

# SELECTION

Ausgewählte Produkte von Ihrem WNT-Anwendungstechniker

(gültig ab 01.06.2011)



Schneller zur 1. Wahl  
beim Gewindebohren.

Das richtige Werkzeug für  
Ihre Anwendung - einfach  
und übersichtlich.



**TOTAL TOOLING = QUALITÄT x SERVICE<sup>2</sup>**



WNT Deutschland GmbH • Daimlerstr. 70 • D-87437 Kempten • Tel: 0831 - 57010-0 • [www.wnt.com](http://www.wnt.com)

# 1. Wahl Werkzeug für jeden Einsatzbereich

**UNI**

1. Wahl bei universellen Einsatz für Werkstoffe bis 1100 N/mm<sup>2</sup>  
 Umfangreiches Ø-Programm, in verschiedenen Beschichtungen bei erhöhter Beanspruchung und abrasiven Werkstoffen.


 Typ **Stabil UNI** für Durchgangsloch


Seite Seite Seite

|    |                 |        |        |
|----|-----------------|--------|--------|
| M  | Nitr. + vap. 4  | TiN 5  | TiCN 5 |
| MF | Nitr. + vap. 17 | TiN 18 |        |


 Typ **Salo-Rex UNI** für Sackloch


Seite Seite Seite

|    |         |        |        |
|----|---------|--------|--------|
| M  | Vap. 4  | TiN 5  | TiCN 5 |
| MF | Vap. 17 | TiN 18 |        |

**CNC**

1. Wahl bei universellen Einsatz für Werkstoffe bis 1100 N/mm<sup>2</sup>  
 Optimierte für die Synchronbearbeitung an CNC Maschinen


 Typ **Stabil UNI CNC** für Durchgangsloch


Seite

|   |          |
|---|----------|
| M | TiN GS 6 |
|---|----------|


 Typ **Salo-Rex UNI CNC** für Sackloch


Seite

|    |           |
|----|-----------|
| M  | TiN GS 6  |
| MF | TiN GS 19 |

**TS  
TOPSPEED**

1. Wahl bei universellen Einsatz für Werkstoffe bis 1100 N/mm<sup>2</sup>  
 Für Hochgeschwindigkeitsbearbeitung bis V<sub>c</sub> 100 m/min


 Typ **B TS** für Durchgangsloch


Seite

|    |        |
|----|--------|
| MF | TiN 19 |
|----|--------|


 Typ **SL40 TS** für Sackloch


Seite

|    |        |
|----|--------|
| M  | TiN 7  |
| MF | TiN 19 |

**HR**

1. Wahl bei hochfesten Stählen bis 1400 N/mm<sup>2</sup>


 Typ **C HR** für Durchgangsloch und Sackloch


Seite

|    |          |
|----|----------|
| M  | Nitr. 7  |
| MF | Nitr. 20 |


 Typ **SL25 HR** für Sackloch


Seite

|    |        |
|----|--------|
| MF | TiN 20 |
|----|--------|

**VA**

1. Wahl bei rost- und säurebeständigen Stählen


 Typ **Stabil VA** für Durchgangsloch


Seite Seite

|    |          |          |
|----|----------|----------|
| M  | Nitr. 8  | TiN GS 9 |
| MF | Nitr. 21 |          |


 Typ **Salo-Rex VA** für Sackloch


Seite Seite

|    |         |           |
|----|---------|-----------|
| M  | Vap. 8  | TiN GS 9  |
| MF | Vap. 21 | TiN GS 22 |

# 1. Wahl Werkzeug für jeden Einsatzbereich

**GG**

1. Wahl für Gusswerkstoffe


 Typ **C GG** für Durchgangsloch und Sackloch


Seite Seite

**M**
**Nitr.**

10-11

**TiN**

10

**MF**
**Nitr.**

23

**TiN**

23

**NW**

1. Wahl Aluminium und Al- Legierungen


 Typ **Stabil NW** für Durchgangsloch


Seite

**M**
**HCr**

12


 Typ **Salo-Rex NW** für Sackloch


Seite

**M**
**HCr**

12

**MF**
**Vap.**

24

**Ti**

 1. Wahl bei Sonderlegierungen  
 Spezialist für Titan, Titanlegierungen und Inconel

 Typ **B Ti** für Durchgangsloch


Seite

**M**
**Vap.**

13


 Typ **SL30 Ti** für Sackloch


Seite

**M**
**TiN**

13

**TWIN HT**

 1. Wahl bei gehärteten Stählen  $\leq 63$  HRC

 Typ **TWIN HT** für Durchgangsloch und Sackloch


Seite

**M**
**OSM**

13

**MF**
**OSM**

24

**Spanlos EC**
**Spanlos EC SN**

1. Wahl zum Gewindeformen für alle kaltumformbaren Werkstoffe


 Typ **Spanlos EC** für Durchgangsloch und Sackloch, ohne Schmiernuten


Seite

**M**
**TiN**

14

**HCr**

16

**MF**
**TiN**

25


 Typ **Spanlos EC SN** für Durchgangsloch und Sackloch, mit Schmiernuten


Seite

**M**
**TiN**

15

**HCr**

15

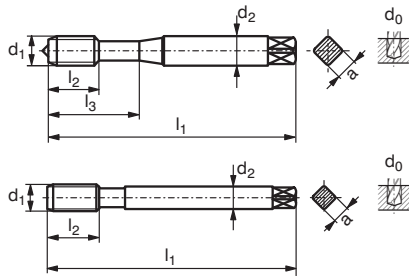
**MF**
**TiN**

26

# Maschinengewindebohrer

- metrisches ISO Regelgewinde DIN 13

|          |            |              |                                  |
|----------|------------|--------------|----------------------------------|
| <b>M</b> | <b>UNI</b> | <b>HSS E</b> | $\leq 1100$<br>N/mm <sup>2</sup> |
|----------|------------|--------------|----------------------------------|




**Stabil  
UNI**

**Nitr.  
+  
vap.**

**B**  
4-5

**0°**

DIN 371  
ISO 2 6H  
rechts  
≤ 4xD



**Salto-Rex  
UNI**

**Vap.**


**C**  
2-3

**42°**

DIN 376  
ISO 2 6H  
rechts  
≤ 4xD



DIN 371  
ISO 2 6H  
rechts  
≤ 3xD



DIN 376  
ISO 2 6H  
rechts  
≤ 3xD

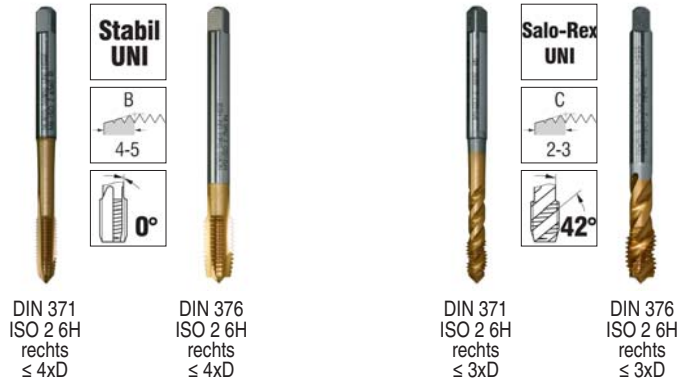
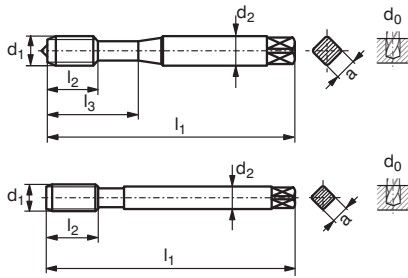
| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a    | d <sub>0</sub> | l <sub>3</sub> | Durchgangsloch            |     |                           | Sackloch |                           |       | l <sub>2</sub> |                           |     |
|----------------|------|----------------|----------------|------|----------------|----------------|---------------------------|-----|---------------------------|----------|---------------------------|-------|----------------|---------------------------|-----|
|                |      |                |                |      |                |                | PG                        | U0  | PG                        | U0       | PG                        | U0    |                | PG                        | U0  |
|                |      |                |                |      |                |                | Bestell Nr.<br>22 501 ... | EUR | Bestell Nr.<br>22 502 ... | EUR      | Bestell Nr.<br>22 518 ... | EUR   |                | Bestell Nr.<br>22 519 ... | EUR |
| M1             | 0,25 | 40             | 2,5            | 2,1  | 0,75           |                | 84,10                     | 010 | 1)                        | 5        |                           |       |                |                           |     |
| M1,2           | 0,25 | 40             | 2,5            | 2,1  | 0,95           |                | 79,70                     | 012 | 1)                        | 5        |                           |       |                |                           |     |
| M1,4           | 0,30 | 40             | 2,5            | 2,1  | 1,10           |                | 72,10                     | 014 | 1)                        | 6        |                           |       |                |                           |     |
| M1,6           | 0,35 | 40             | 2,5            | 2,1  | 1,25           | 9,3            | 50,70                     | 016 |                           | 6        |                           |       |                |                           |     |
| M1,7           | 0,35 | 40             | 2,5            | 2,1  | 1,35           | 11,0           | 78,10                     | 017 |                           | 8        |                           |       |                |                           |     |
| M1,8           | 0,35 | 40             | 2,5            | 2,1  | 1,45           | 11,0           | 107,00                    | 018 |                           | 6        |                           |       |                |                           |     |
| M2             | 0,40 | 45             | 2,8            | 2,1  | 1,60           | 9,9            | 36,80                     | 020 |                           | 7        |                           |       |                |                           |     |
| M2             | 0,40 | 45             | 2,8            | 2,1  | 1,60           | 12,0           |                           |     |                           |          | 28,40                     | 020   | 4              |                           |     |
| M2,2           | 0,45 | 45             | 2,8            | 2,1  | 1,75           | 12,0           | 39,20                     | 022 |                           | 7        | 32,20                     | 022   | 4,5            |                           |     |
| M2,3           | 0,40 | 45             | 2,8            | 2,1  | 1,90           | 12,0           |                           |     |                           |          | 34,10                     | 023   | 4,5            |                           |     |
| M2,5           | 0,45 | 50             | 2,8            | 2,1  | 2,05           | 14,0           | 36,30                     | 025 |                           | 9        | 27,30                     | 025   | 5              |                           |     |
| M2,6           | 0,45 | 50             | 2,8            | 2,1  | 2,15           | 14,0           |                           |     |                           |          | 32,50                     | 026   | 5              |                           |     |
| M3             | 0,50 | 56             | 3,5            | 2,7  | 2,50           | 18,0           | 27,20                     | 030 |                           | 11       | 24,30                     | 030   | 6              |                           |     |
| M3             | 0,50 | 56             | 2,2            |      | 2,50           |                |                           |     |                           |          |                           | 42,30 | 030            | 6                         |     |
| M3,5           | 0,60 | 56             | 4,0            | 3    | 2,90           | 20,0           | 29,80                     | 035 | 50,20                     | 12       | 26,20                     | 035   | 7              |                           |     |
| M4             | 0,70 | 63             | 4,5            | 3,4  | 3,30           | 21,0           | 24,70                     | 040 |                           | 13       | 25,50                     | 040   | 7              |                           |     |
| M4             | 0,70 | 63             | 2,8            | 2,1  | 3,30           |                |                           |     | 33,50                     | 13       |                           |       | 40,10          | 040                       | 7   |
| M5             | 0,80 | 70             | 6,0            | 4,9  | 4,20           | 25,0           | 25,20                     | 050 |                           | 15       | 25,80                     | 050   | 8              |                           |     |
| M5             | 0,80 | 70             | 3,5            | 2,7  | 4,20           |                |                           |     | 31,90                     | 15       |                           |       | 28,40          | 050                       | 8   |
| M6             | 1,00 | 80             | 6,0            | 4,9  | 5,00           | 30,0           | 25,50                     | 060 |                           | 17       | 26,70                     | 060   | 10             |                           |     |
| M6             | 1,00 | 80             | 4,5            | 3,4  | 5,00           |                |                           |     | 31,30                     | 17       |                           |       | 30,00          | 060                       | 10  |
| M7             | 1,00 | 80             | 7,0            | 5,5  | 6,00           | 30,0           | 35,80                     | 070 |                           | 17       | 39,20                     | 070   | 10             |                           |     |
| M8             | 1,25 | 90             | 8,0            | 6,2  | 6,80           | 35,0           | 28,90                     | 080 |                           | 20       | 31,40                     | 080   | 14             |                           |     |
| M8             | 1,25 | 90             | 6,0            | 4,9  | 6,80           |                |                           |     | 34,40                     | 20       |                           |       | 33,50          | 080                       | 14  |
| M10            | 1,50 | 100            | 7,0            | 5,5  | 8,50           |                |                           |     | 39,80                     | 22       |                           |       | 42,00          | 100                       | 16  |
| M10            | 1,50 | 100            | 10,0           | 8    | 8,50           | 39,0           | 34,80                     | 100 |                           | 22       | 37,70                     | 100   | 16             |                           |     |
| M12            | 1,75 | 110            | 9,0            | 7    | 10,20          |                |                           |     | 38,90                     | 24       |                           |       | 44,30          | 120                       | 18  |
| M12            | 1,75 | 110            | 12,0           | 9    | 10,20          | 44,0           | 51,30                     | 120 |                           | 24       | 41,50                     | 120   | 18             |                           |     |
| M14            | 2,00 | 110            | 11,0           | 9    | 12,00          |                |                           |     | 56,10                     | 26       |                           |       | 59,40          | 140                       | 20  |
| M16            | 2,00 | 110            | 12,0           | 9    | 14,00          |                |                           |     | 56,70                     | 27       |                           |       | 63,30          | 160                       | 22  |
| M18            | 2,50 | 125            | 14,0           | 11   | 15,50          |                |                           |     | 112,00                    | 30       |                           |       | 95,50          | 180                       | 25  |
| M20            | 2,50 | 140            | 16,0           | 12   | 17,50          |                |                           |     | 86,90                     | 32       |                           |       | 95,50          | 200                       | 25  |
| M22            | 2,50 | 140            | 18,0           | 14,5 | 19,50          |                |                           |     | 139,00                    | 32       |                           |       | 134,00         | 220                       | 27  |
| M24            | 3,00 | 160            | 18,0           | 14,5 | 21,00          |                |                           |     | 114,00                    | 34       |                           |       | 121,00         | 240                       | 30  |
| M27            | 3,00 | 160            | 20,0           | 16   | 24,00          |                |                           |     | 158,00                    | 36       |                           |       | 159,00         | 270                       | 30  |
| M30            | 3,50 | 180            | 22,0           | 18   | 26,50          |                |                           |     | 185,00                    | 40       |                           |       | 204,00         | 300                       | 35  |
| M33            | 3,50 | 180            | 25,0           | 20   | 29,50          |                |                           |     | 428,00                    | 40       |                           |       | 392,00         | 330                       | 35  |
| M36            | 4,00 | 200            | 28,0           | 22   | 32,00          |                |                           |     | 511,00                    | 50       |                           |       | 325,00         | 360                       | 40  |
| M42            | 4,50 | 200            | 32,0           | 24   | 37,50          |                |                           |     | 972,00                    | 56       |                           |       |                |                           |     |
| M48            | 5,00 | 250            | 36,0           | 29   | 43,00          |                |                           |     | 982,00                    | 65       |                           |       |                |                           |     |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA  | Guss | NE | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|-----|------|----|--------------------|-----------------|
|  | 10-20                         | 6-10                          | 4-8 | 6-15 |    |                    |                 |

1) Tol. 4H/5H ≤ M1,4

# Maschinengewindebohrer

- metrisches ISO Regelgewinde DIN 13

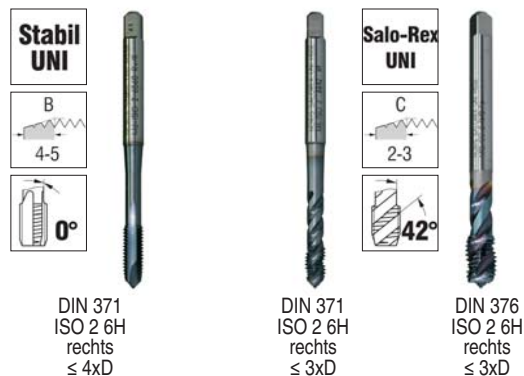
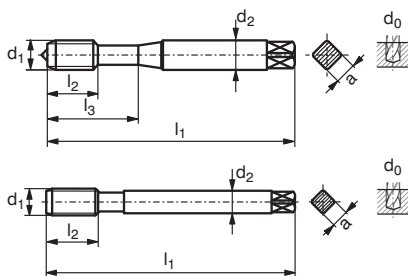


| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a    | d <sub>0</sub> | l <sub>3</sub> | Durchgangsloch |        | Sackloch   |     | l <sub>2</sub> |
|----------------|------|----------------|----------------|------|----------------|----------------|----------------|--------|------------|-----|----------------|
|                |      |                |                |      |                |                | PG             | U0     | PG         | U0  |                |
| M2             | 0,40 | 45             | 2,8            | 2,1  | 1,6            | 12             | 22 503 ...     | 020    | 22 520 ... | 020 | 4              |
| M3             | 0,50 | 56             | 3,5            | 2,7  | 2,5            | 18             | 34,90          | 030    | 40,90      | 030 | 6              |
| M4             | 0,70 | 63             | 4,5            | 3,4  | 3,3            | 21             | 29,40          | 040    | 30,80      | 040 | 7              |
| M5             | 0,80 | 70             | 6,0            | 4,9  | 4,2            | 25             | 30,80          | 050    | 32,80      | 050 | 8              |
| M6             | 1,00 | 80             | 6,0            | 4,9  | 5,0            | 30             | 31,10          | 060    | 33,10      | 060 | 10             |
| M8             | 1,25 | 90             | 8,0            | 6,2  | 6,8            | 35             | 35,10          | 080    | 39,00      | 080 | 14             |
| M10            | 1,50 | 100            | 10,0           | 8    | 8,5            | 39             | 39,40          | 100    | 43,00      | 100 | 16             |
| M12            | 1,75 | 110            | 12,0           | 9    | 10,2           | 44             | 55,00          |        | 51,30      | 120 | 18             |
| M12            | 1,75 | 110            | 9,0            | 7    | 10,2           |                |                | 63,40  | 62,80      | 120 | 18             |
| M14            | 2,00 | 110            | 11,0           | 9    | 12,0           |                |                | 93,30  |            | 140 | 20             |
| M16            | 2,00 | 110            | 12,0           | 9    | 14,0           |                |                | 81,60  |            | 160 | 22             |
| M18            | 2,50 | 125            | 14,0           | 11   | 15,5           |                |                | 148,00 |            | 180 | 25             |
| M20            | 2,50 | 140            | 16,0           | 12   | 17,5           |                |                | 151,00 |            | 200 | 25             |
| M22            | 2,50 | 140            | 18,0           | 14,5 | 19,5           |                |                | 225,00 |            | 220 | 27             |
| M24            | 3,00 | 160            | 18,0           | 14,5 | 21,0           |                |                | 192,00 |            | 240 | 30             |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA   | Guss | NE    | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|------|------|-------|--------------------|-----------------|
|  |                               | 10-25                         | 6-10 | 5-10 | 10-20 | 12-25              |                 |

# Maschinengewindebohrer

- metrisches ISO Regelgewinde DIN 13

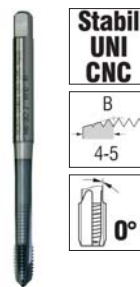
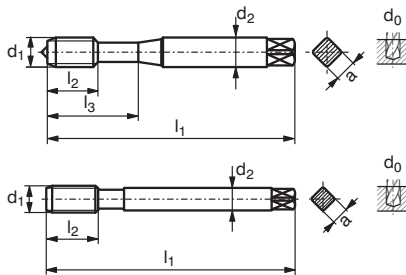


| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a   | d <sub>0</sub> | l <sub>3</sub> | Durchgangsloch |     | Sackloch   |     | l <sub>2</sub> |
|----------------|------|----------------|----------------|-----|----------------|----------------|----------------|-----|------------|-----|----------------|
|                |      |                |                |     |                |                | PG             | U0  | PG         | U0  |                |
| M3             | 0,50 | 56             | 3,5            | 2,7 | 2,5            | 18             | 22 505 ...     | 030 | 22 522 ... | 030 | 6              |
| M4             | 0,70 | 63             | 4,5            | 3,4 | 3,3            | 21             | 29,40          | 040 | 30,80      | 040 | 7              |
| M5             | 0,80 | 70             | 6,0            | 4,9 | 4,2            | 25             | 30,80          | 050 | 32,80      | 050 | 8              |
| M6             | 1,00 | 80             | 6,0            | 4,9 | 5,0            | 30             | 31,10          | 060 | 33,10      | 060 | 10             |
| M8             | 1,25 | 90             | 8,0            | 6,2 | 6,8            | 35             | 35,10          | 080 | 39,00      | 080 | 14             |
| M10            | 1,50 | 100            | 10,0           | 8   | 8,5            | 39             | 39,40          | 100 | 43,40      | 100 | 16             |
| M12            | 1,75 | 110            | 12,0           | 9   | 10,2           | 44             | 55,00          |     | 51,30      | 120 | 18             |
| M12            | 1,75 | 110            | 9,0            | 7   | 10,2           |                |                |     | 65,20      | 120 | 18             |
| M14            | 2,00 | 110            | 11,0           | 9   | 12,0           |                |                |     |            | 140 | 20             |
| M16            | 2,00 | 110            | 12,0           | 9   | 14,0           |                |                |     |            | 160 | 22             |
| M18            | 2,50 | 125            | 14,0           | 11  | 15,5           |                |                |     |            | 180 | 25             |
| M20            | 2,50 | 140            | 16,0           | 12  | 17,5           |                |                |     |            | 200 | 25             |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA   | Guss | NE    | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|------|------|-------|--------------------|-----------------|
|  |                               | 10-25                         | 6-10 | 5-10 | 10-20 | 12-25              |                 |

## Maschinengewindebohrer

- metrisches ISO Regelgewinde DIN 13
- Spezialist für Synchronbearbeitung
- Titannitrid-beschichtet und Gleitstoffschicht


 DIN 371  
ISO 2X  
rechts  
≤ 4xD

 DIN 376  
ISO 2X  
rechts  
≤ 4xD

 DIN 371  
ISO 2 6H  
rechts  
≤ 3xD

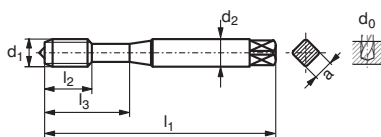
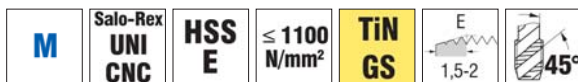
 DIN 376  
ISO 2 6H  
rechts  
≤ 3xD

| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a   | d <sub>0</sub> | l <sub>3</sub> | Durchgangsloch |       |             |            | l <sub>2</sub> |             |     |             |       |     |            |        |     |    |
|----------------|------|----------------|----------------|-----|----------------|----------------|----------------|-------|-------------|------------|----------------|-------------|-----|-------------|-------|-----|------------|--------|-----|----|
|                |      |                |                |     |                |                | PG             |       | U0          |            |                | PG          |     | U0          |       |     |            |        |     |    |
|                |      |                |                |     |                |                | Bestell Nr.    | EUR   | Bestell Nr. | EUR        |                | Bestell Nr. | EUR | Bestell Nr. | EUR   |     |            |        |     |    |
| M3             | 0,50 | 56             | 3,5            | 2,7 | 2,5            | 18             | 22 542 ...     | 31,90 | 030         | 22 543 ... | 69,80          | 120         | 11  | 22 544 ...  | 36,80 | 030 | 22 545 ... | 78,10  | 120 | 6  |
| M4             | 0,70 | 63             | 4,5            | 3,4 | 3,3            | 21             | 33,90          | 040   |             |            | 197,00         | 140         | 13  | 37,70       | 040   |     |            | 95,00  | 140 | 7  |
| M5             | 0,80 | 70             | 6,0            | 4,9 | 4,2            | 25             | 34,40          | 050   |             |            | 99,30          | 160         | 15  | 39,00       | 050   |     |            | 104,00 | 160 | 8  |
| M6             | 1,00 | 80             | 6,0            | 4,9 | 5,0            | 30             | 43,70          | 060   |             |            | 170,00         | 200         | 17  | 40,40       | 060   |     |            | 151,00 | 200 | 10 |
| M8             | 1,25 | 90             | 8,0            | 6,2 | 6,8            | 35             | 48,30          | 080   |             |            |                |             | 20  | 50,40       | 080   |     |            |        |     | 14 |
| M10            | 1,50 | 100            | 10,0           | 8   | 8,5            | 39             | 60,00          | 100   |             |            |                |             | 22  | 57,30       | 100   |     |            |        |     | 16 |
| M12            | 1,75 | 110            | 9,0            | 7   | 10,2           |                |                |       |             |            | 69,80          | 120         | 24  |             |       |     |            | 78,10  | 120 | 18 |
| M14            | 2,00 | 110            | 11,0           | 9   | 12,0           |                |                |       |             |            | 197,00         | 140         | 26  |             |       |     |            | 95,00  | 140 | 20 |
| M16            | 2,00 | 110            | 12,0           | 9   | 14,0           |                |                |       |             |            | 99,30          | 160         | 27  |             |       |     |            | 104,00 | 160 | 22 |
| M20            | 2,50 | 140            | 16,0           | 12  | 17,5           |                |                |       |             |            | 170,00         | 200         | 32  |             |       |     |            | 151,00 | 200 | 25 |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA   | Guss  | NE    | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|------|-------|-------|--------------------|-----------------|
|  | 10-25                         | 6-10                          | 5-10 | 10-20 | 12-25 |                    |                 |

## Maschinengewindebohrer

- metrisches ISO Regelgewinde DIN 13
- Spezialist für Synchronbearbeitung
- mit durchgehender Kühlmittelbohrung
- Titannitrid-beschichtet und Gleitstoffschicht

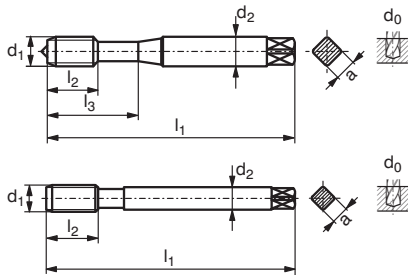
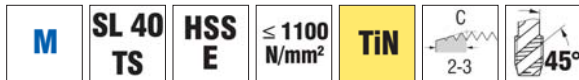

 DIN 371  
ISO 2 6H  
rechts  
≤ 3xD

| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a   | d <sub>0</sub> | l <sub>3</sub> | Sackloch    |       |             |     |   |
|----------------|------|----------------|----------------|-----|----------------|----------------|-------------|-------|-------------|-----|---|
|                |      |                |                |     |                |                | PG          |       | U0          |     |   |
|                |      |                |                |     |                |                | Bestell Nr. | EUR   | Bestell Nr. | EUR |   |
| M5             | 0,80 | 70             | 6              | 4,9 | 4,2            | 25             | 22 546 ...  | 55,70 | 050         |     | 8 |
| M6             | 1,00 | 80             | 6              | 4,9 | 5,0            | 30             | 56,20       | 060   |             | 10  |   |
| M8             | 1,25 | 90             | 8              | 6,2 | 6,8            | 35             | 72,10       | 080   |             | 14  |   |
| M10            | 1,50 | 100            | 10             | 8   | 8,5            | 39             | 83,00       | 100   |             | 16  |   |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA   | Guss  | NE    | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|------|-------|-------|--------------------|-----------------|
|  | 10-25                         | 6-10                          | 5-10 | 10-20 | 12-25 |                    |                 |

## Maschinengewindebohrer

- metrisches ISO Regelgewinde DIN 13
- mit durchgehender Kühlmittelbohrung
- Spezialist für hohe Vc bis 100 m/min
- 5 - 12%ige Emulsion verwenden!


 DIN 371  
ISO 2 6H  
rechts  
≤ 2xD

 DIN 376  
ISO 2 6H  
rechts  
≤ 2xD

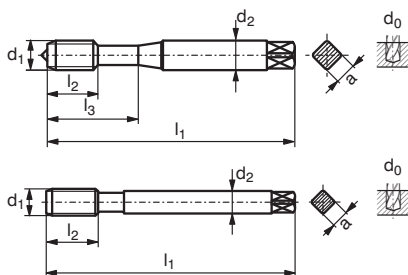
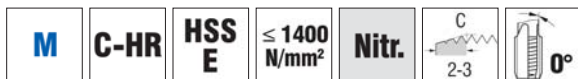
| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a   | d <sub>0</sub> | l <sub>3</sub> |
|----------------|------|----------------|----------------|-----|----------------|----------------|
| mm             | mm   | mm             | mm             | mm  | mm             | mm             |
| M5             | 0,80 | 70             | 6              | 4,9 | 4,2            | 25             |
| M6             | 1,00 | 80             | 6              | 4,9 | 5,0            | 30             |
| M8             | 1,25 | 90             | 8              | 6,2 | 6,8            | 35             |
| M10            | 1,50 | 100            | 10             | 8   | 8,5            | 39             |
| M12            | 1,75 | 110            | 9              | 7   | 10,2           |                |
| M16            | 2,00 | 110            | 12             | 9   | 14,0           |                |

| Sackloch               |     |                        |     |                   |    |
|------------------------|-----|------------------------|-----|-------------------|----|
| PG                     | U0  | PG                     | U0  |                   |    |
| Bestell Nr. 22 046 ... |     | Bestell Nr. 22 047 ... |     |                   |    |
| EUR                    |     | EUR                    |     | l <sub>2</sub> mm |    |
| 68,80                  | 050 |                        |     |                   | 8  |
| 89,50                  | 060 |                        |     |                   | 10 |
| 92,70                  | 080 |                        |     |                   | 14 |
| 126,00                 | 100 |                        |     |                   | 16 |
|                        |     | 136,00                 | 120 |                   | 18 |
|                        |     | 210,00                 | 160 |                   | 22 |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss | NE    | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|----|------|-------|--------------------|-----------------|
|  |                               | 20-100                        |    |      | 20-60 | 20-100             | 10-25           |

## Maschinengewindebohrer

- metrisches ISO Regelgewinde DIN 13
- für hochfeste Stähle ≤ 1400 N/mm<sup>2</sup>, Hastelloy, Nimonic


 DIN 371  
ISO 2X  
rechts  
≤ 2xD

 DIN 376  
ISO 2X  
rechts  
≤ 2xD

| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a   | d <sub>0</sub> | l <sub>3</sub> |
|----------------|------|----------------|----------------|-----|----------------|----------------|
| mm             | mm   | mm             | mm             | mm  | mm             | mm             |
| M3             | 0,50 | 56             | 3,5            | 2,7 | 2,5            | 18             |
| M4             | 0,70 | 63             | 4,5            | 3,4 | 3,3            | 21             |
| M5             | 0,80 | 70             | 6,0            | 4,9 | 4,2            | 25             |
| M6             | 1,00 | 80             | 6,0            | 4,9 | 5,0            | 30             |
| M8             | 1,25 | 90             | 8,0            | 6,2 | 6,8            | 35             |
| M10            | 1,50 | 100            | 10,0           | 8   | 8,5            | 39             |
| M12            | 1,75 | 110            | 9,0            | 7   | 10,2           |                |
| M16            | 2,00 | 110            | 12,0           | 9   | 14,0           |                |

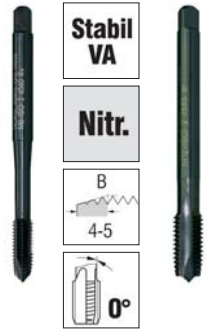
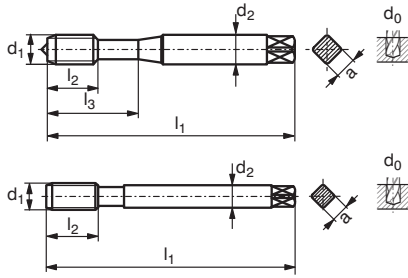
| Durchgangs- + Sackloch |     |                        |     |                   |    |
|------------------------|-----|------------------------|-----|-------------------|----|
| PG                     | U0  | PG                     | U0  |                   |    |
| Bestell Nr. 22 006 ... |     | Bestell Nr. 22 007 ... |     |                   |    |
| EUR                    |     | EUR                    |     | l <sub>2</sub> mm |    |
| 25,30                  | 030 |                        |     |                   | 11 |
| 26,20                  | 040 |                        |     |                   | 13 |
| 27,30                  | 050 |                        |     |                   | 15 |
| 27,50                  | 060 |                        |     |                   | 17 |
| 30,60                  | 080 |                        |     |                   | 20 |
| 37,90                  | 100 |                        |     |                   | 22 |
|                        |     | 48,30                  | 120 |                   | 24 |
|                        |     | 68,30                  | 160 |                   | 27 |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA   | Guss | NE   | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|------|------|------|--------------------|-----------------|
|  |                               | 12-15                         | 6-12 |      | 6-15 |                    | 3-5             |

# Maschinengewindebohrer

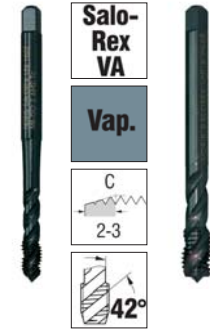
- metrisches ISO Regelgewinde DIN 13
- auf ausreichend Schmierung mit geeigneter Emulsion achten!

|          |           |              |                               |
|----------|-----------|--------------|-------------------------------|
| <b>M</b> | <b>VA</b> | <b>HSS E</b> | <b>≤ 900 N/mm<sup>2</sup></b> |
|----------|-----------|--------------|-------------------------------|



DIN 371  
ISO 2 6H  
rechts  
≤ 4xD

DIN 376  
ISO 2 6H  
rechts  
≤ 4xD



DIN 371  
ISO 2 6H  
rechts  
≤ 3xD

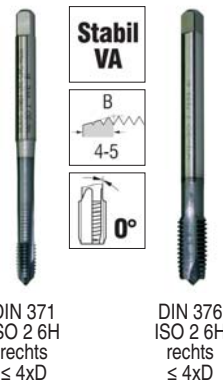
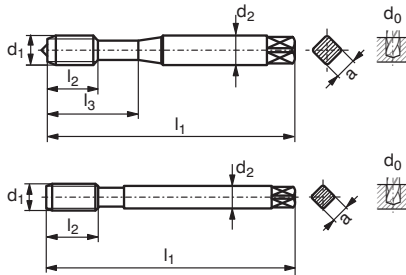
DIN 376  
ISO 2 6H  
rechts  
≤ 3xD

| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a    | d <sub>0</sub> | l <sub>3</sub> | Durchgangslloch |     | l <sub>2</sub> | Sackloch   |        | l <sub>2</sub> |
|----------------|------|----------------|----------------|------|----------------|----------------|-----------------|-----|----------------|------------|--------|----------------|
|                |      |                |                |      |                |                | PG              | U0  |                | PG         | U0     |                |
| M2             | 0,40 | 45             | 2,8            | 2,1  | 1,60           | 12             | 22 056 ...      | 020 | 7              | 22 090 ... | 020    | 4              |
| M2,5           | 0,45 | 50             | 2,8            | 2,1  | 2,05           | 14             | 27,30           | 025 | 9              | 33,90      | 025    | 5              |
| M3             | 0,50 | 56             | 3,5            | 2,7  | 2,50           | 18             | 27,00           | 030 | 11             | 25,30      | 030    | 6              |
| M3,5           | 0,60 | 56             | 4,0            | 3    | 2,90           | 20             | 21,80           | 035 | 12             |            |        |                |
| M4             | 0,70 | 63             | 4,5            | 3,4  | 3,30           | 21             | 24,60           | 040 | 13             | 26,00      | 040    | 7              |
| M5             | 0,80 | 70             | 6,0            | 4,9  | 4,20           | 25             | 22,90           | 050 | 15             | 26,50      | 050    | 8              |
| M6             | 1,00 | 80             | 6,0            | 4,9  | 5,00           | 30             | 23,70           | 060 | 17             | 26,70      | 060    | 10             |
| M8             | 1,25 | 90             | 8,0            | 6,2  | 6,80           | 35             | 24,80           | 080 | 20             | 31,10      | 080    | 14             |
| M10            | 1,50 | 100            | 10,0           | 8    | 8,50           | 39             | 27,50           | 100 | 22             | 37,70      | 100    | 16             |
| M12            | 1,75 | 110            | 9,0            | 7    | 10,20          |                | 33,90           |     | 24             |            |        | 18             |
| M14            | 2,00 | 110            | 11,0           | 9    | 12,00          |                |                 |     | 26             |            | 46,90  | 120            |
| M16            | 2,00 | 110            | 12,0           | 9    | 14,00          |                |                 |     | 27             |            | 68,80  | 140            |
| M18            | 2,50 | 125            | 14,0           | 11   | 15,50          |                |                 |     | 30             |            | 66,00  | 160            |
| M20            | 2,50 | 140            | 16,0           | 12   | 17,50          |                |                 |     | 32             |            |        | 200            |
| M22            | 2,50 | 140            | 18,0           | 14,5 | 19,50          |                |                 |     | 32             |            | 101,00 | 220            |
| M24            | 3,00 | 160            | 18,0           | 14,5 | 21,00          |                |                 |     | 34             |            | 187,00 | 220            |
| M27            | 3,00 | 160            | 20,0           | 16   | 24,00          |                |                 |     | 34             |            | 121,00 | 240            |
| M30            | 3,50 | 180            | 22,0           | 18   | 26,50          |                |                 |     | 36             |            | 203,00 | 270            |
|                |      |                |                |      |                |                |                 |     | 40             |            | 195,00 | 300            |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA   | Guss | NE | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|------|------|----|--------------------|-----------------|
|  |                               |                               | 5-10 |      |    |                    |                 |

# Maschinengewindebohrer

- metrisches ISO Regelgewinde DIN 13
- Titanitrid-beschichtet und Gleitstoffschicht
- auf ausreichend Schmierung mit geeigneter Emulsion achten!



DIN 371  
ISO 2 6H  
rechts  
≤ 4xD

DIN 376  
ISO 2 6H  
rechts  
≤ 4xD

DIN 371  
ISO 2 6H  
rechts  
≤ 3xD

DIN 376  
ISO 2 6H  
rechts  
≤ 3xD

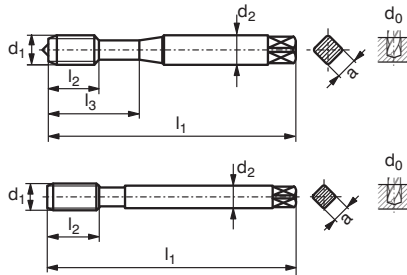
| $d_1$ | p<br>mm | $l_1$<br>mm | $d_2$<br>mm | a<br>mm | $d_0$<br>mm | $l_3$<br>mm | Durchgangsloch |       |             |            | Sackloch    |     |             |       |             |            |        |     |  |
|-------|---------|-------------|-------------|---------|-------------|-------------|----------------|-------|-------------|------------|-------------|-----|-------------|-------|-------------|------------|--------|-----|--|
|       |         |             |             |         |             |             | PG             |       | U0          |            | PG          |     | U0          |       | $l_2$<br>mm |            |        |     |  |
|       |         |             |             |         |             |             | Bestell Nr.    | EUR   | Bestell Nr. | EUR        | Bestell Nr. | EUR | Bestell Nr. | EUR   |             |            |        |     |  |
| M1,6  | 0,35    | 40          | 2,5         | 2,1     | 1,25        | 11          | 22 038 ...     | 48,00 | 016         | 22 039 ... | 72,10       | 120 | 22 040 ...  | 68,30 | 016         | 22 041 ... | 79,70  | 120 |  |
| M2    | 0,40    | 45          | 2,8         | 2,1     | 1,60        | 12          | 39,20          | 020   |             |            | 103,00      | 140 |             | 38,40 | 020         |            | 96,00  | 140 |  |
| M2,5  | 0,45    | 50          | 2,8         | 2,1     | 2,05        | 14          | 38,20          | 025   |             |            | 101,00      | 160 |             | 36,60 | 025         |            | 105,00 | 160 |  |
| M3    | 0,50    | 56          | 3,5         | 2,7     | 2,50        | 18          | 32,70          | 030   |             |            | 172,00      | 200 |             | 37,70 | 030         |            | 153,00 | 200 |  |
| M4    | 0,70    | 63          | 4,5         | 3,4     | 3,30        | 21          | 34,40          | 040   |             |            |             |     |             | 38,20 | 040         |            |        |     |  |
| M5    | 0,80    | 70          | 6,0         | 4,9     | 4,20        | 25          | 35,40          | 050   |             |            |             |     |             | 39,90 | 050         |            |        |     |  |
| M6    | 1,00    | 80          | 6,0         | 4,9     | 5,00        | 30          | 44,20          | 060   |             |            |             |     |             | 40,90 | 060         |            |        |     |  |
| M8    | 1,25    | 90          | 8,0         | 6,2     | 6,80        | 35          | 48,80          | 080   |             |            |             |     |             | 51,30 | 080         |            |        |     |  |
| M10   | 1,50    | 100         | 10,0        | 8       | 8,50        | 39          | 60,60          | 100   |             |            |             |     |             | 59,50 | 100         |            |        |     |  |
| M12   | 1,75    | 110         | 9,0         | 7       | 10,20       |             |                |       |             |            |             |     |             |       |             |            |        |     |  |
| M14   | 2,00    | 110         | 11,0        | 9       | 12,00       |             |                |       |             |            |             |     |             |       |             |            |        |     |  |
| M16   | 2,00    | 110         | 12,0        | 9       | 14,00       |             |                |       |             |            |             |     |             |       |             |            |        |     |  |
| M20   | 2,50    | 140         | 16,0        | 12      | 17,50       |             |                |       |             |            |             |     |             |       |             |            |        |     |  |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss | NE | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|----|------|----|--------------------|-----------------|
|  |                               | 5-12                          |    | 5-10 |    |                    |                 |

# Maschinengewindebohrer

- metrisches ISO Regelgewinde DIN 13

|          |                       |                        |                             |          |
|----------|-----------------------|------------------------|-----------------------------|----------|
| <b>M</b> | <b>C</b><br><b>GG</b> | <b>HSS</b><br><b>E</b> | ≤ 1050<br>N/mm <sup>2</sup> | C<br>2-3 |
|----------|-----------------------|------------------------|-----------------------------|----------|


**Nitr.**

**TiN**

 DIN 371  
ISO 2X  
rechts  
≤ 2xD

 DIN 376  
ISO 2X  
rechts  
≤ 2xD

 DIN 371  
ISO 2X  
rechts  
≤ 2xD

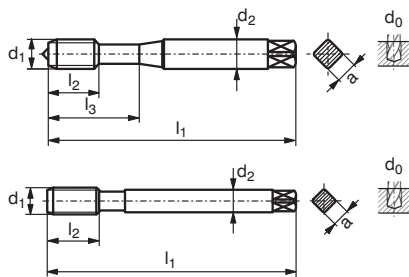
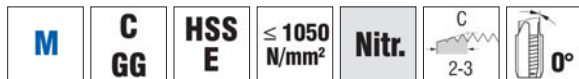
 DIN 376  
ISO 2X  
rechts  
≤ 2xD

| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a    | d <sub>0</sub> | l <sub>3</sub> | Durchgangs- + Sackloch |     |             |     | l <sub>2</sub> |             |        |             |     |
|----------------|------|----------------|----------------|------|----------------|----------------|------------------------|-----|-------------|-----|----------------|-------------|--------|-------------|-----|
|                |      |                |                |      |                |                | PG                     |     | U0          |     |                | PG          |        | U0          |     |
|                |      |                |                |      |                |                | Bestell Nr.            | EUR | Bestell Nr. | EUR |                | Bestell Nr. | EUR    | Bestell Nr. | EUR |
| M2             | 0,40 | 45             | 2,8            | 2,1  | 1,60           | 12             | 22 032 ...             | 020 | 24,30       | 7   | 22 033 ...     | 020         | 24,30  |             |     |
| M2,5           | 0,45 | 50             | 2,8            | 2,1  | 2,05           | 14             | 24,30                  | 025 | 24,30       | 9   |                | 025         | 24,30  |             |     |
| M3             | 0,50 | 56             | 3,5            | 2,7  | 2,50           | 18             | 20,40                  | 030 | 20,40       | 11  | 36,30          | 030         | 36,30  |             |     |
| M3,5           | 0,60 | 56             | 4,0            | 3    | 2,90           | 20             | 22,40                  | 035 | 22,40       | 12  |                | 035         | 22,40  |             |     |
| M4             | 0,70 | 63             | 2,8            | 2,1  | 3,30           |                |                        |     |             | 13  | 26,20          | 040         | 26,20  |             |     |
| M4             | 0,70 | 63             | 4,5            | 3,4  | 3,30           | 21             | 21,00                  | 040 | 21,00       | 13  | 28,60          | 040         | 28,60  |             |     |
| M5             | 0,80 | 70             | 6,0            | 4,9  | 4,20           | 25             | 22,30                  | 050 | 22,30       | 15  | 29,40          | 050         | 29,40  |             |     |
| M5             | 0,80 | 70             | 3,5            | 2,7  | 4,20           |                |                        |     |             | 15  | 26,50          | 050         | 26,50  |             |     |
| M6             | 1,00 | 80             | 6,0            | 4,9  | 5,00           | 30             | 22,30                  | 060 | 22,30       | 17  | 35,40          | 060         | 35,40  |             |     |
| M6             | 1,00 | 80             | 4,5            | 3,4  | 5,00           |                |                        |     |             | 17  | 26,70          | 060         | 26,70  |             |     |
| M8             | 1,25 | 90             | 8,0            | 6,2  | 6,80           | 35             | 26,10                  | 080 | 26,10       | 20  | 39,70          | 080         | 39,70  |             |     |
| M8             | 1,25 | 90             | 6,0            | 4,9  | 6,80           |                |                        |     |             | 20  | 28,40          | 080         | 28,40  |             |     |
| M10            | 1,50 | 100            | 10,0           | 8    | 8,50           | 39             | 30,80                  | 100 | 30,80       | 22  | 55,00          | 100         | 55,00  |             |     |
| M10            | 1,50 | 100            | 7,0            | 5,5  | 8,50           |                |                        |     |             | 22  | 32,70          | 100         | 32,70  |             |     |
| M12            | 1,75 | 110            | 9,0            | 7    | 10,20          |                |                        |     |             | 24  | 38,90          | 120         | 38,90  |             |     |
| M14            | 2,00 | 110            | 11,0           | 9    | 12,00          |                |                        |     |             | 26  | 51,60          | 140         | 51,60  |             |     |
| M16            | 2,00 | 110            | 12,0           | 9    | 14,00          |                |                        |     |             | 27  | 56,10          | 160         | 56,10  |             |     |
| M18            | 2,50 | 125            | 14,0           | 11   | 15,50          |                |                        |     |             | 30  | 83,10          | 180         | 83,10  |             |     |
| M20            | 2,50 | 140            | 16,0           | 12   | 17,50          |                |                        |     |             | 32  | 83,10          | 200         | 83,10  |             |     |
| M22            | 2,50 | 140            | 18,0           | 14,5 | 19,50          |                |                        |     |             | 32  | 126,00         | 220         | 126,00 |             |     |
| M24            | 3,00 | 160            | 18,0           | 14,5 | 21,00          |                |                        |     |             | 34  | 110,00         | 240         | 110,00 |             |     |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss  | NE | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|----|-------|----|--------------------|-----------------|
|  |                               |                               |    | 10-20 |    |                    |                 |

# Maschinengewindebohrer

- metrisches ISO Regelgewinde DIN 13
- mit durchgehender Kühlmittelbohrung


 DIN 371  
ISO 2X  
rechts  
≤ 2xD

 DIN 376  
ISO 2X  
rechts  
≤ 2xD

| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a   | d <sub>0</sub> | l <sub>3</sub> |
|----------------|------|----------------|----------------|-----|----------------|----------------|
| mm             | mm   | mm             | mm             | mm  | mm             | mm             |
| M5             | 0,80 | 70             | 6              | 4,9 | 4,2            | 25             |
| M6             | 1,00 | 80             | 6              | 4,9 | 5,0            | 30             |
| M8             | 1,25 | 90             | 8              | 6,2 | 6,8            | 35             |
| M10            | 1,50 | 100            | 10             | 8   | 8,5            | 39             |
| M12            | 1,75 | 110            | 9              | 7   | 10,2           |                |
| M14            | 2,00 | 110            | 11             | 9   | 12,0           |                |
| M16            | 2,00 | 110            | 12             | 9   | 14,0           |                |
| M20            | 2,50 | 140            | 16             | 12  | 17,5           |                |

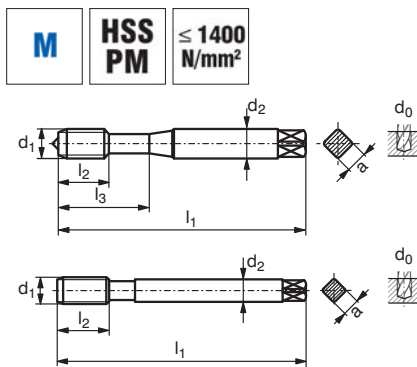
| Durchgangs- + Sackloch |     |                        |                   |
|------------------------|-----|------------------------|-------------------|
| PG                     | U0  | PG                     | U0                |
| Bestell Nr. 22 036 ... |     | Bestell Nr. 22 037 ... |                   |
| EUR                    |     | EUR                    |                   |
| 32,70                  | 050 |                        |                   |
| 33,50                  | 060 |                        |                   |
| 36,80                  | 080 |                        |                   |
| 43,70                  | 100 |                        |                   |
|                        |     | 51,60                  | 120               |
|                        |     | 70,90                  | 140               |
|                        |     | 71,50                  | 160               |
|                        |     | 106,00                 | 200               |
|                        |     |                        | l <sub>2</sub> mm |
|                        |     |                        | 15                |
|                        |     |                        | 17                |
|                        |     |                        | 20                |
|                        |     |                        | 22                |
|                        |     |                        | 24                |
|                        |     |                        | 26                |
|                        |     |                        | 27                |
|                        |     |                        | 32                |

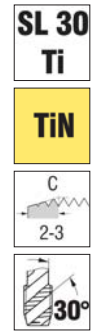
| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss | NE    | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|----|------|-------|--------------------|-----------------|
|  |                               |                               |    |      | 10-20 |                    |                 |



## Maschinengewindebohrer

- metrisches ISO Regelgewinde DIN 13
- Spezialist für Titan, Titanlegierungen und Inconel
- 22 076 ... mit abgesetztem Führungsgewinde


 DIN 371  
ISO 2X  
rechts  
≤ 4xD

 DIN 376  
ISO 2X  
rechts  
≤ 4xD

 DIN 371  
ISO 2X  
rechts  
≤ 1,5xD

| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a   | d <sub>0</sub> | l <sub>3</sub> | Durchgangsloch |            | Sackloch   |     |
|----------------|------|----------------|----------------|-----|----------------|----------------|----------------|------------|------------|-----|
|                |      |                |                |     |                |                | PG             | U0         | PG         | U0  |
| M1,6           | 0,35 | 40             | 2,5            | 2,1 | 1,25           | 11             | 22 075 ...     | 22 140 ... | 22 076 ... |     |
| M2             | 0,40 | 45             | 2,8            | 2,1 | 1,60           | 12             | EUR 88,40      | EUR 88,40  | EUR 36,60  | 030 |
| M2,5           | 0,45 | 50             | 2,8            | 2,1 | 2,05           | 14             | EUR 70,90      | EUR 70,90  | EUR 37,70  | 040 |
| M3             | 0,50 | 56             | 3,5            | 2,7 | 2,50           | 18             | EUR 69,30      | EUR 69,30  | EUR 37,90  | 050 |
| M3,5           | 0,60 | 56             | 4,0            | 3   | 2,90           | 20             | EUR 48,50      | EUR 48,50  | EUR 41,50  | 060 |
| M4             | 0,70 | 63             | 4,5            | 3,4 | 3,30           | 21             | EUR 55,50      | EUR 55,50  | EUR 43,70  | 080 |
| M5             | 0,80 | 70             | 6,0            | 4,9 | 4,20           | 25             | EUR 51,00      | EUR 51,00  | EUR 63,30  | 100 |
| M6             | 1,00 | 80             | 6,0            | 4,9 | 5,00           | 30             | EUR 51,00      | EUR 51,00  | EUR 72,10  | 120 |
| M8             | 1,25 | 90             | 8,0            | 6,2 | 6,80           | 35             | EUR 52,40      | EUR 52,40  |            |     |
| M10            | 1,50 | 100            | 10,0           | 8   | 8,50           | 39             | EUR 60,00      | EUR 60,00  |            |     |
| M12            | 1,75 | 110            | 12,0           | 9   | 10,20          | 44             | EUR 69,80      | EUR 69,80  |            |     |
| M12            | 1,75 | 110            | 9,0            | 7   | 10,20          | 44             |                | 84,60      | 120        |     |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA  | Guss | NE | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|-----|------|----|--------------------|-----------------|
|  |                               |                               | 2-5 |      |    |                    | 2-6             |

## Maschinengewindebohrer

- metrisches ISO Regelgewinde DIN 13
- Vollhartmetall-Gewindebohrer für gehärtete Stähle
- Spezialist für harte Werkstoffe
- nur mit Ausgleichsfutter und Spezialöl oder Paste verwenden

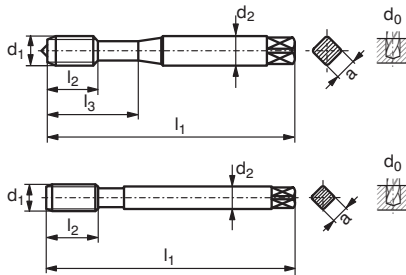

 DIN 371  
ISO 2X  
rechts  
≤ 1,5xD

| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a   | d <sub>0</sub> | l <sub>3</sub> | Durchgangs- + Sackloch |     |
|----------------|------|----------------|----------------|-----|----------------|----------------|------------------------|-----|
|                |      |                |                |     |                |                | PG                     | U0  |
| M3             | 0,50 | 63             | 4,5            | 3,4 | 2,55           | 18             | 22 806 ...             |     |
| M4             | 0,70 | 63             | 4,5            | 3,4 | 3,40           | 20             | EUR 152,00             | 030 |
| M5             | 0,80 | 70             | 6,0            | 4,9 | 4,30           | 26             | EUR 152,00             | 040 |
| M6             | 1,00 | 80             | 6,0            | 4,9 | 5,10           | 28             | EUR 171,00             | 050 |
| M8             | 1,25 | 90             | 8,0            | 6,2 | 6,90           | 35             | EUR 179,00             | 060 |
| M10            | 1,50 | 100            | 10,0           | 8   | 8,50           | 36             | EUR 200,00             | 080 |
| M12            | 1,75 | 110            | 12,0           | 9   | 10,40          | 41             | EUR 248,00             | 100 |
| M16            | 2,00 | 110            | 16,0           | 12  | 14,20          | 44             | EUR 380,00             | 120 |
|                |      |                |                |     |                |                | EUR 537,00             | 160 |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss | NE | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|----|------|----|--------------------|-----------------|
|  |                               |                               |    |      |    |                    |                 |

# Maschinengewindeformer

- metrisches ISO Regelgewinde DIN 13
- für alle kalt umformbaren Werkstoffe
- mit kurzem Anlauf, nicht für Horizontalbearbeitung geeignet


 DIN 2174  
ISO 2X  
rechts  
≤ 1,5xD

 DIN 2174  
ISO 2X  
rechts  
≤ 1,5xD

**Durchgangs- + Sackloch**

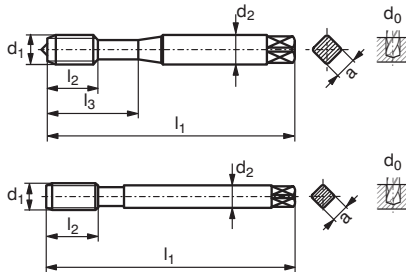
| $d_1$ | $p$  | $l_1$ | $d_2$ | $a$ | $d_0$ | $l_3$ |
|-------|------|-------|-------|-----|-------|-------|
| mm    | mm   | mm    | mm    | mm  | mm    | mm    |
| M1    | 0,25 | 40    | 2,5   | 2,1 | 0,90  |       |
| M1,2  | 0,25 | 40    | 2,5   | 2,1 | 1,10  |       |
| M1,4  | 0,30 | 40    | 2,5   | 2,1 | 1,28  |       |
| M1,6  | 0,35 | 40    | 2,5   | 2,1 | 1,47  | 9,3   |
| M1,7  | 0,35 | 40    | 2,5   | 2,1 | 1,57  | 11,0  |
| M2    | 0,40 | 45    | 2,8   | 2,1 | 1,85  | 9,9   |
| M2,5  | 0,45 | 50    | 2,8   | 2,1 | 2,33  | 14,0  |
| M2,6  | 0,45 | 50    | 2,8   | 2,1 | 2,43  | 14,0  |
| M3    | 0,50 | 56    | 3,5   | 2,7 | 2,80  | 18,0  |
| M3,5  | 0,60 | 56    | 4,0   | 3   | 3,25  | 20,0  |
| M4    | 0,70 | 63    | 4,5   | 3,4 | 3,70  | 21,0  |
| M5    | 0,80 | 70    | 6,0   | 4,9 | 4,65  | 25,0  |
| M6    | 1,00 | 80    | 6,0   | 4,9 | 5,60  | 30,0  |
| M8    | 1,25 | 90    | 8,0   | 6,2 | 7,40  | 35,0  |
| M10   | 1,50 | 100   | 10,0  | 8   | 9,35  | 39,0  |
| M12   | 1,75 | 110   | 9,0   | 7   | 11,25 |       |
| M16   | 2,00 | 110   | 12,0  | 9   | 15,10 |       |

| PG                     | U0  | PG                     | U0  | $l_2$ |
|------------------------|-----|------------------------|-----|-------|
| Bestell Nr. 22 100 ... |     | Bestell Nr. 22 101 ... |     | mm    |
| EUR                    |     | EUR                    |     |       |
| 65,70                  | 010 |                        |     | 5     |
| 62,20                  | 012 |                        |     | 5     |
| 55,60                  | 014 |                        |     | 6     |
| 53,60                  | 016 |                        |     | 6     |
| 58,90                  | 017 |                        |     | 6     |
| 38,40                  | 020 |                        |     | 7     |
| 37,30                  | 025 |                        |     | 9     |
| 41,60                  | 026 |                        |     | 9     |
| 35,70                  | 030 |                        |     | 11    |
| 31,40                  | 035 |                        |     | 12    |
| 36,50                  | 040 |                        |     | 13    |
| 38,20                  | 050 |                        |     | 15    |
| 43,60                  | 060 |                        |     | 17    |
| 47,90                  | 080 |                        |     | 20    |
| 60,70                  | 100 |                        |     | 22    |
|                        |     | 66,70                  | 120 | 24    |
|                        |     | 113,00                 | 160 | 27    |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA   | Guss | NE | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|------|------|----|--------------------|-----------------|
|  |                               | 10-30                         | 8-15 | 8-15 |    | 12-25              |                 |

## Maschinengewindeformer

- metrisches ISO Regelgewinde DIN 13
- für alle kalt umformbaren Werkstoffe
- mit Schmiernuten
- mit kurzem Anlauf
- optimale Schmiermittelzufuhr auch bei großen Gewindetiefen durch geräumige Schmiernuten


 DIN 2174  
ISO3X  
rechts  
≤ 3xD

 DIN 2174  
ISO 2X  
rechts  
≤ 3xD

 DIN 2174  
ISO 2X  
rechts  
≤ 3xD

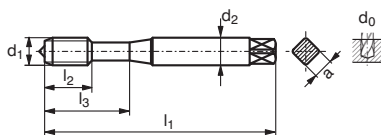
### Durchgangs- + Sackloch

| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a   | d <sub>0</sub> | l <sub>3</sub> | PG U0       |     | PG U0       |     | PG U0       |     | l <sub>2</sub><br>mm |
|----------------|------|----------------|----------------|-----|----------------|----------------|-------------|-----|-------------|-----|-------------|-----|----------------------|
|                |      |                |                |     |                |                | Bestell Nr. | EUR | Bestell Nr. | EUR | Bestell Nr. | EUR |                      |
| M2             | 0,40 | 45             | 2,8            | 2,1 | 1,85           | 9,9            |             |     |             |     |             |     | 7                    |
| M2,5           | 0,45 | 50             | 2,8            | 2,1 | 2,33           | 14,0           |             |     |             |     |             |     | 9                    |
| M3             | 0,50 | 56             | 3,5            | 2,7 | 2,80           | 18,0           | 37,00       | 030 |             |     |             |     | 11                   |
| M3,5           | 0,60 | 56             | 4,0            | 3   | 3,25           | 20,0           |             |     |             |     |             |     | 12                   |
| M4             | 0,70 | 63             | 4,5            | 3,4 | 3,70           | 21,0           | 38,40       | 040 |             |     |             |     | 13                   |
| M5             | 0,80 | 70             | 6,0            | 4,9 | 4,65           | 25,0           | 40,40       | 050 |             |     |             |     | 15                   |
| M6             | 1,00 | 80             | 6,0            | 4,9 | 5,60           | 30,0           | 47,20       | 060 |             |     |             |     | 17                   |
| M8             | 1,25 | 90             | 8,0            | 6,2 | 7,45           | 35,0           | 53,60       | 080 |             |     |             |     | 20                   |
| M10            | 1,50 | 100            | 10,0           | 8   | 9,35           | 39,0           | 67,90       | 100 |             |     |             |     | 22                   |
| M12            | 1,75 | 110            | 9,0            | 7   | 11,25          |                |             |     |             |     | 82,00       | 120 | 24                   |
| M14            | 2,00 | 110            | 11,0           | 9   | 13,10          |                |             |     |             |     | 158,00      | 140 | 26                   |
| M16            | 2,00 | 110            | 12,0           | 9   | 15,10          |                |             |     |             |     | 127,00      | 160 | 27                   |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA   | Guss | NE    | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|------|------|-------|--------------------|-----------------|
|  | 10-30                         | 8-15                          | 8-15 |      | 12-25 |                    |                 |

## Maschinengewindeformer

- metrisches ISO Regelgewinde DIN 13
- mit kurzem Anlauf
- optimale Schmiermittelzufuhr auch bei großen Gewindetiefen durch geräumige Schmiernuten
- für alle kalt umformbaren Werkstoffe
- mit Schmiernuten
- Spezialist für Aluminium und Alu-Knetlegierungen


 DIN 2174  
ISO 2X  
rechts  
≤ 3xD

### Durchgangs- + Sackloch

| d <sub>1</sub> | p    | l <sub>1</sub> | d <sub>2</sub> | a   | d <sub>0</sub> | l <sub>3</sub> | PG U0       |     | l <sub>2</sub><br>mm |
|----------------|------|----------------|----------------|-----|----------------|----------------|-------------|-----|----------------------|
|                |      |                |                |     |                |                | Bestell Nr. | EUR |                      |
| M3             | 0,50 | 56             | 3,5            | 2,7 | 2,80           | 18             | 38,20       | 030 | 11                   |
| M4             | 0,70 | 63             | 4,5            | 3,4 | 3,70           | 21             | 38,90       | 040 | 13                   |
| M5             | 0,80 | 70             | 6,0            | 4,9 | 4,65           | 25             | 40,90       | 050 | 15                   |
| M6             | 1,00 | 80             | 6,0            | 4,9 | 5,60           | 30             | 40,90       | 060 | 17                   |
| M8             | 1,25 | 90             | 8,0            | 6,2 | 7,45           | 35             | 46,90       | 080 | 20                   |
| M10            | 1,50 | 100            | 10,0           | 8   | 9,35           | 39             | 61,70       | 100 | 22                   |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss | NE    | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|----|------|-------|--------------------|-----------------|
|  | 8-25                          |                               |    |      | 10-30 |                    |                 |

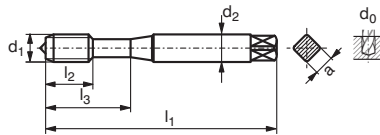


## Maschinengewindeformer

- metrisches ISO Regelgewinde DIN 13
- für alle kalt umformbaren Werkstoffe
- mit kurzem Anlauf, nicht für Horizontalbearbeitung geeignet



DIN 2174  
ISO 2X  
rechts  
≤ 1,5xD



### Durchgangs- + Sackloch

| PG          | U0  | l <sub>2</sub><br>mm |
|-------------|-----|----------------------|
| Bestell Nr. |     |                      |
| 22 128 ...  |     |                      |
| EUR         |     |                      |
| 53,90       | 020 | 7                    |
| 46,40       | 025 | 9                    |
| 33,40       | 030 | 11                   |
| 34,70       | 040 | 13                   |
| 36,30       | 050 | 15                   |
| 36,30       | 060 | 17                   |
| 41,30       | 080 | 20                   |
| 53,90       | 100 | 22                   |

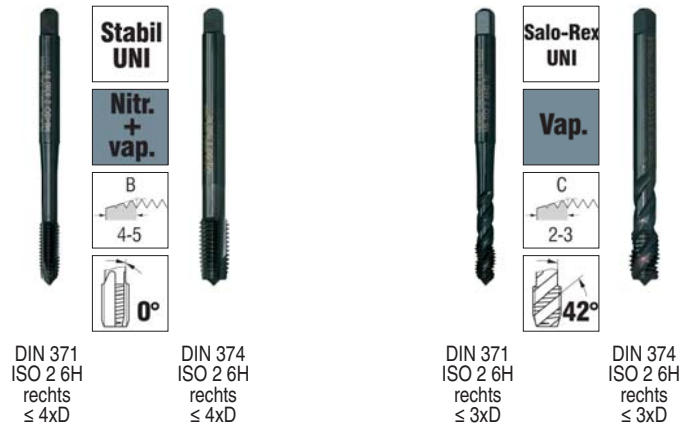
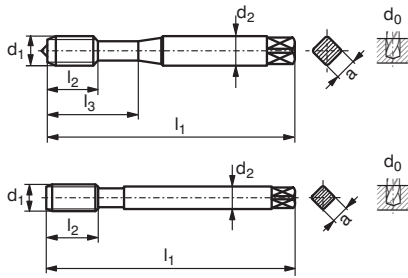
| d <sub>1</sub> | p<br>mm | l <sub>1</sub><br>mm | d <sub>2</sub><br>mm | a<br>mm | d <sub>0</sub><br>mm | l <sub>3</sub><br>mm |
|----------------|---------|----------------------|----------------------|---------|----------------------|----------------------|
| M2             | 0,40    | 45                   | 2,8                  | 2,1     | 1,85                 | 12                   |
| M2,5           | 0,45    | 50                   | 2,8                  | 2,1     | 2,33                 | 14                   |
| M3             | 0,50    | 56                   | 3,5                  | 2,7     | 2,80                 | 18                   |
| M4             | 0,70    | 63                   | 4,5                  | 3,4     | 3,70                 | 21                   |
| M5             | 0,80    | 70                   | 6,0                  | 4,9     | 4,65                 | 25                   |
| M6             | 1,00    | 80                   | 6,0                  | 4,9     | 5,60                 | 30                   |
| M8             | 1,25    | 90                   | 8,0                  | 6,2     | 7,45                 | 35                   |
| M10            | 1,50    | 100                  | 10,0                 | 8       | 9,35                 | 39                   |

| Vc (m/min) für Haupt- und<br>Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss | NE | Hochwärmefeste Leg. | Hartbearbeitung |
|---|-------------------------------|-------------------------------|----|------|----|---------------------|-----------------|
|   |                               | 8-25                          |    |      |    | 10-30               |                 |

# Maschinengewindebohrer

- metrisches ISO Feingewinde DIN 13

|           |            |              |                                  |
|-----------|------------|--------------|----------------------------------|
| <b>MF</b> | <b>UNI</b> | <b>HSS E</b> | $\leq 1100$<br>N/mm <sup>2</sup> |
|-----------|------------|--------------|----------------------------------|

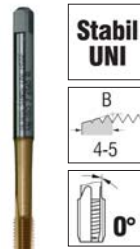
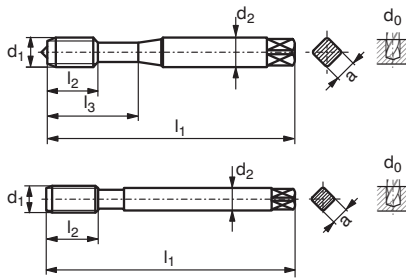


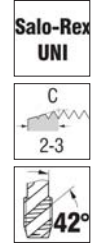
| d <sub>1</sub> | p<br>mm | l <sub>1</sub><br>mm | d <sub>2</sub><br>mm | a<br>mm | d <sub>0</sub><br>mm | l <sub>3</sub><br>mm | Durchgangsloch            |     |                           |     | Sackloch                  |     |                           |     | l <sub>2</sub><br>mm |
|----------------|---------|----------------------|----------------------|---------|----------------------|----------------------|---------------------------|-----|---------------------------|-----|---------------------------|-----|---------------------------|-----|----------------------|
|                |         |                      |                      |         |                      |                      | PG U0                     |     | PG U0                     |     | PG U0                     |     | PG U0                     |     |                      |
|                |         |                      |                      |         |                      |                      | Bestell Nr.<br>22 590 ... | EUR | Bestell Nr.<br>22 551 ... | EUR | Bestell Nr.<br>22 202 ... | EUR | Bestell Nr.<br>22 553 ... | EUR |                      |
| M4x0,5         | 0,50    | 63                   | 4,5                  | 3,4     | 3,5                  | 21                   | 41,50                     | 040 |                           | 10  | 44,70                     | 040 |                           | 5   |                      |
| M5x0,5         | 0,50    | 70                   | 6,0                  | 4,9     | 4,5                  | 25                   | 41,50                     | 050 |                           | 11  | 40,90                     | 050 |                           | 5   |                      |
| M6x0,5         | 0,50    | 80                   | 6,0                  | 4,9     | 5,5                  | 30                   | 43,70                     | 060 |                           | 13  | 44,70                     | 060 |                           | 5   |                      |
| M6x0,5         | 0,50    | 80                   | 4,5                  | 3,4     | 5,5                  |                      |                           |     | 76,90                     | 060 |                           |     |                           |     |                      |
| M6x0,75        | 0,75    | 80                   | 6,0                  | 4,9     | 5,2                  | 30                   | 43,70                     | 062 |                           | 13  | 44,70                     | 062 |                           | 8   |                      |
| M6x0,75        | 0,75    | 80                   | 4,5                  | 3,4     | 5,2                  |                      |                           |     | 37,10                     | 062 |                           |     | 44,70                     | 062 | 8                    |
| M8x0,75        | 0,75    | 80                   | 6,0                  | 4,9     | 7,2                  |                      |                           |     | 40,60                     | 082 |                           |     | 41,80                     | 080 | 8                    |
| M8x1           | 1,00    | 90                   | 6,0                  | 4,9     | 7,0                  |                      |                           |     | 37,10                     | 084 |                           |     | 38,70                     | 082 | 10                   |
| M8x1           | 1,00    | 90                   | 8,0                  | 6,2     | 7,0                  | 35                   | 42,50                     | 084 |                           | 17  |                           |     |                           |     |                      |
| M10x1          | 1,00    | 90                   | 7,0                  | 5,5     | 9,0                  |                      |                           |     | 37,90                     | 102 |                           |     | 41,50                     | 100 | 10                   |
| M10x0,75       | 0,75    | 90                   | 7,0                  | 5,5     | 9,2                  |                      |                           |     | 54,50                     | 100 |                           |     | 77,40                     | 101 | 10                   |
| M10x1,25       | 1,25    | 100                  | 7,0                  | 5,5     | 8,8                  |                      |                           |     | 81,30                     | 104 |                           |     | 102,00                    | 102 | 16                   |
| M10x1          | 1,00    | 90                   | 10,0                 | 8       | 9,0                  | 35                   | 43,70                     | 102 |                           | 18  |                           |     |                           |     |                      |
| M12x1          | 1,00    | 100                  | 9,0                  | 7       | 11,0                 |                      |                           |     | 44,40                     | 120 |                           |     | 52,40                     | 120 | 11                   |
| M12x1,25       | 1,25    | 100                  | 9,0                  | 7       | 10,8                 |                      |                           |     | 61,60                     | 122 |                           |     | 81,90                     | 122 | 15                   |
| M12x1,5        | 1,50    | 100                  | 9,0                  | 7       | 10,5                 |                      |                           |     | 41,80                     | 124 |                           |     | 50,40                     | 124 | 15                   |
| M14x1,5        | 1,50    | 100                  | 11,0                 | 9       | 12,5                 |                      |                           |     | 56,20                     | 144 |                           |     | 62,20                     | 140 | 15                   |
| M14x1          | 1,00    | 100                  | 11,0                 | 9       | 13,0                 |                      |                           |     | 115,00                    | 140 |                           |     |                           |     |                      |
| M16x1,5        | 1,50    | 100                  | 12,0                 | 9       | 14,5                 |                      |                           |     | 67,10                     | 162 |                           |     | 75,90                     | 160 | 15                   |
| M18x1,5        | 1,50    | 110                  | 14,0                 | 11      | 16,5                 |                      |                           |     | 78,10                     | 182 |                           |     | 92,70                     | 180 | 17                   |
| M18x1          | 1,00    | 110                  | 14,0                 | 11      | 17,0                 |                      |                           |     | 186,00                    | 180 |                           |     |                           |     |                      |
| M18x2          | 2,00    | 125                  | 14,0                 | 11      | 16,0                 |                      |                           |     | 153,00                    | 184 |                           |     |                           |     |                      |
| M20x1,5        | 1,50    | 125                  | 16,0                 | 12      | 18,5                 |                      |                           |     | 87,90                     | 202 |                           |     | 127,00                    | 200 | 17                   |
| M20x1          | 1,00    | 125                  | 16,0                 | 12      | 19,0                 |                      |                           |     | 202,00                    | 200 |                           |     |                           |     |                      |
| M22x1,5        | 1,50    | 125                  | 18,0                 | 14,5    | 20,5                 |                      |                           |     | 95,50                     | 222 |                           |     | 123,00                    | 220 | 17                   |
| M24x1,5        | 1,50    | 140                  | 18,0                 | 14,5    | 22,5                 |                      |                           |     | 109,00                    | 242 |                           |     | 134,00                    | 240 | 20                   |
| M24x2          | 2,00    | 140                  | 18,0                 | 14,5    | 22,0                 |                      |                           |     | 198,00                    | 244 |                           |     |                           |     |                      |
| M25x1,5        | 1,50    | 140                  | 18,0                 | 14,5    | 23,5                 |                      |                           |     | 325,00                    | 250 |                           |     |                           |     |                      |
| M26x1,5        | 1,50    | 140                  | 18,0                 | 14,5    | 24,5                 |                      |                           |     | 135,00                    | 260 |                           |     | 172,00                    | 260 | 20                   |
| M27x2          | 2,00    | 140                  | 20,0                 | 16      | 25,0                 |                      |                           |     | 343,00                    | 272 |                           |     |                           |     |                      |
| M28x1,5        | 1,50    | 140                  | 20,0                 | 16      | 26,5                 |                      |                           |     | 158,00                    | 280 |                           |     | 202,00                    | 280 | 20                   |
| M30x1,5        | 1,50    | 150                  | 22,0                 | 18      | 28,5                 |                      |                           |     | 170,00                    | 302 |                           |     | 204,00                    | 300 | 22                   |

| Vc (m/min) für Haupt- und<br>Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA  | Guss | NE | Hochwärmefeste Leg. | Hartbearbeitung |
|---|-------------------------------|-------------------------------|-----|------|----|---------------------|-----------------|
|   | 10-20                         | 6-10                          | 4-8 | 6-15 |    |                     |                 |

# Maschinengewindebohrer

- metrisches ISO Feingewinde DIN 13


 DIN 371  
ISO 2 6H  
rechts  
≤ 4xD

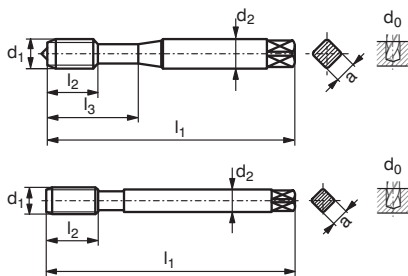
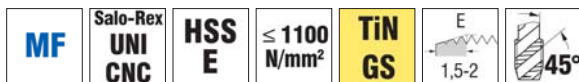
 DIN 374  
ISO 2 6H  
rechts  
≤ 4xD

 DIN 374  
ISO 2 6H  
rechts  
≤ 3xD

| d <sub>1</sub> | p<br>mm | l <sub>1</sub><br>mm | d <sub>2</sub><br>mm | a<br>mm | d <sub>0</sub><br>mm | l <sub>3</sub><br>mm | Durchgangsloch |             | Sackloch             |                      |    |    |
|----------------|---------|----------------------|----------------------|---------|----------------------|----------------------|----------------|-------------|----------------------|----------------------|----|----|
|                |         |                      |                      |         |                      |                      | PG             | U0          | PG                   | U0                   | PG | U0 |
|                |         |                      |                      |         |                      |                      | Bestell Nr.    | Bestell Nr. | Bestell Nr.          | Bestell Nr.          |    |    |
| M4x0,5         | 0,50    | 63                   | 4,5                  | 3,4     | 3,5                  | 21                   | PG             | U0          | l <sub>2</sub><br>mm | l <sub>2</sub><br>mm |    |    |
| M5x0,5         | 0,50    | 70                   | 6,0                  | 4,9     | 4,5                  | 25                   | 22 550 ...     | 22 552 ...  | 10                   |                      |    |    |
| M6x0,5         | 0,50    | 80                   | 6,0                  | 4,9     | 5,5                  | 30                   | EUR 48,00      | EUR 48,00   | 11                   |                      |    |    |
| M6x0,75        | 0,75    | 80                   | 6,0                  | 4,9     | 5,2                  | 30                   | EUR 60,00      | EUR 60,00   | 13                   |                      |    |    |
| M8x1           | 1,00    | 90                   | 8,0                  | 6,2     | 7,0                  | 35                   | EUR 57,30      | EUR 57,30   | 13                   |                      |    |    |
| M8x1           | 1,00    | 90                   | 6,0                  | 4,9     | 7,0                  |                      |                | 080         | 17                   |                      |    |    |
| M10x1          | 1,00    | 90                   | 7,0                  | 5,5     | 9,0                  |                      |                | 080         | 17                   | 10                   |    |    |
| M10x1          | 1,00    | 90                   | 10,0                 | 8       | 9,0                  | 35                   | EUR 65,00      | EUR 62,80   | 18                   | 10                   |    |    |
| M10x1          | 1,00    | 90                   | 10,0                 | 8       | 9,0                  | 35                   |                | 100         | 18                   |                      |    |    |
| M12x1,5        | 1,50    | 100                  | 9,0                  | 7       | 10,5                 |                      |                | 120         | 22                   | 15                   |    |    |
| M12x1          | 1,00    | 100                  | 9,0                  | 7       | 11,0                 |                      |                | 120         | 22                   | 15                   |    |    |
| M12x1          | 1,00    | 100                  | 9,0                  | 7       | 11,0                 |                      |                | 121         | 18                   | 11                   |    |    |
| M14x1,5        | 1,50    | 100                  | 11,0                 | 9       | 12,5                 |                      |                | 140         | 22                   | 15                   |    |    |
| M14x1,5        | 1,50    | 100                  | 11,0                 | 9       | 12,5                 |                      |                | 140         | 22                   | 15                   |    |    |
| M16x1,5        | 1,50    | 100                  | 12,0                 | 9       | 14,5                 |                      |                | 160         | 22                   | 15                   |    |    |
| M18x1,5        | 1,50    | 110                  | 14,0                 | 11      | 16,5                 |                      |                | 160         | 22                   | 15                   |    |    |
| M18x1,5        | 1,50    | 110                  | 14,0                 | 11      | 16,5                 |                      |                | 182         |                      | 17                   |    |    |
| M20x1,5        | 1,50    | 125                  | 16,0                 | 12      | 18,5                 |                      |                | 200         | 25                   | 17                   |    |    |
| M20x1,5        | 1,50    | 125                  | 16,0                 | 12      | 18,5                 |                      |                | 202         | 25                   | 17                   |    |    |
| M22x1,5        | 1,50    | 125                  | 18,0                 | 14,5    | 20,5                 |                      |                | 220         | 25                   |                      |    |    |

| V <sub>c</sub> (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA   | Guss | NE    | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|------|------|-------|--------------------|-----------------|
|  |                               | 10-25                         | 6-10 | 5-10 | 10-20 | 12-25              |                 |

## Maschinengewindebohrer

- metrisches ISO Feingewinde DIN 13
- Titanitrid-beschichtet und Gleitstoffschicht
- Spezialist für Synchronbearbeitung


 DIN 371  
ISO 2 6H  
rechts  
≤ 3xD

 DIN 374  
ISO 2 6H  
rechts  
≤ 3xD

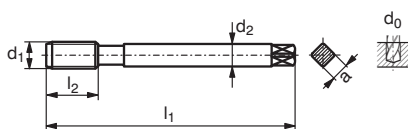
| $d_1$   | p    | $l_1$ | $d_2$ | a   | $d_0$ | $l_3$ |
|---------|------|-------|-------|-----|-------|-------|
| mm      | mm   | mm    | mm    | mm  | mm    | mm    |
| M5x0,5  | 0,50 | 70    | 6     | 4,9 | 4,5   | 25    |
| M6x0,5  | 0,50 | 80    | 6     | 4,9 | 5,5   | 30    |
| M6x0,75 | 0,75 | 80    | 6     | 4,9 | 5,2   | 30    |
| M8x0,75 | 0,75 | 80    | 6     | 4,9 | 7,2   |       |
| M8x1    | 1,00 | 90    | 6     | 4,9 | 7,0   |       |
| M10x1   | 1,00 | 90    | 7     | 5,5 | 9,0   |       |
| M12x1   | 1,00 | 100   | 9     | 7   | 11,0  |       |
| M12x1,5 | 1,50 | 100   | 9     | 7   | 10,5  |       |
| M14x1,5 | 1,50 | 100   | 11    | 9   | 12,5  |       |
| M16x1,5 | 1,50 | 100   | 12    | 9   | 14,5  |       |
| M18x1,5 | 1,50 | 110   | 14    | 11  | 16,5  |       |
| M20x1,5 | 1,50 | 125   | 16    | 12  | 18,5  |       |

| Sackloch               |     |                        |     |  |             |
|------------------------|-----|------------------------|-----|--|-------------|
| PG                     | U0  | PG                     | U0  |  |             |
| Bestell Nr. 22 548 ... |     | Bestell Nr. 22 549 ... |     |  |             |
| EUR                    |     | EUR                    |     |  |             |
| 51,80                  | 050 |                        |     |  | $l_2$<br>mm |
| 51,80                  | 060 |                        |     |  | 5           |
| 51,80                  | 062 |                        |     |  | 5           |
|                        |     | 54,50                  | 082 |  | 8           |
|                        |     | 66,00                  | 084 |  | 8           |
|                        |     | 75,30                  | 102 |  | 10          |
|                        |     | 86,70                  | 120 |  | 10          |
|                        |     | 83,50                  | 124 |  | 11          |
|                        |     | 106,00                 | 144 |  | 15          |
|                        |     | 124,00                 | 162 |  | 15          |
|                        |     | 151,00                 | 182 |  | 15          |
|                        |     | 186,00                 | 202 |  | 17          |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm² | Stahl > 900 N/mm² | VA   | Guss  | NE    | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------|-------------------|------|-------|-------|--------------------|-----------------|
|  | 10-25             | 6-10              | 5-10 | 10-20 | 12-25 |                    |                 |

## Maschinengewindebohrer

- metrisches ISO Feingewinde DIN 13
- Spezialist für hohe Vc bis 100 m/min
- 5 - 12%ige Emulsion verwenden!


 DIN 374  
ISO 2X  
rechts  
≤ 4xD

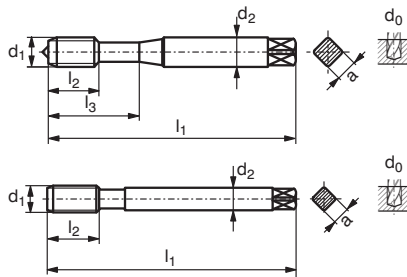
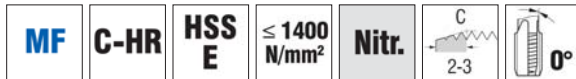
 DIN 374  
ISO 2 6H  
rechts  
≤ 3xD

| Durchgangsloch         |     |                        |  | Sackloch |     |             |  |
|------------------------|-----|------------------------|--|----------|-----|-------------|--|
| PG                     | U0  |                        |  | PG       | U0  |             |  |
| Bestell Nr. 22 193 ... |     | Bestell Nr. 22 216 ... |  |          |     |             |  |
| EUR                    |     | EUR                    |  |          |     |             |  |
| 65,00                  | 080 | $l_2$<br>mm            |  | 54,20    | 080 | $l_2$<br>mm |  |
| 69,80                  | 100 | 17                     |  | 60,00    | 100 | 10          |  |
| 67,10                  | 120 | 18                     |  | 67,10    | 120 | 10          |  |
| 84,60                  | 140 | 22                     |  | 85,10    | 140 | 15          |  |
| 113,00                 | 160 | 22                     |  | 103,00   | 160 | 15          |  |
| 139,00                 | 180 | 22                     |  |          |     |             |  |
| 175,00                 | 200 | 25                     |  |          |     |             |  |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm² | Stahl > 900 N/mm² | VA | Guss  | NE     | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------|-------------------|----|-------|--------|--------------------|-----------------|
|  | 20-100            |                   |    | 20-60 | 20-100 | 10-25              |                 |

## Maschinengewindebohrer

- metrisches ISO Feingewinde DIN 13
- für hochfeste Stähle  $\leq 1400 \text{ N/mm}^2$ , Hastelloy, Nimonic



| $d_1$   | p    | $l_1$ | $d_2$ | a   | $d_0$ | $l_3$ |
|---------|------|-------|-------|-----|-------|-------|
| mm      | mm   | mm    | mm    | mm  | mm    | mm    |
| M4x0,5  | 0,50 | 63    | 4,5   | 3,4 | 3,5   | 21    |
| M5x0,5  | 0,50 | 70    | 6,0   | 4,9 | 4,5   | 25    |
| M6x0,5  | 0,50 | 80    | 6,0   | 4,9 | 5,5   | 30    |
| M6x0,75 | 0,75 | 80    | 6,0   | 4,9 | 5,2   | 30    |
| M8x1    | 1,00 | 90    | 6,0   | 4,9 | 7,0   |       |
| M10x1   | 1,00 | 90    | 7,0   | 5,5 | 9,0   |       |
| M12x1,5 | 1,50 | 100   | 9,0   | 7   | 10,5  |       |
| M14x1,5 | 1,50 | 100   | 11,0  | 9   | 12,5  |       |
| M16x1,5 | 1,50 | 100   | 12,0  | 9   | 14,5  |       |
| M18x1,5 | 1,50 | 110   | 14,0  | 11  | 16,5  |       |
| M20x1,5 | 1,50 | 125   | 16,0  | 12  | 18,5  |       |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss | NE | Hochwärmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|----|------|----|--------------------|-----------------|
|  | 12-15                         | 6-12                          |    | 6-15 |    | 3-5                |                 |

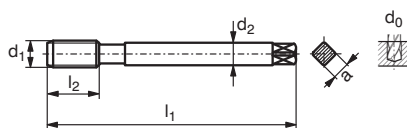
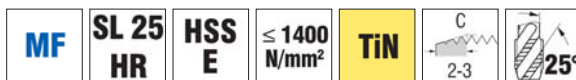

 DIN 371  
ISO 2X  
rechts  
 $\leq 2xD$ 

 DIN 374  
ISO 2X  
rechts  
 $\leq 2xD$ 

| Durchgangs- + Sackloch |     |                        |     |
|------------------------|-----|------------------------|-----|
| PG                     | U0  | PG                     | U0  |
| Bestell Nr. 22 146 ... |     | Bestell Nr. 22 209 ... |     |
| EUR                    |     | EUR                    |     |
| 38,70                  | 040 | 38,70                  | 082 |
| 38,70                  | 050 | 38,70                  | 100 |
| 38,70                  | 060 |                        | 120 |
| 38,70                  | 062 |                        | 140 |
|                        |     | 65,00                  | 160 |
|                        |     | 77,40                  | 180 |
|                        |     | 97,20                  | 200 |

## Maschinengewindebohrer

- metrisches ISO Feingewinde DIN 13
- für hochfeste Stähle  $\leq 1400 \text{ N/mm}^2$ , Hastelloy, Nimonic
- mit durchgehender Kühlmittelbohrung



| $d_1$    | p    | $l_1$ | $d_2$ | a   | $d_0$ |
|----------|------|-------|-------|-----|-------|
| mm       | mm   | mm    | mm    | mm  | mm    |
| M8x1     | 1,00 | 90    | 6     | 4,9 | 7,0   |
| M10x1    | 1,00 | 90    | 7     | 5,5 | 9,0   |
| M10x1,25 | 1,25 | 100   | 7     | 5,5 | 8,8   |
| M12x1,5  | 1,50 | 100   | 9     | 7   | 10,5  |

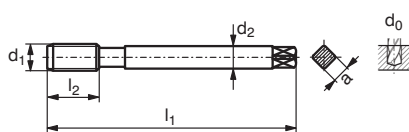
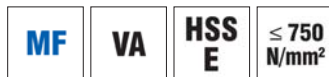
| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss | NE | Hochwärmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|----|------|----|--------------------|-----------------|
|  |                               | 2-6                           |    |      |    | 3-5                |                 |


 DIN 374  
ISO 2X  
rechts  
 $\leq 2xD$ 

| Sackloch               |     |     |    |
|------------------------|-----|-----|----|
| PG                     | U0  | PG  | U0 |
| Bestell Nr. 22 215 ... |     |     |    |
| EUR                    |     | EUR |    |
| 85,10                  | 080 |     | 10 |
| 92,20                  | 100 |     | 10 |
| 109,00                 | 102 |     | 16 |
| 103,00                 | 120 |     | 15 |

# Maschinengewindebohrer

- metrisches ISO Feingewinde DIN 13
- auf ausreichend Schmierung mit geeigneter Emulsion achten


**Stabil  
VA**
**Nitr.**

 DIN 374  
ISO 2 6H  
rechts  
≤ 4xD

**Salo-  
Rex  
VA**
**Vap.**

 DIN 374  
ISO 2 6H  
rechts  
≤ 3xD

**Durchgangsloch**
**Sackloch**

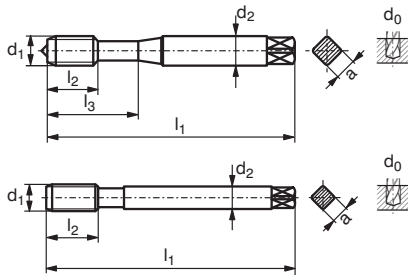
| $d_1$   | p    | $l_1$ | $d_2$ | a    | $d_0$ |
|---------|------|-------|-------|------|-------|
| mm      | mm   | mm    | mm    | mm   | mm    |
| M6x0,75 | 0,75 | 80    | 4,5   | 3,4  | 5,2   |
| M8x0,75 | 0,75 | 80    | 6,0   | 4,9  | 7,2   |
| M8x1    | 1,00 | 90    | 6,0   | 4,9  | 7,0   |
| M10x1   | 1,00 | 90    | 7,0   | 5,5  | 9,0   |
| M12x1,5 | 1,50 | 100   | 9,0   | 7    | 10,5  |
| M12x1   | 1,00 | 100   | 9,0   | 7    | 11,0  |
| M14x1,5 | 1,50 | 100   | 11,0  | 9    | 12,5  |
| M16x1,5 | 1,50 | 100   | 12,0  | 9    | 14,5  |
| M18x1,5 | 1,50 | 110   | 14,0  | 11   | 16,5  |
| M20x1,5 | 1,50 | 125   | 16,0  | 12   | 18,5  |
| M22x1,5 | 1,50 | 125   | 18,0  | 14,5 | 20,5  |
| M24x1,5 | 1,50 | 140   | 18,0  | 14,5 | 22,5  |
| M26x1,5 | 1,50 | 140   | 18,0  | 14,5 | 24,5  |
| M28x1,5 | 1,50 | 140   | 20,0  | 16   | 26,5  |
| M30x1,5 | 1,50 | 150   | 22,0  | 18   | 28,5  |

| Durchgangsloch         |     | Sackloch               |     |
|------------------------|-----|------------------------|-----|
| PG                     | U0  | PG                     | U0  |
| Bestell Nr. 22 181 ... |     | Bestell Nr. 22 189 ... |     |
| EUR                    |     | EUR                    |     |
| 42,00                  | 060 |                        |     |
| 43,10                  | 080 |                        |     |
| 43,70                  | 100 | 40,90                  | 082 |
| 51,00                  | 120 | 47,50                  | 100 |
|                        |     | 52,40                  | 120 |
|                        |     | 53,70                  | 121 |
| 63,30                  | 140 | 65,00                  | 140 |
| 74,20                  | 160 | 78,60                  | 160 |
| 98,70                  | 180 |                        |     |
| 103,00                 | 200 | 109,00                 | 200 |
| 113,00                 | 220 |                        |     |
| 130,00                 | 240 |                        |     |
| 155,00                 | 260 | 212,00                 | 260 |
| 187,00                 | 280 | 248,00                 | 280 |
| 203,00                 | 300 | 245,00                 | 300 |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss | NE | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|----|------|----|--------------------|-----------------|
|  |                               |                               |    | 5-10 |    |                    |                 |

# Maschinengewindebohrer

- metrisches ISO Feingewinde DIN 13
- auf ausreichend Schmierung mit geeigneter Emulsion achten
- Titanitrid-beschichtet und Gleitstoffschicht


 DIN 371  
ISO 2 6H  
rechts  
 $\le 3xD$ 

 DIN 374  
ISO 2 6H  
rechts  
 $\le 3xD$ 
**Sackloch**

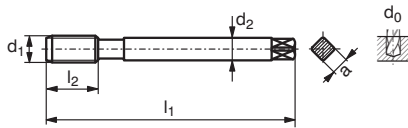
| PG                     | U0  | PG                     | U0  | $l_2$<br>mm |
|------------------------|-----|------------------------|-----|-------------|
| Bestell Nr. 22 176 ... |     | Bestell Nr. 22 177 ... |     |             |
| EUR                    |     | EUR                    |     |             |
| 68,30                  | 040 | 55,10                  | 082 | 5           |
| 52,40                  | 050 | 66,60                  | 084 | 5           |
| 52,40                  | 060 | 75,90                  | 102 | 5           |
| 52,40                  | 062 | 87,90                  | 120 | 8           |
|                        |     | 84,60                  | 124 | 8           |
|                        |     | 108,00                 | 144 | 10          |
|                        |     | 126,00                 | 162 | 10          |
|                        |     | 153,00                 | 182 | 11          |
|                        |     | 190,00                 | 202 | 15          |
|                        |     |                        |     | 15          |
|                        |     |                        |     | 15          |
|                        |     |                        |     | 17          |
|                        |     |                        |     | 17          |

| $d_1$   | p    | $l_1$ | $d_2$ | a   | $d_0$ | $l_3$ |
|---------|------|-------|-------|-----|-------|-------|
| mm      | mm   | mm    | mm    | mm  | mm    | mm    |
| M4x0,5  | 0,50 | 63    | 4,5   | 3,4 | 3,5   | 21    |
| M5x0,5  | 0,50 | 70    | 6,0   | 4,9 | 4,5   | 25    |
| M6x0,5  | 0,50 | 80    | 6,0   | 4,9 | 5,5   | 30    |
| M6x0,75 | 0,75 | 80    | 6,0   | 4,9 | 5,2   | 30    |
| M8x0,75 | 0,75 | 80    | 6,0   | 4,9 | 7,2   |       |
| M8x1    | 1,00 | 90    | 6,0   | 4,9 | 7,0   |       |
| M10x1   | 1,00 | 90    | 7,0   | 5,5 | 9,0   |       |
| M12x1   | 1,00 | 100   | 9,0   | 7   | 11,0  |       |
| M12x1,5 | 1,50 | 100   | 9,0   | 7   | 10,5  |       |
| M14x1,5 | 1,50 | 100   | 11,0  | 9   | 12,5  |       |
| M16x1,5 | 1,50 | 100   | 12,0  | 9   | 14,5  |       |
| M18x1,5 | 1,50 | 110   | 14,0  | 11  | 16,5  |       |
| M20x1,5 | 1,50 | 125   | 16,0  | 12  | 18,5  |       |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss | NE | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|----|------|----|--------------------|-----------------|
|  |                               | 5-12                          |    | 5-10 |    |                    |                 |

# Maschinengewindebohrer

- metrisches ISO Feingewinde DIN 13



Nitr.



TiN


 DIN 374  
ISO 2X  
rechts  
≤ 2xD

 DIN 374  
ISO 2X  
rechts  
≤ 2xD

**Durchgangs- + Sackloch**

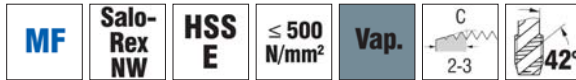
| $d_1$    | p<br>mm | $l_1$<br>mm | $d_2$<br>mm | a<br>mm | $d_0$<br>mm | PG                        |        | U0                        |     | $l_2$<br>mm |
|----------|---------|-------------|-------------|---------|-------------|---------------------------|--------|---------------------------|-----|-------------|
|          |         |             |             |         |             | Bestell Nr.<br>22 173 ... | EUR    | Bestell Nr.<br>22 214 ... | EUR |             |
| M5x0,5   | 0,50    | 70          | 3,5         | 2,7     | 4,5         | 050                       | 35,40  |                           |     | 11          |
| M6x0,5   | 0,50    | 80          | 4,5         | 3,4     | 5,5         | 060                       | 43,90  |                           |     | 13          |
| M6x0,75  | 0,75    | 80          | 4,5         | 3,4     | 5,2         | 062                       | 38,70  |                           |     | 13          |
| M8x0,75  | 0,75    | 80          | 6,0         | 4,9     | 7,2         | 080                       | 68,30  |                           |     | 14          |
| M8x1     | 1,00    | 90          | 6,0         | 4,9     | 7,0         | 082                       | 68,30  | 51,80                     | 082 | 17          |
| M10x1    | 1,00    | 90          | 7,0         | 5,5     | 9,0         | 100                       | 38,20  | 56,20                     | 100 | 18          |
| M10x1,25 | 1,25    | 100         | 7,0         | 5,5     | 8,8         | 102                       | 46,40  |                           |     | 22          |
| M12x1    | 1,00    | 100         | 9,0         | 7       | 11,0        | 120                       | 43,90  | 67,10                     | 120 | 18          |
| M12x1,5  | 1,50    | 100         | 9,0         | 7       | 10,5        | 124                       | 42,00  |                           |     | 22          |
| M14x1    | 1,00    | 100         | 11,0        | 9       | 13,0        | 140                       | 65,00  |                           |     | 18          |
| M14x1,5  | 1,50    | 100         | 11,0        | 9       | 12,5        | 142                       | 59,50  | 84,10                     | 142 | 22          |
| M16x1,5  | 1,50    | 100         | 12,0        | 9       | 14,5        | 160                       | 61,60  | 89,50                     | 160 | 22          |
| M18x1,5  | 1,50    | 110         | 14,0        | 11      | 16,5        | 180                       | 82,40  |                           |     | 25          |
| M20x1,5  | 1,50    | 125         | 16,0        | 12      | 18,5        | 200                       | 86,20  |                           |     | 25          |
| M22x1,5  | 1,50    | 125         | 18,0        | 14,5    | 20,5        | 220                       | 92,70  |                           |     | 25          |
| M24x1,5  | 1,50    | 140         | 18,0        | 14,5    | 22,5        | 240                       | 105,00 |                           |     | 27          |
| M26x1,5  | 1,50    | 140         | 18,0        | 14,5    | 24,5        | 260                       | 130,00 |                           |     | 28          |
| M28x1,5  | 1,50    | 140         | 20,0        | 16      | 26,5        | 280                       | 154,00 |                           |     | 28          |
| M30x1,5  | 1,50    | 150         | 22,0        | 18      | 28,5        | 300                       | 168,00 |                           |     | 28          |

| Vc (m/min) für Haupt- und<br>Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss | NE    | Hochwarmfeste Leg. | Hartbearbeitung |
|---|-------------------------------|-------------------------------|----|------|-------|--------------------|-----------------|
|   |                               |                               |    |      | 10-20 |                    |                 |

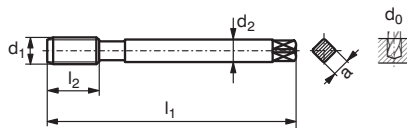


## Maschinengewindebohrer

- metrisches ISO Feingewinde DIN 13



DIN 374  
ISO 2 6H  
rechts  
≤ 3xD



| $d_1$   | $p$<br>mm | $l_1$<br>mm | $d_2$<br>mm | $a$<br>mm | $d_0$<br>mm |  | $l_2$<br>mm |
|---------|-----------|-------------|-------------|-----------|-------------|--|-------------|
| M8x1    | 1,0       | 90          | 6           | 4,9       | 7,0         |  | 10          |
| M10x1   | 1,0       | 90          | 7           | 5,5       | 9,0         |  | 10          |
| M12x1   | 1,0       | 100         | 9           | 7         | 11,0        |  | 11          |
| M12x1,5 | 1,5       | 100         | 9           | 7         | 10,5        |  | 15          |
| M14x1,5 | 1,5       | 100         | 11          | 9         | 12,5        |  | 15          |
| M16x1,5 | 1,5       | 100         | 12          | 9         | 14,5        |  | 15          |
| M18x1,5 | 1,5       | 110         | 14          | 11        | 16,5        |  | 17          |
| M20x1,5 | 1,5       | 125         | 16          | 12        | 18,5        |  | 17          |

### Sackloch

| PG          | U0  |    |
|-------------|-----|----|
| Bestell Nr. |     |    |
| 22 188 ...  |     |    |
| EUR         |     |    |
| 40,90       | 081 | 10 |
| 42,50       | 100 | 10 |
| 52,10       | 120 | 11 |
| 46,90       | 122 | 15 |
| 67,10       | 140 | 15 |
| 73,60       | 160 | 15 |
| 103,00      | 180 | 17 |
| 96,00       | 200 | 17 |

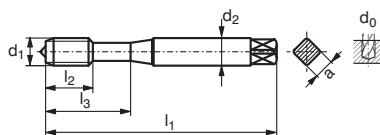
| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss | NE | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|----|------|----|--------------------|-----------------|
|  |                               | 10-20                         |    |      |    | 10-20              |                 |

## Maschinengewindebohrer

- metrisches ISO Feingewinde DIN 13
- Vollhartmetall-Gewindebohrer für gehärtete Stähle
- Spezialist für harte Werkstoffe
- nur mit Ausgleichsfutter und Spezialöl oder Paste verwenden



DIN 371  
ISO 2X  
rechts  
≤ 1,5xD



| $d_1$   | $p$<br>mm | $l_1$<br>mm | $d_2$<br>mm | $a$<br>mm | $d_0$<br>mm | $l_3$<br>mm |  | $l_2$<br>mm |
|---------|-----------|-------------|-------------|-----------|-------------|-------------|--|-------------|
| M8x1    | 1,0       | 90          | 8           | 6,2       | 7,1         | 35          |  | 15          |
| M10x1   | 1,0       | 100         | 10          | 8         | 9,1         | 38          |  | 18          |
| M12x1,5 | 1,5       | 110         | 12          | 9         | 10,6        | 41          |  | 21          |
| M14x1,5 | 1,5       | 110         | 14          | 11        | 12,6        | 44          |  | 24          |
| M16x1,5 | 1,5       | 110         | 16          | 12        | 14,6        | 44          |  | 24          |

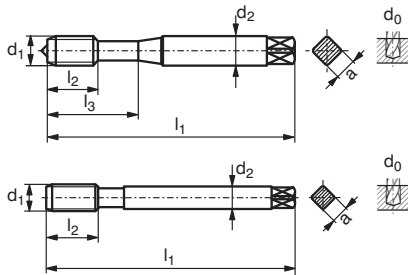
### Durchgangs- + Sackloch

| PG          | U0  |    |
|-------------|-----|----|
| Bestell Nr. |     |    |
| 22 817 ...  |     |    |
| EUR         |     |    |
| 268,00      | 080 | 15 |
| 342,00      | 100 | 18 |
| 397,00      | 120 | 21 |
| 466,00      | 140 | 24 |
| 530,00      | 160 | 24 |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA | Guss | NE | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|----|------|----|--------------------|-----------------|
|  |                               |                               |    |      |    |                    |                 |

# Maschinengewindeformer

- metrisches ISO Feingewinde DIN 13
- mit kurzem Anlauf, nicht für Horizontalbearbeitung geeignet
- für alle kalt umformbaren Werkstoffe


 DIN 2174  
ISO 2X  
rechts  
≤ 1,5xD

 DIN 2174  
ISO 2X  
rechts  
≤ 1,5xD

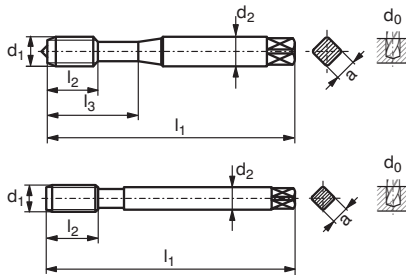
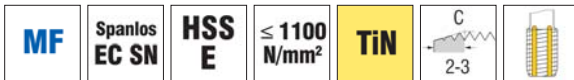
**Durchgangs- + Sackloch**

| $d_1$   | p<br>mm | $l_1$<br>mm | $d_2$<br>mm | a<br>mm | $d_0$<br>mm | $l_3$<br>mm | Durchgangs- + Sackloch                 |  | $l_2$<br>mm |
|---------|---------|-------------|-------------|---------|-------------|-------------|--|--|-------------|
|         |         |             |             |         |             |             | PG<br>Bestell Nr.<br>22 204 ...<br>EUR | U0<br>Bestell Nr.<br>22 196 ...<br>EUR |             |
| M4x0,5  | 0,50    | 63          | 4,5         | 3,4     | 3,80        | 21          | 73,60                                  | 040                                    | 10          |
| M5x0,5  | 0,50    | 70          | 6,0         | 4,9     | 4,80        | 25          | 62,80                                  | 050                                    | 11          |
| M6x0,5  | 0,50    | 80          | 6,0         | 4,9     | 5,80        | 30          | 73,60                                  | 060                                    | 13          |
| M6x0,75 | 0,75    | 80          | 6,0         | 4,9     | 5,70        | 30          | 58,30                                  | 062                                    | 13          |
| M8x0,75 | 0,75    | 80          | 8,0         | 6,2     | 7,70        | 30          | 76,90                                  | 080                                    | 14          |
| M8x1    | 1,00    | 90          | 8,0         | 6,2     | 7,60        | 35          | 71,30                                  | 082                                    | 17          |
| M10x1   | 1,00    | 90          | 10,0        | 8       | 9,60        | 35          | 65,70                                  | 100                                    | 18          |
| M12x1   | 1,00    | 100         | 9,0         | 7       | 11,60       |             |  |  | 18          |
| M12x1,5 | 1,50    | 100         | 9,0         | 7       | 11,35       |             |  | 75,70                                  | 120         |
| M14x1,5 | 1,50    | 100         | 11,0        | 9       | 13,35       |             |  | 76,30                                  | 124         |
| M16x1,5 | 1,50    | 100         | 12,0        | 9       | 15,35       |             |  | 104,00                                 | 140         |
| M20x1,5 | 1,50    | 125         | 16,0        | 12      | 19,35       |             |  | 108,00                                 | 160         |
|         |         |             |             |         |             |             |  | 156,00                                 | 200         |

| Vc (m/min) für Haupt- und<br>Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA   | Guss | NE | Hochwärmefeste Leg. | Hartbearbeitung |
|---|-------------------------------|-------------------------------|------|------|----|---------------------|-----------------|
|   |                               | 10-30                         | 8-15 | 8-15 |    | 12-25               |                 |

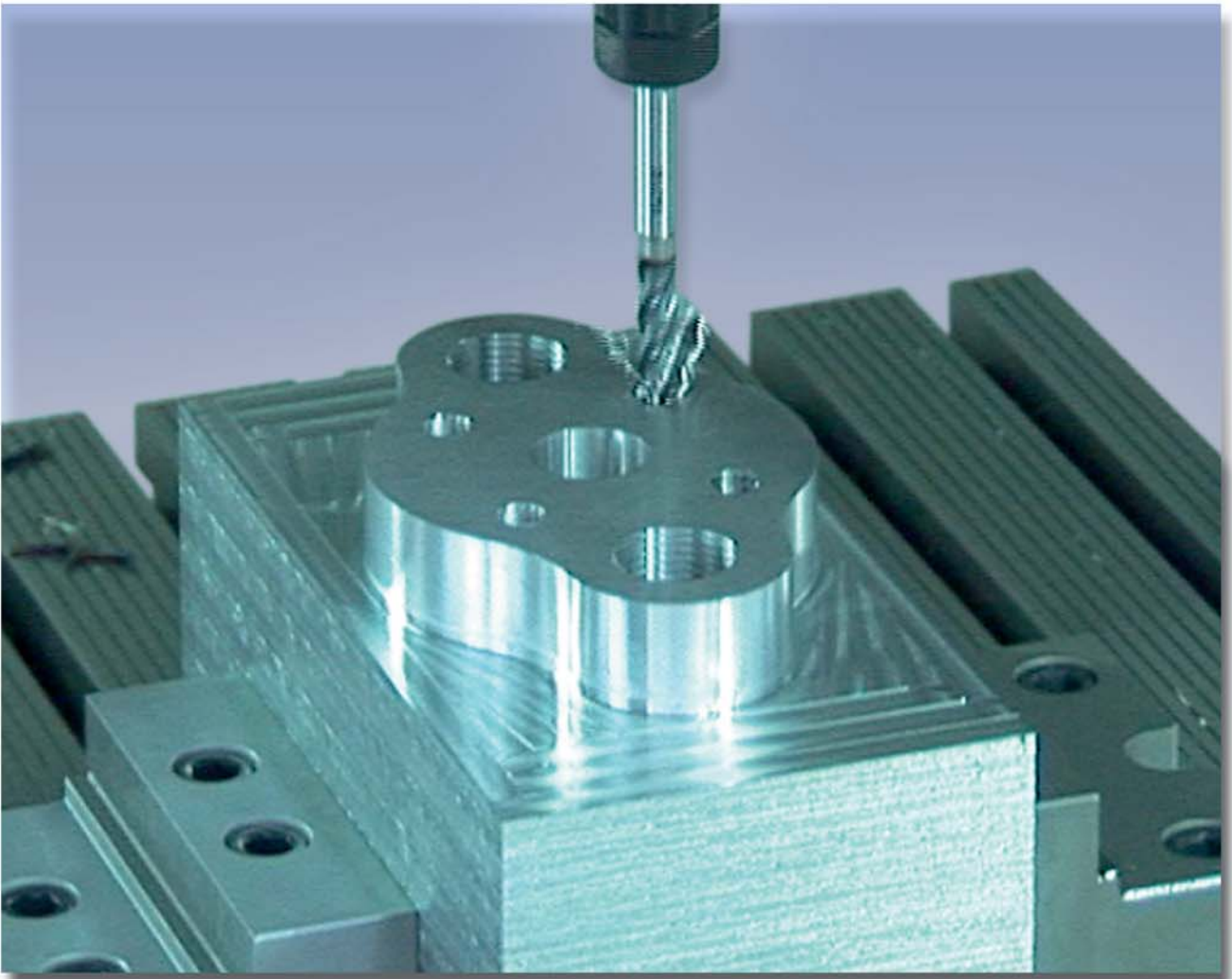
# Maschinengewindeformer

- metrisches ISO Feingewinde DIN 13
- für alle kalt umformbaren Werkstoffe
- mit Schmiernuten
- mit kurzem Anlauf, optimale Schmiermittelzufuhr auch bei großen Gewindetiefen durch geräumige Schmiernuten



| Durchgangs- + Sackloch |     |                        |     |  |             |
|------------------------|-----|------------------------|-----|--|-------------|
| PG                     | U0  | PG                     | U0  |  |             |
| Bestell Nr. 22 205 ... |     | Bestell Nr. 22 197 ... |     |  |             |
| EUR                    |     | EUR                    |     |  |             |
|                        |     |                        |     |  | $l_2$<br>mm |
|                        | 040 |                        |     |  | 10          |
|                        | 050 |                        |     |  | 11          |
|                        | 060 |                        |     |  | 13          |
|                        | 062 |                        |     |  | 13          |
|                        | 080 |                        |     |  | 14          |
|                        | 082 |                        |     |  | 17          |
|                        | 100 |                        |     |  | 18          |
|                        |     | 84,20                  | 120 |  | 18          |
|                        |     | 85,30                  | 124 |  | 22          |
|                        |     | 109,00                 | 140 |  | 22          |
|                        |     | 123,00                 | 160 |  | 22          |
|                        |     | 173,00                 | 200 |  | 25          |

| Vc (m/min) für Haupt- und Nebenanwendung | Stahl < 900 N/mm <sup>2</sup> | Stahl > 900 N/mm <sup>2</sup> | VA   | Guss | NE | Hochwarmfeste Leg. | Hartbearbeitung |
|--|-------------------------------|-------------------------------|------|------|----|--------------------|-----------------|
|  |                               | 10-30                         | 8-15 | 8-15 |    | 12-25              |                 |

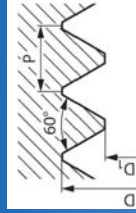


## Gewindeformen Vorbohrdurchmesser



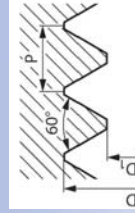
Metrisches ISO-Regelgewinde 6H nach DIN 13 und DIN ISO 965-1 (M1-M1,4 = 5H)

| Gewinde-Nenn-Ø |      | Vorbohr-Ø |   | Gewinde-Nenn-Ø |      | Vorbohr-Ø |   |
|----------------|------|-----------|---|----------------|------|-----------|---|
| D              | P    | D         | P | D              | P    | D         | P |
| M1             | 0,25 | 0,9       |   | M6             | 1    | 5,6       |   |
| M1,2           | 0,25 | 1,1       |   | M7             | 1    | 6,6       |   |
| M1,4           | 0,3  | 1,28      |   | M8             | 1,25 | 7,45      |   |
| M1,6           | 0,35 | 1,47      |   | M9             | 1,25 | 8,45      |   |
| M1,8           | 0,35 | 1,67      |   | M10            | 1,5  | 9,35      |   |
| M2             | 0,4  | 1,85      |   | M11            | 1,5  | 10,35     |   |
| M2,2           | 0,45 | 2,03      |   | M12            | 1,75 | 11,25     |   |
| M2,5           | 0,45 | 2,33      |   | M14            | 2    | 13,1      |   |
| M3             | 0,5  | 2,8       |   | M16            | 2    | 15,1      |   |
| M3,5           | 0,6  | 3,25      |   | M18            | 2,5  | 16,85     |   |
| M4             | 0,7  | 3,7       |   | M20            | 2,5  | 18,85     |   |
| M4,5           | 0,75 | 4,2       |   | M22            | 2,5  | 20,85     |   |
| M5             | 0,8  | 4,65      |   | M24            | 3    | 22,65     |   |



Metrisches ISO-Feingewinde 6H nach DIN 13 und DIN ISO 965-1

| Gewinde-Nenn-Ø |      | Vorbohr-Ø |   | Gewinde-Nenn-Ø |      | Vorbohr-Ø |   |
|----------------|------|-----------|---|----------------|------|-----------|---|
| D              | P    | D         | P | D              | P    | D         | P |
| M2             | 0,25 | 1,9       |   | M12            | 1,0  | 11,6      |   |
| M2,2           | 0,25 | 2,1       |   | M12            | 1,25 | 11,45     |   |
| M2,5           | 0,25 | 2,4       |   | M12            | 1,5  | 11,35     |   |
| M2,5           | 0,35 | 2,37      |   | M13            | 0,75 | 12,7      |   |
| M3             | 0,35 | 2,9       |   | M13            | 1,0  | 12,6      |   |
| M3             | 0,35 | 2,88      |   | M13            | 1,5  | 12,3      |   |
| M3,5           | 0,35 | 3,38      |   | M14            | 0,75 | 13,7      |   |
| M3,5           | 0,5  | 3,3       |   | M14            | 1,0  | 13,6      |   |
| M4             | 0,35 | 3,88      |   | M14            | 1,25 | 13,45     |   |
| M4             | 0,5  | 3,8       |   | M14            | 1,5  | 13,35     |   |
| M4,5           | 0,5  | 4,3       |   | M15            | 0,75 | 14,7      |   |
| M5             | 0,5  | 4,8       |   | M15            | 1,0  | 14,6      |   |
| M5             | 0,75 | 4,7       |   | M15            | 1,5  | 14,3      |   |
| M5,5           | 0,5  | 5,3       |   | M16            | 0,75 | 15,7      |   |
| M6             | 0,5  | 5,8       |   | M16            | 1,0  | 15,6      |   |
| M6             | 0,75 | 5,7       |   | M16            | 1,5  | 15,35     |   |
| M7             | 0,5  | 6,8       |   | M18            | 1,0  | 17,6      |   |
| M7             | 0,75 | 6,7       |   | M18            | 1,5  | 17,35     |   |
| M8             | 0,5  | 7,8       |   | M18            | 2,0  | 17,1      |   |
| M8             | 0,75 | 7,7       |   | M20            | 1,0  | 19,6      |   |
| M8             | 1,0  | 7,6       |   | M20            | 1,5  | 19,35     |   |
| M9             | 0,5  | 8,8       |   | M20            | 2,0  | 19,1      |   |
| M9             | 0,75 | 8,7       |   | M22            | 1,5  | 21,35     |   |
| M9             | 1,0  | 8,6       |   | M22            | 2,0  | 21,1      |   |
| M10            | 0,5  | 9,8       |   | M24            | 1,5  | 23,35     |   |
| M10            | 0,75 | 9,7       |   | M24            | 2,0  | 23,1      |   |
| M10            | 1,0  | 9,6       |   | M25            | 1,5  | 24,3      |   |
| M10            | 1,25 | 9,45      |   | M26            | 1,5  | 25,3      |   |
| M11            | 0,75 | 10,7      |   | M27            | 2,0  | 26,1      |   |
| M11            | 1,0  | 10,6      |   | M28            | 1,5  | 27,25     |   |
| M12            | 0,75 | 11,7      |   | M30            | 1,5  | 29,35     |   |
|                |      |           |   | M30            | 2,0  | 29,1      |   |

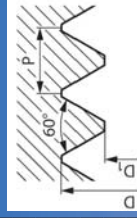


## Gewindebohren Vorbohrdurchmesser



Metrisches ISO-Regelgewinde 6H nach DIN 13 und DIN ISO 965-1 (M1-M1,4 = 5H)

| Gewinde-Nenn-Ø |      | Vorbohr-Ø |   | Gewinde-Nenn-Ø |      | Vorbohr-Ø |   |
|----------------|------|-----------|---|----------------|------|-----------|---|
| D              | P    | D         | P | D              | P    | D         | P |
| M1             | 0,25 | 0,75      |   | M12            | 1,75 | 10,2      |   |
| M1,1           | 0,25 | 0,85      |   | M14            | 2,0  | 12,0      |   |
| M1,2           | 0,25 | 0,95      |   | M16            | 2,0  | 14,0      |   |
| M1,4           | 0,3  | 1,1       |   | M18            | 2,5  | 15,5      |   |
| M1,6           | 0,35 | 1,25      |   | M20            | 2,5  | 17,5      |   |
| M1,8           | 0,35 | 1,45      |   | M22            | 2,5  | 19,5      |   |
| M2             | 0,4  | 1,6       |   | M24            | 3,0  | 21,0      |   |
| M2,2           | 0,45 | 1,75      |   | M27            | 3,0  | 24,0      |   |
| M2,5           | 0,45 | 2,05      |   | M30            | 3,5  | 26,5      |   |
| M3             | 0,5  | 2,5       |   | M33            | 3,5  | 29,5      |   |
| M3,5           | 0,6  | 2,9       |   | M36            | 4,0  | 32,0      |   |
| M4             | 0,7  | 3,3       |   | M39            | 4,0  | 35,0      |   |
| M4,5           | 0,75 | 3,7       |   | M42            | 4,5  | 37,5      |   |
| M5             | 0,8  | 4,2       |   | M45            | 4,5  | 40,5      |   |
| M6             | 1,0  | 5,0       |   | M48            | 5,0  | 43,0      |   |
| M7             | 1,0  | 6,0       |   | M52            | 5,0  | 47        |   |
| M8             | 1,25 | 6,8       |   | M56            | 5,5  | 50,5      |   |
| M9             | 1,25 | 7,8       |   | M60            | 5,5  | 54,5      |   |
| M10            | 1,5  | 8,5       |   | M64            | 6,0  | 58,0      |   |
| M11            | 1,5  | 9,5       |   | M68            | 6,0  | 62,0      |   |



Metrisches ISO-Feingewinde 6H nach DIN 13 und DIN ISO 965-1

| Gewinde-Nenn-Ø |      | Vorbohr-Ø |   | Gewinde-Nenn-Ø |     | Vorbohr-Ø |   |
|----------------|------|-----------|---|----------------|-----|-----------|---|
| D              | P    | D         | P | D              | P   | D         | P |
| M2             | 0,25 | 1,75      |   | M20            | 1,0 | 19,0      |   |
| M2,2           | 0,25 | 1,95      |   | M20            | 1,5 | 18,5      |   |
| M2,5           | 0,35 | 2,15      |   | M20            | 2,0 | 18,0      |   |
| M3             | 0,35 | 2,65      |   | M24            | 1,5 | 22,5      |   |
| M3,5           | 0,35 | 3,15      |   | M30            | 2,0 | 28,0      |   |
| M4             | 0,35 | 3,65      |   | M36            | 1,5 | 34,5      |   |
| M4             | 0,5  | 3,5       |   | M36            | 3,0 | 33,0      |   |
| M4,5           | 0,5  | 4,0       |   | M42            | 2,0 | 40,0      |   |
| M5             | 0,5  | 4,5       |   | M48            | 1,5 | 46,5      |   |
| M6             | 0,5  | 5,5       |   | M48            | 3,0 | 45,0      |   |
| M6             | 0,75 | 5,2       |   | M48            | 4,0 | 44,0      |   |
| M8             | 0,75 | 7,2       |   | M56            | 1,5 | 54,5      |   |
| M8             | 1,0  | 7,0       |   | M56            | 2,0 | 54,0      |   |
| M10            | 0,75 | 9,2       |   | M56            | 3,0 | 53,0      |   |
| M10            | 1,0  | 9,0       |   | M56            | 4,0 | 52,0      |   |
| M10            | 1,25 | 8,8       |   | M64            | 3,0 | 61,0      |   |
| M12            | 1,0  | 11,0      |   | M64            | 4,0 | 60,0      |   |
| M12            | 1,5  | 10,5      |   | M72            | 3,0 | 68,0      |   |
| M14            | 1,25 | 12,8      |   | M80            | 4,0 | 74,0      |   |
| M16            | 1,0  | 15,0      |   | M95            | 6,0 | 89,0      |   |
| M16            | 1,5  | 14,5      |   | M110           | 6,0 | 104,0     |   |

