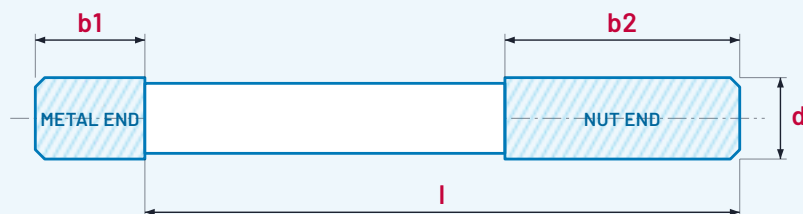


## Studs with metal end $\approx 1 d$

DIN 938



### LEGEND

- d** Nominal thread diameter
- P** Thread pitch
- b1** Metal-end thread,  $\approx 1 d$
- b2** Nut-end thread
- l** Nominal length
- x1** Run-out, normal
- x2** Run-out, short

### DIMENSIONS IN MM

| THREAD D               | M3   | M4   | M5  | M6   | M7   | M8     | M10        | M12        | M14       | M16       | M18       | M20       | M22       | M24     |
|------------------------|------|------|-----|------|------|--------|------------|------------|-----------|-----------|-----------|-----------|-----------|---------|
| <b>P</b> coarse        | 0.5  | 0.7  | 0.8 | 1    | 1    | 1.25   | 1.5        | 1.75       | 2         | 2         | 2.5       | 2.5       | 2.5       | 3       |
| fine                   | –    | –    | –   | –    | –    | M8 × 1 | M10 × 1.25 | M12 × 1.25 | M14 × 1.5 | M16 × 1.5 | M18 × 1.5 | M20 × 1.5 | M22 × 1.5 | M24 × 2 |
|                        | –    | –    | –   | –    | –    | –      | –          | M12 × 1.5  | –         | –         | –         | –         | –         | –       |
| <b>b1</b>              | 3    | 4    | 5   | 6    | 7    | 8      | 10         | 12         | 14        | 16        | 18        | 20        | 22        | 24      |
| <b>b2</b> $l \leq 125$ | 12   | 14   | 16  | 18   | 20   | 22     | 26         | 30         | 34        | 38        | 42        | 46        | 50        | 54      |
| $125 < l \leq 200$     | 18   | 20   | 22  | 24   | 26   | 28     | 32         | 36         | 40        | 44        | 48        | 52        | 56        | 60      |
| $l > 200$              | –    | –    | –   | –    | –    | –      | 45         | 49         | 53        | 57        | 61        | 65        | 69        | 73      |
| <b>x1</b> max.         | 1.25 | 1.75 | 2   | 2.5  | 2.5  | 3.2    | 3.8        | 4.3        | 5         | 5         | 6.3       | 6.3       | 6.3       | 7.5     |
| <b>x2</b> max.         | 0.7  | 0.9  | 1   | 1.25 | 1.25 | 1.6    | 1.9        | 2.2        | 2.5       | 2.5       | 3.2       | 3.2       | 3.2       | 3.8     |

| THREAD D               | M27     | M30     | M33     | M36     | M39     | M42     | M45     | M48     | M52     |
|------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>P</b> coarse        | 3       | 3.5     | 3.5     | 4       | 4       | 4.5     | 4.5     | 5       | 5       |
| fine                   | M27 × 2 | M30 × 2 | M33 × 2 | M36 × 3 | M39 × 3 | M42 × 3 | M45 × 3 | M48 × 3 | M52 × 3 |
| <b>b1</b>              | 25      | 30      | 32      | 35      | 38      | 42      | 45      | 48      | 52      |
| <b>b2</b> $l \leq 125$ | 60      | 66      | 72      | 78      | 84      | 90      | 96      | 102     | 110     |
| $125 < l \leq 200$     | 66      | 72      | 78      | 84      | 90      | 96      | 102     | 108     | 116     |
| $l > 200$              | 79      | 85      | 91      | 97      | 103     | 109     | 115     | 121     | 129     |
| <b>x1</b> max.         | 7.5     | 9       | 9       | 10      | 10      | 11      | 11      | 12.5    | 12.5    |
| <b>x2</b> max.         | 3.8     | 4.5     | 4.5     | 5       | 5       | 5.5     | 5.5     | 6.3     | 6.3     |

**Metal end** (b1) is screwed into the tapped hole; the nut end (b2) takes the nut. b2 depends on the nominal length l, as shown. The length l excludes the metal end.

**Grades and finishes** – configure at [hbsfasteners.nl/products/stud-bolts](https://hbsfasteners.nl/products/stud-bolts).

# Studs with metal end ≈ 1 d

DIN 938 · weights

continued

WEIGHT PER 1000 PIECES IN KG (STEEL, 7.85 KG/DM<sup>3</sup>), BY NOMINAL LENGTH L IN MM

| L   | M3    | M4   | M5   | M6   | M7   | M8   | M10  | M12  | M14  | M16  | M18 | M20 | M22 | M24 | M27  | M30  | M33  | M36  | M39  | M42  | M45  | M48  | M52  |
|-----|-------|------|------|------|------|------|------|------|------|------|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|
| 18  | 0.981 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 20  | 1.09  | 1.95 | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 22  | 1.2   | 2.15 | 3.47 | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 25  | 1.37  | 2.44 | 3.93 | 5.68 | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 28  | 1.53  | 2.74 | 4.39 | 6.35 | 8.99 | -    | -    | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 30  | 1.64  | 2.94 | 4.7  | 6.79 | 9.59 | 12.5 | -    | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 35  | -     | 3.43 | 5.47 | 7.9  | 11.1 | 14.8 | 23.2 | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 40  | -     | 3.93 | 6.24 | 9.01 | 12.6 | 16.4 | 26.3 | 38.8 | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 45  | -     | -    | 7.01 | 10.1 | 14.1 | 18.4 | 29.4 | 43.2 | 60   | -    | -   | -   | -   | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 50  | -     | -    | 7.78 | 11.2 | 15.6 | 20.4 | 32.4 | 47.7 | 66   | 89.6 | -   | -   | -   | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 55  | -     | -    | -    | 12.3 | 17.1 | 22.4 | 35.5 | 52.1 | 72.1 | 97.5 | 123 | -   | -   | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 60  | -     | -    | -    | 13.4 | 18.7 | 24.3 | 38.6 | 56.6 | 78.1 | 105  | 133 | 170 | -   | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 65  | -     | -    | -    | -    | 20.2 | 26.3 | 41.7 | 61   | 84.2 | 113  | 143 | 182 | 226 | -   | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 70  | -     | -    | -    | -    | 21.7 | 28.3 | 44.8 | 65.4 | 90.2 | 121  | 153 | 195 | 241 | 287 | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| 75  | -     | -    | -    | -    | -    | 30.3 | 47.9 | 69.9 | 96.3 | 129  | 163 | 207 | 256 | 305 | 392  | -    | -    | -    | -    | -    | -    | -    | -    |
| 80  | -     | -    | -    | -    | -    | 32.2 | 50.9 | 74.3 | 102  | 137  | 173 | 219 | 271 | 323 | 414  | -    | -    | -    | -    | -    | -    | -    | -    |
| 85  | -     | -    | -    | -    | -    | -    | 54   | 78.8 | 108  | 145  | 183 | 232 | 286 | 340 | 437  | 553  | -    | -    | -    | -    | -    | -    | -    |
| 90  | -     | -    | -    | -    | -    | -    | 57.1 | 83.2 | 114  | 153  | 193 | 244 | 301 | 358 | 459  | 580  | 718  | -    | -    | -    | -    | -    | -    |
| 95  | -     | -    | -    | -    | -    | -    | 60.2 | 87.6 | 120  | 161  | 203 | 256 | 316 | 376 | 482  | 608  | 752  | -    | -    | -    | -    | -    | -    |
| 100 | -     | -    | -    | -    | -    | -    | 63.3 | 92.1 | 126  | 169  | 213 | 269 | 330 | 394 | 504  | 636  | 785  | 942  | -    | -    | -    | -    | -    |
| 110 | -     | -    | -    | -    | -    | -    | -    | 101  | 139  | 184  | 233 | 293 | 360 | 429 | 549  | 691  | 852  | 1022 | 1228 | -    | -    | -    | -    |
| 120 | -     | -    | -    | -    | -    | -    | -    | 110  | 151  | 200  | 253 | 318 | 390 | 465 | 594  | 747  | 919  | 1102 | 1322 | 1550 | 1822 | -    | -    |
| 130 | -     | -    | -    | -    | -    | -    | -    | -    | 163  | 216  | 273 | 342 | 420 | 500 | 639  | 802  | 986  | 1182 | 1416 | 1659 | 1947 | 2216 | -    |
| 140 | -     | -    | -    | -    | -    | -    | -    | -    | 175  | 232  | 293 | 367 | 450 | 536 | 684  | 858  | 1054 | 1262 | 1509 | 1767 | 2072 | 2358 | 2837 |
| 150 | -     | -    | -    | -    | -    | -    | -    | -    | -    | 247  | 313 | 392 | 480 | 571 | 729  | 913  | 1121 | 1342 | 1603 | 1876 | 2197 | 2500 | 3004 |
| 160 | -     | -    | -    | -    | -    | -    | -    | -    | -    | 263  | 333 | 417 | 509 | 607 | 774  | 969  | 1188 | 1421 | 1697 | 1985 | 2321 | 2642 | 3170 |
| 170 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | 353 | 441 | 539 | 642 | 819  | 1024 | 1255 | 1501 | 1791 | 2094 | 2446 | 2784 | 3337 |
| 180 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | 373 | 466 | 569 | 678 | 864  | 1080 | 1322 | 1581 | 1884 | 2202 | 2571 | 2926 | 3504 |
| 190 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | 491 | 599 | 713 | 909  | 1135 | 1389 | 1661 | 1978 | 2311 | 2696 | 3068 | 3671 |
| 200 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | 515 | 629 | 749 | 953  | 1191 | 1456 | 1741 | 2072 | 2420 | 2821 | 3210 | 3837 |
| 220 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | 1043 | 1302 | 1591 | 1901 | 2259 | 2637 | 3071 | 3494 | 4171 |
| 240 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | 1133 | 1413 | 1725 | 2061 | 2447 | 2855 | 3320 | 3779 | 4504 |
| 260 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | 1223 | 1524 | 1859 | 2220 | 2635 | 3072 | 3570 | 4063 | 4838 |
| 280 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | 1313 | 1635 | 1994 | 2380 | 2822 | 3290 | 3820 | 4347 | 5171 |
| 300 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -    | 1746 | 2128 | 2540 | 3010 | 3507 | 4069 | 4631 | 5504 |
| 320 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -    | -    | 2262 | 2700 | 3197 | 3725 | 4319 | 4915 | 5838 |
| 340 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -    | -    | 2396 | 2860 | 3385 | 3942 | 4569 | 5199 | 6171 |
| 360 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | 3019 | 3572 | 4160 | 4819 | 5483 | 6505 |
| 380 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | 3760 | 4377 | 5068 | 5767 | 6838 |
| 400 | -     | -    | -    | -    | -    | -    | -    | -    | -    | -    | -   | -   | -   | -   | -    | -    | -    | -    | 3947 | 4595 | 5318 | 6051 | 7172 |

- : not standardised or no confirmed value. Lengths with tolerance js15.