

# Fasteners

Hisener is known as one of the top suppliers of screws and various fasteners worldwide.



## 2004-HISENER-2020 16 YEARS OF MAKING CONNECTIONS

Since 2004, Hisener was founded in Haining, Zhejiang, China, started the business as a threaded rods producer and shortly, established its full range fastener distribution line 2 years later.

In 2010, we established the screws factory.

Up to now, Hisener is known as one of the top suppliers of screws and various fasteners worldwide.



To fulfill customers' growing demand on different packaging on DIY market, Hisener established the facility of auto packing line and built warehouse in Haiyan in 2015. In 2017, we moved our packing lines and storage into a new building of 4000 square meters together with our screws factory which is located in Haining to increase the productivity.

Now Hisener has more than 4000 items with different packing that supplied regularly to our customers which are continuously expanding. Strict production procedure and quality controlling are carried out in per product batch by our well-equipped laboratory to make sure that only qualified products can be delivered to our customers. Hisener is also certified by ISO9001:2015, CE EN 14592 and CE EN14566.

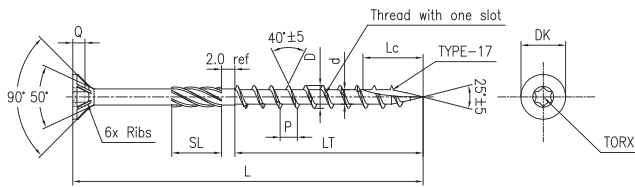
Hisener, a reliable, supportive, innovation, loyal business partner, definitely is your best choice.



# Timber Screws

ISO - EN -

DIN



CE

## Torx Drive Flat Head Timber Screws

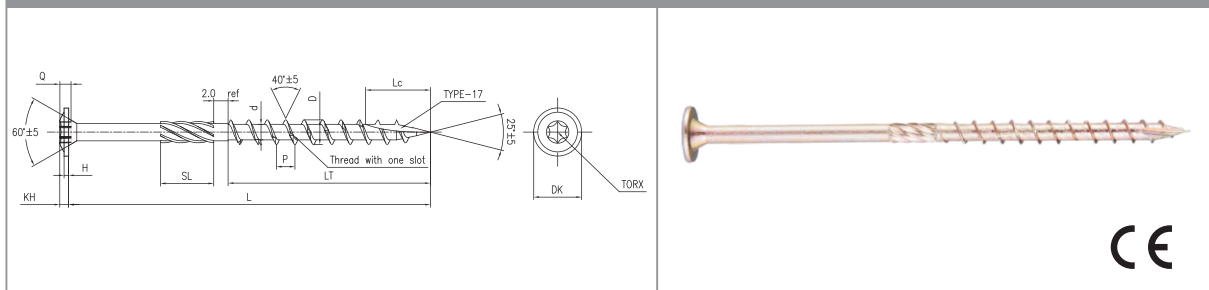
| SIZE | DK        | Q         | TORX | D        | d       | P±10% | SL     | Lc        |
|------|-----------|-----------|------|----------|---------|-------|--------|-----------|
| 3.0  | 5.6-6.0   | 1.10-1.40 | T10  | 2.8-3.1  | 1.7-1.9 | 1.45  | Ref 4  | 5.0-6.0   |
| 3.5  | 6.6-7.0   | 1.30-1.60 | T15  | 3.3-3.6  | 1.9-2.2 | 2.20  | Ref 5  | 6.0-7.0   |
| 4.0  | 7.5-8.0   | 1.70-2.00 | T20  | 3.8-4.1  | 2.2-2.5 | 2.60  | Ref 5  | 7.0-8.0   |
| 4.5  | 8.5-9.0   | 1.70-2.00 | T25  | 4.2-4.6  | 2.6-3.0 | 2.80  | Ref 6  | 8.0-9.0   |
| 5.0  | 9.5-10.0  | 2.00-2.40 | T25  | 4.7-5.1  | 2.7-3.1 | 3.20  | Ref 8  | 10.0-12.0 |
| 6.0  | 11.5-12.0 | 2.40-2.85 | T30  | 5.8-6.2  | 3.6-4.0 | 4.50  | Ref 12 | 12.0-14.0 |
| 8.0  | 14.3-15.2 | 3.00-3.45 | T40  | 7.8-8.3  | 5.1-5.5 | 5.50  | Ref 12 | 14.0-16.0 |
| 10.0 | 17.4-18.2 | 3.40-3.85 | T40  | 9.7-10.3 | 6.0-6.5 | 6.60  | Ref 12 | 16.0-18.0 |

| 3.0       |      | 3.5   |      | 4.0     |      | 4.5      |      | 5.0   |      | 6.0             |    | 8.0             |    | 10.0            |    |
|-----------|------|-------|------|---------|------|----------|------|-------|------|-----------------|----|-----------------|----|-----------------|----|
| L         | LT   | L     | LT   | L       | LT   | L        | LT   | L     | LT   | L               | LT | L               | LT | L               | LT |
| 16        | Full | 16    | Full | 16      | Full | 25       | Full | 25    | Full | 40              | 25 | 80              | 50 | 80              | 50 |
| 20        | Full | 20    | Full | 20      | Full | 30       | 15   | 30    | 15   | 50              | 25 | 90              | 50 | 90              | 50 |
| 25        | Full | 25    | Full | 25      | Full | 35       | 15   | 35    | 15   | 60              | 35 | 100             | 50 | 100             | 50 |
| 30        | 15   | 30    | 15   | 30      | 15   | 40       | 25   | 40    | 25   | 70              | 35 | 110             | 50 | 110             | 50 |
| 35        | 15   | 35    | 15   | 35      | 15   | 45       | 25   | 45    | 25   | 80              | 50 | 120<br> <br>360 | 80 | 120<br> <br>360 | 80 |
| 40        | 25   | 40    | 25   | 40      | 25   | 50       | 25   | 50    | 25   | 90              | 50 |                 |    |                 |    |
| 45        | 25   | 45    | 25   | 45      | 25   | 60       | 35   | 60    | 35   | 100             | 50 |                 |    |                 |    |
|           |      | 50    | 25   | 50      | 25   | 70       | 35   | 70    | 35   | 110             | 50 |                 |    |                 |    |
|           |      |       |      | 55      | 35   | 80       | 35   | 80    | 35   | 120<br> <br>300 | 80 |                 |    |                 |    |
|           |      |       |      | 60      | 35   |          |      | 90    | 50   |                 |    |                 |    |                 |    |
|           |      |       |      | 70      | 35   |          |      | 100   | 50   |                 |    |                 |    |                 |    |
|           |      |       |      |         |      |          |      | 120   | 50   |                 |    |                 |    |                 |    |
|           |      |       |      |         |      |          |      |       |      |                 |    |                 |    |                 |    |
| L         |      | L≤50  |      | 50<L≤80 |      | 80<L≤120 |      | L>120 |      |                 |    |                 |    |                 |    |
| Tolerance |      | -1.25 |      | -1.5    |      | -1.75    |      | -2    |      |                 |    |                 |    |                 |    |

## Timber Screws

### DIN

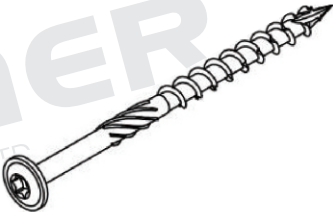
ISO - EN -



### Torx Drive Wafer Head Timber Screws

| SIZE | DK        | Q         | TORX | KH        | H         | D          | d         | P±10% | Lc        |
|------|-----------|-----------|------|-----------|-----------|------------|-----------|-------|-----------|
| 5.0  | 11.5-13.2 | 2.10-2.55 | T25  | 2.50-3.30 | 1.05-1.35 | 4.70-5.10  | 2.70-3.10 | 3.20  | 10.0-12.0 |
| 6.0  | 14.5-16.1 | 2.40-2.85 | T30  | 2.70-3.50 | 1.35-1.65 | 5.80-6.20  | 3.65-4.00 | 4.50  | 12.0-14.0 |
| 8.0  | 20.5-22.5 | 3.00-3.45 | T40  | 3.35-3.75 | 1.65-2.15 | 7.80-8.20  | 5.10-5.50 | 5.50  | 14.0-16.0 |
| 10.0 | 23.5-26.5 | 3.40-3.85 | T40  | 3.80-4.20 | 1.95-2.35 | 9.60-10.25 | 6.00-6.50 | 6.60  | 16.0-18.0 |

| 5.0 |      |    | 6.0             |    |    | 8.0             |    |    | 10.0            |    |    |
|-----|------|----|-----------------|----|----|-----------------|----|----|-----------------|----|----|
| L   | LT   | SL | L               | LT | SL | L               | LT | SL | L               | LT | SL |
| 25  | Full | 8  | 50              | 30 | 6  | 80              | 50 | 12 | 80              | 50 | 12 |
| 30  | 15   | 8  | 60              | 35 | 6  | 100             | 50 | 12 | 100             | 50 | 12 |
| 35  | 15   | 8  | 70              | 35 | 6  | 120<br> <br>360 | 80 | 12 | 120<br> <br>360 | 80 | 12 |
| 40  | 25   | 8  | 80              | 50 | 10 |                 |    |    |                 |    |    |
| 45  | 25   | 8  | 100             | 50 | 12 |                 |    |    |                 |    |    |
| 50  | 25   | 8  | 120<br> <br>300 | 80 | 12 |                 |    |    |                 |    |    |
| 60  | 35   | 8  |                 |    |    |                 |    |    |                 |    |    |
| 70  | 35   | 8  |                 |    |    |                 |    |    |                 |    |    |
| 80  | 35   | 8  |                 |    |    |                 |    |    |                 |    |    |
| 90  | 50   | 8  |                 |    |    |                 |    |    |                 |    |    |
| 100 | 50   | 8  |                 |    |    |                 |    |    |                 |    |    |
| 120 | 50   | 8  |                 |    |    |                 |    |    |                 |    |    |

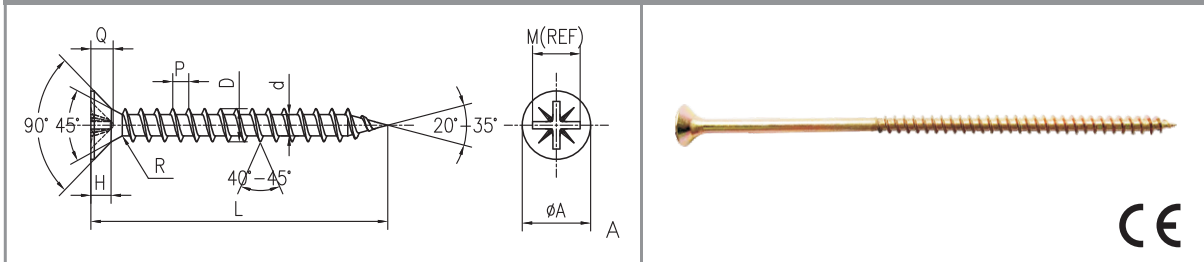


| L        | Tolerance |
|----------|-----------|
| L≤50     | -1.25     |
| 50<L≤80  | -1.5      |
| 80<L≤120 | -1.5      |
| L>120    | -2        |



# Chipboard Screws

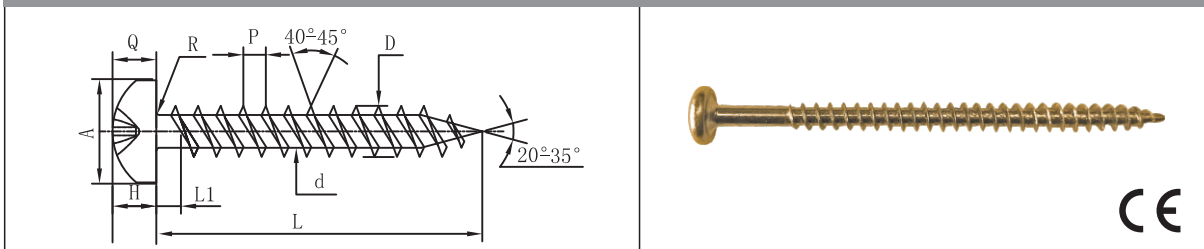
ISO - EN -

**DIN 7505-A**


## Pozidrive countersunk head screws for chipboard

| SIZE                        | A     |       | H    | L1   | Q    |      | M    | Drive | R                       | D    |      | d    |      | P    | Wire Dia                 | Case Depth | Torsion  |  |
|-----------------------------|-------|-------|------|------|------|------|------|-------|-------------------------|------|------|------|------|------|--------------------------|------------|----------|--|
|                             | Min   | Max   | Ref. | max  | min  | max  | Ref. | NO    | max                     | min  | max  | min  | max  | Ref. | +0/-0.02                 | Mm         | Min(N*m) |  |
| 2,5                         | 4,70  | 5,05  | 1,40 | 2,10 | 1,22 | 1,57 | 2,51 | 1     | 1,5                     | 2,30 | 2,50 | 1,40 | 1,60 | 1,10 | 1,80                     | 0,05-0,10  | 1,1      |  |
| 3,0                         | 5,70  | 6,05  | 1,80 | 2,35 | 1,60 | 2,11 | 3,00 | 1     | 1,5                     | 2,80 | 3,00 | 1,75 | 1,90 | 1,35 | 2,10                     | 0,08-0,18  | 1,5      |  |
| 3,5                         | 6,64  | 7,05  | 2,00 | 2,60 | 1,76 | 2,16 | 4,00 | 2     | 1,8                     | 3,25 | 3,50 | 2,00 | 2,25 | 1,60 | 2,45                     | 0,08-0,18  | 2,0      |  |
| 4,0                         | 7,64  | 8,05  | 2,35 | 2,80 | 2,05 | 2,51 | 4,40 | 2     | 2,0                     | 3,75 | 4,00 | 2,30 | 2,50 | 1,80 | 2,78                     | 0,12-0,23  | 3,0      |  |
| 4,5                         | 8,64  | 9,05  | 2,55 | 3,00 | 2,46 | 3,02 | 4,80 | 2     | 2,2                     | 4,25 | 4,50 | 2,50 | 2,70 | 2,00 | 3,10                     | 0,12-0,23  | 4,3      |  |
| 5,0                         | 9,64  | 10,05 | 2,85 | 3,20 | 2,99 | 3,55 | 5,30 | 2     | 2,5                     | 4,75 | 5,00 | 2,90 | 3,10 | 2,20 | 3,45                     | 0,12-0,23  | 6,0      |  |
| 6,0                         | 11,57 | 12,05 | 3,35 | 3,60 | 2,99 | 3,55 | 6,60 | 3     | 2,5                     | 5,75 | 6,00 | 3,60 | 3,80 | 2,60 | 4,20                     | 0,15-0,28  | 10,8     |  |
| Notes:                      |       |       |      |      |      |      |      |       | Thread length L:        |      |      |      |      |      | Nominal length L:        |            |          |  |
| 1、Materials: C1022A         |       |       |      |      |      |      |      |       | up to 60mm=fully        |      |      |      |      |      | 01-10mm incl. +0/0.75    |            |          |  |
| 2、Case Hardness: Hv 550-800 |       |       |      |      |      |      |      |       | 70mm=42mm T.L±1.0       |      |      |      |      |      | 11-30mm incl. 0/-0.90    |            |          |  |
| 3、Core hardness: Hv 300-500 |       |       |      |      |      |      |      |       | 80mm=48mm T.L±1.0       |      |      |      |      |      | 31-50mm incl. +0/-1.10   |            |          |  |
| 4、Bending Angle: 15°        |       |       |      |      |      |      |      |       | 90mm=54mm T.L±1.0       |      |      |      |      |      | 51-80mm incl. +0/-1.50   |            |          |  |
|                             |       |       |      |      |      |      |      |       | 100mm=60mm T.L±1.0      |      |      |      |      |      | 91-120mm incl. +0/-1.75  |            |          |  |
|                             |       |       |      |      |      |      |      |       | Over 100mm=72mm T.L±2.0 |      |      |      |      |      | 121-200mm incl. +0/-2.00 |            |          |  |

ISO - EN -

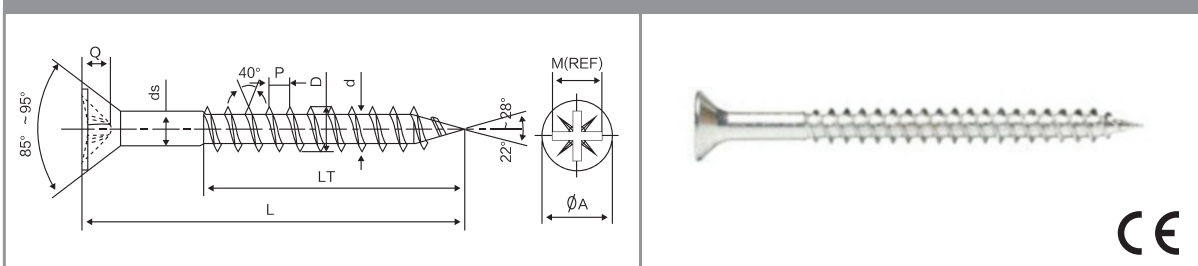
**DIN 7505-B**


## Pozidrive raised cheese head screws for chipboard

| Size                        | A     |       | H    |      | L1   | Q    |      | M    | Drive | R                       | D    |      | d    |      | P    | Wire Dia                | Case Depth | Torsion  |  |
|-----------------------------|-------|-------|------|------|------|------|------|------|-------|-------------------------|------|------|------|------|------|-------------------------|------------|----------|--|
|                             | min   | max   | min  | max  | max  | min  | max  | Ref. | NO    | max                     | min  | max  | min  | max  | Ref. | +0/-0.02                | Mm         | Min(N*m) |  |
| 2.5                         | 4.60  | 5.00  | 1.88 | 2.12 | 1.10 | 1.30 | 1.52 | 2.60 | 1     | 0.25                    | 2.30 | 2.50 | 1.40 | 1.60 | 1.10 | 1.80                    | 0.05-0.10  | 1.0      |  |
| 3.0                         | 5.60  | 6.00  | 2.13 | 2.37 | 1.35 | 1.75 | 1.93 | 3.12 | 1     | 0.25                    | 2.80 | 3.00 | 1.75 | 1.90 | 1.35 | 2.10                    | 0.08-0.18  | 1.5      |  |
| 3.5                         | 6.50  | 7.00  | 2.48 | 2.72 | 1.60 | 1.70 | 2.11 | 3.81 | 2     | 0.30                    | 3.25 | 2.50 | 2.00 | 2.25 | 1.60 | 2.45                    | 0.08-0.18  | 2.0      |  |
| 4.0                         | 7.50  | 8.00  | 2.68 | 2.92 | 1.80 | 1.95 | 2.36 | 4.65 | 2     | 0.30                    | 3.75 | 4.00 | 2.30 | 2.50 | 1.80 | 2.78                    | 0.12-0.23  | 3.0      |  |
| 4.5                         | 8.50  | 9.00  | 2.82 | 3.15 | 2.00 | 2.69 | 3.10 | 5.00 | 2     | 0.30                    | 4.25 | 4.50 | 2.50 | 2.70 | 2.00 | 3.10                    | 0.12-0.23  | 4.3      |  |
| 5.0                         | 9.50  | 10.00 | 3.35 | 3.65 | 2.20 | 2.69 | 3.10 | 5.28 | 2     | 0.30                    | 4.75 | 5.00 | 2.90 | 3.10 | 2.20 | 3.45                    | 0.12-0.23  | 6.0      |  |
| 6.0                         | 11.40 | 12.00 | 3.95 | 4.25 | 2.60 | 2.99 | 3.48 | 6.63 | 3     | 0.40                    | 5.75 | 6.00 | 3.60 | 3.80 | 2.60 | 4.20                    | 0.15-0.28  | 10.8     |  |
| Notes:                      |       |       |      |      |      |      |      |      |       | Thread length L:        |      |      |      |      |      | Nominal length L:       |            |          |  |
| 1、Materials: C1022A         |       |       |      |      |      |      |      |      |       | up to 60mm=fully        |      |      |      |      |      | 01-10mm incl.+0/-0.75   |            |          |  |
| 2、Case Hardness: Hv 550-800 |       |       |      |      |      |      |      |      |       | 70mm=42mm T.L±1.0       |      |      |      |      |      | 11-30mm incl.+0/-0.90   |            |          |  |
| 3、Core hardness: Hv 300-500 |       |       |      |      |      |      |      |      |       | 80mm=48mm T.L±1.0       |      |      |      |      |      | 31-50mm incl.+0/-1.10   |            |          |  |
| 4、Bending Angle: 15°        |       |       |      |      |      |      |      |      |       | 90mm=54mm T.L±1.0       |      |      |      |      |      | 51-80mm incl.+0/-1.50   |            |          |  |
|                             |       |       |      |      |      |      |      |      |       | 100mm=60mm T.L±1.0      |      |      |      |      |      | 91-120mm incl.+0/-1.75  |            |          |  |
|                             |       |       |      |      |      |      |      |      |       | Over 100mm=72mm T.L±2.0 |      |      |      |      |      | 121-200mm incl.+0/-2.00 |            |          |  |

## Chipboard Screws

### Wood Screw, Twinfast Thread Double leads



### Pozi Drive Countersunk Flat Head Wood Screw, Twinfast Thread Double leads

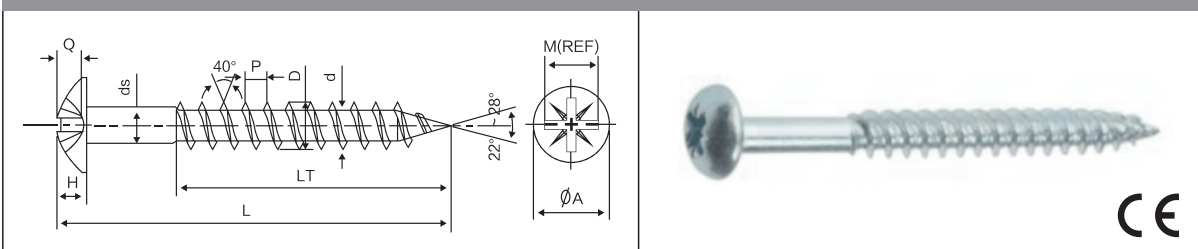
| Size    | A     |       | H    |      | Q    |      | M    | Drive | D    |      | d    | P    | ds        | Trosion  |
|---------|-------|-------|------|------|------|------|------|-------|------|------|------|------|-----------|----------|
|         | Min   | Max   | Ref. | Max  | Min  | Max  | Ref. | No.   | Min  | Max  | ±0.3 | Ref. | Wire Dia  | Min(N*m) |
| #4-2.9  | 5.21  | 5.49  | 1.85 | 2.05 | 1.32 | 1.73 | 2.74 | 1     | 2.72 | 2.92 | 1.65 | 1.10 | 2.15-2.25 | 1.50     |
| #5-3.2  | 5.89  | 6.20  | 2.08 | 2.28 | 1.14 | 1.80 | 3.50 | 2     | 3.05 | 3.25 | 1.88 | 1.27 | 2.35-2.40 | 1.50     |
| #6-3.5  | 6.55  | 6.91  | 2.28 | 2.54 | 1.85 | 2.31 | 4.22 | 2     | 3.38 | 3.58 | 2.16 | 1.41 | 2.60-2.70 | 2.80     |
| #7-3.9  | 7.24  | 7.62  | 2.51 | 2.76 | 1.85 | 2.31 | 4.22 | 2     | 3.74 | 3.94 | 2.41 | 1.59 | 2.80-2.90 | 3.80     |
| #8-4.2  | 7.93  | 8.33  | 2.72 | 2.99 | 2.26 | 2.72 | 4.60 | 2     | 4.09 | 4.29 | 2.77 | 1.69 | 3.20-3.30 | 4.20     |
| #10-4.8 | 9.27  | 9.75  | 3.17 | 3.45 | 2.64 | 3.10 | 4.98 | 2     | 4.73 | 4.93 | 3.15 | 1.95 | 3.65-3.75 | 6.20     |
| #12-5.5 | 10.62 | 11.18 | 3.61 | 3.91 | 2.72 | 3.18 | 6.35 | 3     | 5.38 | 5.64 | 3.61 | 2.21 | 4.20-4.30 | 9.40     |
| #14-6.3 | 11.99 | 12.60 | 4.04 | 4.34 | 3.00 | 3.45 | 6.60 | 3     | 6.17 | 6.45 | 4.19 | 2.54 | 4.95-5.05 | 10.80    |

Notes:  
 1, Material: C1022A  
 2, Case Hardness: 470-720 HV0.3  
 3, Core Hardness: 300-420 HV0.3  
 4, Case Depth: #4-#6: 0.05-0.18mm  
                   #8-#12: 0.10-0.23mm  
                   #14: 0.13-0.28mm

Thread length LT(±1 pitch):  
 up to 1-1/4"=fully  
 1-1/2" to 1-3/4"=30  
 2" to 2-1/4"=37  
 2-1/2" to 3"=50  
 3-1/2"=67  
 Over 4"=70

Nominal Length L:  
 01-10mm incl. +0/-0.75  
 11-30mm incl. +0/-0.90  
 31-50mm incl. +0/-1.10  
 51-80mm incl. +0/-1.50  
 81-120mm incl. +0/-1.75  
 121-200mm incl. +0/-2.00

### Wood Screw, Twinfast Thread Double leads



### Pozi Drive Round Head Wood Screw, Twifast Thread Double leads

| Size    | A     |       | H    |      | Q    |      | M    | Drive | D    |      | d    | P    | ds        | Trosion  |
|---------|-------|-------|------|------|------|------|------|-------|------|------|------|------|-----------|----------|
|         | Min   | Max   | Ref. | Max  | Min  | Max  | Ref. | No.   | Min  | Min  | ±0.3 | Ref. | Wire Dia  | Min(N*m) |
| #4-2.9  | 5.21  | 5.49  | 1.85 | 2.05 | 1.27 | 1.72 | 2.90 | 1     | 2.72 | 2.72 | 1.65 | 1.10 | 2.15-2.25 | 1.50     |
| #5-3.2  | 5.89  | 6.20  | 2.08 | 2.28 | 1.42 | 1.82 | 3.70 | 2     | 3.05 | 3.05 | 1.88 | 1.27 | 2.35-2.40 | 1.50     |
| #6-3.5  | 6.55  | 6.91  | 2.28 | 2.54 | 1.47 | 1.93 | 3.91 | 2     | 3.38 | 3.38 | 2.16 | 1.41 | 2.60-2.70 | 2.80     |
| #7-3.9  | 7.24  | 7.62  | 2.51 | 2.76 | 1.70 | 2.16 | 4.11 | 2     | 3.74 | 3.74 | 2.41 | 1.59 | 2.80-2.90 | 3.80     |
| #8-4.2  | 7.93  | 8.33  | 2.72 | 2.99 | 1.85 | 2.31 | 4.26 | 2     | 4.09 | 4.09 | 2.77 | 1.69 | 3.20-3.30 | 4.20     |
| #10-4.8 | 9.27  | 9.75  | 3.17 | 3.45 | 2.26 | 2.72 | 4.67 | 2     | 4.73 | 4.73 | 3.15 | 1.95 | 3.65-3.75 | 6.20     |
| #12-5.5 | 10.62 | 11.18 | 3.61 | 3.91 | 2.41 | 2.87 | 6.14 | 3     | 5.38 | 5.38 | 3.61 | 2.21 | 4.20-4.30 | 9.40     |
| #14-6.3 | 11.99 | 12.60 | 4.04 | 4.34 | 3.05 | 3.50 | 6.75 | 3     | 6.17 | 6.17 | 4.19 | 2.54 | 4.95-5.05 | 10.80    |

Notes:  
 1, Material: C1022A  
 2, Case Hardness: 470-720 HV0.3  
 3, Core Hardness: 300-420 HV0.3  
 4, Case Depth: #4-#6: 0.05-0.18mm  
                   #8-#12: 0.10-0.23mm  
                   #14: 0.13-0.28mm

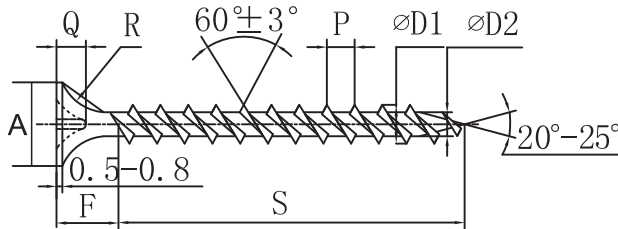
Thread length LT(±1 pitch):  
 up to 1-1/4"=fully  
 1-1/2" to 1-3/4"=30  
 2" to 2-1/4"=37  
 2-1/2" to 3"=50  
 3-1/2"=67  
 Over 4"=70

Nominal Length L:  
 01-10mm incl. +0/-0.75  
 11-30mm incl. +0/-0.90  
 31-50mm incl. +0/-1.10  
 51-80mm incl. +0/-1.50  
 81-120mm incl. +0/-1.75  
 121-200mm incl. +0/-2.00

## Drywall Screws

ISO - EN -

### Phillips Bugle Head Drywall Screw



CE

### Phillips Bugle Head Drywall Screw Coarse Thread

| SIZE | Wire Dia<br>(ref.) | D1   |      | D2   |      | A   |     | Q    |     | W   | F   |     | P   |     | R   |     | Torque<br>Min(N*m) |
|------|--------------------|------|------|------|------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|--------------------|
|      |                    | min  | max  | min  | max  | min | max | min  | max |     | min | max | MM  | TPI | min | max |                    |
| 3,5  | 2.65               | 3,65 | 3,90 | 2,25 | 2,45 | 7,9 | 8,5 | 2,64 | 3,0 | Ph2 | 5,0 | 6,5 | 2,8 | 9   | 4,5 | 5,0 | 2,2                |
| 3,9  | 2.90               | 3,90 | 4,20 | 2,35 | 2,50 | 7,9 | 8,5 | 2,64 | 3,0 | Ph2 | 5,0 | 6,5 | 2,8 | 9   | 4,5 | 5,0 | 3,0                |
| 4,2  | 3.20               | 4,30 | 4,60 | 2,80 | 3,00 | 7,9 | 8,5 | 2,64 | 3,0 | Ph2 | 5,0 | 6,5 | 2,8 | 9   | 4,5 | 5,0 | 3,7                |
| 4,8  | 3.70               | 4,90 | 5,30 | 3,20 | 3,50 | 8,5 | 9,4 | 2,87 | 3,3 | Ph2 | 5,0 | 6,5 | 3,1 | 8   | 4,5 | 5,0 | 5,8                |

Notes:

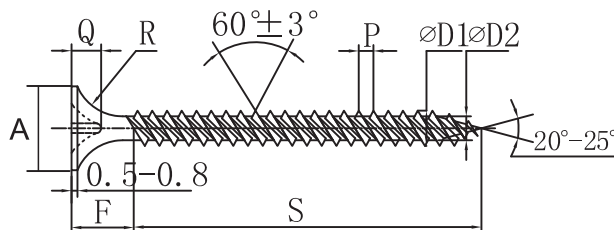
- 1、Material: C1022A
- 2、Case hardness: Hv 550-800
- 3、Core Hardness: Hv 300-500
- 4、Bending Angle:  $\geq 15^\circ$
- 5、 $L \leq 50$  full,  $L > 50$ ,  $S \geq 45$

Nominal Length L:

13-19mm incl. +0/-0.50  
25-30mm incl. +0/-0.80  
32-50mm incl. +0/-1.50  
55-90mm incl. +0/-1.50  
100-152mm incl. +0/-2.50

ISO - EN -

### Phillips Bugle Head Drywall Screw



CE

### Phillips Bugle Head Drywall Screw Twinfast Thread

| SIZE | Wire Dia<br>(ref.) | D1   |      | D2   |      | A   |     | Q    |     | M   | F   |     | P   |     | R   |     | Torque<br>Min(N*m) |
|------|--------------------|------|------|------|------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|--------------------|
|      |                    | min  | max  | min  | max  | min | max | min  | max |     | min | max | MM  | TPI | min | max |                    |
| 3.5  | 2.65               | 3.40 | 3.60 | 2.27 | 2.42 | 7.9 | 8.5 | 2.64 | 3.0 | PH2 | 5.0 | 6.5 | 1.4 | 17  | 4.5 | 5.0 | 2.2                |
| 3.9  | 2.90               | 3.70 | 3.90 | 2.40 | 2.60 | 7.9 | 8.5 | 2.64 | 3.0 | PH2 | 5.0 | 6.5 | 1.6 | 16  | 4.5 | 5.0 | 3.0                |
| 4.2  | 3.20               | 4.05 | 4.30 | 2.80 | 3.00 | 7.9 | 8.5 | 2.64 | 3.0 | PH2 | 5.0 | 6.5 | 1.7 | 15  | 4.5 | 5.0 | 3.7                |
| 4.8  | 3.70               | 4.70 | 4.90 | 3.20 | 3.40 | 8.5 | 9.4 | 2.87 | 3.0 | PH2 | 5.0 | 6.5 | 2.1 | 12  | 4.5 | 5.0 | 5.8                |

Notes:

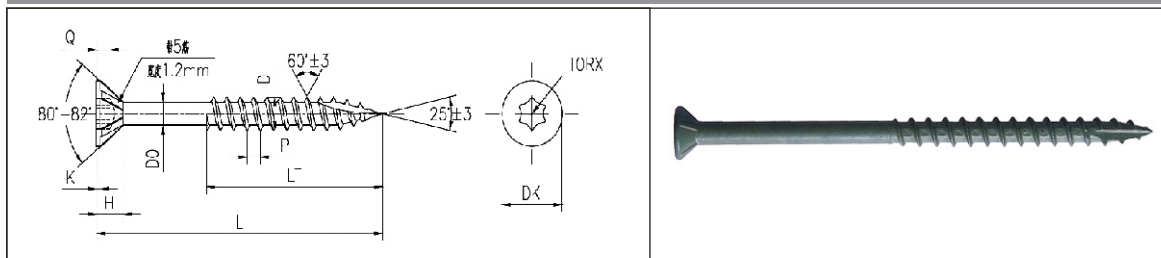
- 1、Material: C1022A
- 2、Case hardness: Hv 550-800
- 3、Core Hardness: Hv 300-500
- 4、Bending Angle:  $\geq 15^\circ$
- 5、 $L \leq 50$  full,  $L > 50$ ,  $S \geq 45$

Nominal Length L:

13-19mm incl. +0/-0.50  
25-30mm incl. +0/-0.80  
32-50mm incl. +0/-1.20  
55-90mm incl. +0/-1.50  
100-152mm incl. +0/-2.50

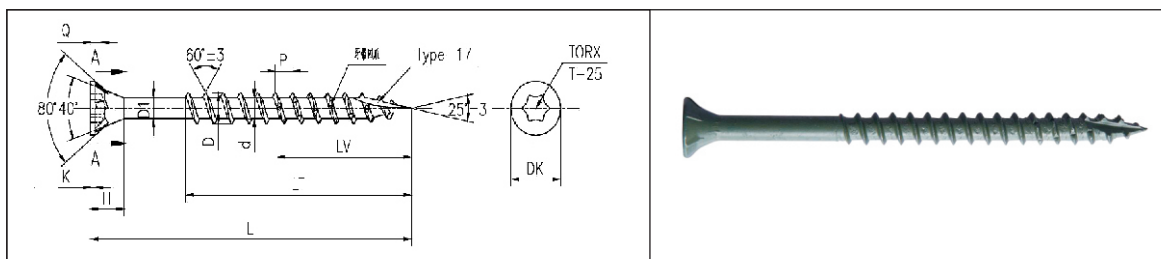
## Deck Screws

### Deck Screw, Star Drive Flat Head W/5 Nibs T-17



| SIZE<br>ITEM | DK      | H         | K     | Q       | TORX | D0  | D        | P | L           | LT          | Torque |
|--------------|---------|-----------|-------|---------|------|-----|----------|---|-------------|-------------|--------|
| #8x1-1/4"    | 7.6-8.2 | 3.2-4.1   | 0.8-1 | 1.5-1.8 | T-20 | 3.2 | 4.35-4.7 | 9 | 30.5-33     | 14.75-16.75 | 4.6    |
| #8x1-5/8"    | 7.6-8.2 | 3.2-4.1   | 0.8-1 | 1.5-1.8 | T-20 | 3.2 | 4.35-4.7 | 9 | 40.05-42.55 | 20.28-22.28 | 4.6    |
| #8x2"        | 7.6-8.2 | 3.2-4.1   | 0.8-1 | 1.5-1.8 | T-20 | 3.2 | 4.35-4.7 | 9 | 49.3-52.3   | 27.8-29.8   | 4.6    |
| #9x2-1/2"    | 8.2-8.8 | 3.4-4.3   | 0.8-1 | 1.9-2.2 | T-25 | 3.5 | 4.6-5    | 9 | 62-65       | 34.5-36.5   | 5.6    |
| #9x3"        | 8.2-8.8 | 3.4-4.3   | 0.8-1 | 1.9-2.2 | T-25 | 3.5 | 4.6-5    | 9 | 74.7-77.7   | 35.2-37.2   | 5.6    |
| #10x3-1/2"   | 8.8-9.4 | 3.65-4.55 | 0.8-1 | 1.9-2.2 | T-25 | 3.8 | 4.9-5.3  | 8 | 87.15-90.65 | 47.4-50.4   | 6.6    |

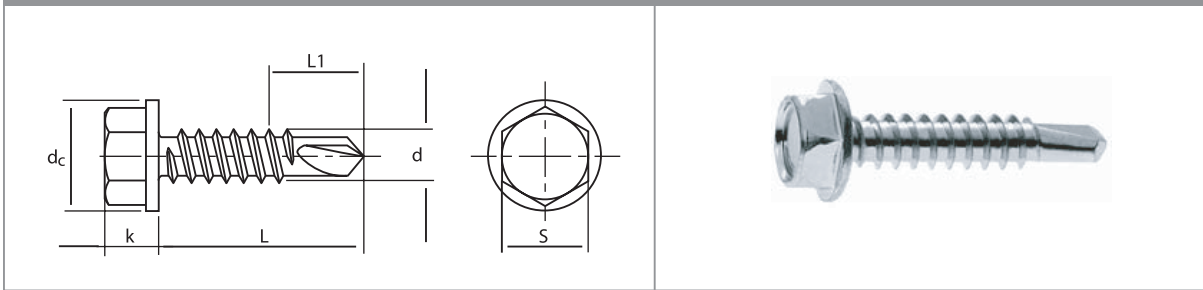
### Deck Screw, Star Drive Double Flat Head W/6 Nibs Auger Threads T-17



| SIZE<br>ITEM | DK        | H     | K         | Q     | D1        | D      | d     | P | L            | LT          | LV         |
|--------------|-----------|-------|-----------|-------|-----------|--------|-------|---|--------------|-------------|------------|
| #8x1-1/4"    | 7.87-8.38 | 4.5-6 | 0.51-0.79 | ≥1.27 | 3.02-3.12 | 4-4.45 | ≥2.69 | 8 | 31.75-33     | 21.17-22    | 14.3-15.55 |
| #8x1-5/8"    | 7.87-8.38 | 4.5-6 | 0.51-0.79 | ≥1.27 | 3.02-3.12 | 4-4.45 | ≥2.69 | 8 | 41.28-42.55  | 27.52-28.37 | 14.3-15.55 |
| #8x2"        | 7.87-8.38 | 4.5-6 | 0.51-0.79 | ≥1.27 | 3.02-3.12 | 4-4.45 | ≥2.69 | 8 | 50.8-52.3    | 33.86-34.86 | 19-20.25   |
| #10x2-1/2"   | 8.76-9.27 | 4.5-6 | 0.51-0.79 | ≥1.27 | 3.63-3.76 | 5-5.16 | ≥3.4  | 9 | 63.5-65      | 42.33-43.33 | 19-20.25   |
| #10x3"       | 8.76-9.27 | 4.5-6 | 0.51-0.79 | ≥1.27 | 3.63-3.76 | 5-5.16 | ≥3.4  | 9 | 76.2-77.7    | 50.8-51.8   | 19-20.25   |
| #10x3-1/2"   | 8.76-9.27 | 4.5-6 | 0.51-0.79 | ≥1.27 | 3.63-3.76 | 5-5.16 | ≥3.4  | 9 | 88.9-90.65   | 59.27-60.43 | 19-20.25   |
| #10x4"       | 8.76-9.27 | 4.5-6 | 0.51-0.79 | ≥1.27 | 3.63-3.76 | 5-5.16 | ≥3.4  | 9 | 101.6-103.35 | 68-70       | 19-20.25   |

## Drilling Screws

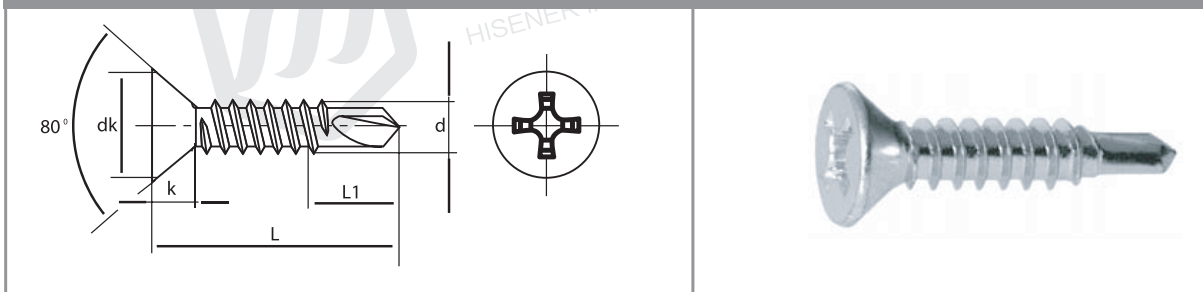
ISO - EN -

**DIN 7504-K**


### Hexagon washer Head Self-drilling screws

| d       | ST3,5 | ST4,2 | ST4,8 | ST5,5 | ST6,3 |
|---------|-------|-------|-------|-------|-------|
| P       | 1     | 1,4   | 1,6   | 1,8   | 1,8   |
| dc      | 8,3   | 8,8   | 10,5  | 1     | 13,2  |
| k (max) | 3,45  | 4,25  | 4,45  | 5,45  | 6,45  |
| s       | 5,5   | 7     | 8     | 8     | 10    |
| L1      | 6     | 7     | 9     | 11    | 12    |
| No. ISO | 6 #   | 8 #   | 10 #  | 12 #  | 14 #  |

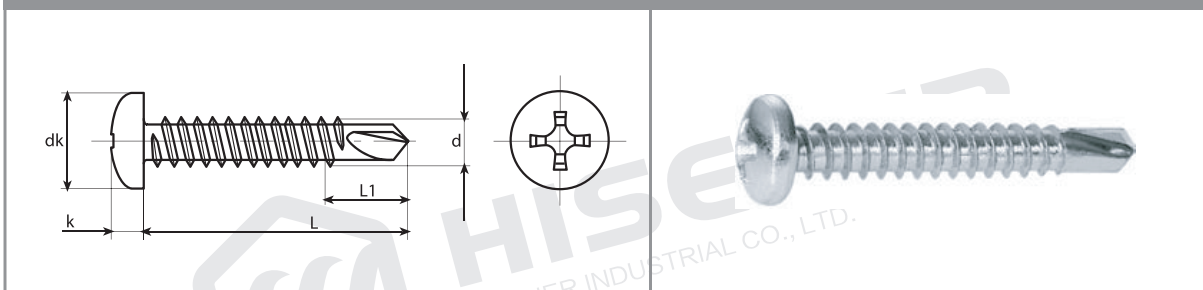
ISO - EN -

**DIN 7504-P**


### Phillips flat head self-drilling screws

| d               | ST3,5 | ST(3,9) | ST4,2 | ST4,8 | ST5,5 |
|-----------------|-------|---------|-------|-------|-------|
| P=pitch         | 1,3   | 1,3     | 1,4   | 1,6   | 1,8   |
| dk              | 6,8   | 7,5     | 8,1   | 9,5   | 10,8  |
| L1              | 5     | 6       | 7     | 8     | 10    |
| No. Phillips(H) | 2     | 2       | 2     | 2     | 3     |
| No. ISO         | 6 #   | 7 #     | 8 #   | 10 #  | 12 #  |

ISO - EN -

**DIN 7504-N**


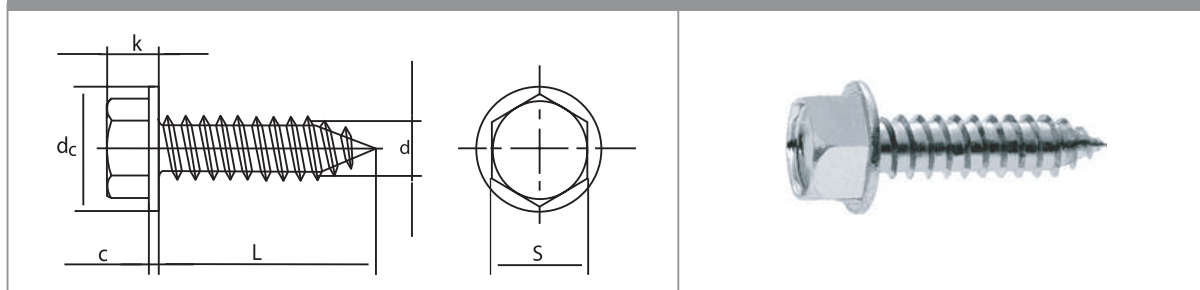
### Phillips pan head self-drilling screws

| d               | ST2,9 | ST3,5 | ST(3,9) | ST4,2 | ST4,8 | ST5,5 |
|-----------------|-------|-------|---------|-------|-------|-------|
| P = pitch       | 1,1   | 1,3   | 1,3     | 1,4   | 1,6   | 1,8   |
| dk              | 5,6   | 6,9   | 7,5     | 8,2   | 9,5   | 10,8  |
| k               | 2,2   | 2,6   | 2,8     | 3,05  | 3,55  | 3,95  |
| L1              | 4,5   | 5     | 6       | 7     | 8     | 9     |
| No. Phillips(H) | 1     | 2     | 2       | 2     | 2     | 3     |
| No. ISO         | 4 #   | 6 #   | 7 #     | 8 #   | 10 #  | 12 #  |

## Tapping Screws

### DIN 6928

ISO 7053 EN -

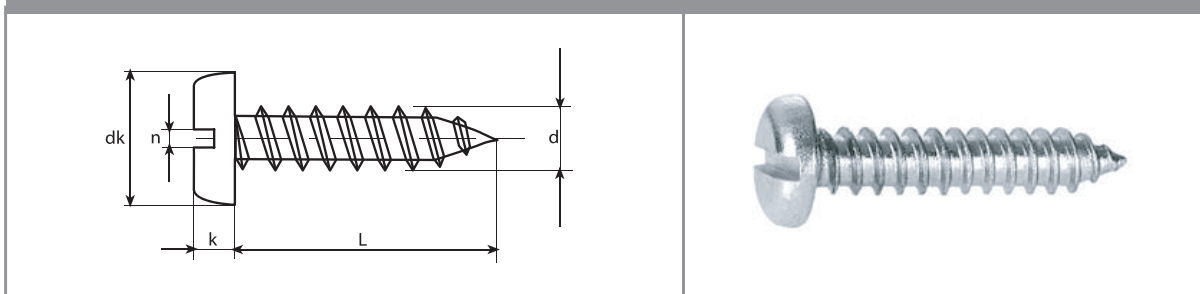


#### Hexagon washer head tapping screws

| d       | ST3,5 | ST4,2 | ST4,8 | ST6,3 |
|---------|-------|-------|-------|-------|
| P       | 1,3   | 1,4   | 1,6   | 1,8   |
| dc min  | 7,6   | 8,1   | 9,8   | 12,2  |
| dc max  | 8,3   | 8,8   | 10,5  | 13,5  |
| k       | 2,5   | 2,8   | 3,1   | 4,95  |
| c       | 0,5   | 0,6   | 0,7   | 0,9   |
| s       | 5,5   | 7     | 8     | 10    |
| No. ISO | 6 #   | 8 #   | 10 #  | 14 #  |

### DIN 7971

ISO 1482 EN -



#### Slotted pan head tapping screws

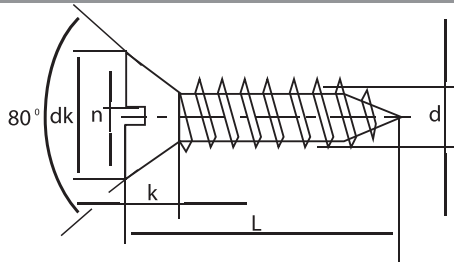
| d       | ST2,9 | ST3,5 | ST3,9 | ST4,2 | ST4,8 | ST5,5 | ST6,3 |
|---------|-------|-------|-------|-------|-------|-------|-------|
| P       | 1,1   | 1,3   | 1,3   | 1,4   | 1,6   | 1,8   | 1,8   |
| dk      | 5,6   | 6,9   | 7,5   | 8,2   | 9,5   | 10,8  | 12,5  |
| k       | 1,75  | 2,1   | 2,25  | 2,45  | 2,8   | 3,2   | 3,65  |
| n       | 0,8   | 1     | 1     | 1,2   | 1,2   | 1,6   | 1,6   |
| No. ISO | 4 #   | 6 #   | 7 #   | 8 #   | 10 #  | 12 #  | 14 #  |



## Tapping Screws

ISO 1482 EN -

**DIN 7972**

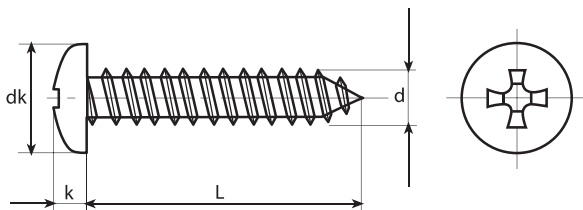


Slotted countersunk head tapping screws

| d       | ST2,9 | ST3,5 | ST3,9 | ST4,2 | ST4,8 | ST5,5 | ST6,3 |
|---------|-------|-------|-------|-------|-------|-------|-------|
| P       | 1,1   | 1,3   | 1,3   | 1,4   | 1,6   | 1,8   | 1,8   |
| dk      | 5,5   | 6,8   | 7,5   | 8,1   | 9,5   | 10,8  | 12,4  |
| k       | 1,7   | 2,1   | 2,3   | 2,5   | 3     | 3,4   | 3,8   |
| N       | 0,8   | 1     | 1     | 1,2   | 1,2   | 1,6   | 1,6   |
| No. ISO | 4 #   | 6 #   | 7 #   | 8 #   | 10 #  | 12 #  | 14 #  |

ISO 7049 EN -

**DIN 7981**

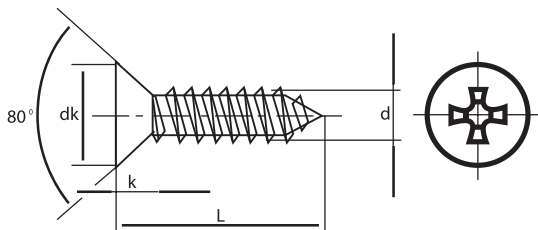


Cross recessed pan head tapping screws

| d               | ST2,9 | ST3,5 | ST3,9 | ST4,2 | ST4,8 | ST5,5 | ST6,3 |
|-----------------|-------|-------|-------|-------|-------|-------|-------|
| P               | 1,1   | 1,3   | 1,3   | 1,4   | 1,6   | 1,8   | 1,8   |
| dk              | 5,6   | 6,9   | 7,5   | 8,2   | 9,5   | 10,8  | 12,5  |
| k               | 2,2   | 2,6   | 2,8   | 3,05  | 3,55  | 3,95  | 4,55  |
| No. Phillips(H) | 1     | 2     | 2     | 2     | 2     | 3     | 3     |
| No. ISO         | 4 #   | 6 #   | 7 #   | 8 #   | 10 #  | 12 #  | 14 #  |

ISO 7050 EN -

**DIN 7982**



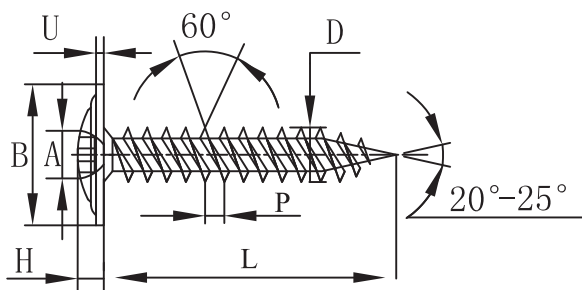
Cross recessed flat countersunk head tapping screws

| d               | ST2,9 | ST3,5 | ST(3,9) | ST4,2 | ST4,8 | ST5,5 | ST6,3 |
|-----------------|-------|-------|---------|-------|-------|-------|-------|
| P               | 1,1   | 1,3   | 1,3     | 1,4   | 1,6   | 1,8   | 1,8   |
| dk              | 5,5   | 6,8   | 7,5     | 8,1   | 9,5   | 10,8  | 12,4  |
| k               | 1,7   | 2,1   | 2,3     | 2,5   | 3     | 3,4   | 3,8   |
| No. Phillips(H) | 1     | 2     | 2       | 2     | 2     | 3     | 3     |
| No. ISO         | 4 #   | 6 #   | 7 #     | 8 #   | 10 #  | 12 #  | 14 #  |

## Truss Head Screws

### MTS-Sharp

ISO - EN -

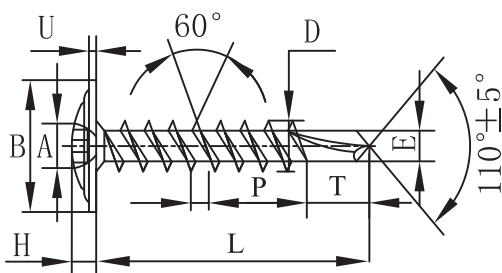


### Modified Truss Head Self Tapping Screws, Twinfast Thread

| Size                                                                                                 | A      | B     | U    | H    | D    | P    | Torque<br>Min(N*m)                                                                                    |
|------------------------------------------------------------------------------------------------------|--------|-------|------|------|------|------|-------------------------------------------------------------------------------------------------------|
| #8-15<br>(4,2-1,7)                                                                                   | #2Phil | 10,60 | 1,20 | 2,40 | 4,22 | Ref. | 3,7                                                                                                   |
|                                                                                                      |        | 10,20 | 0,80 | 2,00 | 4,05 | 1,70 |                                                                                                       |
| Notes:<br>1、 Case Depth: 0.10-2.23mm<br>2、 Case Hardness: Hv 550-700<br>3、 Core hardness: Hv 320-420 |        |       |      |      |      |      | Nominal Length L:<br>10-19mm incl. +0 / -0.76<br>19-38mm incl. +0 / -1.27<br>41-76mm incl. +0 / -1.52 |

### MTS-Drilling

ISO - EN -



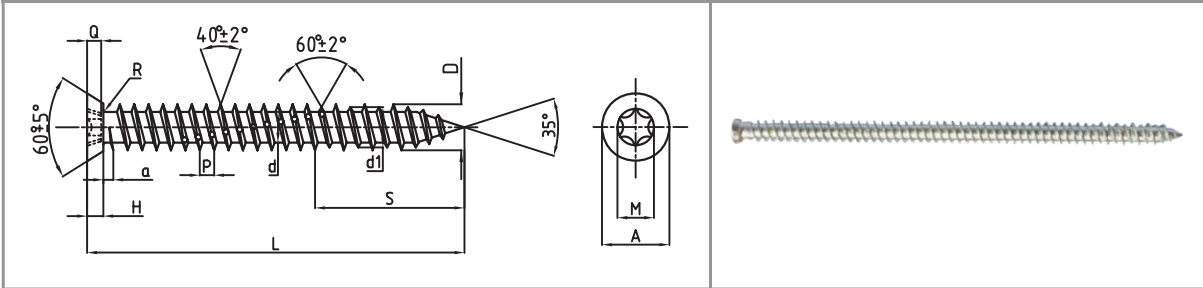
### Modified Truss Head Self Drilling Screw

| Size                         | A      | B     | U    | H    | D                        | P    | T    | E    | Torque<br>Min(N*m) |
|------------------------------|--------|-------|------|------|--------------------------|------|------|------|--------------------|
| #8-18<br>(4,2-1,4)           | #2Phil | 10,60 | 1,20 | 2,40 | 4,22                     | Ref. | 5,80 | 3,45 | 4,2                |
|                              |        | 10,20 | 0,80 | 2,00 | 4,05                     | 1,41 | 4,45 | 3,35 |                    |
| Notes:                       |        |       |      |      | Nominal Length L:        |      |      |      |                    |
| 1、 Case Depth: 0.10-2.23mm   |        |       |      |      | 10-19mm incl. +0 / -0.76 |      |      |      |                    |
| 2、 Case Hardness: Hv 550-700 |        |       |      |      | 19-38mm incl. +0 / -1.27 |      |      |      |                    |
| 3、 Core hardness: Hv 320-420 |        |       |      |      | 41-76mm incl. +0 / -1.52 |      |      |      |                    |

## Screws

ISO - EN -

### Concrete Screws

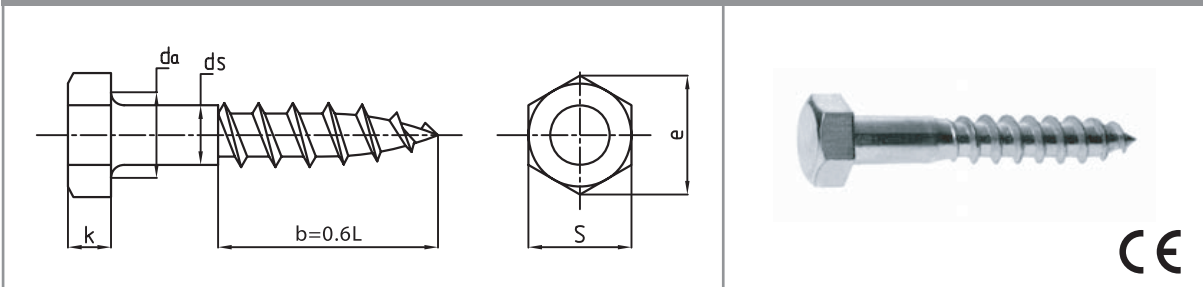


### Torx Flat Head, Concrete Screws, Hi-low Thread

| Size | Head Dia. | Head Hi. | a max | R max | Recess Width | Recess Depth. | Drive Size | Major Dia. |     | Minor Dia | pitch | Torq.  |
|------|-----------|----------|-------|-------|--------------|---------------|------------|------------|-----|-----------|-------|--------|
|      | A         | H max    |       |       | M            | Q             |            | D          | d1  | d         | p     |        |
| 7,5  | 10,5      | 2,75     | 1     | 1,5   | 5,8          | 2             | T30        | 7,2        | 6,5 | 5,1       | 2,4   | 16 min |
|      | 11,2      |          |       |       |              |               |            | 7,5        |     | 5,5       | 2,8   |        |

ISO - EN -

### DIN 571

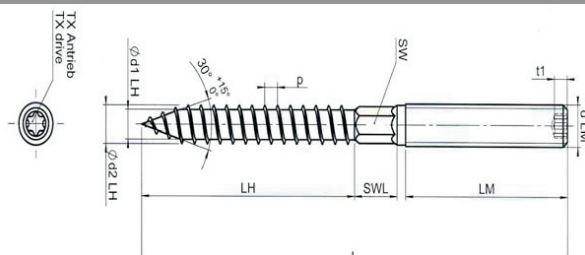


### Hexagon head wood Screws (Coach Screws)

| Thread size |                   | 4    | 5    | 6     | (7)   | 8     | 10    | 12    | 16    | 20    |
|-------------|-------------------|------|------|-------|-------|-------|-------|-------|-------|-------|
| ds          | max.=nominal size | 4    | 5    | 6     | (7)   | 8     | 10    | 12    | 16    | 20    |
|             | min               | 3.52 | 4.52 | 5.52  | 6.42  | 7.42  | 9.42  | 11.3  | 15.3  | 19.3  |
| da          | max               | 5    | 6    | 7.2   | 8.2   | 10.2  | 12.2  | 15.2  | 19.2  | 24.4  |
| k           | Nominal size      | 2.8  | 3.5  | 4     | 5     | 5.5   | 7     | 8     | 10    | 13    |
|             | max               | 3.1  | 3.88 | 4.38  | 5.38  | 5.88  | 7.45  | 8.45  | 10.45 | 13.90 |
|             | min               | 2.5  | 3.13 | 3.63  | 4.63  | 5.13  | 6.55  | 7.55  | 9.55  | 12.1  |
| s           | max               | 7    | 8    | 10    | 12    | 13    | 17    | 19    | 24    | 30    |
|             | Nominal size      | 7    | 8    | 10    | 12    | 13    | 17    | 19    | 24    | 30    |
|             | min               | 6.64 | 7.64 | 9.64  | 11.57 | 12.57 | 16.57 | 18.48 | 23.16 | 29.16 |
| e           | min               | 7.50 | 8.63 | 10.89 | 13.07 | 14.2  | 18.72 | 20.88 | 26.17 | 32.95 |

# Hanger Bolts

ISO - EN -

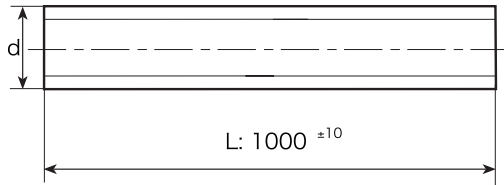


HANGER BOLT

| DIA | Length |         | metric/L |        | wood/L |         | wood outer  | wood core  | wood pitch | SW      | SW/L   | TORX              |
|-----|--------|---------|----------|--------|--------|---------|-------------|------------|------------|---------|--------|-------------------|
| M4  | 20     | +/-2.0  | 10       | +/-1.5 | 10     | +/-1.5  | 4.2+/-0.15  | 3.45       | 1.8+/-0.3  | w/o     | w/o    | w/o               |
| M4  | 25     | +/-2.0  | 10       | +/-1.5 | 10     | +/-1.5  | 4.2+/-0.15  | 3.45       | 1.8+/-0.3  | w/o     | w/o    | w/o               |
| M4  | 30     | +/-2.0  | 10       | +/-1.5 | 15     | +/-1.5  | 4.2+/-0.15  | 3.45       | 1.8+/-0.3  | w/o     | w/o    | w/o               |
| M4  | 35     | +/-2.0  | 15       | +/-1.5 | 15     | +/-1.5  | 4.2+/-0.15  | 3.45       | 1.8+/-0.3  | w/o     | w/o    | w/o               |
| M4  | 40     | +/-2.0  | 17       | +/-1.5 | 20     | +/-1.5  | 4.2+/-0.15  | 3.45       | 1.8+/-0.3  | w/o     | w/o    | w/o               |
| M5  | 25     | +/-2.0  | 10       | +/-1.5 | 15     | +/-1.5  | 5.35+/-0.15 | 4.35       | 2.2+/-0.3  | w/o     | w/o    | w/o               |
| M5  | 40     | +/-2.0  | 15       | +/-1.5 | 20     | +/-1.5  | 5.35+/-0.15 | 4.35       | 2.2+/-0.3  | w/o     | w/o    | w/o               |
| M5  | 50     | +/-2.0  | 20       | +/-1.5 | 20     | +/-1.5  | 5.35+/-0.15 | 4.35       | 2.2+/-0.3  | w/o     | w/o    | w/o               |
| M6  | 40     | +/-2.0  | 17       | +/-1.5 | 23     | +/-1.5  | 6+/-0.15    | 4.7        | 2.6+/-0.3  | w/o     | w/o    | T15 2+/-0.15      |
| M6  | 50     | +/-2.0  | 20       | +/-1.5 | 30     | +/-1.5  | 6+/-0.15    | 4.7        | 2.6+/-0.3  | w/o     | w/o    | T15 2+/-0.15      |
| M6  | 60     | +/-2.0  | 20       | +/-1.5 | 30     | +/-1.5  | 6+/-0.15    | 4.7        | 2.6+/-0.3  | w/o     | w/o    | T15 2+/-0.15      |
| M6  | 70     | +/-2.0  | 30       | +/-1.5 | 30     | +/-1.5  | 6+/-0.15    | 4.7        | 2.6+/-0.3  | w/o     | w/o    | T15 2+/-0.15      |
| M6  | 80     | +/-2.0  | 30       | +/-1.5 | 30     | +/-1.5  | 6+/-0.15    | 4.7        | 2.6+/-0.3  | w/o     | w/o    | T15 2+/-0.15      |
| M6  | 90     | +/-2.0  | 30       | +/-1.5 | 30     | +/-1.5  | 6+/-0.15    | 4.7        | 2.6+/-0.3  | w/o     | w/o    | T15 2+/-0.15      |
| M6  | 120    | +/-2.0  | 30       | +/-1.5 | 30     | +/-1.5  | 6+/-0.15    | 4.7        | 2.6+/-0.3  | w/o     | w/o    | T15 2+/-0.15      |
| M6  | 150    | +/-2.0  | 30       | +/-1.5 | 30     | +/-1.5  | 6+/-0.15    | 4.7        | 2.6+/-0.3  | w/o     | w/o    | T15 2+/-0.15      |
| M8  | 50     | +/-1.25 | 15       | +/-2.0 | 30     | +/-1.5  | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | w/o     | w/o    | T25 3.0+/-0.3     |
| M8  | 60     | +/-1.5  | 20       | +/-2.0 | 30     | +/-1.25 | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 8+/-2  | T25 3.0+/-0.3     |
| M8  | 70     | +/-1.5  | 25       | +/-2.0 | 30     | +/-1.25 | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 10+/-2 | T25 3.0+/-0.3     |
| M8  | 80     | +/-1.5  | 30       | +/-2.0 | 40     | +/-1.25 | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 10+/-2 | T25 3.0+/-0.3     |
| M8  | 90     | +/-1.75 | 30       | +/-2.0 | 40     | +/-1.25 | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 10+/-2 | T25 3.0+/-0.3     |
| M8  | 100    | +/-1.75 | 40       | +/-2.0 | 40     | +/-1.25 | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 10+/-2 | T25 3.0+/-0.3     |
| M8  | 110    | +/-1.75 | 40       | +/-2.0 | 50     | +/-1.25 | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 10+/-2 | T25 3.0+/-0.3     |
| M8  | 120    | +/-1.75 | 50       | +/-2.0 | 50     | +/-1.25 | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 10+/-2 | T25 3.0+/-0.3     |
| M8  | 130    | +/-2.0  | 50       | +/-2.0 | 50     | +/-1.25 | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 10+/-2 | T25 3.0+/-0.3     |
| M8  | 140    | +/-2.0  | 50       | +/-2.0 | 50     | +/-1.25 | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 10+/-2 | T25 3.0+0.1/-0.5  |
| M8  | 150    | +/-2.0  | 50       | +/-2.0 | 50     | +/-1.25 | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 10+/-2 | T25 3.0+0.1/-0.5  |
| M8  | 160    | +/-2.0  | 50       | +/-2.0 | 50     | +/-1.5  | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 10+/-2 | T25 3.0+0.1/-0.5  |
| M8  | 180    | +/-2.0  | 50       | +/-2.0 | 50     | +/-1.5  | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 10+/-2 | T25 3.0+0.1/-0.5  |
| M8  | 200    | +/-2.0  | 50       | +/-2.0 | 50     | +/-1.5  | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 10+/-2 | T25 3.0+0.1/-0.5  |
| M8  | 220    | +/-2.0  | 50       | +/-2.0 | 50     | +/-1.5  | 7.3+/-0.15  | 5.4+/-0.15 | 3.0+/-0.3  | 6-0.15  | 10+/-2 | T25 3.0+0.1/-0.5  |
| M10 | 60     | +/-1.5  | 18       | +/-3.0 | 30     | +/-1.25 | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.15  | 8+/-2  | T25 3.0+/-0.3     |
| M10 | 70     | +/-1.5  | 28       | +/-3.0 | 30     | +/-1.25 | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.16  | 8+/-2  | T25 3.0+/-0.4     |
| M10 | 80     | +/-1.5  | 30       | +/-3.0 | 40     | +/-1.25 | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.15  | 10+/-2 | T25 3.0+/-0.5     |
| M10 | 90     | +/-1.75 | 30       | +/-3.0 | 50     | +/-1.5  | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.15  | 10+/-2 | T25 3.0+/-0.6     |
| M10 | 100    | +/-1.75 | 30       | +/-3.0 | 50     | +/-1.5  | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.15  | 10+/-2 | T25 3.0+/-0.7     |
| M10 | 110    | +/-1.75 | 40       | +/-3.0 | 60     | +/-1.5  | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.15  | 10+/-2 | T25 3.0+/-0.8     |
| M10 | 120    | +/-1.75 | 50       | +/-3.0 | 60     | +/-1.5  | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.15  | 10+/-2 | T25 3.0+/-0.9     |
| M10 | 130    | +/-2.0  | 50       | +/-3.0 | 60     | +/-1.5  | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.15  | 10+/-2 | T25 3.0+0.1/-0.5  |
| M10 | 140    | +/-2.0  | 50       | +/-3.0 | 60     | +/-1.5  | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.15  | 10+/-2 | T25 3.0+0.1/-0.6  |
| M10 | 150    | +/-2.0  | 50       | +/-3.0 | 60     | +/-1.5  | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.15  | 10+/-2 | T25 3.0+0.1/-0.7  |
| M10 | 160    | +/-2.0  | 50       | +/-3.0 | 60     | +/-1.5  | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.15  | 10+/-2 | T25 3.0+0.1/-0.8  |
| M10 | 180    | +/-2.0  | 50       | +/-3.0 | 60     | +/-1.5  | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.15  | 10+/-2 | T25 3.0+0.1/-0.9  |
| M10 | 200    | +/-2.3  | 50       | +/-3.0 | 60     | +/-1.5  | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.15  | 10+/-2 | T25 3.0+0.1/-0.10 |
| M10 | 220    | +/-2.3  | 50       | +/-3.0 | 60     | +/-1.5  | 8.9+/-0.15  | 7+/-0.15   | 3.0+/-0.3  | 8-0.15  | 10+/-2 | T25 3.0+0.1/-0.10 |
| M12 | 100    | +/-1.75 | 30       | +/-3.0 | 60     | +/-1.5  | 11+/-0.15   | 8.7+/-0.15 | 4.2+/-0.3  | 10-0.15 | 10+/-2 | T30 3.0+/-0.3     |
| M12 | 120    | +/-1.75 | 40       | +/-3.0 | 60     | +/-1.5  | 11+/-0.15   | 8.7+/-0.15 | 4.2+/-0.3  | 10-0.15 | 10+/-2 | T30 3.0+/-0.3     |
| M12 | 140    | +/-2.0  | 60       | +/-3.0 | 60     | +/-1.5  | 11+/-0.15   | 8.7+/-0.15 | 4.2+/-0.3  | 10-0.15 | 10+/-2 | T30 3.0+0.1/-0.5  |
| M12 | 160    | +/-2.0  | 60       | +/-3.0 | 60     | +/-1.5  | 11+/-0.15   | 8.7+/-0.15 | 4.2+/-0.3  | 10-0.15 | 10+/-2 | T30 3.0+0.1/-0.5  |
| M12 | 180    | +/-2.0  | 60       | +/-3.0 | 60     | +/-1.5  | 11+/-0.15   | 8.7+/-0.15 | 4.2+/-0.3  | 10-0.15 | 10+/-2 | T30 3.0+0.1/-0.5  |
| M12 | 200    | +/-2.3  | 60       | +/-3.0 | 60     | +/-1.5  | 11+/-0.15   | 8.7+/-0.15 | 4.2+/-0.3  | 10-0.15 | 10+/-2 | T30 3.0+0.1/-0.5  |
| M12 | 250    | +/-3.0  | 100      | +/-3.0 | 80     | +/-1.5  | 11+/-0.15   | 8.7+/-0.15 | 4.2+/-0.3  | 10-0.15 | 10+/-2 | T30 3.0+0.1/-0.5  |
| M12 | 300    | +/-4.0  | 100      | +/-3.0 | 100    | +/-1.5  | 11+/-0.15   | 8.7+/-0.15 | 4.2+/-0.3  | 10-0.15 | 10+/-2 | T30 3.0+0.1/-0.5  |

# Threaded Rods & Anchor Bolts

ISO-EN-

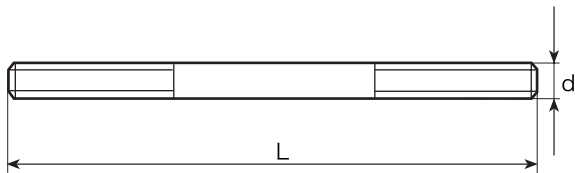
**DIN 975**


Threaded rods—Length 1 meter

| d | M3  | M4  | M5  | M6 | M8   | M10 | M12  | M14 | M16 | M18 | M20 |
|---|-----|-----|-----|----|------|-----|------|-----|-----|-----|-----|
| P | 0,5 | 0,7 | 0,8 | 1  | 1,25 | 1,5 | 1,75 | 2   | 2   | 2,5 | 2,5 |

| d | M22 | M24 | M27 | M30 | M33 | M36 | M39 | M42 | M45 | M48 | M52 |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| P | 2,5 | 3   | 3   | 3,5 | 3,5 | 4   | 4   | 4,5 | 4,5 | 5   | 5   |

ISO-EN-

**Threaded studs-double ends**


Threaded studs—double ends

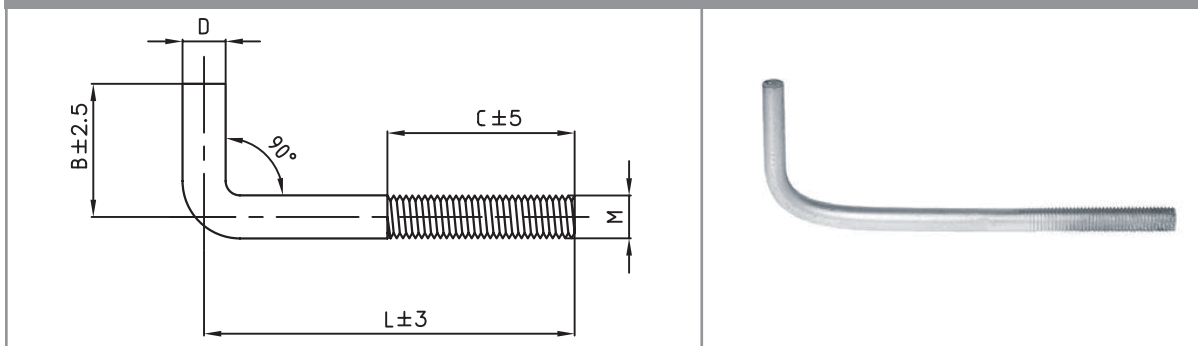
| d | M3  | M4  | M5  | M6 | M8   | M10 | M12  | M14 | M16 | M18 | M20 |
|---|-----|-----|-----|----|------|-----|------|-----|-----|-----|-----|
| P | 0,5 | 0,7 | 0,8 | 1  | 1,25 | 1,5 | 1,75 | 2   | 2   | 2,5 | 2,5 |

| d | M22 | M24 | M27 | M30 | M33 | M36 | M39 | M42 | M45 | M48 | M52 |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| P | 2,5 | 3   | 3   | 3,5 | 3,5 | 4   | 4   | 4,5 | 4,5 | 5   | 5   |

# Threaded Rods & Anchor Bolts

## Anchor Bolts, "L" Type

ISO-EN-

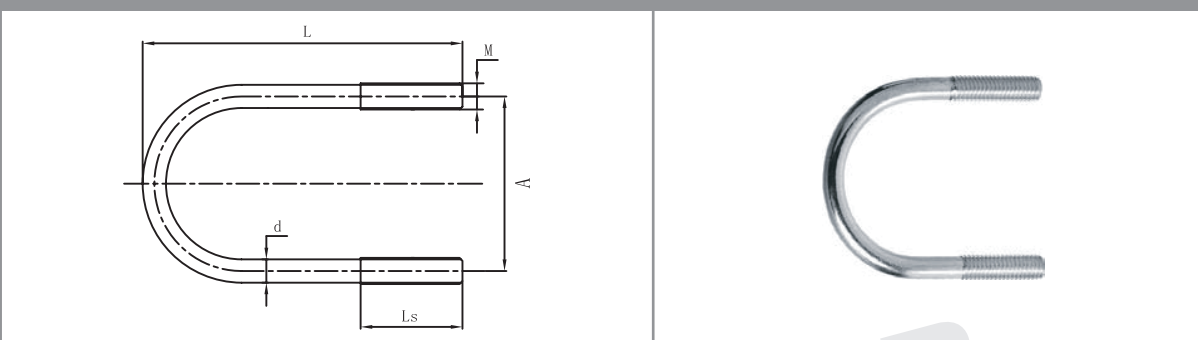


### L-Bolts

| SIZE        | L   |   |   | B   |   |     | C   |   |   | D     |   |     |
|-------------|-----|---|---|-----|---|-----|-----|---|---|-------|---|-----|
| M12X300X50  | 300 | ± | 3 | 50  | ± | 2.5 | 150 | + | 5 | 10.65 | ± | 0.1 |
| M12X300X100 | 300 | ± | 3 | 100 | ± | 2.5 | 150 | + | 5 | 10.65 | ± | 0.1 |
| M16X400X50  | 400 | ± | 3 | 50  | ± | 2.5 | 150 | + | 5 | 14.4  | ± | 0.1 |
| M16X400X100 | 400 | ± | 3 | 100 | ± | 2.5 | 150 | + | 5 | 14.4  | ± | 0.1 |
| M20X500X50  | 500 | ± | 3 | 50  | ± | 2.5 | 150 | + | 5 | 18.1  | ± | 0.1 |
| M20X500X100 | 500 | ± | 3 | 100 | ± | 2.5 | 150 | + | 5 | 18.1  | ± | 0.1 |
| M24X600X50  | 600 | ± | 3 | 50  | ± | 2.5 | 150 | + | 5 | 21.7  | ± | 0.1 |
| M24X600X100 | 600 | ± | 3 | 100 | ± | 2.5 | 150 | + | 5 | 21.7  | ± | 0.1 |
| M27X700X50  | 700 | ± | 3 | 50  | ± | 2.5 | 150 | + | 5 | 24.7  | ± | 0.1 |
| M27X700X100 | 700 | ± | 3 | 100 | ± | 2.5 | 150 | + | 5 | 24.7  | ± | 0.1 |
| M30X700X50  | 700 | ± | 3 | 50  | ± | 2.5 | 150 | + | 5 | 27.4  | ± | 0.1 |
| M30X700X100 | 700 | ± | 3 | 100 | ± | 2.5 | 150 | + | 5 | 27.4  | ± | 0.1 |
| M33X800X50  | 800 | ± | 3 | 50  | ± | 2.5 | 150 | + | 5 | 30.4  | ± | 0.1 |
| M33X800X100 | 800 | ± | 3 | 100 | ± | 2.5 | 150 | + | 5 | 30.4  | ± | 0.1 |

## "U" Bolts

ISO-EN-



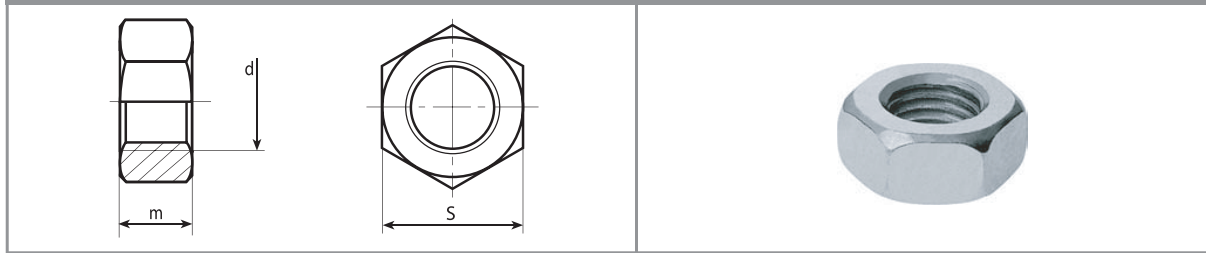
### U-Bolts

| SIZE    | a   |   |   | L   |   |   | Ls  |   |   | d (min) |   |     |
|---------|-----|---|---|-----|---|---|-----|---|---|---------|---|-----|
|         | mm  |   |   | mm  |   |   | mm  |   |   | mm      |   |     |
| M16X400 | 100 | ± | 1 | 400 | ± | 2 | 150 | + | 3 | 14.4    | ± | 0.1 |
| M20X350 | 100 | ± | 1 | 350 | ± | 2 | 150 | + | 3 | 18.1    | ± | 0.1 |
| M20X500 | 100 | ± | 1 | 500 | ± | 2 | 150 | + | 3 | 18.1    | ± | 0.1 |
| M24X350 | 150 | ± | 1 | 350 | ± | 2 | 150 | + | 3 | 21.7    | ± | 0.1 |



# Nuts

ISO 4032 EN 24032

**DIN 934**


## Hexagon nuts

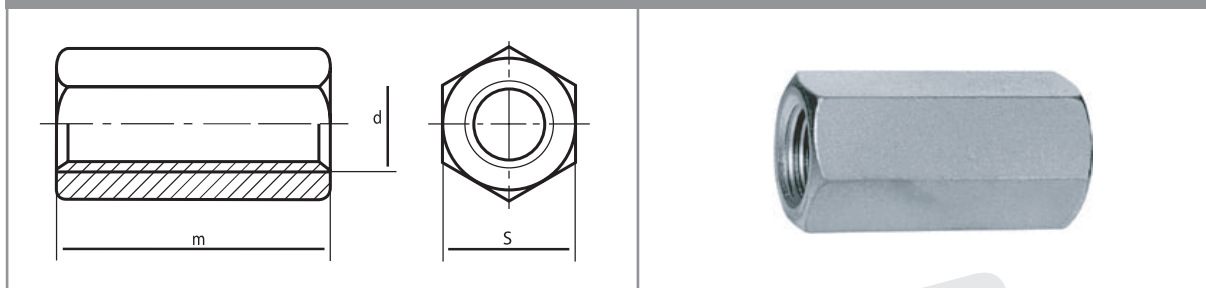
| d | M3  | M4  | M5  | M6 | M7  | M8   | M10    | M12    | M14    |
|---|-----|-----|-----|----|-----|------|--------|--------|--------|
| P | 0,5 | 0,7 | 0,8 | 1  | 1   | 1,25 | 1,5    | 1,75   | 2      |
| m | 2,4 | 3,2 | 4   | 5  | 5,5 | 6,5  | 8      | 10     | 11     |
| s | 5,5 | 7   | 8   | 10 | 11  | 13   | 17/16* | 19/18* | 22/21* |

| d | M16 | M18 | M20 | M22    | M24 | M27 | M30 | M33 | M36 |
|---|-----|-----|-----|--------|-----|-----|-----|-----|-----|
| P | 2   | 2,5 | 2,5 | 2,5    | 3   | 3   | 3,5 | 3,5 | 4   |
| m | 13  | 15  | 16  | 18     | 19  | 22  | 24  | 26  | 29  |
| s | 24  | 27  | 30  | 32/34* | 36  | 41  | 46  | 50  | 55  |

| d | M39 | M42 | M45 | M48 | M52 | M56 | M60 | M64 | M68 |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| P | 4   | 4,5 | 4,5 | 5   | 5   | 5,5 | 5,5 | 6   | 6   |
| m | 31  | 34  | 36  | 38  | 42  | 45  | 48  | 51  | 54  |
| s | 60  | 65  | 70  | 75  | 80  | 85  | 90  | 95  | 100 |

| d | M72 | M76 | M80 | M90 | M100 | M110 |
|---|-----|-----|-----|-----|------|------|
| P | 6   | 6   | 6   | 6   | 6    | 6    |
| m | 58  | 61  | 64  | 72  | 80   | 88   |
| s | 105 | 110 | 115 | 130 | 145  | 155  |

ISO - EN -

**DIN 6334**


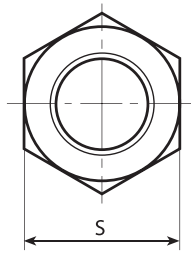
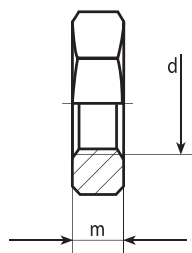
## Hexagon connection nuts-Height 3 x d

| d | M5  | M6 | M8   | M10 | M12  | M14 | M16 | M20 | M24 | M27 | M30 |
|---|-----|----|------|-----|------|-----|-----|-----|-----|-----|-----|
| P | 0,8 | 1  | 1,25 | 1,5 | 1,75 | 2   | 2   | 2,5 | 3   | 3   | 3,5 |
| m | 15  | 18 | 24   | 30  | 36   | 42  | 48  | 60  | 72  | 81  | 90  |
| S | 8   | 10 | 13   | 17  | 19   | 22  | 24  | 30  | 36  | 41  | 46  |

## Nuts

### DIN 936

ISO - EN -



### Hexagon thin nuts

| d        | M8   | M8x1 | M10    | M10x1  | M10x1,25 | M12    |
|----------|------|------|--------|--------|----------|--------|
| P        | 1,25 | 1    | 1,5    | 1      | 1,25     | 1,75   |
| m (nom.) | 5    | 5    | 6      | 6      | 6        | 7      |
| s (nom.) | 13   | 13   | 17/16* | 17/16* | 17/16*   | 19/18* |

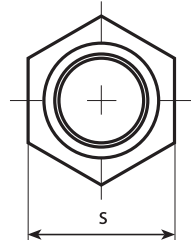
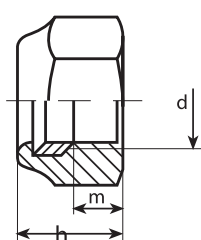
| d        | M12x1,25 | M12x1,5 | M14    | M14x1,5 | M16 | M16x1,5 |
|----------|----------|---------|--------|---------|-----|---------|
| P        | 1,25     | 1,5     | 2      | 1,5     | 2   | 1,5     |
| m (nom.) | 7        | 7       | 8      | 8       | 8   | 8       |
| s (nom.) | 19/18*   | 19/18*  | 22/21* | 22/21*  | 24  | 24      |

| d        | M18 | M18x1,5 | M18x2 | M20 | M20x1,5 | M20x2 |
|----------|-----|---------|-------|-----|---------|-------|
| P        | 2,5 | 1,5     | 2     | 2,5 | 1,5     | 2     |
| m (nom.) | 9   | 9       | 9     | 9   | 9       | 9     |
| s (nom.) | 27  | 27      | 27    | 30  | 30      | 30    |

| d        | M22    | M22x1,5 | M22x2  | M24 | M24x1,5 | M24x2 |
|----------|--------|---------|--------|-----|---------|-------|
| P        | 2,5    | 1,5     | 2      | 3   | 1,5     | 2     |
| m (nom.) | 10     | 10      | 10     | 10  | 10      | 10    |
| s (nom.) | 32/34* | 32/34*  | 32/34* | 36  | 36      | 36    |

### DIN 982

ISO - EN -

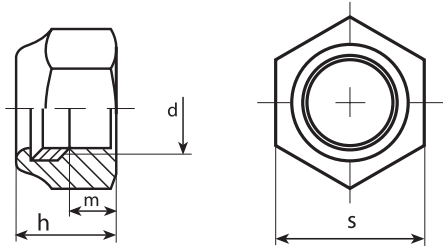


### Prevailing torque type hexagon nuts with nylon insert-High type

| d | M5  | M6 | M8   | M10    | M12    | M14    | M16 | M18 | M20 | M22    | M24 |
|---|-----|----|------|--------|--------|--------|-----|-----|-----|--------|-----|
| p | 0,8 | 1  | 1,25 | 1,5    | 1,75   | 2      | 2   | 2,5 | 2,5 | 2,5    | 3   |
| s | 8   | 10 | 13   | 17/16* | 19/18* | 22/21* | 24  | 27  | 30  | 32/34* | 36  |
| h | 6,3 | 8  | 9,5  | 11,5   | 14     | 16     | 18  | 20  | 22  | 25     | 28  |

# Nuts

ISO - EN -

**DIN 985**


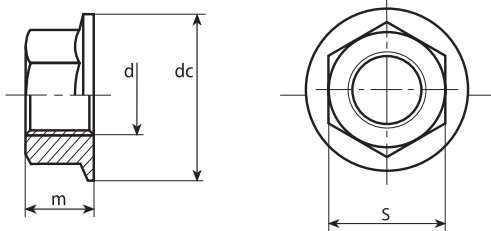
## Prevailing torque type hexagon nuts with nylon insert

| d | M3  | M4  | M5  | M6 | M7  | M8   | M10    | M12    | M14    | M16 | M18  |
|---|-----|-----|-----|----|-----|------|--------|--------|--------|-----|------|
| p | 0,5 | 0,7 | 0,8 | 1  | 1   | 1,25 | 1,5    | 1,75   | 2      | 2   | 2,5  |
| s | 5,5 | 7   | 8   | 10 | 1   | 13   | 17/16* | 19/18* | 22/21* | 24  | 27   |
| h | 4   | 5   | 5   | 6  | 7,5 | 8    | 10     | 12     | 14     | 16  | 18,5 |

| d | M20 | M22    | M24 | M27 | M30 | M33 | M36 | M39 | M42 | M45 | M48 |
|---|-----|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| p | 2,5 | 2,5    | 3   | 3   | 3,5 | 3,5 | 4   | 4   | 4,5 | 4,5 | 5   |
| s | 30  | 32/34* | 36  | 41  | 46  | 50  | 55  | 60  | 65  | 70  | 75  |
| h | 20  | 22     | 24  | 27  | 30  | 33  | 36  | 39  | 42  | 45  | 48  |

ISO 4161 EN -

**DIN 6923**


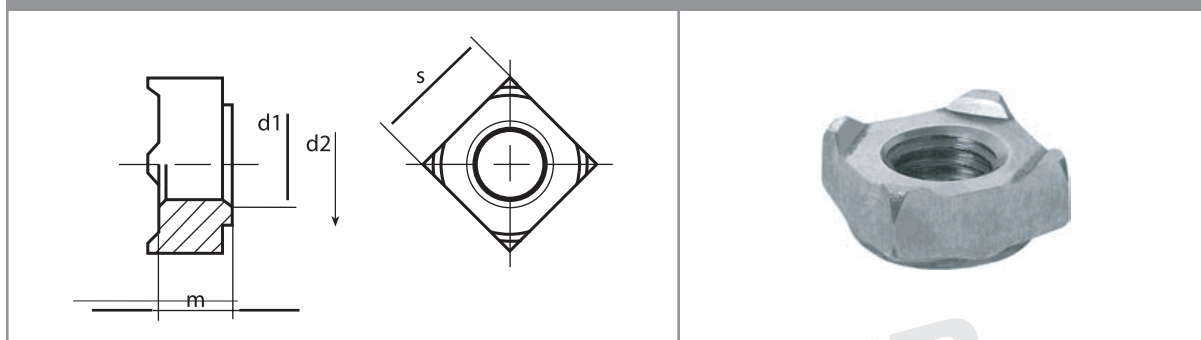
## Hexagon flange nuts

| d  | M5   | M6   | M8   | M10  | M12  | M14  | M16  | M20  |
|----|------|------|------|------|------|------|------|------|
| p  | 0,8  | 1    | 1,25 | 1,5  | 1,75 | 2    | 2    | 2,5  |
| m  | 5    | 6    | 8    | 10   | 12   | 14   | 16   | 20   |
| s  | 8    | 10   | 13   | 15   | 18   | 21   | 24   | 30   |
| dc | 11,8 | 14,2 | 17,9 | 21,8 | 26   | 29,9 | 34,5 | 42,8 |

## Nuts

### DIN 928

ISO - EN -

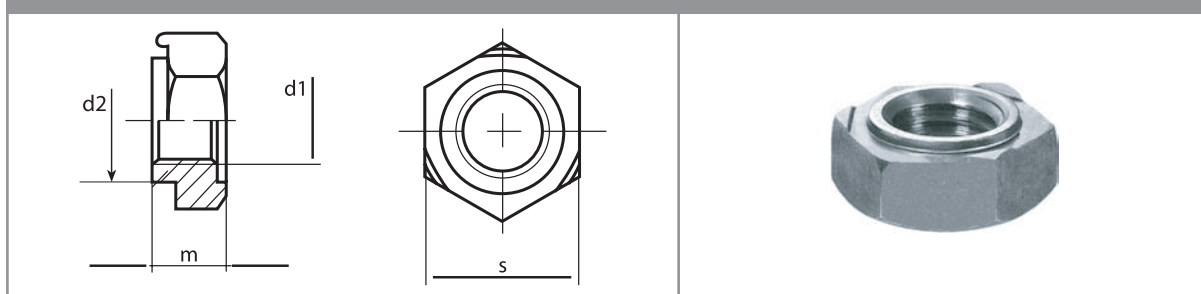


### Square weld nuts

| d1      | M4  | M5  | M6 | M8   | M10  | M12  | M14  | M16  |
|---------|-----|-----|----|------|------|------|------|------|
| p       | 0,7 | 0,8 | 1  | 1,25 | 1,5  | 1,75 | 2    | 2    |
| m (h14) | 3,5 | 4,2 | 5  | 6,5  | 8    | 9,5  | 11   | 13   |
| s (h14) | 7   | 9   | 10 | 14   | 17   | 19   | 22   | 24   |
| d2      | 6   | 7   | 8  | 10,5 | 12,5 | 14,8 | 16,8 | 18,8 |

### DIN 929

ISO - EN -

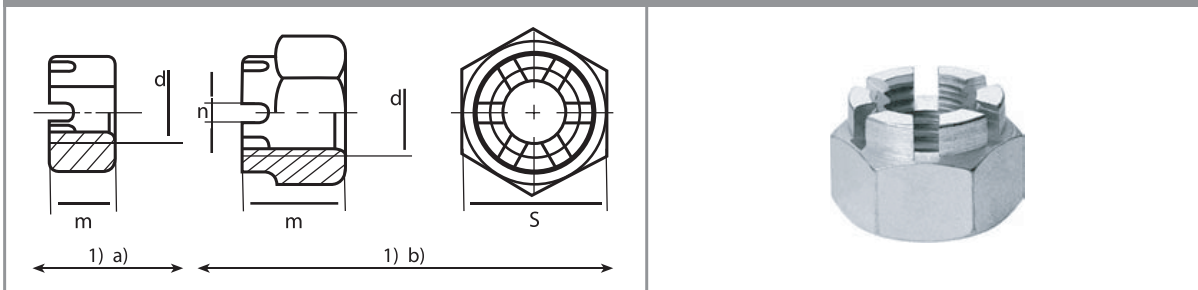


### Hexagon weld nuts

| d1      | M3  | M4  | M5  | M6 | M8   | M10  | M12  | M14  | M16  |
|---------|-----|-----|-----|----|------|------|------|------|------|
| p       | 0,5 | 0,7 | 0,8 | 1  | 1,25 | 1,5  | 1,75 | 2    | 2    |
| m (h14) | 3   | 3,5 | 4   | 5  | 6,5  | 8    | 10   | 11   | 13   |
| s (h13) | 7,5 | 9   | 10  | 11 | 14   | 17   | 19   | 22   | 24   |
| d2      | 4,5 | 6   | 7   | 8  | 10,5 | 12,5 | 14,8 | 16,8 | 18,8 |

# Nuts

ISO - EN -

**DIN 935**


Hexagon castle nuts

| d | M4  | M5  | M6  | M7 | M8   | M10    | M12    | M14    |
|---|-----|-----|-----|----|------|--------|--------|--------|
| p | 0,7 | 0,8 | 1   | 1  | 1,25 | 1,5    | 1,75   | 2      |
| m | 5   | 6   | 7,5 | 8  | 9,5  | 12     | 15     | 16     |
| s | 7   | 8   | 10  | 11 | 13   | 17/16* | 19/18* | 22/21* |
| n | 1,2 | 1,4 | 2   | 2  | 2,5  | 2,8    | 3,5    | 3,5    |

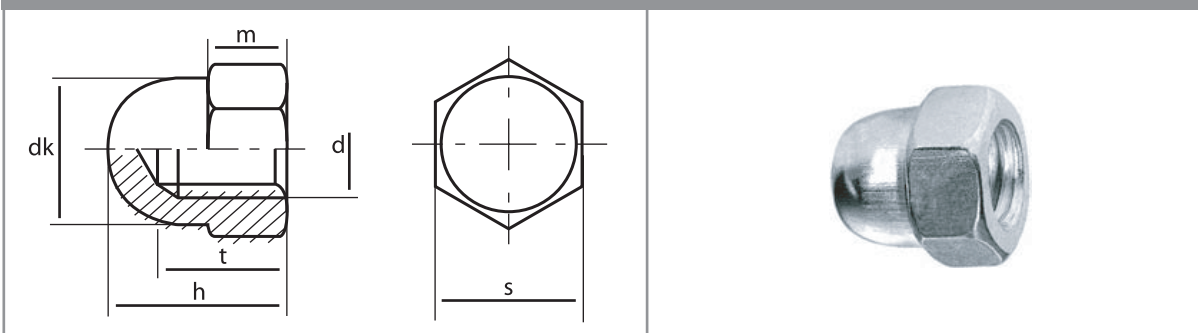
  

| d | M16 | M18 | M20 | M22    | M24 | M27 | M30 | M33 |
|---|-----|-----|-----|--------|-----|-----|-----|-----|
| p | 2   | 2,5 | 2,5 | 2,5    | 3   | 3   | 3,5 | 3,5 |
| m | 19  | 21  | 22  | 26     | 27  | 30  | 33  | 35  |
| s | 24  | 27  | 30  | 32/34* | 36  | 41  | 46  | 50  |
| n | 4,5 | 4,5 | 4,5 | 5,5    | 5,5 | 5,5 | 7   | 7   |

| d | M36 | M39 | M42 | M45 | M48 | M52 | M56 | M60 |
|---|-----|-----|-----|-----|-----|-----|-----|-----|
| p | 4   | 4   | 4,5 | 4,5 | 5   | 5   | 5,5 | 5,5 |
| m | 38  | 40  | 46  | 48  | 50  | 54  | 57  | 63  |
| s | 55  | 60  | 65  | 70  | 75  | 80  | 85  | 90  |
| n | 7   | 7   | 9   | 9   | 9   | 9   | 9   | 1   |

ISO - EN -

**DIN 1587**


Hexagon domed cap nuts, high type

| d        | M4  | M5  | M6  | M8   | M10    | M12    |
|----------|-----|-----|-----|------|--------|--------|
| p        | 0,7 | 0,8 | 1   | 1,25 | 1,50   | 1,75   |
| m (max)  | 3,2 | 4   | 5   | 6,5  | 8      | 10     |
| s        | 7   | 8   | 10  | 13   | 17/16* | 19/18* |
| h        | 8   | 10  | 12  | 15   | 18     | 22     |
| dk (max) | 6,5 | 7,5 | 9,5 | 12,5 | 16     | 18     |
| t        | 5,5 | 7,5 | 8   | 11   | 13     | 16     |

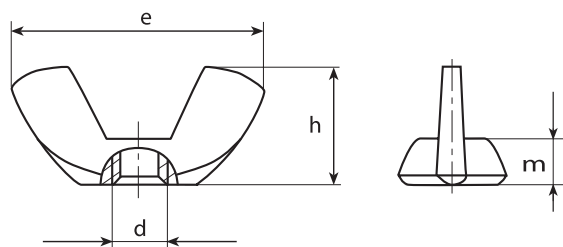
  

| d        | M14    | M16 | M18 | M20 | M22    | M24 |
|----------|--------|-----|-----|-----|--------|-----|
| p        | 2      | 2   | 2,5 | 2,5 | 2,5    | 3   |
| m (max)  | 11     | 13  | 15  | 16  | 18     | 19  |
| s        | 22/21* | 24  | 27  | 30  | 32/34* | 36  |
| h        | 25     | 28  | 32  | 34  | 39     | 42  |
| dk (max) | 21     | 23  | 26  | 28  | 31     | 34  |
| t        | 18     | 21  | 25  | 26  | 29     | 31  |

## Nuts

### DIN 315

ISO - EN -

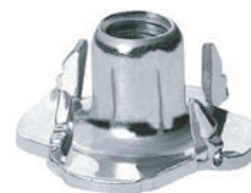
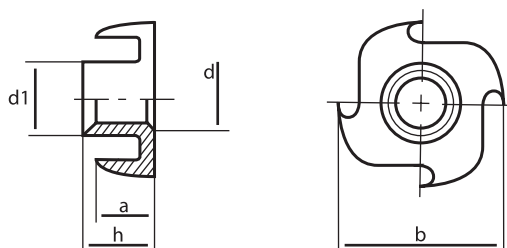


#### Wing nuts-Rounded wings

| d       | M4   | M5  | M6 | M8   | M10 | M12  | M14  | M16  | M20  | M24  |
|---------|------|-----|----|------|-----|------|------|------|------|------|
| p       | 0,7  | 0,8 | 1  | 1,25 | 1,5 | 1,75 | 2    | 2    | 2,5  | 3    |
| m (min) | 3,2  | 4   | 5  | 6,5  | 8   | 10   | 11,2 | 13   | 16   | 20   |
| e (max) | 20   | 26  | 33 | 39   | 51  | 65   | 65   | 73   | 90   | 110  |
| h (max) | 10,5 | 13  | 17 | 20   | 25  | 33,5 | 33,5 | 37,5 | 46,5 | 56,5 |

### DIN 1624

ISO - EN -

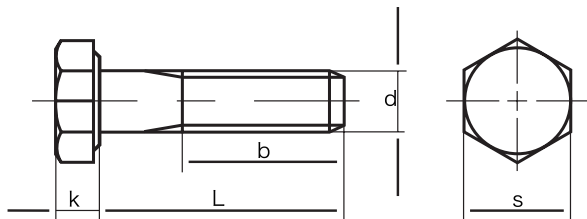


#### Tee nuts

| d  | M3  | M4  | M5  | M6  | M8   | M10  |
|----|-----|-----|-----|-----|------|------|
| p  | 0,5 | 0,7 | 0,8 | 1   | 1,25 | 1,5  |
| d1 | 4,3 | 5   | 6,3 | 7,3 | 9,7  | 11,9 |
| h  | 5   | 6   | 8   | 9   | 11   | 12   |
| a  | 3,5 | 4,5 | 5,5 | 7   | 7,5  | 9    |
| b  | 13  | 15  | 17  | 19  | 22   | 25   |

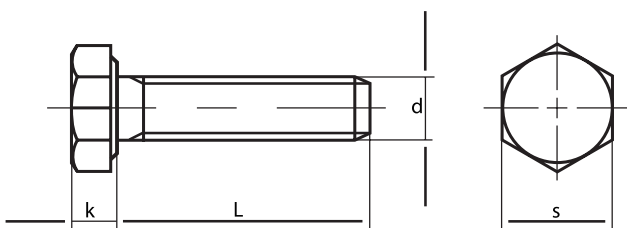


## Metric Bolts

**ISO4014 EN24014**
**DIN 931**


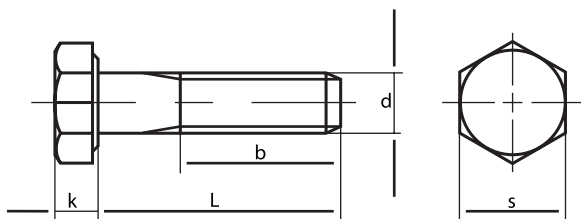
Hexagon head bolts, partial threaded

| d                | M4  | M5  | M6 | M7  | M8   | M10    | M12    | M14    |
|------------------|-----|-----|----|-----|------|--------|--------|--------|
| P                | 0,7 | 0,8 | 1  | 1   | 1,25 | 1,5    | 1,75   | 2      |
| b <sup>(1)</sup> | 14  | 16  | 18 | 20  | 22   | 26     | 30     | 34     |
| (2)              | -   | 22  | 24 | 26  | 28   | 32     | 36     | 40     |
| (3)              | -   | -   | -  | -   | -    | 45     | 49     | 53     |
| k                | 2,8 | 3,5 | 4  | 4,8 | 5,3  | 6,4    | 7,5    | 8,8    |
| s                | 7   | 8   | 10 | 11  | 13   | 17/16* | 19/18* | 22/21* |

**ISO4017 EN24017**
**DIN 933**


Hexagon head bolts, fully threaded

| d | M33 | M36  | M39 | M42 | M45 | M48 | M52 |
|---|-----|------|-----|-----|-----|-----|-----|
| P | 3,5 | 4    | 4   | 4,5 | 4,5 | 5   | 5   |
| k | 21  | 22,5 | 25  | 26  | 28  | 30  | 33  |
| s | 50  | 55   | 60  | 65  | 70  | 75  | 80  |

**ISO8765 EN28765**
**DIN 960**


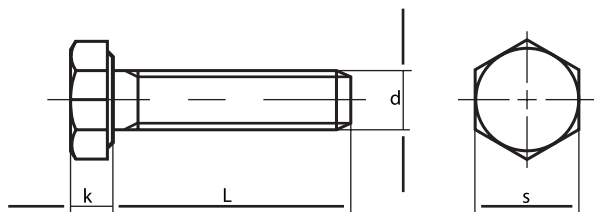
Hexagon head bolts-Metric fine pitch thread, partial threaded

| dxP            | M8x1 | M10x1<br>M10x1,25 | M12x1,25<br>M12x1,5 | M14x1,5 | M16x1,5 | M18x1,5<br>M18x2 | M20x1,5<br>M20x2 | M22x1,5<br>M22x2 | M24x1,5<br>M24x2 |
|----------------|------|-------------------|---------------------|---------|---------|------------------|------------------|------------------|------------------|
| b <sup>1</sup> | 22   | 26                | 30                  | 34      | 38      | 42               | 46               | 50               | 54               |
| 2              | 28   | 32                | 36                  | 40      | 44      | 48               | 52               | 56               | 60               |
| k              | 5,3  | 6,4               | 7,5                 | 8,8     | 10      | 11,5             | 12,5             | 14               | 15               |
| s              | 13   | 17/16*            | 19/18*              | 22/21*  | 24      | 27               | 30               | 32/34*           | 36               |

## Metric Bolts

### DIN 961

ISO 8676 EN 28676

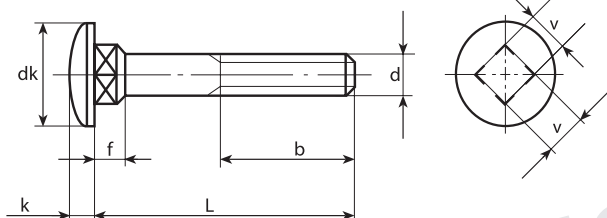


#### Hexagon head bolts-Metric fine pitch thread,full threaded

| dxP | M8x1 | M10x1<br>M10x1,25 | M12x1,25<br>M12x1,5 | M14x1,5 | M16x1,5 | M18x1,5<br>M18x2 | M20x1,5<br>M20x2 |
|-----|------|-------------------|---------------------|---------|---------|------------------|------------------|
| k   | 5,3  | 6,4               | 7,5                 | 8,8     | 10      | 11,5             | 12,5             |
| s   | 13   | 17/16*            | 19/18*              | 22/21*  | 24      | 27               | 30               |

### DIN 603

ISO 8677 EN -

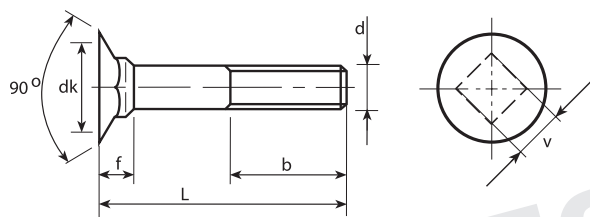


#### Mushroom head square neck bolts (cup square neck bolts)

| d                | M5    | M6    | M8    | M10   | M12   | M16  | M20   |
|------------------|-------|-------|-------|-------|-------|------|-------|
| P                | 0,8   | 1     | 1,25  | 1,5   | 1,75  | 2    | 2,5   |
| b <sup>(1)</sup> | (1)   | (1)   | (1)   | (1)   | (1)   | (1)  | (1)   |
|                  | (2)   | (2)   | (2)   | (2)   | (2)   | (2)  | (2)   |
|                  | (3)   | (3)   | (3)   | (3)   | (3)   | (3)  | (3)   |
| dk (max)         | 13,55 | 16,55 | 20,65 | 24,65 | 30,65 | 38,8 | 46,8  |
| f (max)          | 4,1   | 4,6   | 5,6   | 6,6   | 8,75  | 12,9 | 15,9  |
| k (max)          | 3,3   | 3,88  | 4,88  | 5,38  | 6,95  | 8,95 | 11,05 |
| v (max)          | 5,48  | 6,48  | 8,58  | 10,58 | 12,7  | 16,7 | 20,84 |

### DIN 608

ISO - EN -

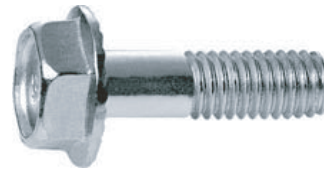
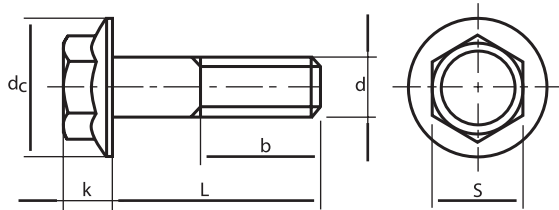


#### Flat countersunk square neck bolts

| d        | M10   | M12   |
|----------|-------|-------|
| P        | 1,5   | 1,75  |
| b        | 26    | 30    |
| dk (max) | 19,65 | 24,65 |
| f (max)  | 8,45  | 11,05 |
| v (max)  | 10,58 | 12,7  |

## Metric Bolts

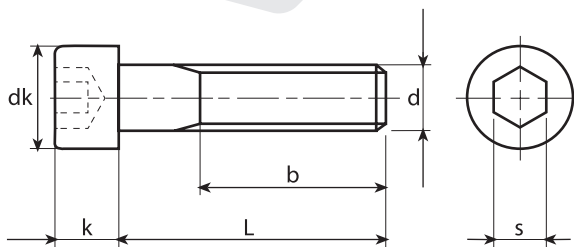
ISO 8100 EN -

**DIN 6921**


hexagon flange bolts

| d  | M5   | M6   | M8   | M10  | M12  | M14  | M16  | M20  |
|----|------|------|------|------|------|------|------|------|
| P  | 0,8  | 1    | 1,25 | 1,5  | 1,75 | 2    | 2    | 2,5  |
| b  | 16   | 18   | 22   | 26   | 30   | 34   | 38   | 46   |
| k  | 5,40 | 6,6  | 8,1  | 9,2  | 11,5 | 12,8 | 14,4 | 17,1 |
| s  | 8    | 10   | 13   | 15   | 16   | 18   | 21   | 27   |
| dc | 11,8 | 14,2 | 18   | 22,3 | 26,6 | 30,5 | 35   | 43   |

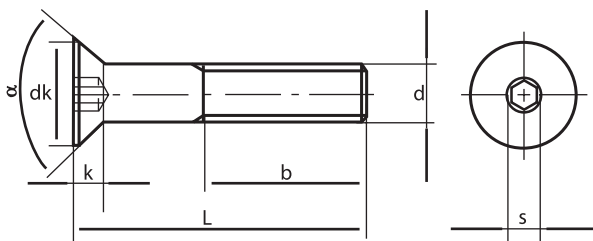
ISO 4762 EN -

**DIN 912**


hexagon socket head cap screws

| d        | M3  | M4  | M5  | M6 | M8   | M10 | M12  | M14 | M16 | M18 |
|----------|-----|-----|-----|----|------|-----|------|-----|-----|-----|
| P        | 0,5 | 0,7 | 0,8 | 1  | 1,25 | 1,5 | 1,75 | 2   | 2   | 2,5 |
| b*       | 18  | 20  | 22  | 24 | 28   | 32  | 36   | 40  | 44  | 48  |
| dk (max) | 5,5 | 7   | 8,5 | 10 | 13   | 16  | 18   | 21  | 24  | 27  |
| k (max)  | 3   | 4   | 5   | 6  | 8    | 10  | 12   | 14  | 16  | 18  |
| s        | 2,5 | 3   | 4   | 5  | 6    | 8   | 10   | 12  | 14  | 14  |

ISO - EN -

**DIN 7991**


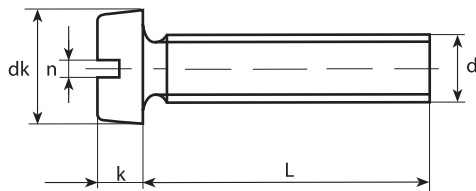
Hexagon socket countersunk head screwss

| d       | M3  | M4  | M5  | M6  | M8   | M10 | M12  | M16 | M20 |
|---------|-----|-----|-----|-----|------|-----|------|-----|-----|
| P       | 0,5 | 0,7 | 0,8 | 1   | 1,25 | 1,5 | 1,75 | 2   | 2,5 |
| b*      | 12  | 14  | 16  | 18  | 22   | 26  | 30   | 38  | 46  |
| dk      | 6   | 8   | 10  | 12  | 16   | 20  | 24   | 30  | 36  |
| k (max) | 1,7 | 2,3 | 2,8 | 3,3 | 4,4  | 5,5 | 6,5  | 7,5 | 8,5 |
| !       | 90  | 90  | 90  | 90  | 90   | 90  | 90   | 90  | 90  |
| s       | 2   | 2,5 | 3   | 4   | 5    | 6   | 8    | 10  | 12  |

## Machine Screws

### DIN 84

ISO 1207 EN -

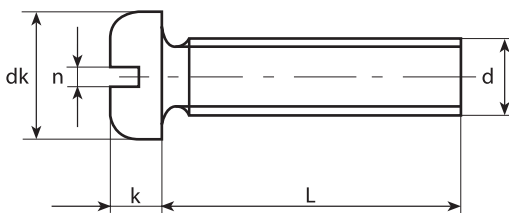


#### Slotted chesse head screws

| d  | M3  | M4  | M5  | M6  | M8   |
|----|-----|-----|-----|-----|------|
| P  | 0,5 | 0,7 | 0,8 | 1   | 1,25 |
| dk | 5,5 | 7   | 8,5 | 10  | 13   |
| k  | 2   | 2,6 | 3,3 | 3,9 | 5    |
| n  | 0,8 | 1,2 | 1,2 | 1,6 | 2    |

### DIN 85

ISO 1580 EN -

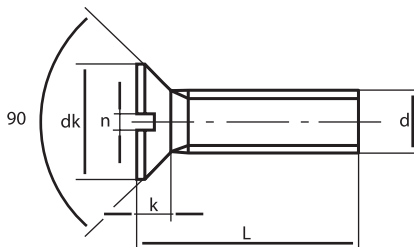


#### Slotted pan head screws

| d  | M3  | M4  | M5  | M6  | M8   |
|----|-----|-----|-----|-----|------|
| P  | 0,5 | 0,7 | 0,8 | 1   | 1,25 |
| dk | 6   | 8   | 10  | 12  | 16   |
| k  | 1,8 | 2,4 | 3   | 3,6 | 4,8  |
| n  | 0,8 | 1,2 | 1,2 | 1,6 | 2    |

### DIN 963

ISO 2009 EN -



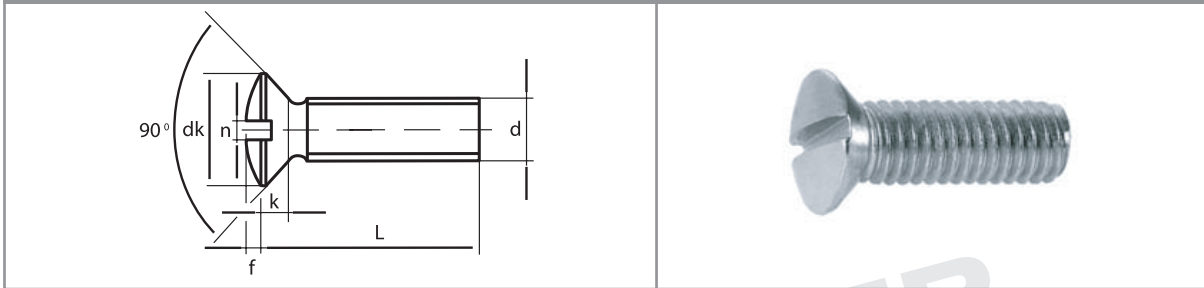
#### Slotted countersunk head screws

| d       | M3   | M4  | M5  | M6  | M8   | M10 |
|---------|------|-----|-----|-----|------|-----|
| P       | 0,5  | 0,7 | 0,8 | 1   | 1,25 | 1,5 |
| dk      | 5,6  | 7,5 | 9,2 | 1   | 14,5 | 18  |
| k (max) | 1,65 | 2,2 | 2,5 | 3   | 4    | 5   |
| n       | 0,8  | 1   | 1,2 | 1,6 | 2    | 2,5 |

## Machine Screws

ISO 2010 EN -

**DIN 964**

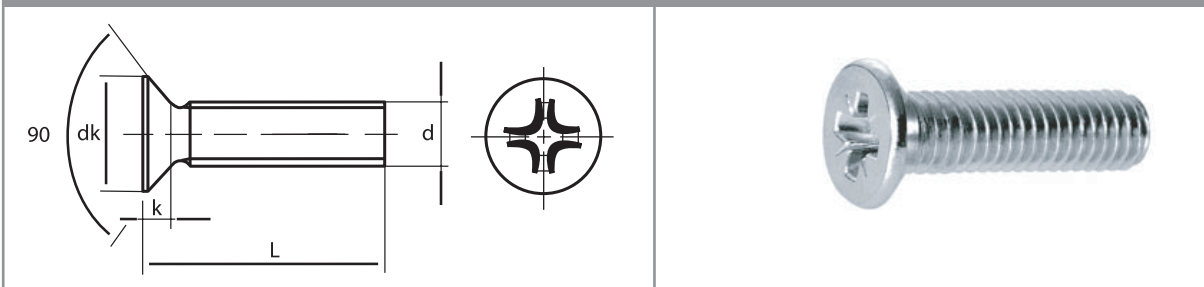


Slotted raised countersunk head screws

| d       | M3   | M4  | M5   | M6  | M8   |
|---------|------|-----|------|-----|------|
| P       | 0,5  | 0,7 | 0,8  | 1   | 1,25 |
| dk      | 5,6  | 7,5 | 9,2  | 11  | 14,5 |
| k (max) | 1,65 | 2,2 | 2,5  | 3   | 4    |
| f       | 0,75 | 1   | 1,25 | 1,5 | 2    |
| n       | 0,8  | 1   | 1,2  | 1,6 | 2    |

ISO 7046 EN -

**DIN 965**

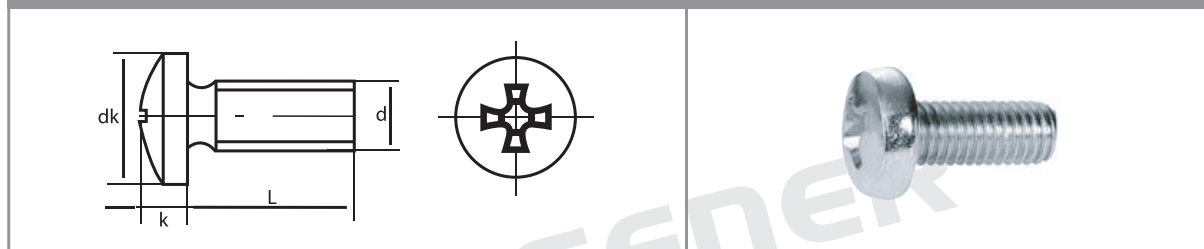


Cross recessed countersunk head screws

| d                | M3   | M4  | M5  | M6 | M8   |
|------------------|------|-----|-----|----|------|
| P                | 0,5  | 0,7 | 0,8 | 1  | 1,25 |
| dk               | 5,6  | 7,5 | 9,2 | 11 | 14,5 |
| k (max)          | 1,65 | 2,2 | 2,5 | 3  | 4    |
| Nr. Phillips (H) | 1    | 2   | 2   | 3  | 4    |

ISO 7045 EN -

**DIN 7985**

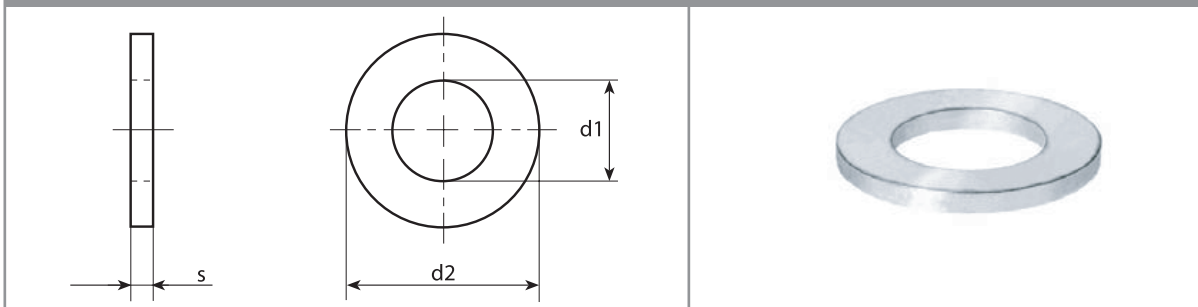


Cross recessed raised cheese head screws

| d                | M3  | M4  | M5  | M6  | M8   |
|------------------|-----|-----|-----|-----|------|
| P                | 0,5 | 0,7 | 0,8 | 1   | 1,25 |
| dk               | 6   | 8   | 10  | 12  | 16   |
| k                | 2,4 | 3,1 | 3,8 | 4,6 | 6    |
| Nr. Phillips (H) | 1   | 2   | 2   | 3   | 4    |

# Washers

## DIN 125A



### Plain washers without chamfer

| d nom. | M3  | M4  | M5  | M6  | M7  | M8  | M10  | M12 | M14 |
|--------|-----|-----|-----|-----|-----|-----|------|-----|-----|
| d1     | 3,2 | 4,3 | 5,3 | 6,4 | 7,4 | 8,4 | 10,5 | 13  | 15  |
| d2     | 7   | 9   | 10  | 12  | 14  | 16  | 20   | 24  | 28  |
| s      | 0,5 | 0,8 | 1   | 1,6 | 1,6 | 1,6 | 2    | 2,5 | 2,5 |

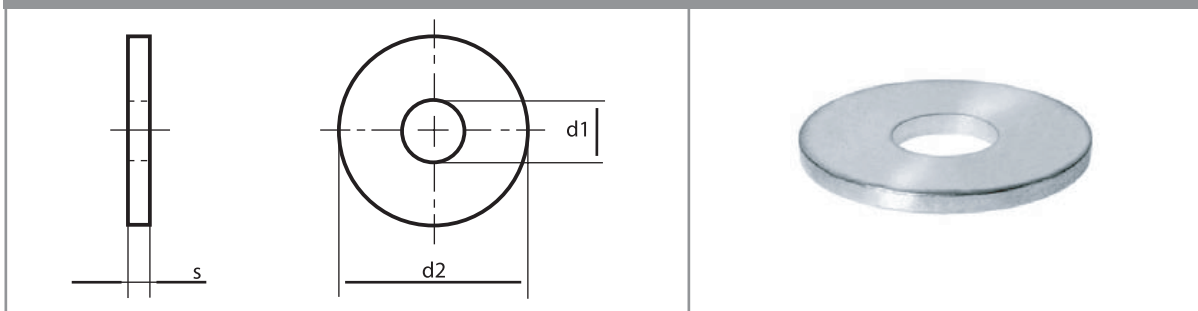
  

| d nom. | M16 | M18 | M20 | M22 | M24 | M27 | M30 | M33 | M36 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| d1     | 17  | 19  | 21  | 23  | 25  | 28  | 31  | 34  | 37  |
| d2     | 30  | 34  | 37  | 39  | 44  | 50  | 56  | 60  | 66  |
| s      | 3   | 3   | 3   | 3   | 4   | 4   | 4   | 5   | 5   |

| d nom. | M39 | M42 | M45 | M48 | M52 | M56 | M60 | M64 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|
| d1     | 40  | 43  | 46  | 50  | 54  | 58  | 62  | 66  |
| d2     | 72  | 78  | 85  | 92  | 98  | 105 | 110 | 115 |
| s      | 6   | 7   | 7   | 8   | 8   | 9   | 9   | 9   |

## DIN 9021



### Plain washers $d2 \approx 3 \times d1$

| d nom.   | M3  | M4  | M5  | M6  | M7  |
|----------|-----|-----|-----|-----|-----|
| d1 (min) | 3,2 | 4,3 | 5,3 | 6,4 | 7,4 |
| d2 (max) | 9   | 12  | 15  | 18  | 22  |
| s        | 0,8 | 1   | 1,2 | 1,6 | 2   |

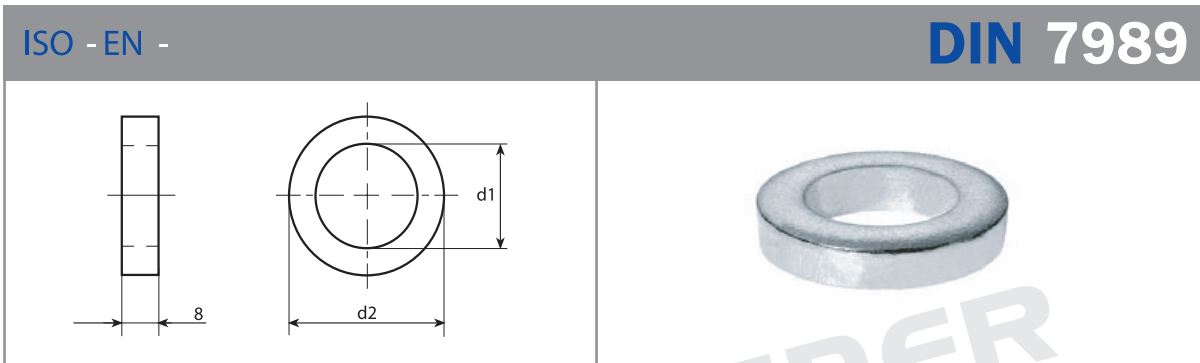
  

| d nom.   | M8  | M10  | M12 | M14 | M16 |
|----------|-----|------|-----|-----|-----|
| d1 (min) | 8,4 | 10,5 | 13  | 15  | 17  |
| d2 (max) | 24  | 30   | 37  | 44  | 50  |
| s        | 2   | 2,5  | 3   | 3   | 3   |

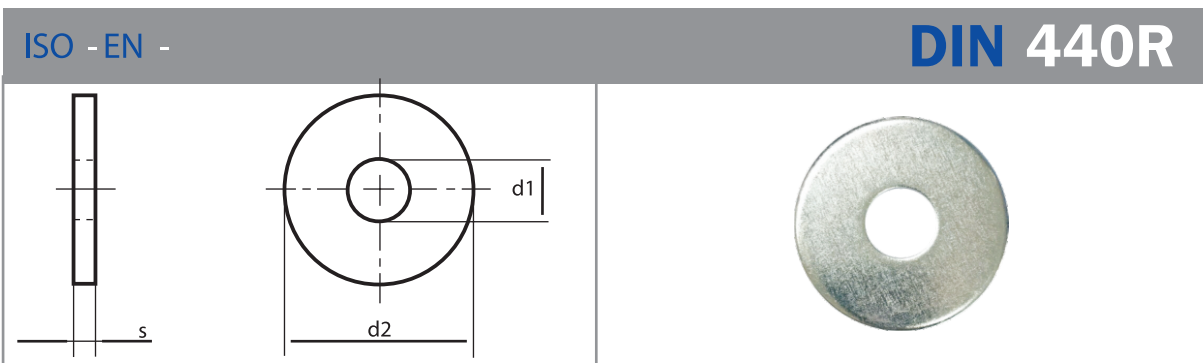
| d nom.   | M18 | M20 | M24 |
|----------|-----|-----|-----|
| d1 (min) | 20  | 22  | 26  |
| d2 (max) | 56  | 60  | 72  |
| s        | 4   | 4   | 5   |

## Washers



Washers for steel structures

| d nom. | M10 | M12 | M16 | M20 | M22 | M24 | M27 | M30 | M33 | M36 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| d1     | 11  | 14  | 18  | 22  | 24  | 26  | 30  | 33  | 36  | 39  |
| d2     | 21  | 24  | 30  | 37  | 39  | 44  | 50  | 56  | 60  | 66  |



Plain washers for timber construction

| d nom. | M5  | M6  | M8 | M10 | M12  | M14  | M16  | M20 | M22 | M24 |
|--------|-----|-----|----|-----|------|------|------|-----|-----|-----|
| d1     | 5.5 | 6.6 | 9  | 11  | 13.5 | 15.5 | 17.5 | 22  | 24  | 26  |
| d2     | 18  | 22  | 28 | 34  | 44   | 50   | 56   | 72  | 80  | 85  |
| s      | 2   | 2   | 3  | 3   | 4    | 4    | 5    | 6   | 6   | 6   |

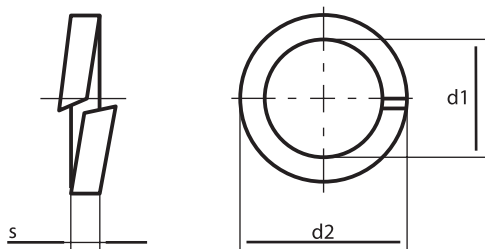
| d nom. | M27 | M30 | M33 | M36 | M39 | M42 | M45 | M48 | M52 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| d1     | 30  | 33  | 36  | 39  | 42  | 45  | 48  | 52  | 56  |
| d2     | 98  | 105 | 112 | 126 | 140 | 150 | 160 | 170 | 180 |
| s      | 6   | 6   | 6   | 8   | 8   | 8   | 8   | 10  | 10  |



## Washers

### DIN 7980

ISO - EN -



### Spring lock washers

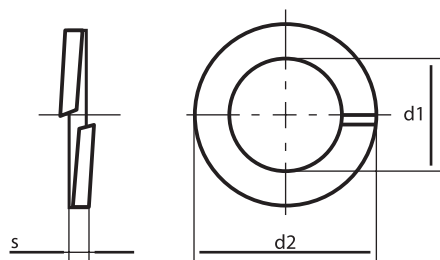
| d nom.   | M3  | M4  | M5  | M6  | M8   | M10  | M12  |
|----------|-----|-----|-----|-----|------|------|------|
| d1 (min) | 3,1 | 4,1 | 5,1 | 6,1 | 8,1  | 10,2 | 12,2 |
| d2 (max) | 5,6 | 7   | 8,8 | 9,9 | 12,7 | 16   | 18   |
| s        | 1   | 1,2 | 1,6 | 1,6 | 2    | 2,5  | 2,5  |

| d nom.   | M14  | M16  | M20  | M22  | M24  | M27  | M30  |
|----------|------|------|------|------|------|------|------|
| d1 (min) | 14,2 | 16,2 | 20,2 | 22,5 | 24,5 | 27,5 | 30,5 |
| d2 (max) | 21,1 | 24,4 | 30,6 | 32,9 | 35,9 | 38,9 | 44,1 |
| s        | 3    | 3,5  | 4,5  | 4,5  | 5    | 5    | 6    |

### DIN 127B

ISO - EN -



### Spring lock washers

| d nom.   | M3  | M4  | M5  | M6   | M7   | M8   | M10  | M12  |
|----------|-----|-----|-----|------|------|------|------|------|
| d1 (min) | 3,1 | 4,1 | 5,1 | 6,1  | 7,1  | 8,1  | 10,2 | 12,2 |
| d2 (max) | 6,2 | 7,6 | 9,2 | 11,8 | 12,8 | 14,8 | 18,1 | 21,1 |
| s        | 0,8 | 0,9 | 1,2 | 1,6  | 1,6  | 2    | 2,2  | 2,5  |

| d nom.   | M14  | M16  | M18  | M20  | M22  | M24  | M27  | M30  |
|----------|------|------|------|------|------|------|------|------|
| d1 (min) | 14,2 | 16,2 | 18,2 | 20,2 | 22,5 | 24,5 | 27,5 | 30,5 |
| d2 (max) | 24,1 | 27,4 | 29,4 | 33,6 | 35,9 | 40   | 43   | 48,2 |
| s        | 3    | 3,5  | 3,5  | 4    | 4    | 5    | 5    | 6    |

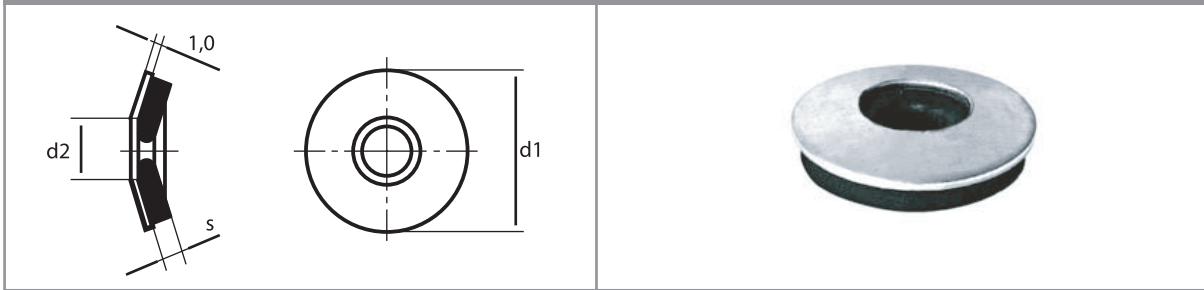
  

| d nom.   | M36  | M39  | M42  | M45  | M48 | M52 |
|----------|------|------|------|------|-----|-----|
| d1 (min) | 36,5 | 39,5 | 42,5 | 45,5 | 49  | 53  |
| d2 (max) | 58,2 | 61,2 | 68,2 | 71,2 | 75  | 83  |
| s        | 6    | 6    | 7    | 7    | 7   | 8   |

## Anchors

ISO - EN -

### EPDM Sealing Rings

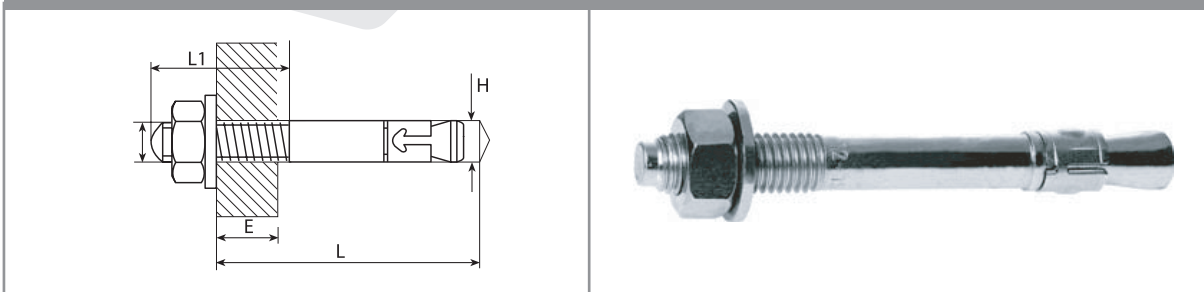


### EPDM Bonded Sealing Washers

| d1 | 16  | 18  | 22  | 25  |
|----|-----|-----|-----|-----|
| d2 | 6,7 | 6,7 | 6,7 | 6,7 |
| s  | 2   | 3   | 3   | 3   |

ISO - EN -

### Wedge Anchors



### Wedge anchors (through Bolts)

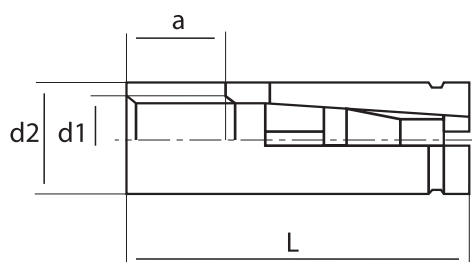
| dxL               | M12x160 | M12x180 | M12x220 | M12x250 | M14x80 | M14x100 | M14x120 | M14x145 |
|-------------------|---------|---------|---------|---------|--------|---------|---------|---------|
| H= drill ø        | 12      | 12      | 12      | 12      | 14     | 14      | 14      | 14      |
| L= drill depth    | 85      | 85      | 85      | 85      | 65     | 85      | 100     | 100     |
| E= grip range     | 80      | 100     | 140     | 170     | 2      | 10      | 30      | 55      |
| G= torque         | 7-8     | 7-8     | 7-8     | 7-8     | 11-13  | 11-13   | 11-13   | 11-13   |
| L1= thread length | 45      | 45      | 45      | 45      | 30     | 45      | 45      | 45      |
| pull out-force:   |         |         |         |         |        |         |         |         |
| 200 Kg concrete:  | 4.000   | 4.000   | 4.000   | 4.000   | 4.800  | 4.800   | 4.800   | 4.800   |
| 300 Kg concrete:  | 4.700   | 4.700   | 4.700   | 4.700   | 5.500  | 5.500   | 5.500   | 5.500   |
| shear tension:    |         |         |         |         |        |         |         |         |
| 200 Kg concrete:  | 3.800   | 3.800   | 3.800   | 3.800   | 4.500  | 4.500   | 4.500   | 4.500   |
| 300 Kg concrete:  | 3.800   | 3.800   | 3.800   | 3.800   | 4.500  | 4.500   | 4.500   | 4.500   |

| dxL               | M14x170 | M14x220 | M14x250 | M16x90 | M16x125 | M16x145 | M16x170 | M16x220 |
|-------------------|---------|---------|---------|--------|---------|---------|---------|---------|
| H= drill ø        | 14      | 14      | 14      | 16     | 16      | 16      | 16      | 16      |
| L= drill depth    | 100     | 100     | 100     | 75     | 110     | 110     | 110     | 110     |
| E= grip range     | 80      | 130     | 160     | 2      | 10      | 30      | 55      | 115     |
| G= torque         | 11-13   | 11-13   | 11-13   | 14-16  | 14-16   | 14-16   | 14-16   | 14-16   |
| L1= thread length | 45      | 45      | 45      | 30     | 45      | 45      | 45      | 45      |
| pull out-force:   |         |         |         |        |         |         |         |         |
| 200 Kg concrete:  | 4.800   | 4.800   | 4.800   | 5.500  | 5.500   | 5.500   | 5.500   | 5.500   |
| 300 Kg concrete:  | 5.500   | 5.500   | 5.500   | 6.750  | 6.750   | 6.750   | 6.750   | 6.750   |
| shear tension:    |         |         |         |        |         |         |         |         |
| 200 Kg concrete:  | 4.500   | 4.500   | 4.500   | 6.600  | 6.600   | 6.600   | 6.600   | 6.600   |
| 300 Kg concrete:  | 4.500   | 4.500   | 4.500   | 6.600  | 6.600   | 6.600   | 6.600   | 6.600   |

## Anchors

### Drop-in Anchor

ISO - EN -

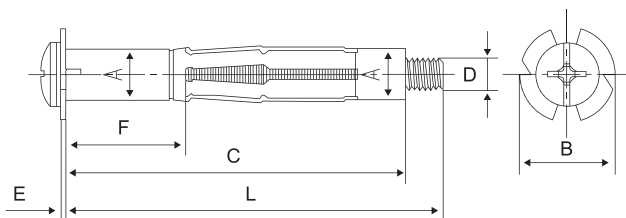


### Drop-in anchors

| d1              | 5   | 6   | 8   | 10  | 12  | 16    | 20    |
|-----------------|-----|-----|-----|-----|-----|-------|-------|
| L               | 25  | 30  | 40  | 40  | 50  | 60    | 80    |
| d2              | 8   | 8   | 10  | 12  | 15  | 20    | 25    |
| a=thread length | 11  | 11  | 13  | 15  | 18  | 23    | 34    |
| torque          | 0,3 | 0,5 | 1,2 | 2,4 | 4,2 | 10    | 17    |
| pull out force  |     |     |     |     |     |       |       |
| 250kg concrete  | 200 | 300 | 540 | 650 | 810 | 1.030 | 1.620 |
| shear tension   |     |     |     |     |     |       |       |
| 250kg concrete  | 100 | 175 | 250 | 380 | 550 | 1.020 | 1.590 |

### Hollow Wall Anchor

ISO - EN -



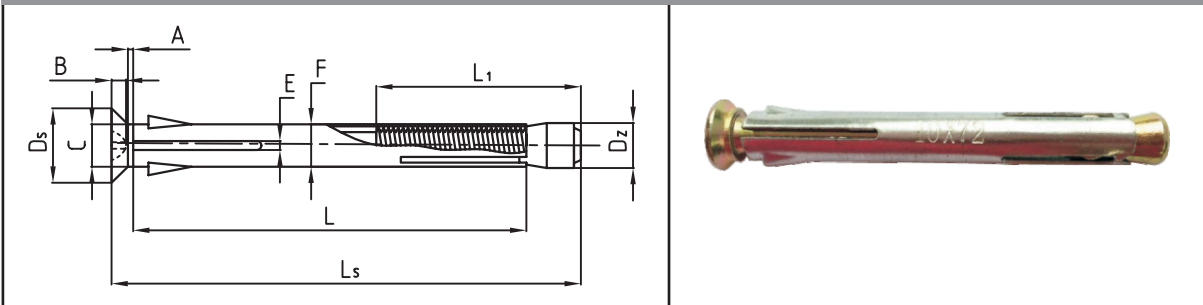
### Hollow Wall Anchor(With pan head screw)

| Size  | A±0.2 | B±0.1 | C±1.5 | D  | E-0.1 | F±0.5 | L±1.5 |
|-------|-------|-------|-------|----|-------|-------|-------|
| M4x20 | 7     | 13    | 20    | M4 | 0.7   | 5.5   | 27    |
| M4x32 | 7     | 13    | 32    | M4 | 0.7   | 7.5   | 40    |
| M4x38 | 7     | 13    | 38    | M4 | 0.7   | 13.5  | 45    |
| M4x46 | 7     | 13    | 46    | M4 | 0.7   | 20.5  | 52    |
| M4x52 | 7     | 13    | 52    | M4 | 0.7   | 26.5  | 60    |
| M4x60 | 7     | 13    | 60    | M4 | 0.7   | 34.0  | 67    |
| M5x37 | 8.5   | 16    | 37    | M5 | 0.8   | 8.0   | 45    |
| M5x52 | 8.5   | 16    | 52    | M5 | 0.8   | 10.0  | 60    |
| M5x65 | 8.5   | 16    | 65    | M5 | 0.8   | 23.5  | 72    |
| M6x37 | 9.5   | 17.5  | 37    | M6 | 0.9   | 7.5   | 45    |
| M6x52 | 9.5   | 17.5  | 52    | M6 | 0.9   | 10.0  | 60    |
| M6x65 | 9.5   | 17.5  | 65    | M6 | 0.9   | 23.0  | 72    |

# Anchors

ISO - EN -

## Metal frame anchor

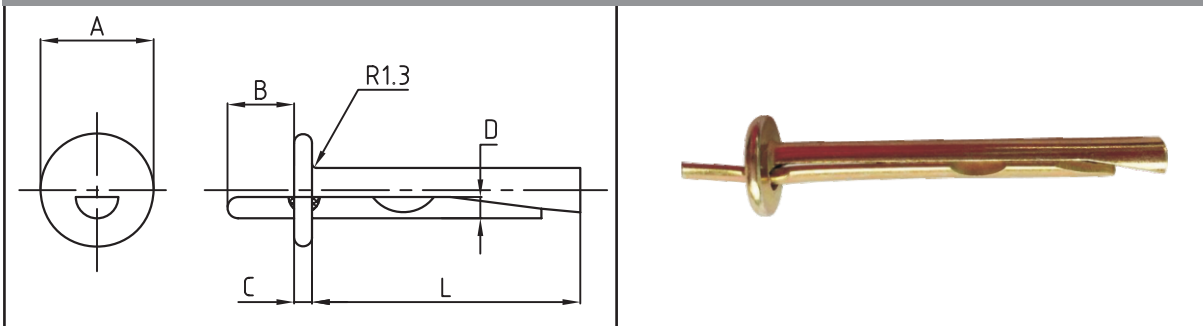


## Metal frame anchor

| SIZE    | L   | $L_s \pm 2$ | $L_1 \pm 2$ | Sleeve Thick. | $D_s \pm 0.2$ | A   | B-0.4 | C | $D_z \pm 0.1$ | E | $F \pm 2$ |
|---------|-----|-------------|-------------|---------------|---------------|-----|-------|---|---------------|---|-----------|
| M10x52  | 52  | 64          | 48          | 0.7           | 13            | 1.5 | 2.8   | 9 | 9.7           | 2 | 9.4       |
| M10x72  | 72  | 84          | 48          | 0.7           | 13            | 1.5 | 2.8   | 9 | 9.7           | 2 | 9.4       |
| M10x92  | 92  | 104         | 48          | 0.7           | 13            | 1.5 | 2.8   | 9 | 9.7           | 2 | 9.4       |
| M10x112 | 112 | 124         | 48          | 0.7           | 13            | 1.5 | 2.8   | 9 | 9.7           | 2 | 9.4       |
| M10x132 | 132 | 144         | 48          | 0.7           | 13            | 1.5 | 2.8   | 9 | 9.7           | 2 | 9.4       |
| M10x152 | 152 | 164         | 48          | 0.7           | 13            | 1.5 | 2.8   | 9 | 9.7           | 2 | 9.4       |
| M10x182 | 182 | 194         | 48          | 0.7           | 13            | 1.5 | 2.8   | 9 | 9.7           | 2 | 9.4       |
| M10x202 | 202 | 214         | 48          | 0.7           | 13            | 1.5 | 2.8   | 9 | 9.7           | 2 | 9.4       |

ISO - EN -

## Ceiling anchor



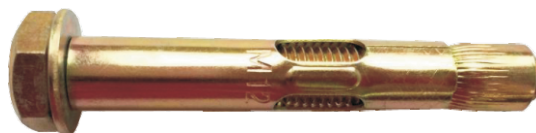
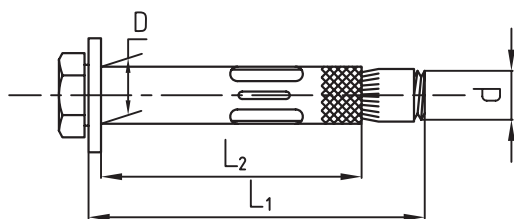
## Ceiling anchor

| Size | A         | B      | C       | D Max | L         |
|------|-----------|--------|---------|-------|-----------|
| 6x40 | 14.2-14.5 | 9.0REF | 2.2-2.3 | 6.1   | 35.5-36.5 |
| 6x60 | 14.2-14.5 | 9.0REF | 2.2-2.3 | 6.1   | 55.5-56.5 |
| 6x65 | 14.2-14.5 | 9.0REF | 2.2-2.3 | 6.1   | 61.5-62.5 |

## Anchors

### Sleeve Anchor Hex Bolt Type

ISO - EN -

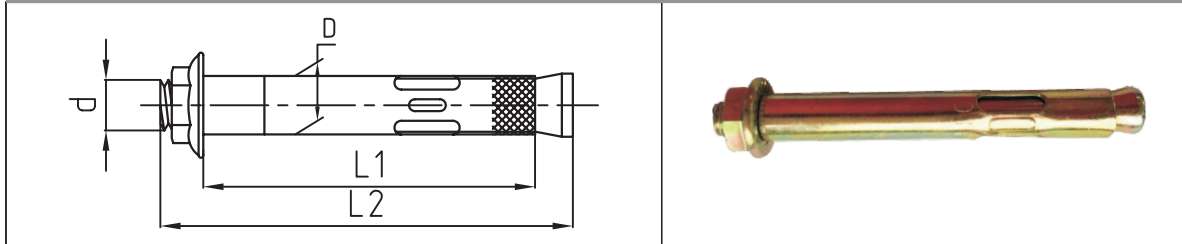


### Sleeve Anchor Hex Bolt Type

| Size   | d(+0mm;-0.4mm) | D(+0.2mm;-0.5mm) | L1 ± 2mm | L2 ± 2mm |
|--------|----------------|------------------|----------|----------|
| 8X40   | M6             | 8                | 40       | 30.00    |
| 8X45   | M6             | 8                | 45       | 34.50    |
| 8X60   | M6             | 8                | 60       | 50.00    |
| 8X75   | M6             | 8                | 75       | 65.00    |
| 8X80   | M6             | 8                | 80       | 70.00    |
| 8X85   | M6             | 8                | 85       | 75.00    |
| 8X90   | M6             | 8                | 90       | 80.30    |
| 8X100  | M6             | 8                | 100      | 90.30    |
| 10X50  | M8             | 10               | 50       | 36.00    |
| 10X55  | M8             | 10               | 55       | 41.00    |
| 10X60  | M8             | 10               | 60       | 46.00    |
| 10X75  | M8             | 10               | 75       | 61.00    |
| 10X80  | M8             | 10               | 80       | 66.00    |
| 10X85  | M8             | 10               | 85       | 71.00    |
| 10X90  | M8             | 10               | 90       | 81.00    |
| 10x100 | M8             | 10               | 100      | 86.00    |
| 10x110 | M8             | 10               | 110      | 96.00    |
| 10X115 | M8             | 10               | 115      | 101.00   |
| 10X120 | M8             | 10               | 120      | 106.00   |
| 10X125 | M8             | 10               | 125      | 111.00   |
| 10X130 | M8             | 10               | 130      | 116.00   |
| 10X140 | M8             | 10               | 140      | 124.90   |
| 12X65  | M10            | 12               | 65       | 48.00    |
| 12X70  | M10            | 12               | 70       | 52.00    |
| 12X80  | M10            | 12               | 80       | 62.00    |
| 12X100 | M10            | 12               | 100      | 82.00    |
| 12X110 | M10            | 12               | 110      | 92.00    |
| 12X120 | M10            | 12               | 120      | 102.00   |
| 12X140 | M10            | 12               | 140      | 122.00   |
| 12X150 | M10            | 12               | 150      | 132.00   |
| 16X80  | M12            | 16               | 80       | 61.00    |
| 16X110 | M12            | 16               | 110      | 91.00    |
| 16X130 | M12            | 16               | 130      | 111.00   |
| 16X150 | M12            | 16               | 150      | 131.00   |
| 16X160 | M12            | 16               | 160      | 141.00   |
| 20X110 | M16            | 20               | 110      | 81.00    |

ISO - EN -

## Sleeve Anchor, Hex Flange Nut Type



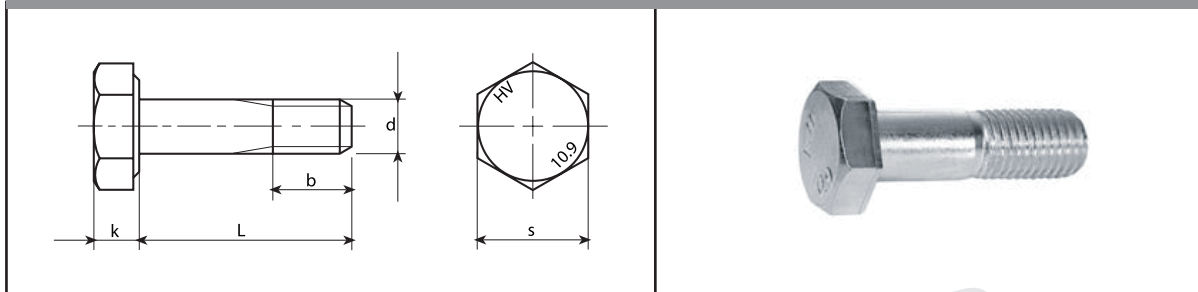
### Sleeve Anchor, Hex Flange Nut Type

| Size   | d(+0mm;-0.4mm) | D(+0.2mm;-0.5mm) | L1 ± 2mm | L2 ± 2mm |
|--------|----------------|------------------|----------|----------|
| 8X25   | M6             | 8                | 18       | 25       |
| 8X40   | M6             | 8                | 28       | 40       |
| 8X45   | M6             | 8                | 34       | 45       |
| 8X50   | M6             | 8                | 40       | 50       |
| 8X60   | M6             | 8                | 49       | 60       |
| 8X65   | M6             | 8                | 55       | 65       |
| 8X70   | M6             | 8                | 59       | 70       |
| 8X80   | M6             | 8                | 69       | 80       |
| 8X85   | M6             | 8                | 74       | 85       |
| 8X90   | M6             | 8                | 79       | 90       |
| 8X100  | M6             | 8                | 89       | 100      |
| 8X120  | M6             | 8                | 109      | 120      |
| 8X140  | M6             | 8                | 129      | 140      |
| 10X40  | M8             | 10               | 28       | 40       |
| 10X50  | M8             | 10               | 36       | 50       |
| 10X55  | M8             | 10               | 42       | 55       |
| 10X60  | M8             | 10               | 47       | 60       |
| 10X65  | M8             | 10               | 52       | 65       |
| 10X70  | M8             | 10               | 57       | 70       |
| 10X77  | M8             | 10               | 64       | 77       |
| 10X90  | M8             | 10               | 77       | 90       |
| 10X97  | M8             | 10               | 84       | 97       |
| 10X120 | M8             | 10               | 105      | 120      |
| 10X125 | M8             | 10               | 110      | 125      |
| 10X130 | M8             | 10               | 115      | 130      |
| 10X140 | M8             | 10               | 125      | 140      |
| 10X150 | M8             | 10               | 135      | 150      |
| 10X180 | M8             | 10               | 165      | 180      |
| 12X60  | M10            | 12               | 42       | 60       |
| 12X75  | M10            | 12               | 56       | 75       |
| 12X80  | M10            | 12               | 62       | 80       |
| 12X99  | M10            | 12               | 82       | 99       |
| 12X110 | M10            | 12               | 92       | 110      |
| 12X120 | M10            | 12               | 102      | 120      |
| 12X129 | M10            | 12               | 112      | 129      |
| 12X140 | M10            | 12               | 122      | 140      |
| 12X150 | M10            | 12               | 132      | 150      |
| 12X160 | M10            | 12               | 142      | 160      |
| 12X170 | M10            | 12               | 152      | 170      |
| 12X180 | M10            | 12               | 162      | 180      |
| 16X65  | M12            | 16               | 42       | 65       |
| 16X85  | M12            | 16               | 62       | 85       |
| 16X111 | M12            | 16               | 91       | 111      |
| 16X147 | M12            | 16               | 126      | 147      |
| 16X165 | M12            | 16               | 145      | 165      |
| 16X180 | M12            | 16               | 160      | 180      |
| 16X200 | M12            | 16               | 180      | 200      |
| 16X220 | M12            | 16               | 200      | 220      |
| 20X75  | M16            | 20               | 47       | 75       |
| 20X107 | M16            | 20               | 79       | 107      |
| 20X151 | M16            | 20               | 122      | 151      |
| 20X161 | M16            | 20               | 132      | 161      |
| 20X180 | M16            | 20               | 151      | 180      |
| 20X200 | M16            | 20               | 171      | 200      |

## Projection-Metric

### DIN 6914

ISO 7412 EN -

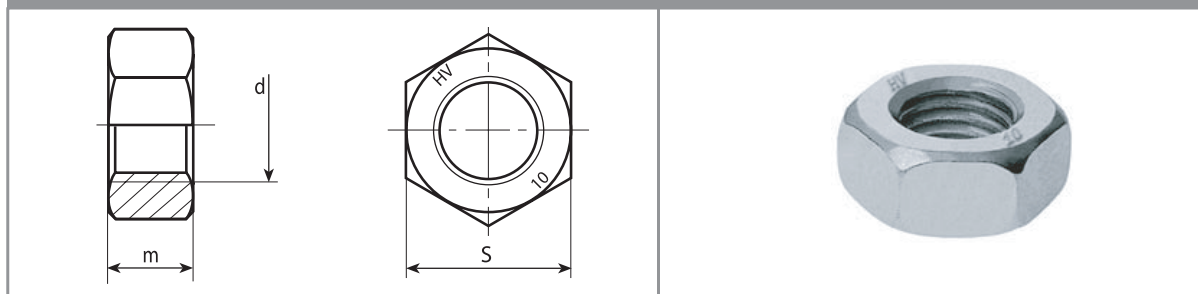


#### High strength structural bolts

| d    | M12  | M16 | M20 | M22 | M24 | M27 | M30 | M36 |
|------|------|-----|-----|-----|-----|-----|-----|-----|
| P    | 1,75 | 2   | 2,5 | 2,5 | 3   | 3   | 3,5 | 4   |
| b 1) | 21   | 26  | 31  | 32  | 34  | 37  | 40  | 48  |
| 2)   | 23   | 28  | 33  | 34  | 37  | 39  | 42  | 50  |
| k    | 8    | 10  | 13  | 14  | 15  | 17  | 19  | 23  |
| s    | 22   | 27  | 32  | 36  | 41  | 46  | 50  | 60  |

### DIN 6915

ISO 7414 EN -

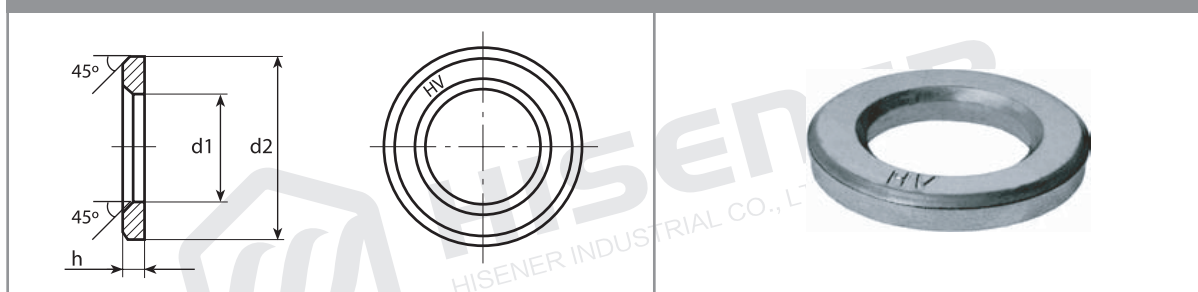


#### High-strength structural hexagonal nuts

| d | M12  | M16 | M20 | M22 | M24 | M27 | M30 | M36 |
|---|------|-----|-----|-----|-----|-----|-----|-----|
| P | 1,75 | 2   | 2,5 | 2,5 | 3   | 3   | 3,5 | 4   |
| m | 10   | 13  | 16  | 18  | 20  | 22  | 24  | 29  |
| s | 22   | 27  | 32  | 36  | 41  | 46  | 50  | 60  |

### DIN 6916

ISO 7416 EN -



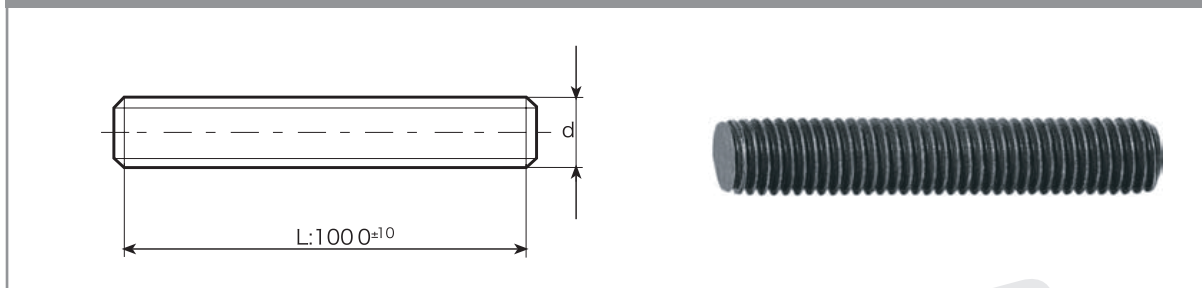
#### High-strength structural washers (HV)

| d  | M12 | M16 | M20 | M22 | M24 | M27 | M30 | M36 |
|----|-----|-----|-----|-----|-----|-----|-----|-----|
| d1 | 13  | 17  | 21  | 23  | 25  | 28  | 31  | 37  |
| d2 | 24  | 30  | 37  | 39  | 44  | 50  | 56  | 66  |
| h  | 3   | 4   | 4   | 4   | 4   | 5   | 5   | 6   |



## Projection-Imperial

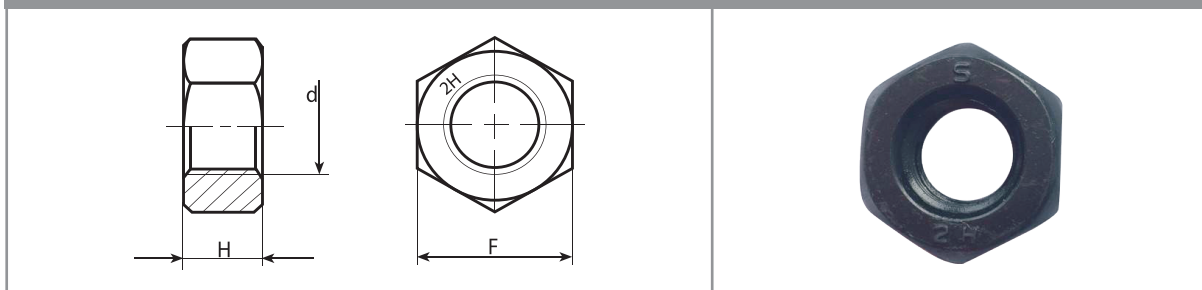
ISO - EN -

**ASTM A193**

**Stud bolts ASTM A193, grade B7, B16, L7**

| d /inch          | 1/2 | 5/8 | 3/4 | 7/8 | 1 | 1 1/8 | 1 1/4 |
|------------------|-----|-----|-----|-----|---|-------|-------|
| Threads per inch | 13  | 11  | 10  | 9   | 8 | 8     | 8     |

| d /inch          | 1 3/8 | 1 1/2 | 1 5/8 | 1 3/4 | 1 7/8 | 2" |
|------------------|-------|-------|-------|-------|-------|----|
| Threads per inch | 8     | 8     | 8     | 8     | 8     | 8  |

ISO - EN -

**A194 Grade 2H**

**Hex nuts ASTM A194 grade 2H**

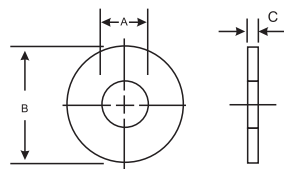
| d /inch          | 1/2  | 5/8    | 3/4   | 7/8    | 1     |
|------------------|------|--------|-------|--------|-------|
| Threads per inch | 13   | 11     | 10    | 9      | 8     |
| H                | 12,3 | 15,5   | 18,65 | 21,85  | 25    |
| F inch           | 7/8  | 1 1/16 | 1 1/4 | 1 7/16 | 1 5/8 |
| F mm             | 22,2 | 27     | 31,75 | 36,5   | 41,3  |

| d /inch          | 1 1/8   | 1 1/4 | 1 3/8  | 1 1/2 | 1 5/8  |
|------------------|---------|-------|--------|-------|--------|
| Threads per inch | 8       | 8     | 8      | 8     | 8      |
| H                | 28,2    | 30,95 | 34,15  | 37,3  | 40,5   |
| F inch           | 1 13/16 | 2"    | 2 3/16 | 2 3/8 | 2 9/16 |
| F mm             | 46      | 50,8  | 55,6   | 60,3  | 65,1   |

| d /inch          | 1 3/4 | 1 7/8   | 2"    |
|------------------|-------|---------|-------|
| Threads per inch | 8     | 8       | 8     |
| H                | 43,65 | 46,85   | 50    |
| F inch           | 2 3/4 | 2 15/16 | 3 1/8 |
| F mm             | 69,85 | 74,6    | 79,4  |

## Projection-Imperial

### Structural Flat Washer F436



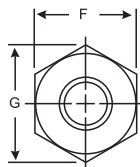
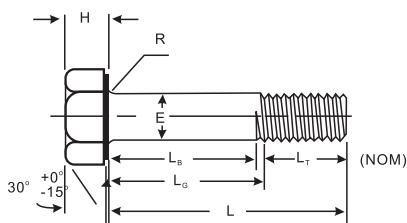
| Size | B       | A       | C    |      | Size  | B       | A       | C    |      | Size  | B       | A       | C    |      |
|------|---------|---------|------|------|-------|---------|---------|------|------|-------|---------|---------|------|------|
|      | Nominal | Nominal | Max  | Min  |       | Nominal | Nominal | Max  | Min  |       | Nominal | Nominal | Max  | Min  |
| 1/4  | .625    | .281    | .051 | .080 | 1     | 2.000   | 1.063   | .136 | .177 | 2 1/4 | 4.000   | 2.375   | .240 | .340 |
| 5/16 | .688    | .344    | .051 | .080 | 1 1/8 | 2.250   | 1.188   | .136 | .177 | 2 1/2 | 4.500   | 2.625   | .240 | .340 |
| 3/8  | .813    | .406    | .051 | .080 | 1 1/4 | 2.500   | 1.375   | .136 | .177 | 2 3/4 | 5.000   | 2.875   | .240 | .340 |
| 7/16 | .922    | .469    | .051 | .080 | 1 3/8 | 2.750   | 1.500   | .136 | .177 | 3     | 5.500   | 3.125   | .240 | .340 |
| 1/2  | 1.063   | .531    | .097 | .177 | 1 1/2 | 3.000   | 1.625   | .136 | .177 | 3 1/4 | 6.000   | 3.375   | .240 | .340 |
| 9/16 | 1.188   | .625    | .110 | .177 | 1-5/8 | 3.250   | 1.750   | .178 | .280 | 3 1/2 | 6.500   | 3.625   | .240 | .340 |
| 5/8  | 1.313   | .688    | .122 | .177 | 1 3/4 | 3.375   | 1.875   | .178 | .280 | 3 3/4 | 7.000   | 3.875   | .240 | .340 |
| 3/4  | 1.468   | .813    | .122 | .177 | 1 7/8 | 3.468   | 1.937   | .178 | .196 | 4     | 7.500   | 4.125   | .240 | .340 |
| 7/8  | 1.750   | .938    | .136 | .177 | 2     | 3.750   | 2.125   | .178 | .280 |       |         |         |      |      |

|    |              |               |               |
|----|--------------|---------------|---------------|
| OD | < 1=+/- .032 | 1=3=+/- .063  | > 3=+/- .125  |
| ID | < 1=+/- .032 | 1=3=-0/+ .063 | > 3=-0/+ .125 |

### Hexagon Structure Bolt

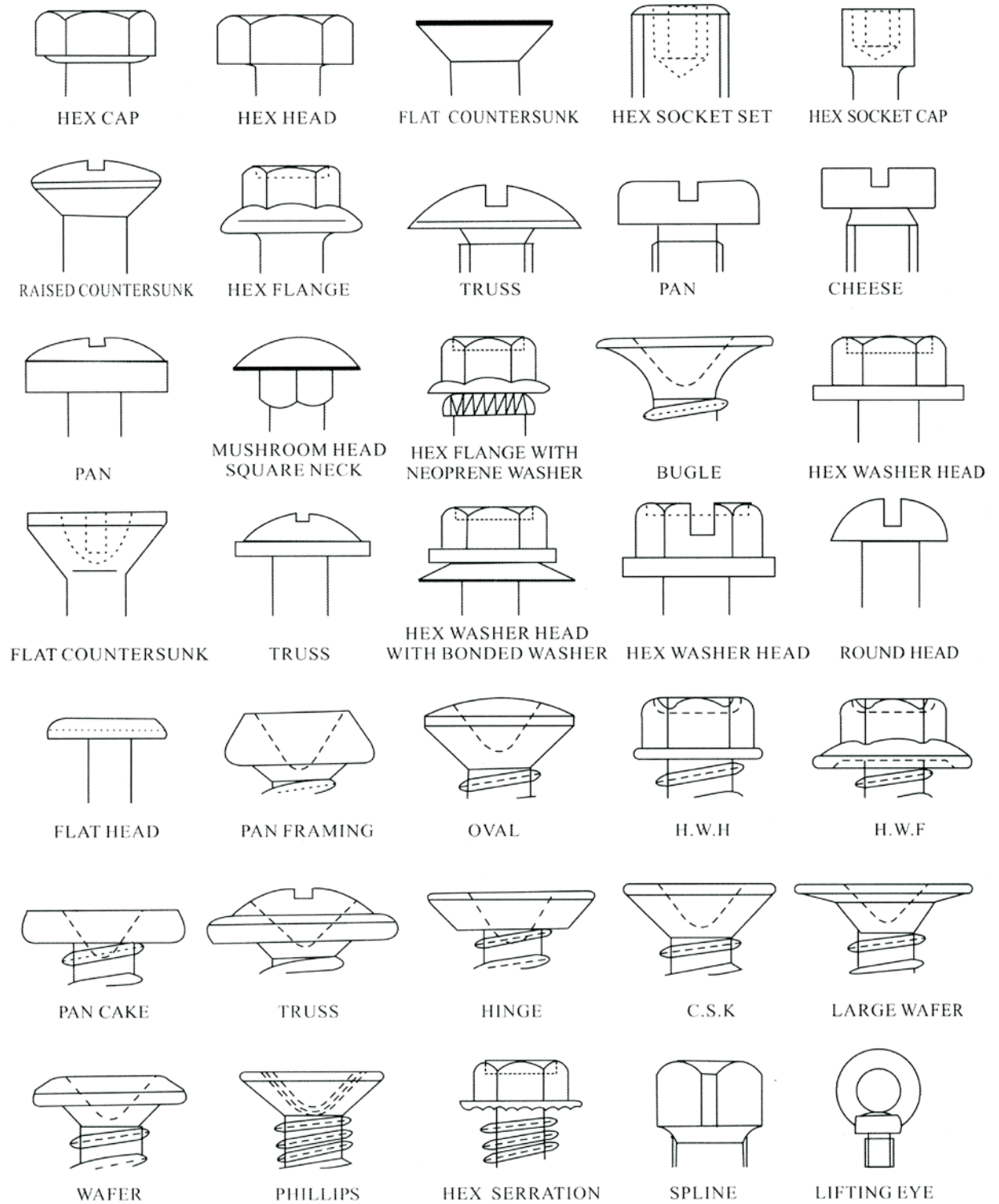
ASTMA 325 Ty.1

ASTMA 490 Ty.1



| Nominal<br>Size<br>(inch) | E                  |       | F                  |       |       | G                       |       | H           |       |       | Thread Length<br>Basic |
|---------------------------|--------------------|-------|--------------------|-------|-------|-------------------------|-------|-------------|-------|-------|------------------------|
|                           | Full Size Body Dia |       | Width Across Flats |       |       | Width Across<br>Corners |       | Head Height |       |       |                        |
|                           | Max.               | Min.  | Basic.             | Max.  | Min.  | Max.                    | Min.  | Basic.      | Max.  | Min.  |                        |
| 1/2                       | 0.515              | 0.482 | 7/8                | 0.875 | 0.850 | 1.010                   | 0.969 | 5/16        | 0.323 | 0.302 | 1.00                   |
| 5/8                       | 0.642              | 0.605 | 1 1/16             | 1.063 | 1.031 | 1.227                   | 1.175 | 25/64       | 0.403 | 0.378 | 1.25                   |
| 3/4                       | 0.768              | 0.729 | 1 1/4              | 1.250 | 1.212 | 1.443                   | 1.383 | 15/32       | 0.483 | 0.455 | 1.38                   |
| 7/8                       | 0.895              | 0.852 | 1 7/16             | 1.438 | 1.394 | 1.660                   | 1.589 | 35/64       | 0.563 | 0.531 | 1.50                   |
| 1                         | 1.022              | 0.976 | 1 5/8              | 1.625 | 1.575 | 1.876                   | 1.796 | 39/64       | 0.627 | 0.591 | 1.75                   |
| 1 1/8                     | 1.149              | 1.098 | 1 13/16            | 1.813 | 1.756 | 2.093                   | 2.002 | 11/16       | 0.718 | 0.658 | 2.00                   |
| 1 1/4                     | 1.277              | 1.223 | 2                  | 2.000 | 1.938 | 2.309                   | 2.209 | 25/32       | 0.813 | 0.749 | 2.00                   |
| 1 3/8                     | 1.404              | 1.345 | 2 3/16             | 2.188 | 2.119 | 2.526                   | 2.416 | 27/32       | 0.878 | 0.810 | 2.25                   |
| 1 1/2                     | 1.531              | 1.470 | 23/8               | 2.375 | 2.300 | 2.742                   | 2.622 | 15/16       | 0.974 | 0.902 | 2.25                   |

## Head Types:





Add: 13th Floor, Tower B, JinHui Building, No.486 HaiChangNan Road, Haining, Zhejiang, China.

Tel: +86-573-87379889, +86-573-87379615 Fax: +86-573-87379884, +86-573-87379616

E-mail: [info@hisener.com](mailto:info@hisener.com)