

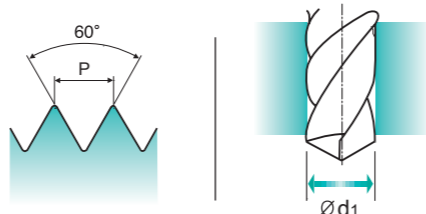
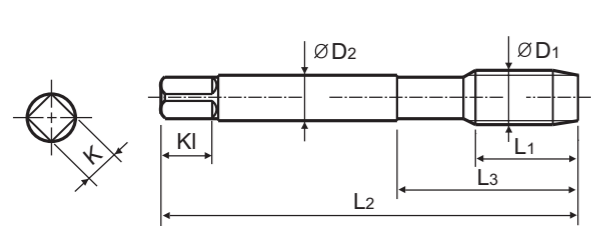
**M ISO metric coarse threads DIN 13**

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

Machine taps  
Maschinengewindebohrer

► Suitable for through hole in more cutting speed than other taps due to thick web.

► Geeignet für Durchgangslöcher in höherer Schnittgeschwindigkeit als bei anderen Gewindebohrern dank größerer Kerndicke.



Material groups: **VG** HSS-E DIN 371/376 6H 60° B Bright p.B197

Recommended ToolHolder: Plain Shank TAPPING ER CHUCK D215-220 D221-228 ONE STEP TAPPING CHUCK D211-213

Unit : mm

| SIZE  | Pitch  | EDP No.  | Thread Length | Overall Length | Neck Length | Shank Diameter | Square Size | Square Length | No. of Flute | Tapping Drill Diameter |
|-------|--------|----------|---------------|----------------|-------------|----------------|-------------|---------------|--------------|------------------------|
| ØD1   | P      | Bright   | L1            | L2             | L3          | ØD2            | K           | K1            | Z            | Ød1                    |
| M2    | × 0.4  | TC422136 | 8             | 45             | 13          | 2.8            | 2.1         | 5             | 3            | 1.6                    |
| M2.2  | × 0.45 | TC422156 | 8             | 45             | 13          | 2.8            | 2.1         | 5             | 3            | 1.75                   |
| *M2.3 | × 0.4  | TC422196 | 8             | 45             | 13          | 2.8            | 2.1         | 5             | 3            | 1.9                    |
| M2.5  | × 0.45 | TC422176 | 9             | 50             | 15          | 2.8            | 2.1         | 5             | 3            | 2.05                   |
| *M2.6 | × 0.45 | TC422496 | 9             | 50             | 15          | 2.8            | 2.1         | 5             | 3            | 2.1                    |
| M3    | × 0.5  | TC422206 | 11            | 56             | 18          | 3.5            | 2.7         | 6             | 3            | 2.5                    |
| M3.5  | × 0.6  | TC422226 | 12            | 56             | 20          | 4              | 3           | 6             | 3            | 2.9                    |
| M4    | × 0.7  | TC422246 | 13            | 63             | 21          | 4.5            | 3.4         | 6             | 3            | 3.3                    |
| M4.5  | × 0.75 | TC422266 | 14            | 70             | 25          | 6              | 4.9         | 8             | 3            | 3.7                    |
| M5    | × 0.8  | TC422286 | 15            | 70             | 25          | 6              | 4.9         | 8             | 3            | 4.2                    |
| M6    | × 1    | TC422316 | 17            | 80             | 30          | 6              | 4.9         | 8             | 3            | 5                      |
| M7    | × 1    | TC422346 | 17            | 80             | 30          | 7              | 5.5         | 8             | 3            | 6                      |
| M8    | × 1.25 | TC422366 | 20            | 90             | 35          | 8              | 6.2         | 9             | 3            | 6.8                    |
| M9    | × 1.25 | TC422396 | 20            | 90             | 35          | 9              | 7           | 10            | 3            | 7.8                    |
| M10   | × 1.5  | TC422426 | 22            | 100            | 39          | 10             | 8           | 11            | 3            | 8.5                    |
| M11   | × 1.5  | TC422466 | 22            | 100            | 40          | 8              | 6.2         | 9             | 3            | 9.5                    |
| M12   | × 1.75 | TC422506 | 24            | 110            | 44          | 9              | 7           | 10            | 3            | 10.2                   |
| M14   | × 2    | TC422546 | 26            | 110            | 44          | 11             | 9           | 12            | 3            | 12                     |
| M16   | × 2    | TC422606 | 27            | 110            | 44          | 12             | 9           | 12            | 3            | 14                     |
| M18   | × 2.5  | TC422656 | 30            | 125            | 50          | 14             | 11          | 14            | 4            | 15.5                   |
| M20   | × 2.5  | TC422706 | 32            | 140            | 54          | 16             | 12          | 15            | 4            | 17.5                   |
| M22   | × 2.5  | TC422746 | 32            | 140            | 54          | 18             | 14.5        | 17            | 4            | 19.5                   |
| M24   | × 3    | TC422786 | 34            | 160            | 60          | 18             | 14.5        | 17            | 4            | 21                     |
| M27   | × 3    | TC422866 | 36            | 160            | 60          | 20             | 16          | 19            | 4            | 24                     |
| M30   | × 3.5  | TC422946 | 40            | 180            | 70          | 22             | 18          | 21            | 4            | 26.5                   |

► DIN 371(M2~M10) and DIN 376(M11~M30)

► \* DIN profile not ISO

◎ : Excellent ○ : Good

| ISO Material Description | P               |     |     |     |     |                 |     |     |     |     | M                                  |     |                 |     | K              |     |                   |     |                     |     |
|--------------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|-----|---------------------|-----|
|                          | Non-alloy steel |     |     |     |     | Low alloy steel |     |     |     |     | High alloyed steel, and tool steel |     | Stainless steel |     | Grey cast iron |     | Nodular cast iron |     | Malleable cast iron |     |
| VDI 3323                 | 1               | 2   | 3   | 4   | 5   | 6               | 7   | 8   | 9   | 10  | 11                                 | 12  | 13              | 14  | 15             | 16  | 17                | 18  | 19                  | 20  |
| HRc                      | 13              | 25  | 28  | 30  | 32  | 10              | 29  | 32  | 38  | 15  | 35                                 | 15  | 23              | 10  | 10             | 26  | 3                 | 25  | 21                  | 21  |
| HB                       | 125             | 190 | 250 | 270 | 300 | 180             | 275 | 300 | 350 | 200 | 325                                | 200 | 240             | 180 | 180            | 260 | 160               | 250 | 130                 | 230 |
| Recommended              | ○               | ○   | ○   | ◎   | ◎   | ○               | ○   | ◎   | ◎   | ○   | ○                                  | ○   | ○               | ○   | ○              | ○   | ○                 | ○   | ○                   | ○   |

| ISO Material Description | N                      |     |                        |    |     |   |    |     |    |    | S                      |     |                             |     |     |       | H               |     |                |                   |                    |
|--------------------------|------------------------|-----|------------------------|----|-----|---|----|-----|----|----|------------------------|-----|-----------------------------|-----|-----|-------|-----------------|-----|----------------|-------------------|--------------------|
|                          | Aluminum-wrought alloy |     | Aluminum-cast, alloyed |    |     | Copper and Copper Alloys (Bronze / Brass) |    |     |    |    | Non Metallic Materials |     | Heat Resistant Super Alloys |     |     |       | Titanium Alloys |     | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323                 | 21                     | 22  | 23                     | 24 | 25  | 26  | 27 | 28  | 29 | 30 | 31                     | 32  | 33                          | 34  | 35  | 36    | 37              | 38  | 39             | 40                | 41                 |
| HRc                      | 21                     | 22  | 23                     | 24 | 25  | 26  | 27 | 28  | 29 | 30 | 15                     | 30  | 25                          | 38  | 34  | 55    | 60              | 42  | 42             | 55                | 55                 |
| HB                       | 60                     | 100 | 75                     | 90 | 130 | 110                                       | 90 | 100 |    |    | 200                    | 280 | 250                         | 350 | 320 | 400Rm | 1050Rm          | 550 | 630            | 400               | 550                |
| Recommended              |                        |     |                        |    |     |   |    |     |    |    | ○                      |     |                             |     |     |       | ○               |     |                |                   |                    |

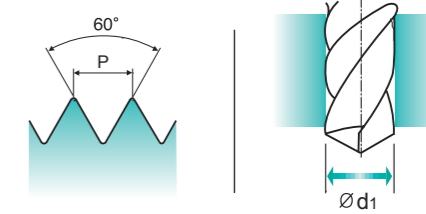
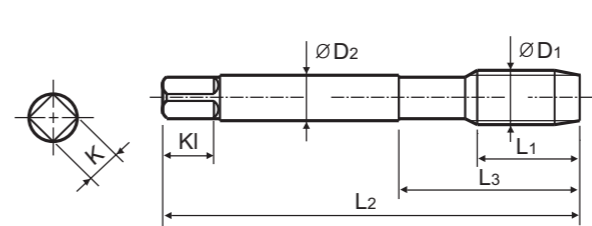
**M ISO metric coarse threads DIN 13**

- Metrisches ISO-Gewinde DIN 13
- ISO MÉTRIQUE DIN13
- ISO Metrico passo grosso DIN 13

Machine taps  
Maschinengewindebohrer

► Suitable for through hole in more cutting speed than other taps due to thick web.

► Geeignet für Durchgangslöcher in höherer Schnittgeschwindigkeit als bei anderen Gewindebohrern dank größerer Kerndicke.



Material groups: **VG** HSS-E DIN 371/376 6H 60° B TiN p.B197

Recommended ToolHolder: Plain Shank TAPPING ER CHUCK D215-220 D221-228 ONE STEP TAPPING CHUCK D211-213

Unit : mm

| SIZE  | Pitch  | EDP No.  | Thread Length | Overall Length | Neck Length | Shank Diameter | Square Size | Square Length | No. of Flute | Tapping Drill Diameter |
|-------|--------|----------|---------------|----------------|-------------|----------------|-------------|---------------|--------------|------------------------|
| ØD1   | P      | TiN      | L1            | L2             | L3          | ØD2            | K           | K1            | Z            | Ød1                    |
| M2    | × 0.4  | TD422136 | 8             | 45             | 13          | 2.8            | 2.1         | 5             | 3            | 1.6                    |
| M2.2  | × 0.45 | TD422156 | 8             | 45             | 13          | 2.8            | 2.1         | 5             | 3            | 1.75                   |
| *M2.3 | × 0.4  | TD422196 | 8             | 45             | 13          | 2.8            | 2.1         | 5             | 3            | 1.9                    |
| M2.5  | × 0.45 | TD422176 | 9             | 50             | 15          | 2.8            | 2.1         | 5             | 3            | 2.05                   |
| *M2.6 | × 0.45 | TD422496 | 9             | 50             | 15          | 2.8            | 2.1         | 5             | 3            | 2.1                    |
| M3    | × 0.5  | TD422206 | 11            | 56             | 18          | 3.5            | 2.7         | 6             | 3            | 2.5                    |
| M3.5  | × 0.6  | TD422226 | 12            | 56             | 20          | 4              | 3           | 6             | 3            | 2.9                    |
| M4    | × 0.7  | TD422246 | 13            | 63             | 21          | 4.5            | 3.4         | 6             | 3            | 3.3                    |
| M4.5  | × 0.75 | TD422266 | 14            | 70             | 25          | 6              | 4.9         | 8             | 3            | 3.7                    |
| M5    | × 0.8  | TD422286 | 15            | 70             | 25          | 6              | 4.9         | 8             | 3            | 4.2                    |
| M6    | × 1    | TD422316 | 17            | 80             | 30          | 6              | 4.9         | 8             | 3            | 5                      |
| M7    | × 1    | TD422346 | 17            | 80             | 30          | 7              | 5.5         | 8             | 3            | 6                      |
| M8    | × 1.25 | TD422366 | 20            | 90             | 35          | 8              | 6.2         | 9             | 3            | 6.8                    |
| M9    | × 1.25 | TD422396 | 20            | 90             | 35          | 9              | 7           | 10            | 3            | 7.8                    |
| M10   | × 1.5  | TD422426 | 22            | 100            | 39          | 10             | 8           | 11            | 3            | 8.5                    |
| M11   | × 1.5  | TD422466 | 22            | 100            | 40          | 8              | 6.2         | 9             | 3            | 9.5                    |
| M12   | × 1.75 | TD422506 | 24            | 110            | 44          | 9              | 7           | 10            | 3            | 10.2                   |
| M14   | × 2    | TD422546 | 26            | 110            | 44          | 11             | 9           | 12            | 3            | 12                     |
| M16   | × 2    | TD422606 | 27            | 110            | 44          | 12             | 9           | 12            | 3            | 14                     |
| M18   | × 2.5  | TD422656 | 30            | 125            | 50          | 14             | 11          | 14            | 4            | 15.5                   |
| M20   | × 2.5  | TD422706 | 32            | 140            | 54          | 16             | 12          | 15            | 4            | 17.5                   |
| M22   | × 2.5  | TD422746 | 32            | 140            | 54          | 18             | 14.5        | 17            | 4            | 19.5                   |
| M24   | × 3    | TD422786 | 34            | 160            | 60          | 18             | 14.5        | 17            | 4            | 21                     |
| M27   | × 3    | TD422866 | 36            | 160            | 60          | 20             | 16          | 19            | 4            | 24                     |
| M30   | × 3.5  | TD422946 | 40            | 180            | 70          | 22             | 18          | 21            | 4            | 26.5                   |

► DIN 371(M2~M10) and DIN 376(M11~M30)

► \* DIN profile not ISO

◎ : Excellent ○ : Good

| ISO Material Description | P               |     |     |     |     |                 |     |     |     |     | M                                  |     |                 |     | K              |     |                   |     |                     |     |
|--------------------------|-----------------|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|------------------------------------|-----|-----------------|-----|----------------|-----|-------------------|-----|---------------------|-----|
|                          | Non-alloy steel |     |     |     |     | Low alloy steel |     |     |     |     | High alloyed steel, and tool steel |     | Stainless steel |     | Grey cast iron |     | Nodular cast iron |     | Malleable cast iron |     |
| VDI 3323                 | 1               | 2   | 3   | 4   | 5   | 6               | 7   | 8   | 9   | 10  | 11                                 | 12  | 13              | 14  | 15             | 16  | 17                | 18  | 19                  | 20  |
| HRc                      | 13              | 25  | 28  | 30  | 32  | 10              | 29  | 32  | 38  | 15  | 35                                 | 15  | 23              | 10  | 10             | 26  | 3                 | 25  | 21                  | 21  |
| HB                       | 125             | 190 | 250 | 270 | 300 | 180             | 275 | 300 | 350 | 200 | 325                                | 200 | 240             | 180 | 180            | 260 | 160               | 250 | 130                 | 230 |
| Recommended              | ○               | ○   | ○   | ◎   | ◎   | ○               | ○   | ◎   | ◎   | ○   | ○                                  | ○   | ○               | ○   | ○              | ○   | ○                 | ○   | ○                   | ○   |

| ISO Material Description | N                      |     |                        |    |     |   |    |     |    |    | S                      |     |                             |     |     |       | H               |     |                |                   |                    |
|--------------------------|------------------------|-----|------------------------|----|-----|---|----|-----|----|----|------------------------|-----|-----------------------------|-----|-----|-------|-----------------|-----|----------------|-------------------|--------------------|
|                          | Aluminum-wrought alloy |     | Aluminum-cast, alloyed |    |     | Copper and Copper Alloys (Bronze / Brass) |    |     |    |    | Non Metallic Materials |     | Heat Resistant Super Alloys |     |     |       | Titanium Alloys |     | Hardened steel | Chilled Cast Iron | Hardened Cast Iron |
| VDI 3323                 | 21                     | 22  | 23                     | 24 | 25  | 26  | 27 | 28  | 29 | 30 | 31                     | 32  | 33                          | 34  | 35  | 36    | 37              | 38  | 39             | 40                | 41                 |
| HRc                      | 21                     | 22  | 23                     | 24 | 25  | 26  | 27 | 28  | 29 | 30 | 15                     | 30  | 25                          | 38  | 34  | 55    | 60              | 42  | 42             | 55                | 55                 |
| HB                       | 60                     | 100 | 75                     | 90 | 130 | 110                                       | 90 | 100 |    |    | 200                    | 280 | 250                         | 350 | 320 | 400Rm | 1050Rm          | 550 | 630            | 400               | 550                |
| Recommended              |                        |     |                        |    |     |   |    |     |    |    | ○                      |     |                             |     |     |       | ○               |     |                |                   |                    |