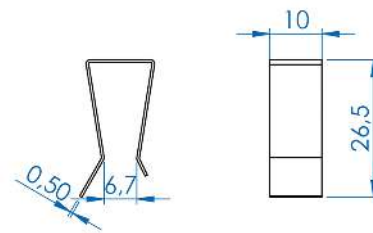
## MC 34



Material: **Stainless steel**

Surface:

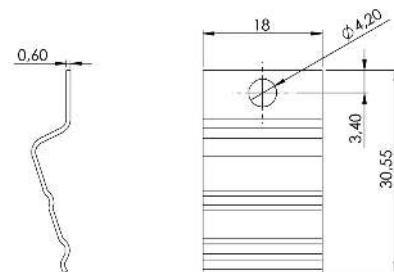
## MC 740



Material: **Spring steel**

Surface: **galvanized**

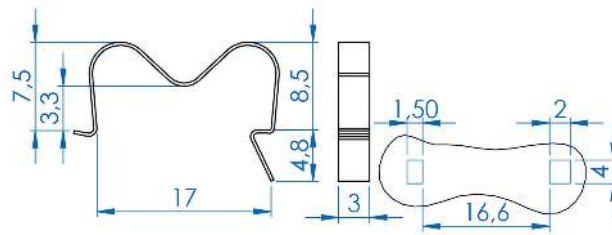
## MC 747



Material: **Stainless steel**

Surface: **Blank**

## MC 780

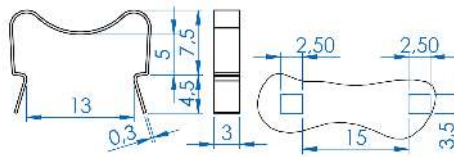


For Casing: **TO 220**

Material: **Stainless steel**

Surface: **Blank**

## MC 782

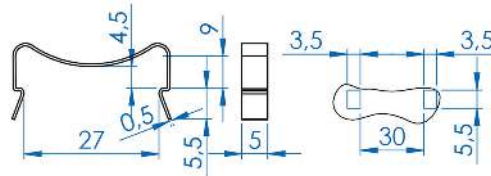


For Casing: **TO 220**

Material: **Stainless steel**

Surface: **Blank**

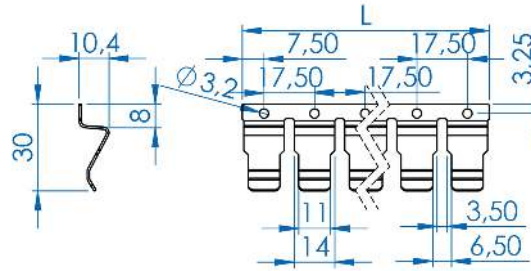
## MC 786



For Casing: **TO 218, TOP 3**

Surface: **Blank**

## MCU



For Casing: **TO 218, TO 220, TO 247, TO 264, TO 264, SOT 32, SIP Multi-watt** Material: **Stainless steel**

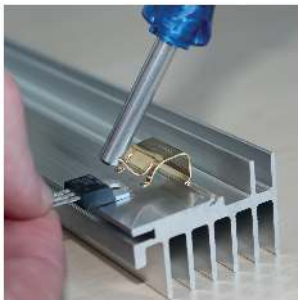
Surface:

| article | Clip length (L) [mm] | Number of clips |
|---------|----------------------|-----------------|
| MC U1   | 15                   | 1               |
| MC U2   | 32.5                 | 2               |
| MC U3   | 50                   | 3               |
| MC U4   | 67.5                 | 4               |
| MC U5   | 85                   | 5               |
| MC U6   | 102.5                | 6               |
| MC U7   | 120                  | 7               |
| MC U8   | 137.5                | 8               |
| MC U9   | 155                  | 9               |
| MC U10  | 172.5                | 10              |

## Multi-Tool \*Clips\*

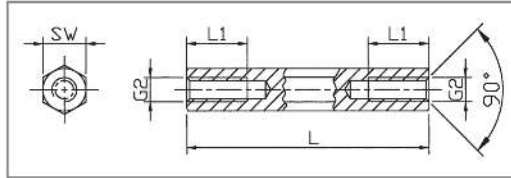
Practical tool for installation of clips from Alutronic

The Alutronic clip tool is suitable for all Alutronic mounting clips of type MC725, MC726, MC773 and MC797. Just like a screwdriver, you can hold the tool comfortably in your hand.



## BRASS, METRIC THREAD

**Spacer bolts**  
**Type** hexagonal  
**Styles** internal / internal  
**Material** Brass 2.0401  
**Surface** nickel plated (E2E)



Thread lengths [mm]

| L       | L1 bei M2 | L1 bei M2,5 bis M8 |
|---------|-----------|--------------------|
| 5       | 5         | 5                  |
| 6       | 6         | 6                  |
| 8       | 8         | 8                  |
| 10      | 10        | 10                 |
| 12      | 6         | 12                 |
| 15      | 6         | 15                 |
| 18      | 6         | 9                  |
| from 20 | 6         | 10                 |

Minimum tensile strength: 430 N/mm<sup>2</sup>  
 Tolerance for length dimensions: +/- 0,1 mm

Lengths [mm]

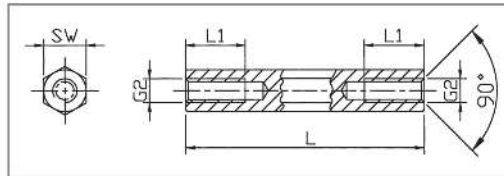
| Order No. | SW (hexagonal) | Thread | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|-----------|----------------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| DI 656    | SW 4           | M2     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 662    | SW 4           | M2,5   | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 648    | SW 5           | M2,5   | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |    |    |    |    |    |    |    |     |
| DI 650    | SW 5           | M3     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |    |    |    |    |    |    |    |     |
| DI 652    | SW 5,5         | M3     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 425    | SW 6           | M3     | 05 |    | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 651    | SW 7           | M4     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 664    | SW 8           | M5     |    |    | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 663    | SW 10          | M6     |    |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 426    | SW 13          | M8     |    |    |    |    |    | 15 |    | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |

**Ordering example:** DI 656/18

## STEEL, METRIC THREAD

**Spacer bolts**

**Type** hexagonal  
**Styles** internal / internal  
**Material** Steel 1.0718  
**Surface** zinc plated (A3F)  
 (optional also blank)



Internal thread lengths [mm]

| L       | L1 bel M2 | L1 at M2,5 to M5 | L1 bel M6 | L1 bel M8 |
|---------|-----------|------------------|-----------|-----------|
| 5       | 5         | 5                | 5         |           |
| 8       | 8         | 8                | 8         |           |
| 10      | 10        | 10               | 10        |           |
| 12      | 6         | 12               | 12        |           |
| 15      | 6         | 15               | 15        | 15        |
| 18      | 6         | 9                | 9         |           |
| 20      | 6         | 10               | 10        | 20        |
| from 30 | 6         | 10               | 12        | 14        |

Minimum tensile strength: 500 N/mm<sup>2</sup>  
 Tolerance for length dimensions: +/- 0,1 mm  
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

| Order No. | SW (hexagonal) | Thread | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|-----------|----------------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| DI 619    | SW 4           | M2     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 |    |    |    |    |    |    |    |    |    |    |    |     |
| DI 602    | SW 4           | M2,5   | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 |    |    |    |    |    |    |    |    |    |    |    |     |
| DI 613    | SW 5           | M2,5   | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 612    | SW 5           | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 642    | SW 5,5         | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 640    | SW 6           | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 668    | SW 7           | M4     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 641    | SW 8           | M4     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 646    | SW 8           | M5     |    | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 657    | SW 10          | M6     |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 427    | SW 13          | M8     |    |    |    |    | 15 |    | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |

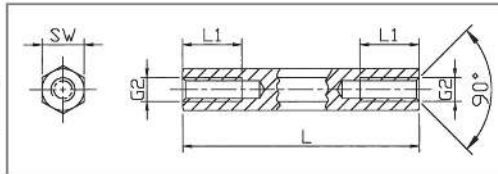
**Ordering example:** DI 619/12



## STAINLESS STEEL, METRIC THREAD

**Spacer bolts**

**Type** hexagonal  
**Styles** internal / internal  
**Material** Stainless steel 1.4305



Internal thread lengths [mm]

| L       | M2.5+M3 | M4 | M5 | M6 | M8 |
|---------|---------|----|----|----|----|
| 5       | 5       | 5  |    |    |    |
| 8       | 8       | 8  | 8  |    |    |
| 10      | 10      | 10 | 10 | 10 |    |
| 12      | 12      | 12 | 12 | 12 |    |
| 15      | 7       | 15 | 15 | 15 | 15 |
| 18      | 7       | 9  | 9  | 9  | 18 |
| 20      | 7       | 9  | 10 | 10 | 20 |
| 25      | 7       | 9  | 10 | 12 | 12 |
| from 30 | 7       | 9  | 10 | 12 | 14 |

Minimum tensile strength: 750 N/mm<sup>2</sup>  
 Tolerance for length dimensions: +/- 0,1 mm  
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

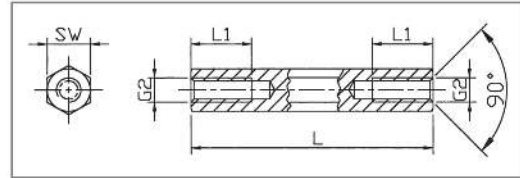
| Order No. | SW (hexagonal) | Thread | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|-----------|----------------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| DI 428    | SW 5           | M2,5   | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |    |    |    |    |    |    |    |     |
| DI 670    | SW 5,5         | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 671    | SW 7           | M4     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 672    | SW 8           | M5     |    | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 673    | SW 10          | M6     |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 429    | SW 13          | M8     |    |    |    |    | 15 |    | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    | 60 |    | 70 |    | 80 |    | 90 |    | 100 |

**Ordering example:** DI 672/20

## ALUMINIUM, METRIC THREAD

**Spacer bolts**

**Type** hexagonal  
**Styles** internal / internal  
**Material** Aluminium 3.1655



Internal thread lengths [L1 in mm]

| L       | M2.5+M3 | M4 | M5 | M6 | M8 |
|---------|---------|----|----|----|----|
| 5       | 5       | 5  |    |    |    |
| 8       | 8       | 8  | 8  |    |    |
| 10      | 10      | 10 | 10 | 10 |    |
| 12      | 12      | 12 | 12 | 12 |    |
| 15      | 7       | 15 | 15 | 15 | 15 |
| 18      | 7       | 9  | 9  | 9  | 18 |
| 20      | 7       | 9  | 10 | 10 | 20 |
| 25      | 7       | 9  | 10 | 12 | 12 |
| from 30 | 7       | 9  | 10 | 12 | 14 |

Minimum tensile strength: 310 N/mm<sup>2</sup>  
 Tolerance for length dimensions: +/- 0,1 mm  
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

| Order No. | SW (hexagonal) | Thread | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|-----------|----------------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| DI 500    | SW 5           | M2,5   | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |    |    |    |    |    |    |    |     |
| DI 513    | SW 5,5         | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 504    | SW 6           | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 505    | SW 7           | M4     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 511    | SW 8           | M5     |    | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 501    | SW 10          | M6     |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 512    | SW 13          | M8     |    |    |    |    | 15 |    | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    | 60 |    | 70 |    | 80 |    | 90 |    | 100 |

**Ordering example:** DI 500/12

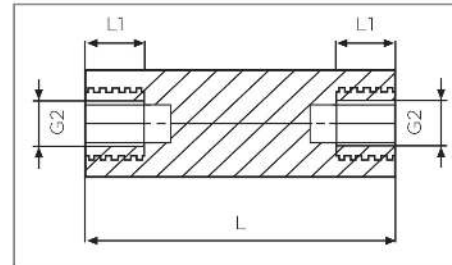
## POLYAMIDE, BRASS THREAD

**Spacer bolts**  
**Type** hexagonal  
**Styles** internal / internal  
**Material** Body: Polyamide 6.6  
 Thread: Brass, nickel plated  
**Flammability Rating** V2  
**Colour** white

Contact resistance:  $10^{12}$  Ohm/cm  
 Dielectric strength: 50 kV/mm  
 Tolerance for length dimensions: +/- 0,1 mm

| Order No. | SW (hexagonal) | Thread | Lengths (L) in mm increments |
|-----------|----------------|--------|------------------------------|
| DI 678    | SW 6           | M2,5   | 15-65                        |
| DI 679    | SW 6           | M3     | 15-65                        |
| DI 680    | SW 8           | M4     | 15-65                        |
| DI 681    | SW 10          | M5     | 15-70                        |

**Note:** The pull-out strength and torques may vary depending on application and ambient influences (e.g. temperature, air humidity, etc.). for critical applications please carry out trials. Alutronic does not assume any liability for the specified strength values.



### Strength / resistance values

| Thread lengths [mm] |    | Torques [Nm] |        |        | Pull-out torques [N] |        |       |
|---------------------|----|--------------|--------|--------|----------------------|--------|-------|
| G1=G2               | L1 | SW           | Thread | Torque | SW                   | Thread | Force |
| M2,5                | 6  | SW6          | M2,5   | 1,3    | SW6                  | M2,5   | 300   |
| M3                  | 6  | SW6          | M3     | 1,3    | SW6                  | M3     | 300   |
| M4                  | 6  | SW8          | M4     | 3,0    | SW8                  | M4     | 600   |
| M5                  | 6  | SW10         | M5     | 4,5    | SW10                 | M5     | 800   |

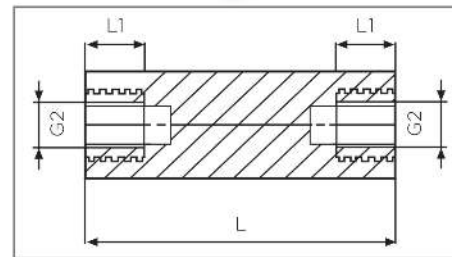
## POLYAMIDE, BRASS THREAD

**Spacer bolts**  
**Type** hexagonal  
**Styles** internal / internal  
**Material** Body: Polyamide 6.6  
 Thread: Brass, blank  
**Flammability Rating** V2  
**Colour** natural

Contact resistance:  $10^{12}$  Ohm/cm  
 Dielectric strength: 50 kV/mm  
 Tolerance for length dimensions: +/- 0,1 mm

| Order No. | SW (hexagonal) | Thread | Lengths (L) in mm increments |
|-----------|----------------|--------|------------------------------|
| DI 581    | SW 13          | M6     | 25-100                       |
| DI 582    | SW 15          | M8     | 25-100                       |

**Note:** The pull-out strength and torques may vary depending on application and ambient influences (e.g. temperature, air humidity, etc.). for critical applications please carry out trials. Alutronic does not assume any liability for the specified strength values.

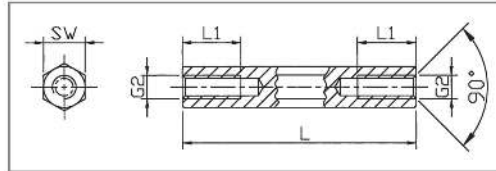


### Strength / resistance values

| Thread lengths [mm] |    | Torques [Nm] |        |        | Pull-out torques [N] |        |       |
|---------------------|----|--------------|--------|--------|----------------------|--------|-------|
| G1=G2               | L1 | SW           | Thread | Torque | SW                   | Thread | Force |
| M6                  | 11 | SW13         | M6     | 12,0   | SW13                 | M6     | 1000  |
| M8                  | 11 | SW15         | M8     | 18,0   | SW15                 | M8     | 1600  |

**POLYAMIDE, METRIC THREAD**

**Spacer bolts**  
**Type** hexagonal  
**Styles** internal / internal  
**Material** Polyamid 6.0 GV  
**Flammability Rating** HB  
**Colour** black



| Thread G2 | L (mm)  | L1 (mm)         |
|-----------|---------|-----------------|
| M2/M2,5   | to 14   | Dead-end thread |
|           | 15-20   | half length     |
|           | from 21 | 10              |
| M3        | to 15   | Dead-end thread |
|           | 16-20   | half length     |
|           | from 21 | 10              |
| M4/M5/M6  | to 20   | Dead-end thread |
|           | from 21 | 10              |

Contact resistance DIN 53 482: >10<sup>12</sup> Ohm/cm  
 Dielectric strength DIN 54 481: 40 kV/mm  
 Tolerance for length dimensions: +/- 0,1 mm

| Order No. | SW (hexagonal) | Thread | Standard lengths in mm-increments |
|-----------|----------------|--------|-----------------------------------|
| DI 635    | SW 5           | M2     | von 5 mm bis 45 mm                |
| DI 637    | SW 5           | M2,5   | von 4 mm bis 55 mm                |
| DI 636    | SW 6           | M3     | von 5 mm bis 65 mm                |
| DI 639    | SW 8           | M4     | von 5 mm bis 68 mm                |
| DI 632    | SW 10          | M5     | von 5 mm bis 65 mm                |
| DI 633    | SW 10          | M6     | von 4 mm bis 65 mm                |

**Ordering example:** DI 635/11

## BRASS, SELF-TAPPING THREAD

**Spacer bolts**  
**Type** hexagonal  
**Styles** internal / external with undercut  
**Material** Brass 2.0401  
**Surface** nickel plated (E2E)

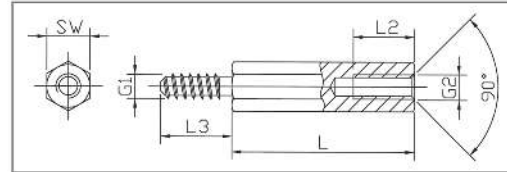


External thread G1 [mm]

| Thread size | I3 | d1  | d2  |
|-------------|----|-----|-----|
| ST2,2       | 5  | 2,1 | 1,6 |
| ST2,9       | 6  | 2,8 | 2,1 |
| ST3,3       | 6  | 3,2 | 2,3 |
| ST3,5       | 7  | 3,4 | 2,6 |
| ST4,2       | 8  | 4,1 | 3,0 |
| ST4,8       | 8  | 4,7 | 3,5 |
| ST6,3       | 10 | 6,1 | 4,8 |

Internal thread G2 [mm]

| L (mm) | I2 (mm) |
|--------|---------|
| 8      | 5       |
| 10     | 6       |
| 12     | 7       |
| 15     | 10      |
| 20     | 10      |



Styles DIA / internal / external

Tolerance for length dimensions: +/- 0,1 mm

Standardlengths [mm]

| Order No. | SW (mm) | Thread size G1 | Thread size G2 | 08 | 10 | 12 | 15 | 20 |
|-----------|---------|----------------|----------------|----|----|----|----|----|
| DI 520    | 5       | ST2,2          | M2,5           | 08 | 10 | 12 | 15 | 20 |
| DI 531    | 5,5     | ST2,9          | M3             | 08 | 10 | 12 | 15 | 20 |
| DI 521    | 5,5     | ST3,3          | M3             | 08 | 10 | 12 | 15 | 20 |
| DI 538    | 6       | ST3,5          | M3             | 08 | 10 | 12 | 15 | 20 |
| DI 539    | 7       | ST4,2          | M4             | 08 | 10 | 12 | 15 | 20 |
| DI 532    | 8       | ST4,8          | M5             | 08 | 10 | 12 | 15 | 20 |
| DI 533    | 10      | ST6,3          | M6             |    | 10 | 12 | 15 | 20 |

**Ordering example:** DI 520/15

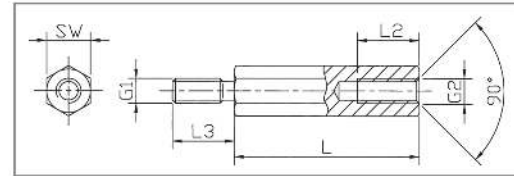
## BRASS, METRIC THREAD

**Spacer bolts**  
**Type** hexagonal  
**Styles** internal / external  
 with undercut

**Material** Brass 2.0401  
**Surface** nickel plated (E2E)



(Illustration: Brass blank, optional bl.)



Internal thread lengths [mm]

External thread lengths [mm]

| L       | L2 bei M2 | L2 at M2,5 to M5 | L2 at M6 | G1=G2 | L3  |
|---------|-----------|------------------|----------|-------|-----|
| 5       | 3         | 3                |          | M2    | 5   |
| 6       | 4         | 4                |          | M2,5  | 6   |
| 8       | 5         | 5                |          | M3    | 6+8 |
| 10      | 6         | 6                | 6        | M4    | 8   |
| 12      | 6         | 7                | 7        | M5    | 8   |
| 15      | 6         | 10               | 10       | M6    | 10  |
| 18      | 6         | 10               | 10       |       |     |
| from 20 | 6         | 10               | 12       |       |     |

Minimum tensile strength: 430 N/mm<sup>2</sup>  
 Tolerance for length dimensions: +/- 0,1 mm

Lengths [mm]

| Order No. | SW (hexagonal) | Thread | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|-----------|----------------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| DI 658    | SW 4           | M2     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 667    | SW 4           | M2,5   | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 649    | SW 5           | M2,5   | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |    |    |    |    |    |    |    |     |
| DI 653    | SW 5           | M3     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |    |    |    |    |    |    |    |     |
| DI 655    | SW 5,5         | M3     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 430    | SW 6           | M3     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 654    | SW 7           | M4     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 665    | SW 8           | M5     |    |    | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 431    | SW 10          | M6     |    |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 992    | SW 13          | M8     |    |    |    |    |    | 15 |    | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |

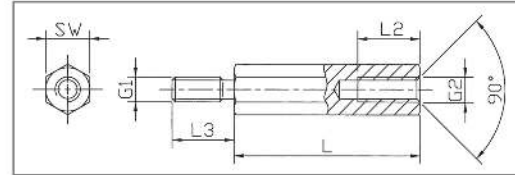
**Ordering example:** DI 658/10

## STEEL, METRIC THREAD

**Spacer bolts**  
**Type** hexagonal  
**Styles** internal / external  
 with undercut



**Material** Steel 1.0718  
**Surface** zinc plated (A3F)



Internal thread lengths [mm]

External thread lengths [mm]

| L       | L2 at M2 | L2 at M2,5 to M5 | L2 at M6 | L2 at M8 | G1=G2 | L3 |
|---------|----------|------------------|----------|----------|-------|----|
| 5       | 3        | 3                |          |          | M2    | 5  |
| 8       | 5        | 5                |          |          | M2,5  | 6  |
| 10      | 6        | 6                | 6        |          | M3    | 6  |
| 12      | 6        | 7                | 7        |          | M4    | 8  |
| 15      | 6        | 10               | 10       | 10       | M5    | 8  |
| 18      | 6        | 10               | 10       |          | M6    | 10 |
| from 20 | 6        | 10               | 12       | 14       | M8    | 14 |

Minimum tensile strength: 500 N/mm<sup>2</sup>  
 Tolerance for length dimensions: +/- 0,1 mm  
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

| Order No. | SW (hexagonal) | Thread | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|-----------|----------------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| DI 432    | SW 4           | M2     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 |    |    |    |    |    |    |    |    |    |    |    |     |
| DI 433    | SW 4           | M2,5   | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 |    |    |    |    |    |    |    |    |    |    |    |     |
| DI 434    | SW 5           | M2,5   | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 701    | SW 5           | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 645    | SW 5,5         | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 643    | SW 6           | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 669    | SW 7           | M4     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 644    | SW 8           | M4     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 647    | SW 8           | M5     |    | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 659    | SW 10          | M6     |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 435    | SW 13          | M8     |    |    |    |    | 15 |    | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |

**Ordering example:** DI 679/30

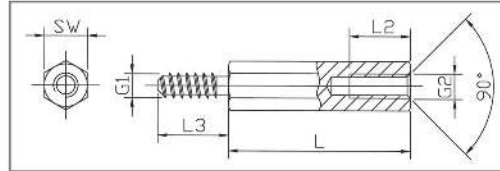
## STEEL, SELF-TAPPING THREAD

**Spacer bolts**

**Type** hexagonal  
**Styles** internal / external with undercut



**Material** Steel 1.0718  
**Surface** zinc plated (A3F)



External thread G1 [mm]

Internal thread G2 [mm]

| Thread size | I3 | d1  | d2  | L (mm) | I2 (mm) |
|-------------|----|-----|-----|--------|---------|
| ST2,2       | 5  | 2,1 | 1,6 | 8      | 5       |
| ST2,9       | 6  | 2,8 | 2,1 | 10     | 6       |
| ST3,3       | 6  | 3,2 | 2,3 | 12     | 7       |
| ST3,5       | 7  | 3,4 | 2,6 | 15     | 10      |
| ST4,2       | 8  | 4,1 | 3,0 | 20     | 10      |
| ST4,8       | 8  | 4,7 | 3,5 |        |         |
| ST6,3       | 10 | 6,1 | 4,8 |        |         |

Tolerance for length dimensions: +/- 0,1 mm

Standardlengths [mm]

| Order No. | SW (mm) | Thread size G1 | Thread size G2 | 08 | 10 | 12 | 15 | 20 |
|-----------|---------|----------------|----------------|----|----|----|----|----|
| DI 691    | 5       | ST2,2          | M2,5           | 08 | 10 | 12 | 15 | 20 |
| DI 692    | 5,5     | ST2,9          | M3             | 08 | 10 | 12 | 15 | 20 |
| DI 690    | 5,5     | ST3,3          | M3             | 08 | 10 | 12 | 15 | 20 |
| DI 693    | 6       | ST3,5          | M3             | 08 | 10 | 12 | 15 | 20 |
| DI 694    | 7       | ST4,2          | M4             | 08 | 10 | 12 | 15 | 20 |
| DI 695    | 8       | ST4,8          | M5             | 08 | 10 | 12 | 15 | 20 |
| DI 696    | 10      | ST6,3          | M6             |    | 10 | 12 | 15 | 20 |

**Ordering example:** DI 691/15

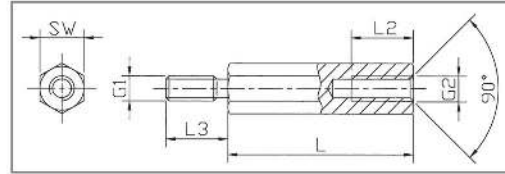


## STAINLESS STEEL, METRIC THREAD

**Spacer bolts**  
**Type** hexagonal  
**Styles** internal / external  
 with undercut



**Material** Stainless steel 1.4305



Internal thread lengths [L2 in mm]

External thread lengths [L3 in mm]

| L       | M2.5+M3 | M4 | M5 | M6 | M8 | G1=G2 | L3 |
|---------|---------|----|----|----|----|-------|----|
| 5       | 2,5     |    |    |    |    | M3    | 6  |
| 8       | 5       | 5  |    |    |    | M4    | 8  |
| 10      | 6       | 6  | 6  | 5  |    | M5    | 8  |
| 12      | 7       | 8  | 8  | 7  |    | M6    | 10 |
| 15      | 7       | 9  | 10 | 10 | 10 | M8    | 14 |
| 18      | 7       | 9  | 10 | 12 | 12 |       |    |
| from 20 | 7       | 9  | 10 | 12 | 14 |       |    |

Minimum tensile strength: 750 N/mm<sup>2</sup>  
 Tolerance for length dimensions: +/- 0,1 mm  
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

| Order No. | SW (hexagonal) | Thread | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|-----------|----------------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| DI 540    | SW 5           | M2,5   | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |    |    |    |    |    |    |    |     |
| DI 674    | SW 5,5         | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 675    | SW 7           | M4     |    | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 676    | SW 8           | M5     |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 677    | SW 10          | M6     |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 548    | SW 13          | M8     |    |    |    |    | 15 |    | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    | 60 |    | 70 |    | 80 |    | 90 |    | 100 |

**Ordering example:** DI 540/55

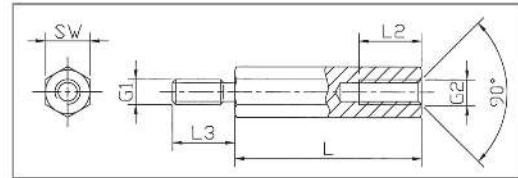
## ALUMINIUM, METRIC THREAD

**Spacer bolts**

**Type** hexagonal  
**Styles** internal / external with undercut



**Material** Aluminium 3.1655



Internal thread lengths [L2 in mm]

External thread lengths [L3 in mm]

| L       | M2.5+M3 | M4 | M5 | M6 | M8 | G1=G2 | L3 |
|---------|---------|----|----|----|----|-------|----|
| 5       | 2,5     |    |    |    |    | M3    | 6  |
| 8       | 5       | 5  |    |    |    | M4    | 8  |
| 10      | 6       | 6  | 6  | 5  |    | M5    | 8  |
| 12      | 7       | 8  | 8  | 7  |    | M6    | 10 |
| 15      | 7       | 9  | 10 | 10 | 10 | M8    | 14 |
| 18      | 7       | 9  | 10 | 12 | 12 |       |    |
| from 20 | 7       | 9  | 10 | 12 | 14 |       |    |

Minimum tensile strength: 310 N/mm<sup>2</sup>  
Tolerance for length dimensions: +/- 0,1 mm  
(applies to SW 13 : DIN 2768-m)

Lengths [mm]

| Order No. | SW (hexagonal) | Thread | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|-----------|----------------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| DI 502    | SW 5           | M2,5   | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |    |    |    |    |    |    |    |     |
| DI 503    | SW 5,5         | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |    |    |    |    |    |    |    |     |
| DI 506    | SW 6           | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 510    | SW 7           | M4     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 514    | SW 8           | M5     |    | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 507    | SW 10          | M6     |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 515    | SW 13          | M8     |    |    |    |    | 15 |    | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    | 60 |    | 70 |    | 80 |    | 90 |    | 100 |

**Ordering example:** DI 502/40

Internal/External

POLYAMIDE, BRASS THREAD

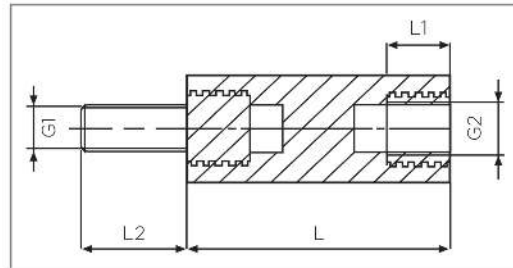
**Spacer bolts**  
**Type** hexagonal  
**Styles** internal / external  
 without undercut DIN 76  
**Material** Body: Polyamide 6.6  
 Thread: Messing nickel plated  
 white  
**Colour**  
**Flammability Rating** V2  
**Standard Pack** 100 pcs

Contact resistance: 10<sup>12</sup> Ohm/cm  
 Dielectric strength: 50 kV/mm  
 Tolerance for length dimensions: +/- 0,1 mm

| Order No. | SW (hexagonal) | Thread | Lengths (L) in mm increments |
|-----------|----------------|--------|------------------------------|
| DI 682    | SW 6           | M2,5   | 15-65                        |
| DI 683    | SW 6           | M3     | 15-65                        |
| DI 684    | SW 8           | M4     | 15-65                        |
| DI 685    | SW 10          | M5     | 15-70                        |

**Ordering example:** DI 684/17

**Note:** The pull-out strength and torques may vary depending on application and ambient influences (e.g. temperature, air humidity, etc.). for critical applications please carry out trials. Alutronic does not assume any liability for the specified strength values.



Strength / resistance values

| Thread lengths [mm] |    |    | Torques [Nm] |        |        | Pull-out torques [N] |        |       |
|---------------------|----|----|--------------|--------|--------|----------------------|--------|-------|
| G1=G2               | L1 | L2 | SW           | Thread | Torque | SW                   | Thread | Force |
| M2,5                | 6  | 6  | SW6          | M2,5   | 1,3    | SW6                  | M2,5   | 300   |
| M3                  | 6  | 6  | SW6          | M3     | 1,3    | SW6                  | M3     | 300   |
| M4                  | 6  | 8  | SW8          | M4     | 3,0    | SW8                  | M4     | 600   |
| M5                  | 6  | 10 | SW10         | M5     | 4,5    | SW10                 | M5     | 800   |

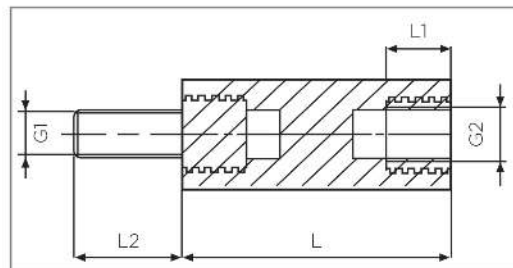
POLYAMIDE, BRASS THREAD

**Spacer bolts**  
**Type** hexagonal  
**Styles** internal / external  
 without undercut DIN 76  
**Material** Body: Polyamide 6.6  
 Thread: Messing blank  
**Flammability Rating** V2  
**Colour** natural  
**Standard Pack** 100 pcs

Contact resistance: 10<sup>12</sup> Ohm/cm  
 Dielectric strength: 50 kV/mm  
 Tolerance for length dimensions: +/- 0,2 mm

| Order No. | SW (hexagonal) | Thread | Lengths (L) in mm increments |
|-----------|----------------|--------|------------------------------|
| DI 597    | SW 13          | M6     | 25-100                       |
| DI 598    | SW 15          | M8     | 25-100                       |

**Note:** The pull-out strength and torques may vary depending on application and ambient influences (e.g. temperature, air humidity, etc.). for critical applications please carry out trials. Alutronic does not assume any liability for the specified strength values.

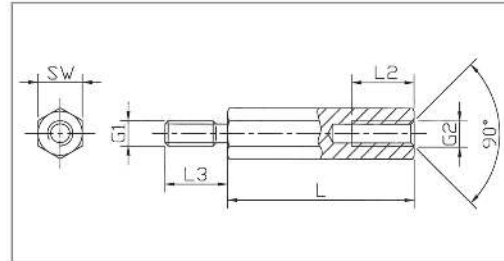


Strength / resistance values

| Thread lengths [mm] |    |    | Torques [Nm] |        |        | Pull-out torques [N] |        |       |
|---------------------|----|----|--------------|--------|--------|----------------------|--------|-------|
| G1=G2               | L1 | L2 | SW           | Thread | Torque | SW                   | Thread | Force |
| M6                  | 11 | 12 | SW13         | M6     | 12,0   | SW13                 | M6     | 1000  |
| M8                  | 11 | 14 | SW15         | M8     | 18,0   | SW15                 | M8     | 1600  |

**POLYAMIDE, METRIC THREAD**

**Spacer bolts**  
**Type** hexagonal  
**Styles** internal / external  
**Material** Polyamid 6.6  
**Colour** black  
**Flammability Rating** V2



Contact resistance DIN 53 482: >10<sup>12</sup> Ohm/cm  
 Dielectric strength DIN 54 481: 40 kV/mm  
 Tolerance for length dimensions: +/- 0,1 mm

| Order No. | SW (hexagonal) | Thread | Standardlängen in mm-Staffelung |
|-----------|----------------|--------|---------------------------------|
| DI 627    | SW 5           | M2,5   | from 5 mm to 45 mm              |
| DI 638    | SW 6           | M3     | from 5 mm to 60 mm              |
| DI 628    | SW 8           | M4     | from 5 mm to 60 mm              |
| DI 629    | SW 10          | M5     | from 8 mm to 65 mm              |
| DI 630    | SW 10          | M6     | from 8 mm to 60 mm              |

Internal thread lengths [mm]

| L (mm) | L2 (mm) |
|--------|---------|
| 5      | 3,0     |
| ab 6   | 4,0     |
| ab 8   | 6,0     |
| ab 10  | 8,0     |
| ab 12  | 10,0    |

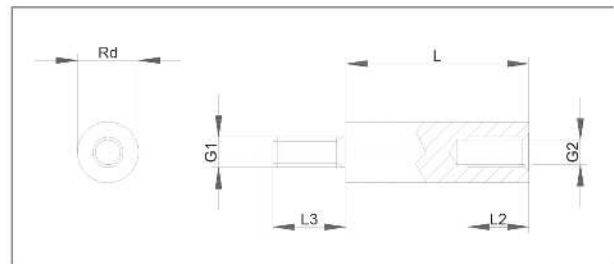
External thread lengths [mm]

| G1=G2 | L3 (mm) |
|-------|---------|
| M2,5  | 8       |
| M3    | 8       |
| M4    | 8       |
| M5    | 8       |
| M6    | 10      |

**Ordering example:** DI 627/6

**POLYAMIDE, METRIC THREAD**

**Spacer bolts**  
**Type** round  
**Styles** internal / external  
**Material** Polyamid 6.6  
**Colour** black  
**Flammability Rating** V2



Contact resistance DIN 53 482: >10<sup>12</sup> Ohm/cm  
 Dielectric strength DIN 54 481: 40 kV/mm  
 Tolerance for length dimensions: +/- 0,1 mm

| Order No. | Diameter (mm) | Thread | Standard lengths in mm-increments |
|-----------|---------------|--------|-----------------------------------|
| DI 594    | 6             | M3     | from 5 mm to 60 mm                |
| DI 599    | 8             | M4     | from 5 mm to 60 mm                |

Internal thread lengths [mm]

| L (mm)  | L2 (mm) |
|---------|---------|
| 5       | 3,0     |
| from 6  | 4,0     |
| from 8  | 6,0     |
| from 10 | 8,0     |
| from 12 | 10,0    |

External thread lengths [mm]

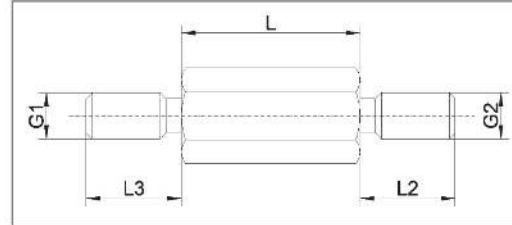
| G1=G2 | L3 (mm) |
|-------|---------|
| M2,5  | 8       |
| M3    | 8       |
| M4    | 8       |
| M5    | 8       |
| M6    | 10      |

**Ordering example:** DI 594/10

## BRASS, METRIC THREAD

**Spacer bolts**  
**Type** hexagonal  
**Styles** external / external with undercut

**Material** Brass 2.0401  
**Surface** nickel plated (E2E)



External thread lengths [mm]

| G1=G2 | L2=L3 |
|-------|-------|
| M2    | 5     |
| M2,5  | 6     |
| M3    | 6+8   |
| M4    | 8     |
| M5    | 8     |
| M6    | 10    |

Minimum tensile strength: 430 N/mm<sup>2</sup>  
 Tolerance for length dimensions: +/- 0,1 mm

Lengths [mm]

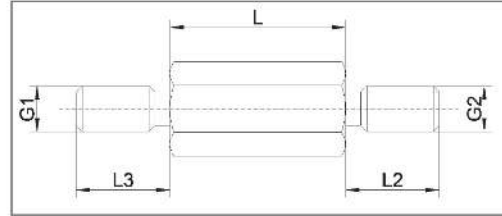
| Order No. | SW (hexagonal) | Thread | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|-----------|----------------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| DI 522    | SW 4           | M2     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 523    | SW 4           | M2,5   | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 524    | SW 5           | M2,5   | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |    |    |    |    |    |    |    |     |
| DI 525    | SW 5           | M3     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |    |    |    |    |    |    |    |     |
| DI 526    | SW 5,5         | M3     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 527    | SW 6           | M3     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 528    | SW 7           | M4     | 05 | 06 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 529    | SW 8           | M5     |    |    | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 530    | SW 10          | M6     |    |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 534    | SW 13          | M8     |    |    |    |    |    | 15 |    | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |

**Ordering example:** DI 522/30

## STEEL, METRIC THREAD

**Spacer bolts**  
**Type** hexagonal  
**Styles** external / external with undercut

**Material** Steel 1.0718  
**Surface** zinc plated (A3F)



External thread lengths [mm]

| G1=G2 | L2=L3 |
|-------|-------|
| M2    | 5     |
| M2,5  | 6     |
| M3    | 6     |
| M4    | 8     |
| M5    | 8     |
| M6    | 10    |
| M8    | 14    |

Minimum tensile strength: 500 N/mm<sup>2</sup>  
 Tolerance for length dimensions: +/- 0,1 mm  
 (applies to SW 13 : DIN 2768-m)

Lengths [mm]

| Order No. | SW (hexagonal) | Thread | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|-----------|----------------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| DI 549    | SW 4           | M2     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 |    |    |    |    |    |    |    |    |    |    |    |     |
| DI 550    | SW 4           | M2,5   | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 |    |    |    |    |    |    |    |    |    |    |    |     |
| DI 551    | SW 5           | M2,5   | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 552    | SW 5           | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 543    | SW 5,5         | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 544    | SW 6           | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 545    | SW 7           | M4     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 546    | SW 8           | M4     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 547    | SW 8           | M5     |    | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 537    | SW 10          | M6     |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 554    | SW 13          | M8     |    |    |    |    | 15 |    | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |

**Ordering example:** DI 544/20

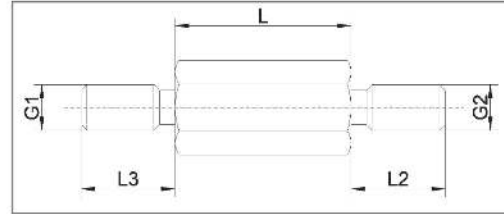
## STAINLESS STEEL, METRIC THREAD

**Spacer bolts**

**Type** hexagonal  
**Styles** external / external with undercut



**Material** Stainless steel 1.4305



External thread lengths [L3 in mm]

| G1=G2   | L2=L3 |
|---------|-------|
| M2.5-M3 | 6     |
| M4      | 8     |
| M5      | 8     |
| M6      | 10    |
| M8      | 14    |

Minimum tensile strength: 750 N/mm<sup>2</sup>  
Tolerance for length dimensions: +/- 0,1 mm  
(applies to SW 13 : DIN 2768-m)

Lengths [mm]

| Order No. | SW (hexagonal) | Thread | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|-----------|----------------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| DI 555    | SW 5           | M2,5   | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 556    | SW 5,5         | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 557    | SW 7           | M4     |    | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 559    | SW 8           | M5     |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 560    | SW 10          | M6     |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 561    | SW 13          | M8     |    |    |    |    | 15 |    | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    | 60 |    | 70 |    | 80 |    | 90 |    | 100 |

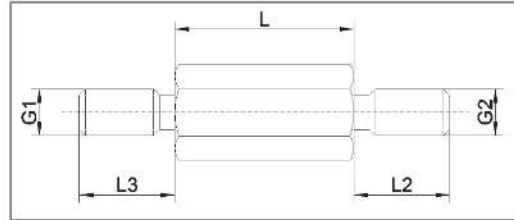
**Ordering example:** DI 555/45

## ALUMINIUM, METRIC THREAD

**Spacer bolts**

**Type** hexagonal  
**Styles** external / external with undercut

**Material** Aluminium 3.1655



External thread lengths [L3 in mm]

| G1=G2 | L2=L3 |
|-------|-------|
| M3    | 6     |
| M4    | 8     |
| M5    | 8     |
| M6    | 10    |
| M8    | 14    |

Minimum tensile strength: 310 N/mm<sup>2</sup>  
Tolerance for length dimensions: +/- 0,1 mm  
(applies to SW 13 : DIN 2768-m)

Lengths [mm]

| Order No. | SW (hexagonal) | Thread | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
|-----------|----------------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| DI 508    | SW 5           | M2,5   | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    |    |    |    |    |    |    |    |    |     |
| DI 509    | SW 5,5         | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 516    | SW 6           | M3     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 |    |    |    |    |    |     |
| DI 517    | SW 7           | M4     | 05 | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 518    | SW 8           | M5     |    | 08 | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 519    | SW 10          | M6     |    |    | 10 | 12 | 15 | 18 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 |
| DI 595    | SW 13          | M8     |    |    |    |    | 15 |    | 20 | 25 | 30 | 35 | 40 | 45 | 50 |    | 60 |    | 70 |    | 80 |    | 90 |    | 100 |

**Ordering example:** DI 508/18



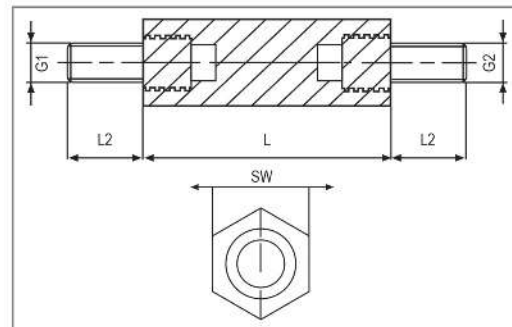
## POLYAMIDE, BRASS THREAD

**Spacer bolts**  
**Type** hexagonal  
**Styles** external / external  
 without undercut DIN 76  
**Material** Body: Polyamide 6.6  
 Thread: Brass, nickel plated  
**Flammability Rating** V2  
**Colour** white



### Strength / resistance values

| Thread lengths [mm] |         | Torques [Nm] |      |     | Pull-out torques [N] |      |     |
|---------------------|---------|--------------|------|-----|----------------------|------|-----|
| G1=G2               | L2 (mm) | SW6          | M2,5 | 1,3 | SW6                  | M2,5 | 300 |
| M2,5                | 6       | SW6          | M3   | 1,3 | SW6                  | M3   | 300 |
| M3                  | 6       | SW8          | M4   | 3,0 | SW8                  | M4   | 600 |
| M4                  | 8       | SW10         | M5   | 4,5 | SW10                 | M5   | 800 |
| M5                  | 10      |              |      |     |                      |      |     |



**Note:** The pull-out strength and torques may vary depending on application and ambient influences (e.g. temperature, air humidity, etc.). for critical applications please carry out trials. Alutronic does not assume any liability for the specified strength values.

Contact resistance:  $10^{12}$  Ohm/cm  
 Dielectric strength: 50 kV/mm  
 Tolerance for length dimensions: +/- 0,1 mm

| Order No. | SW (hexagonal) | Thread | Lengths (L) in mm increments |
|-----------|----------------|--------|------------------------------|
| DI 686    | SW 6           | M2,5   | 15-65                        |
| DI 687    | SW 6           | M3     | 15-65                        |
| DI 688    | SW 8           | M4     | 15-65                        |
| DI 689    | SW 10          | M5     | 15-70                        |

## POLYAMIDE, BRASS THREAD

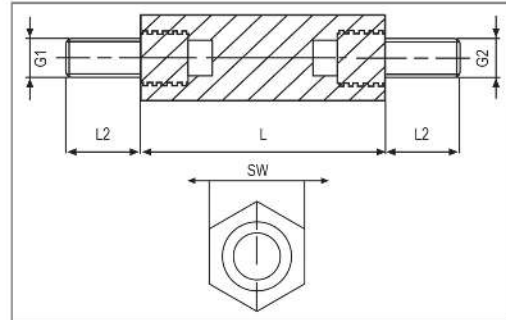
**Spacer bolts**

**Type** hexagonal  
**Styles** external / external  
 without undercut DIN 76  
**Material** Body: Polyamide 6.6  
 Thread: Messing blank  
**Colour** natural



Strength / resistance values

| Thread lengths [mm] |         | Torques [Nm] |    |      | Pull-out torques [N] |    |      |
|---------------------|---------|--------------|----|------|----------------------|----|------|
| G1=G2               | L2 (mm) | SW13         | M6 | 12,0 | SW13                 | M6 | 1000 |
| M6                  | 12      | SW15         | M8 | 18,0 | SW15                 | M8 | 1600 |
| M8                  | 14      |              |    |      |                      |    |      |



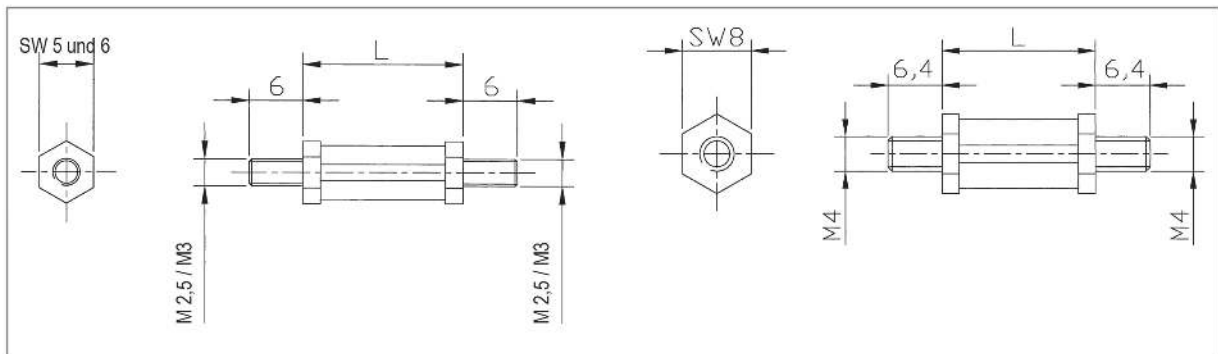
**Note:** The pull-out strength and torques may vary depending on application and ambient influences (e.g. temperature, air humidity, etc.). for critical applications please carry out trials. Alutronic does not assume any liability for the specified strength values.

Contact resistance:  $10^{12}$  Ohm/cm  
 Dielectric strength: 50 kV/mm  
 Tolerance for length dimensions: +/- 0,2 mm

| Order No. | SW (hexagonal) | Thread | Lengths (L) in mm increments |
|-----------|----------------|--------|------------------------------|
| DI 590    | SW 13          | M6     | 25-100                       |
| DI 579    | SW 15          | M8     | 25-100                       |

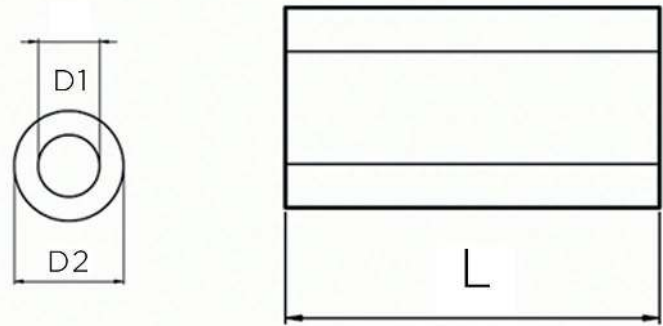
POLYAMIDE, METRIC THREAD

**Spacer bolts**  
**Type** hexagonal  
**Styles** external / external  
**Material** Polyamid 6.6  
**Flammability Rating** V2  
**Colour** black



Contact resistance DIN 53 482: >10<sup>12</sup> Ohm/cm  
 Dielectric strength DIN 54 481: 40 kV/mm  
 Tolerance for length dimensions: +/- 0,1 mm

| Order No. | SW (hexagonal) | Thread | Standard lengths in mm-increments |
|-----------|----------------|--------|-----------------------------------|
| DI 576    | SW 5           | M2,5   | from 3 mm to 65 mm                |
| DI 577    | SW 6           | M3     | from 5 mm to 65 mm                |
| DI 578    | SW 8           | M4     | from 5 mm to 65 mm                |



Material: Polystyrene  
 Resistance to heat: 70°C  
 Colour: Black  
 Dielectric strength: 90 V/mm

| Type   | Inside Diameter - D1 [mm] | Outside Diameter - D2 [mm] | Length - L [mm] |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|--------|---------------------------|----------------------------|-----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
|        |                           |                            | 2               | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |
| DI 600 | 3,6                       | 7                          | 19              | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
|        |                           |                            | 2               | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |
| DI 610 | 4,5                       | 8                          | 19              | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
|        |                           |                            | 2               | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |
| DI 615 | 5,5                       | 10                         | 19              | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
|        |                           |                            | 2               | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |

Material: Makrolon  
 Resistance to heat: 135°C  
 Colour: Grey  
 Dielectric strength: 90 KV/mm

| Type   | Inside Diameter - D1 [mm] | Outside Diameter - D2 [mm] | Length - L [mm] |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|--------|---------------------------|----------------------------|-----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
|        |                           |                            | 2               | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |
| DI 601 | 3,6                       | 7                          | 19              | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
|        |                           |                            | 2               | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |
| DI 611 | 4,5                       | 8                          | 19              | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
|        |                           |                            | 2               | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |
| DI 616 | 5,5                       | 10                         | 19              | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
|        |                           |                            | 2               | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |

Material: Brass, nickel-plated  
 Tolerance: +/- 0.1mm

| Type   | Inside Diameter - D1 [mm] | Outside Diameter - D2 [mm] | Length - L [mm] |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|--------|---------------------------|----------------------------|-----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
|        |                           |                            | 2               | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |
| DI 617 | 3,2                       | 6                          | 19              | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
|        |                           |                            | 2               | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |
| DI 618 | 4,3                       | 8                          | 19              | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 |  |
|        |                           |                            | 2               | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |  |

## WK800 (Hernon 746)



**WK 800** is an excellent thermally conducting two-component adhesive with very short curing time. It offers an effective thermal connection between electronic components and heat sinks. The material has an extraordinary adhesive property.

The adhesive consists of a pasty adhesive WK 800 and a liquid activator WK 800-A. The adhesive is available in container sizes of **4 ml** and **25 ml** (spray) and the activator is available as a **10 ml** bottle with brush

The components are not mixed. It suffices to apply a small quantity of the adhesive on one of the surfaces to be bonded and smearing the other adhesive surface with the activator. The surfaces are joined by pressing them together. It is possible to make a correction within 15-30 seconds. The adhesion is sturdy after 5 minutes at room temperature and cures within 24 hours completely. Comprehensive tests have proven the excellent thermal and mechanical properties of WK 800. Consistent and uniform quality is ensured with the help of on-going quality supervision. An in-depth test should be conducted for specific applications.

|                               |                      | WK 800      |
|-------------------------------|----------------------|-------------|
| Colour                        |                      |             |
| Max. adhesive gap             | [mm]                 | 0,25        |
| Shear strenght                | [N/mm <sup>2</sup> ] | 5,5         |
| Tensile strenght              | [N/mm <sup>2</sup> ] | 15,2        |
| Thermal expansion coefficient | [ppm/K]              | 110         |
| Thermal Conductivity          | [W / mK]             | 0,76        |
| Dielectric Strenght           | [kV/mm]              | 26,78       |
| Flammability                  |                      | V-O         |
| Processing temperature        | [°C]                 | 20-28       |
| Temperature range             | [°C]                 | -55 to +150 |
| Storability temperature       | [°C]                 | 8 - 28      |
| Storability at 22°C           | [Jahre]              | min. 3      |

### AREAS OF APPLICATION

**WK 800** fixes heat sinks to components and parts. It allows parts and components to be stuck even on vertical cooling surfaces, and similarly on metallic housing surfaces, side walls without clamps, screws or other mechanical fixture. Typical applications include adhesion of transformers, microprocessors and other heat-dissipating component and PCBs (Printed Circuit Boards) or coolers. WK 800 is particularly suitable for fixing LED chips on heat sinks.

WK 800 has several benefits compared to traditional adhesive compounds such as e.g. thermal hot adhesives or epoxy adhesives. It ensures permanent application with reliable compliance of the thermal and technical properties. The adhesive can be used easily and thus reduces costs in production as well as repair times in service. Surfaces moistened with WK 800 adhesive or activator can rest for an almost unlimited period of time without the properties of the adhesive location getting deteriorated.

### INSTRUCTIONS FOR USE

Recommended aid: cotton cloth, lint-free, cleaning agent [e.g. toluene, isopropyl alcohol]  
Please pay attention to the safety regulations for the solvent. Wear rubber gloves when working for a longer time!

| type                   | page |
|------------------------|------|
| <b>M</b>               |      |
| MC 28                  | 5    |
| MC 31                  | 5    |
| MC 32                  | 5    |
| MC 33                  | 6    |
| MC 34                  | 6    |
| MC U1                  | 8    |
| MC U2                  | 8    |
| MC U3                  | 8    |
| MC U4                  | 8    |
| MC U5                  | 8    |
| MC U6                  | 8    |
| MC U7                  | 8    |
| MC U8                  | 8    |
| MC U9                  | 8    |
| MC 725                 | 4    |
| MC 726                 | 4    |
| MC 740                 | 6    |
| MC 747                 | 6    |
| MC 773                 | 5    |
| MC 780                 | 7    |
| MC 782                 | 7    |
| MC 786                 | 7    |
| MC 797                 | 4    |
| MC U10                 | 8    |
| Multi-Tool *Clips*     | 8    |
| <b>W</b>               |      |
| WK 800 (Hernon<br>746) | 31   |