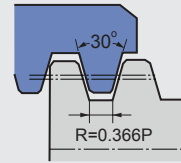
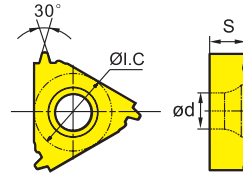


Tr (ISO trapezoid thread 30°)  
Tr (ISO Trapez 30° Gewinde)

ISO 2901-2904  
Tolerance: 7  
Toleranz



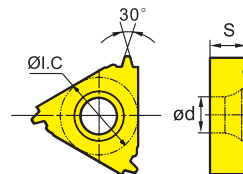
R



|                   | Type<br>Typ                   | Dimension (mm)<br>Abmessung  |      |       |     | Grade<br>Sorte |        |
|-------------------|-------------------------------|------------------------------|------|-------|-----|----------------|--------|
|                   | Right hand<br>Rechtausführung | Pitch<br>Steigung<br>(T.P.i) | S    | ØI.C  | ød  | YBG201         | YBG205 |
| External<br>Außen | <b>RT16.01W-1.50TR</b>        | 1.50                         | 3.97 | 9.525 | 4.4 | ○              | ●      |
|                   | <b>RT16.01W-2.00TR</b>        | 2.00                         | 3.97 | 9.525 | 4.4 | ○              | ●      |
|                   | <b>RT16.01W-3.00TR</b>        | 3.00                         | 3.97 | 9.525 | 4.4 | ○              | ●      |

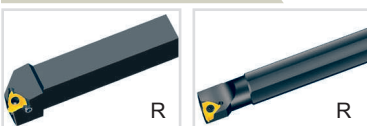


R



|                   | Type<br>Typ                   | Dimension (mm)<br>Abmessung  |      |       |     | Grade<br>Sorte |        |
|-------------------|-------------------------------|------------------------------|------|-------|-----|----------------|--------|
|                   | Right hand<br>Rechtausführung | Pitch<br>Steigung<br>(T.P.i) | S    | ØI.C  | ød  | YBG201         | YBG205 |
| Internal<br>Innen | <b>RT16.01N-1.50TR</b>        | 1.50                         | 3.97 | 9.525 | 4.4 | ○              | ○      |
|                   | <b>RT16.01N-2.00TR</b>        | 2.00                         | 3.97 | 9.525 | 4.4 | ○              | ○      |
|                   | <b>RT16.01N-3.00TR</b>        | 3.00                         | 3.97 | 9.525 | 4.4 | ○              | ○      |

Tool holder / Klemmhalter



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A345

● ex stock · ab Lager ○ on demand · auf Anfrage

Select proper inserts and size of toolholder (Please refer to detailed table of threading tools and inserts)  
Ausgewählt zweckmäßige Gewindeplatten und Haltergrößen

Parameter table for threading machining program under different conditions  
Parametertabelle für das Gewindedrehprogramm für unterschiedliche Bedingungen

Table of recommended infeed for metric **ISO external threading with wiper edge**  
Empfohlene Zustellungswerte für metrische **ISO Außengewinde mit Wiper**

| Pitch(mm)<br>Steigung                     | 1.0                                      | 1.25      | 1.5       | 1.75      | 2.0       | 2.5       | 3.0       | 4.0       | 5.0       |
|-------------------------------------------|------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Total feed (a)<br>Gesamtzustellung        | 0.72                                     | 0.86      | 1.02      | 1.17      | 1.33      | 1.63      | 1.94      | 2.58      | 3.21      |
| Cutting times(nap)<br>Anzahl der Schnitte | 5                                        | 6         | 7         | 8         | 9         | 11        | 13        | 15        | 17        |
| Cutting order<br>Schnittaufteilung        | Radial X · Axial Z<br>Radial X · Axial Z |           |           |           |           |           |           |           |           |
|                                           | x/z                                      | x/z       | x/z       | x/z       | x/z       | x/z       | x/z       | x/z       | x/z       |
| 1                                         | 0.20/-                                   | 0.20/-    | 0.21/-    | 0.22/-    | 0.24/-    | 0.25/-    | 0.26/-    | 0.35/-    | 0.40/-    |
| 2                                         | 0.18/0.10                                | 0.18/0.10 | 0.18/0.10 | 0.20/0.12 | 0.22/0.13 | 0.24/0.14 | 0.24/0.14 | 0.30/0.17 | 0.35/0.20 |
| 3                                         | 0.16/0.09                                | 0.14/0.09 | 0.18/0.10 | 0.18/0.10 | 0.20/0.12 | 0.21/0.12 | 0.20/0.12 | 0.25/0.14 | 0.30/0.17 |
| 4                                         | 0.10/0.06                                | 0.10/0.08 | 0.15/0.09 | 0.15/0.09 | 0.15/0.09 | 0.18/0.10 | 0.20/0.12 | 0.20/0.12 | 0.28/0.16 |
| 5                                         | 0.08/-                                   | 0.08/0.06 | 0.12/0.07 | 0.13/0.08 | 0.12/0.07 | 0.15/0.09 | 0.18/0.10 | 0.18/0.10 | 0.25/0.14 |
| 6                                         |                                          |           | 0.10/0.06 | 0.11/0.06 | 0.12/0.07 | 0.12/0.07 | 0.15/0.09 | 0.18/0.10 | 0.20/0.12 |
| 7                                         |                                          |           | 0.08/-    | 0.10/0.06 | 0.10/0.06 | 0.12/0.07 | 0.13/0.08 | 0.16/0.09 | 0.18/0.10 |
| 8                                         |                                          |           |           | 0.08/-    | 0.10/0.06 | 0.10/0.06 | 0.12/0.07 | 0.15/0.09 | 0.16/0.09 |
| 9                                         |                                          |           |           |           | 0.08/-    | 0.10/0.06 | 0.10/0.06 | 0.15/0.09 | 0.15/0.09 |
| 10                                        |                                          |           |           |           |           | 0.08/0.05 | 0.10/0.06 | 0.13/0.08 | 0.15/0.09 |
| 11                                        |                                          |           |           |           |           | 0.08/-    | 0.08/0.06 | 0.12/0.07 | 0.13/0.08 |
| 12                                        |                                          |           |           |           |           |           | 0.08/0.05 | 0.12/0.07 | 0.13/0.08 |
| 13                                        |                                          |           |           |           |           |           |           | 0.11/0.06 | 0.12/0.07 |
| 14                                        |                                          |           |           |           |           |           |           | 0.10/0.06 | 0.12/0.07 |
| 15                                        |                                          |           |           |           |           |           |           | 0.08/-    | 0.11/0.06 |
| 16                                        |                                          |           |           |           |           |           |           |           | 0.10/0.06 |
| 17                                        |                                          |           |           |           |           |           |           |           | 0.08/-    |

# Turning · Drehen

## Threading tools · Gewindedrehwerkzeuge

Table of recommended infeed for metric **ISO internal threading with wiper edge**  
Empfohlene Zustellungswerte für metrische **ISO Innengewinde mit Wiper**

| Pitch(mm)<br>Steigung                     | 1.00                                     | 1.25      | 1.5       | 1.75      | 2.0       | 2.5       | 3.0       | 4.0       | 5.0       |
|-------------------------------------------|------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Total feed (a)<br>Gesamtzustellung        | 0.62                                     | 0.77      | 0.92      | 1.06      | 1.21      | 0.15      | 1.79      | 2.36      | 2.95      |
| Cutting times(nap)<br>Anzahl der Schnitte | 5                                        | 6         | 7         | 8         | 9         | 11        | 13        | 15        | 17        |
| Cutting order<br>Schnittaufteilung        | Radial X · Axial Z<br>Radial X · Axial Z |           |           |           |           |           |           |           |           |
|                                           | x/z                                      | x/z       | x/z       | x/z       | x/z       | x/z       | x/z       | x/z       | x/z       |
| 1                                         | 0.18/-                                   | 0.20/-    | 0.22/-    | 0.23/-    | 0.24/-    | 0.25/-    | 0.26/-    | 0.30/-    | 0.32/-    |
| 2                                         | 0.14/0.08                                | 0.15/0.09 | 0.16/0.09 | 0.16/0.09 | 0.18/0.10 | 0.20/0.12 | 0.20/0.12 | 0.25/0.14 | 0.28/0.16 |
| 3                                         | 0.12/0.07                                | 0.12/0.07 | 0.14/0.08 | 0.14/0.08 | 0.15/0.09 | 0.15/0.09 | 0.20/0.12 | 0.22/0.13 | 0.25/0.14 |
| 4                                         | 0.10/0.06                                | 0.12/0.07 | 0.12/0.07 | 0.13/0.08 | 0.14/0.08 | 0.15/0.09 | 0.18/0.10 | 0.20/0.12 | 0.22/0.13 |
| 5                                         | 0.08/-                                   | 0.10/0.06 | 0.11/0.06 | 0.12/0.07 | 0.12/0.07 | 0.13/0.08 | 0.15/0.09 | 0.18/0.10 | 0.21/0.12 |
| 6                                         |                                          |           | 0.09/0.05 | 0.10/0.06 | 0.11/0.06 | 0.12/0.07 | 0.12/0.07 | 0.15/0.09 | 0.20/0.12 |
| 7                                         |                                          |           | 0.08/-    | 0.10/0.06 | 0.10/0.06 | 0.12/0.07 | 0.12/0.07 | 0.15/0.09 | 0.18/0.10 |
| 8                                         |                                          |           |           | 0.08/-    | 0.09/0.05 | 0.10/0.06 | 0.10/0.06 | 0.15/0.09 | 0.18/0.10 |
| 9                                         |                                          |           |           |           | 0.08/-    | 0.10/0.06 | 0.10/0.06 | 0.12/0.07 | 0.15/0.09 |
| 10                                        |                                          |           |           |           |           | 0.09/0.05 | 0.10/0.06 | 0.12/0.07 | 0.15/0.09 |
| 11                                        |                                          |           |           |           |           | 0.08/-    | 0.10/0.06 | 0.12/0.07 | 0.15/0.09 |
| 12                                        |                                          |           |           |           |           |           | 0.08/0.05 | 0.11/0.06 | 0.15/0.09 |
| 13                                        |                                          |           |           |           |           |           |           | 0.11/0.06 | 0.12/0.07 |
| 14                                        |                                          |           |           |           |           |           |           | 0.10/0.06 | 0.11/0.06 |
| 15                                        |                                          |           |           |           |           |           |           | 0.08/-    | 0.10/0.06 |
| 16                                        |                                          |           |           |           |           |           |           |           | 0.10/0.06 |
| 17                                        |                                          |           |           |           |           |           |           |           | 0.08/-    |

A

General Turning  
Allgemeine Drehbearbeitung

Threading  
Gewindedrehen



Table of recommended infeed for **American unified standard external threading inserts**  
 Empfohlene Zustellungswerte für **American unified standard Außengewinde Schneidplatten**

| Pitch (mm)<br>Steigung                     | 24                                       | 20               | 18               | 16               | 14               | 12               | 11               | 10               | 9                | 8                | 7                | 6                | 5                |
|--------------------------------------------|------------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Total feed (a)<br>Gesamtzustellung         | <b>0.649</b>                             | <b>0.779</b>     | <b>0.866</b>     | <b>0.974</b>     | <b>1.113</b>     | <b>1.299</b>     | <b>1.416</b>     | <b>1.558</b>     | <b>1.731</b>     | <b>1.948</b>     | <b>2.226</b>     | <b>2.597</b>     | <b>3.116</b>     |
| Cutting times (nap)<br>Anzahl der Schnitte | <b>5</b>                                 | <b>6</b>         | <b>6</b>         | <b>7</b>         | <b>9</b>         | <b>9</b>         | <b>10</b>        | <b>11</b>        | <b>12</b>        | <b>13</b>        | <b>14</b>        | <b>15</b>        | <b>16</b>        |
| Cutting order<br>Schnittaufteilung         | Radial X · Axial Z<br>Radial X · Axial Z |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|                                            | x/z                                      | x/z              | x/z              | x/z              | x/z              | x/z              | x/z              | x/z              | x/z              | x/z              | x/z              | x/z              | x/z              |
| 1                                          | 0.206<br>/ 0.086                         | 0.210<br>/ 0.094 | 0.233<br>/ 0.104 | 0.226<br>/ 0.109 | 0.196<br>/ 0.110 | 0.229<br>/ 0.128 | 0.220<br>/ 0.132 | 0.214<br>/ 0.139 | 0.210<br>/ 0.148 | 0.211<br>/ 0.160 | 0.213<br>/ 0.176 | 0.218<br>/ 0.198 | 0.229<br>/ 0.230 |
| 2                                          | 0.148<br>/ 0.066                         | 0.163<br>/ 0.072 | 0.181<br>/ 0.080 | 0.188<br>/ 0.083 | 0.189<br>/ 0.084 | 0.222<br>/ 0.098 | 0.228<br>/ 0.102 | 0.240<br>/ 0.106 | 0.256<br>/ 0.113 | 0.276<br>/ 0.122 | 0.304<br>/ 0.135 | 0.343<br>/ 0.152 | 0.399<br>/ 0.177 |
| 3                                          | 0.096<br>/ 0.055                         | 0.105<br>/ 0.061 | 0.117<br>/ 0.068 | 0.122<br>/ 0.070 | 0.123<br>/ 0.071 | 0.143<br>/ 0.083 | 0.148<br>/ 0.086 | 0.155<br>/ 0.090 | 0.165<br>/ 0.095 | 0.179<br>/ 0.103 | 0.197<br>/ 0.114 | 0.222<br>/ 0.128 | 0.258<br>/ 0.149 |
| 4                                          | 0.085<br>/ 0.049                         | 0.093<br>/ 0.054 | 0.103<br>/ 0.059 | 0.107<br>/ 0.062 | 0.108<br>/ 0.062 | 0.126<br>/ 0.073 | 0.131<br>/ 0.075 | 0.137<br>/ 0.079 | 0.146<br>/ 0.084 | 0.158<br>/ 0.091 | 0.173<br>/ 0.100 | 0.195<br>/ 0.113 | 0.227<br>/ 0.131 |
| 5                                          |                                          | 0.084<br>/ 0.048 | 0.093<br>/ 0.054 | 0.097<br>/ 0.056 | 0.098<br>/ 0.056 | 0.114<br>/ 0.066 | 0.118<br>/ 0.068 | 0.124<br>/ 0.072 | 0.132<br>/ 0.076 | 0.142<br>/ 0.082 | 0.157<br>/ 0.091 | 0.177<br>/ 0.102 | 0.205<br>/ 0.119 |
| 6                                          |                                          |                  |                  | 0.089<br>/ 0.052 | 0.090<br>/ 0.052 | 0.105<br>/ 0.061 | 0.109<br>/ 0.063 | 0.114<br>/ 0.066 | 0.121<br>/ 0.070 | 0.131<br>/ 0.076 | 0.144<br>/ 0.083 | 0.163<br>/ 0.094 | 0.189<br>/ 0.109 |
| 7                                          |                                          |                  |                  |                  | 0.084<br>/ 0.048 | 0.098<br>/ 0.056 | 0.101<br>/ 0.058 | 0.106<br>/ 0.061 | 0.113<br>/ 0.065 | 0.122<br>/ 0.070 | 0.134<br>/ 0.078 | 0.151<br>/ 0.087 | 0.176<br>/ 0.101 |
| 8                                          |                                          |                  |                  |                  | 0.079<br>/ 0.045 | 0.092<br>/ 0.053 | 0.095<br>/ 0.055 | 0.100<br>/ 0.057 | 0.106<br>/ 0.061 | 0.114<br>/ 0.066 | 0.126<br>/ 0.073 | 0.142<br>/ 0.082 | 0.165<br>/ 0.095 |
| 9                                          |                                          |                  |                  |                  |                  |                  | 0.090<br>/ 0.052 | 0.094<br>/ 0.054 | 0.100<br>/ 0.058 | 0.108<br>/ 0.063 | 0.119<br>/ 0.069 | 0.134<br>/ 0.078 | 0.156<br>/ 0.090 |
| 10                                         |                                          |                  |                  |                  |                  |                  |                  | 0.090<br>/ 0.052 | 0.095<br>/ 0.055 | 0.103<br>/ 0.059 | 0.113<br>/ 0.065 | 0.128<br>/ 0.074 | 0.149<br>/ 0.086 |
| 11                                         |                                          |                  |                  |                  |                  |                  |                  |                  | 0.091<br>/ 0.053 | 0.098<br>/ 0.057 | 0.108<br>/ 0.063 | 0.122<br>/ 0.071 | 0.142<br>/ 0.082 |
| 12                                         |                                          |                  |                  |                  |                  |                  |                  |                  |                  | 0.094<br>/ 0.054 | 0.104<br>/ 0.060 | 0.117<br>/ 0.068 | 0.136<br>/ 0.079 |
| 13                                         |                                          |                  |                  |                  |                  |                  |                  |                  |                  |                  | 0.100<br>/ 0.058 | 0.113<br>/ 0.065 | 0.131<br>/ 0.076 |
| 14                                         |                                          |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  | 0.109<br>/ 0.063 | 0.126<br>/ 0.073 |
| 15                                         |                                          |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  | 0.122<br>/ 0.071 |
| 16                                         |                                          |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |

# A

General Turning  
Allgemeine Drehbearbeitung

Threading  
Gewindedrehen

# Turning · Drehen

## Threading tools · Gewindedrehwerkzeuge

Table of recommended infeed for **American unified standard internal threading inserts**  
 Empfohlene Zustellungswerte für **American unified standard Innengewinde Schneidplatten**

| Pitch (mm)<br>Steigung                    | 24                                       | 20              | 18              | 16              | 14              | 12              | 11              | 10              | 9               | 8               | 7                | 6               | 5               |
|-------------------------------------------|------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|
| Total feed (a)<br>Gesamtzustellung        | <b>0.573</b>                             | <b>0.687</b>    | <b>0.764</b>    | <b>0.860</b>    | <b>0.982</b>    | <b>1.146</b>    | <b>1.250</b>    | <b>1.375</b>    | <b>1.528</b>    | <b>1.719</b>    | <b>1.964</b>     | <b>2.291</b>    | <b>2.750</b>    |
| Cutting times(nap)<br>Anzahl der Schnitte | <b>5</b>                                 | <b>6</b>        | <b>6</b>        | <b>7</b>        | <b>8</b>        | <b>9</b>        | <b>9</b>        | <b>10</b>       | <b>11</b>       | <b>12</b>       | <b>13</b>        | <b>14</b>       | <b>15</b>       |
| Cutting order<br>Schnittaufteilung        | Radial X · Axial Z<br>Radial X · Axial Z |                 |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 |                 |
|                                           | x/z                                      | x/z             | x/z             | x/z             | x/z             | x/z             | x/z             | x/z             | x/z             | x/z             | x/z              | x/z             | x/z             |
| 1                                         | 0.193<br>/—                              | 0.200<br>/—     | 0.222<br>/—     | 0.219<br>/—     | 0.220<br>/—     | 0.228<br>/—     | 0.250<br>/—     | 0.247<br>/—     | 0.246<br>/—     | 0.252<br>/—     | 0.262<br>/—      | 0.278<br>/—     | 0.302<br>/—     |
| 2                                         | 0.127<br>/0.073                          | 0.239<br>/0.081 | 0.155<br>/0.089 | 0.161<br>/0.093 | 0.173<br>/0.100 | 0.190<br>/0.110 | 0.207<br>/0.120 | 0.216<br>/0.125 | 0.229<br>/0.132 | 0.247<br>/0.142 | 0.271<br>/0.156  | 0.304<br>/0.176 | 0.353<br>/0.204 |
| 3                                         | 0.098<br>/0.056                          | 0.107<br>/0.062 | 0.119<br>/0.069 | 0.124<br>/0.072 | 0.132<br>/0.076 | 0.146<br>/0.084 | 0.159<br>/0.092 | 0.166<br>/0.096 | 0.176<br>/0.101 | 0.189<br>/0.109 | 0.208<br>/0.120  | 0.234<br>/0.135 | 0.271<br>/0.156 |
| 4                                         | 0.082<br>/0.048                          | 0.090<br>/0.052 | 0.100<br>/0.058 | 0.104<br>/0.060 | 0.112<br>/0.064 | 0.123<br>/0.071 | 0.134<br>/0.077 | 0.140<br>/0.081 | 0.148<br>/0.086 | 0.160<br>/0.092 | 0.175<br>/0.101  | 0.197<br>/0.114 | 0.228<br>/0.132 |
| 5                                         | 0.073<br>/0.042                          | 0.079<br>/0.046 | 0.088<br>/0.051 | 0.092<br>/0.053 | 0.098<br>/0.057 | 0.108<br>/0.062 | 0.118<br>/0.068 | 0.123<br>/0.071 | 0.130<br>/0.075 | 0.141<br>/0.081 | 0.1543<br>/0.089 | 0.173<br>/0.100 | 0.201<br>/0.116 |
| 6                                         |                                          | 0.072<br>/0.041 | 0.080<br>/0.046 | 0.083<br>/0.048 | 0.089<br>/0.051 | 0.098<br>/0.056 | 0.107<br>/0.062 | 0.111<br>/0.064 | 0.118<br>/0.068 | 0.127<br>/0.073 | 0.140<br>/0.081  | 0.157<br>/0.091 | 0.182<br>/0.105 |
| 7                                         |                                          |                 |                 | 0.077<br>/0.044 | 0.082<br>/0.047 | 0.090<br>/0.052 | 0.098<br>/0.057 | 0.102<br>/0.059 | 0.108<br>/0.063 | 0.117<br>/0.067 | 0.128<br>/0.074  | 0.144<br>/0.083 | 0.167<br>/0.097 |
| 8                                         |                                          |                 |                 |                 | 0.076<br>/0.044 | 0.084<br>/0.048 | 0.091<br>/0.053 | 0.095<br>/0.055 | 0.101<br>/0.058 | 0.109<br>/0.063 | 0.119<br>/0.069  | 0.134<br>/0.078 | 0.156<br>/0.090 |
| 9                                         |                                          |                 |                 |                 |                 | 0.079<br>/0.045 | 0.086<br>/0.050 | 0.090<br>/0.052 | 0.095<br>/0.055 | 0.102<br>/0.059 | 0.112<br>/0.065  | 0.126<br>/0.073 | 0.146<br>/0.084 |
| 10                                        |                                          |                 |                 |                 |                 |                 |                 | 0.085<br>/0.049 | 0.090<br>/0.052 | 0.097<br>/0.056 | 0.106<br>/0.061  | 0.119<br>/0.069 | 0.138<br>/0.080 |
| 11                                        |                                          |                 |                 |                 |                 |                 |                 |                 | 0.085<br>/0.049 | 0.092<br>/0.053 | 0.101<br>/0.058  | 0.113<br>/0.065 | 0.131<br>/0.076 |
| 12                                        |                                          |                 |                 |                 |                 |                 |                 |                 |                 | 0.088<br>/0.051 | 0.096<br>/0.056  | 0.108<br>/0.063 | 0.126<br>/0.073 |
| 13                                        |                                          |                 |                 |                 |                 |                 |                 |                 |                 |                 | 0.092<br>/0.053  | 0.101<br>/0.060 | 0.121<br>/0.070 |
| 14                                        |                                          |                 |                 |                 |                 |                 |                 |                 |                 |                 |                  | 0.100<br>/0.058 | 0.116<br>/0.067 |
| 15                                        |                                          |                 |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 | 0.112<br>/0.065 |

A

General Turning  
Allgemeine Drehbearbeitung

Threading  
Gewindedrehen

Table of recommended infeed for **British standard internal and external threading inserts**  
 Empfohlene Zustellungswerte für **British Standard Innen- und Außengewinde Schneidplatten**

| Pitch(mm)<br>Steigung                     | 28                                       | 20              | 19              | 16              | 14              | 12              | 11              | 10              | 9               | 8                | 7               | 6               | 5               |
|-------------------------------------------|------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|
| Total feed (a)<br>Gesamtzustellung        | <b>0.581</b>                             | <b>0.813</b>    | <b>0.856</b>    | <b>1.017</b>    | <b>1.162</b>    | <b>1.355</b>    | <b>1.479</b>    | <b>1.626</b>    | <b>1.807</b>    | <b>2.033</b>     | <b>2.324</b>    | <b>2.711</b>    | <b>3.253</b>    |
| Cutting times(nap)<br>Anzahl der Schnitte | <b>5</b>                                 | <b>6</b>        | <b>6</b>        | <b>8</b>        | <b>8</b>        | <b>9</b>        | <b>9</b>        | <b>10</b>       | <b>11</b>       | <b>12</b>        | <b>14</b>       | <b>15</b>       | <b>16</b>       |
| Cutting order<br>Schnittaufteilung        | Radial X · Axial Z<br>Radial X · Axial Z |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 |                 |                 |
|                                           | x/z                                      | x/z             | x/z             | x/z             | x/z             | x/z             | x/z             | x/z             | x/z             | x/z              | x/z             | x/z             | x/z             |
| 1                                         | 0.179<br>—                               | 0.211<br>—      | 0.223<br>—      | 0.196<br>—      | 0.223<br>—      | 0.226<br>—      | 0.246<br>—      | 0.236<br>—      | 0.230<br>—      | 0.255<br>—       | 0.195<br>—      | 0.197<br>—      | 0.204<br>—      |
| 2                                         | 0.134<br>/0.070                          | 0.172<br>/0.089 | 0.181<br>/0.094 | 0.186<br>/0.097 | 0.213<br>/0.111 | 0.234<br>/0.122 | 0.255<br>/0.133 | 0.226<br>/0.139 | 0.282<br>/0.147 | 0.304<br>/0.158  | 0.322<br>/0.167 | 0.361<br>/0.189 | 0.421<br>/0.219 |
| 3                                         | 0.104<br>/0.054                          | 0.132<br>/0.069 | 0.139<br>/0.072 | 0.143<br>/0.074 | 0.163<br>/0.085 | 0.180<br>/0.093 | 0.197<br>/0.102 | 0.206<br>/0.106 | 0.216<br>/0.113 | 0.233<br>/0.121  | 0.247<br>/0.128 | 0.278<br>/0.145 | 0.323<br>/0.168 |
| 4                                         | 0.087<br>/0.045                          | 0.111<br>/0.058 | 0.117<br>/0.061 | 0.120<br>/0.063 | 0.138<br>/0.072 | 0.151<br>/0.079 | 0.165<br>/0.086 | 0.172<br>/0.090 | 0.182<br>/0.095 | 0.197<br>/0.102  | 0.208<br>/0.108 | 0.234<br>/0.122 | 0.272<br>/0.142 |
| 5                                         | 0.077<br>/0.040                          | 0.098<br>/0.051 | 0.103<br>/0.054 | 0.106<br>/0.055 | 0.121<br>/0.063 | 0.133<br>/0.069 | 0.145<br>/0.076 | 0.152<br>/0.079 | 0.161<br>/0.084 | 0.1738<br>/0.090 | 0.183<br>/0.095 | 0.207<br>/0.108 | 0.240<br>/0.125 |
| 6                                         |                                          | 0.089<br>/0.046 | 0.093<br>/0.049 | 0.096<br>/0.050 | 0.110<br>/0.057 | 0.121<br>/0.063 | 0.131<br>/0.068 | 0.137<br>/0.071 | 0.145<br>/0.076 | 0.157<br>/0.082  | 0.166<br>/0.086 | 0.187<br>/0.097 | 0.217<br>/0.113 |
| 7                                         |                                          |                 |                 | 0.088<br>/0.046 | 0.101<br>/0.052 | 0.111<br>/0.058 | 0.121<br>/0.063 | 0.126<br>/0.066 | 0.134<br>/0.070 | 0.144<br>/0.075  | 0.152<br>/0.079 | 0.172<br>/0.089 | 0.200<br>/0.104 |
| 8                                         |                                          |                 |                 | 0.082<br>/0.043 | 0.093<br>/0.049 | 0.103<br>/0.054 | 0.113<br>/0.059 | 0.117<br>/0.061 | 0.124<br>/0.065 | 0.134<br>/0.070  | 0.142<br>/0.074 | 0.160<br>/0.083 | 0.186<br>/0.097 |
| 9                                         |                                          |                 |                 |                 |                 | 0.097<br>/0.050 | 0.106<br>/0.055 | 0.110<br>/0.057 | 0.117<br>/0.061 | 0.126<br>/0.066  | 0.133<br>/0.069 | 0.150<br>/0.078 | 0.174<br>/0.091 |
| 10                                        |                                          |                 |                 |                 |                 |                 |                 | 0.104<br>/0.054 | 0.111<br>/0.058 | 0.119<br>/0.062  | 0.126<br>/0.066 | 0.142<br>/0.074 | 0.165<br>/0.086 |
| 11                                        |                                          |                 |                 |                 |                 |                 |                 |                 | 0.105<br>/0.055 | 0.113<br>/0.059  | 0.120<br>/0.062 | 0.135<br>/0.070 | 0.157<br>/0.082 |
| 12                                        |                                          |                 |                 |                 |                 |                 |                 |                 |                 | 0.108<br>/0.056  | 0.114<br>/0.060 | 0.129<br>/0.067 | 0.150<br>/0.078 |
| 13                                        |                                          |                 |                 |                 |                 |                 |                 |                 |                 |                  | 0.110<br>/0.055 | 0.124<br>/0.064 | 0.144<br>/0.075 |
| 14                                        |                                          |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 | 0.119<br>/0.062 | 0.138<br>/0.072 |
| 15                                        |                                          |                 |                 |                 |                 |                 |                 |                 |                 |                  |                 | 0.115<br>/0.060 | 0.133<br>/0.069 |

# A

General Turning  
Allgemeine Drehbearbeitung

Threading  
Gewindedrehen

# Turning · Drehen

## Threading tools · Gewindedrehwerkzeuge

Table of recommended infeed for **NPT internal and external threading inserts**

Empfohlene Zustellungswerte für **NPT Innen- und Außengewinde Schneidplatten**

| Pitch (mm)<br>Steigung                     | 27                                       | 18          | 14          | 11.5        | 8           |
|--------------------------------------------|------------------------------------------|-------------|-------------|-------------|-------------|
| Total feed (a)<br>Gesamtzustellung         | 0.75                                     | 1.129       | 1.451       | 1.767       | 2.54        |
| Cutting times (nap)<br>Anzahl der Schnitte | 6                                        | 8           | 10          | 12          | 14          |
| Cutting order<br>Schnittaufteilung         | Radial X · Axial Z<br>Radial X · Axial Z |             |             |             |             |
|                                            | x/z                                      | x/z         | x/z         | x/z         | x/z         |
| 1                                          | 0.19/-                                   | 0.22/-      | 0.240/-     | 0.24/-      | 0.255/-     |
| 2                                          | 0.15/0.087                               | 0.181/0.104 | 0.200/0.115 | 0.208/0.120 | 0.250/0.144 |
| 3                                          | 0.13/0.075                               | 0.152/0.088 | 0.170/0.098 | 0.182/0.105 | 0.245/0.141 |
| 4                                          | 0.11/0.063                               | 0.141/0.081 | 0.150/0.086 | 0.168/0.097 | 0.230/0.133 |
| 5                                          | 0.09/0.052                               | 0.131/0.075 | 0.140/0.081 | 0.155/0.089 | 0.210/0.121 |
| 6                                          | 0.08/0.46                                | 0.121/0.070 | 0.130/0.075 | 0.145/0.084 | 0.195/0.112 |
| 7                                          |                                          | 0.101/0.058 | 0.120/0.069 | 0.138/0.079 | 0.180/0.104 |
| 8                                          |                                          | 0.082/0.047 | 0.110/0.063 | 0.124/0.072 | 0.175/0.101 |
| 9                                          |                                          |             | 0.100/0.058 | 0.117/0.067 | 0.170/0.098 |
| 10                                         |                                          |             | 0.091/0.052 | 0.105/0.060 | 0.155/0.089 |
| 11                                         |                                          |             |             | 0.095/0.055 | 0.140/0.080 |
| 12                                         |                                          |             |             | 0.090/0.052 | 0.125/0.072 |
| 13                                         |                                          |             |             |             | 0.110/0.063 |
| 14                                         |                                          |             |             |             | 0.100/0.058 |

Table of recommended infeed for **BSPT internal and external threading inserts**

Empfohlene Zustellungswerte für **BSPT Innen- und Außengewinde Schneidplatten**

| Pitch (mm)<br>Steigung                     | 28                                       | 19          | 14          | 11          |
|--------------------------------------------|------------------------------------------|-------------|-------------|-------------|
| Total feed (a)<br>Gesamtzustellung         | 0.581                                    | 0.856       | 1.162       | 1.479       |
| Cutting times (nap)<br>Anzahl der Schnitte | 5                                        | 6           | 8           | 10          |
| Cutting order<br>Schnittaufteilung         | Radial X · Axial Z<br>Radial X · Axial Z |             |             |             |
|                                            | x/z                                      | x/z         | x/z         | x/z         |
| 1                                          | 0.179/-                                  | 0.223/-     | 0.222/-     | 0.214/-     |
| 2                                          | 0.134/0.070                              | 0.181/0.094 | 0.213/0.111 | 0.242/0.126 |
| 3                                          | 0.103/0.054                              | 0.139/0.072 | 0.163/0.085 | 0.186/0.097 |
| 4                                          | 0.087/0.045                              | 0.117/0.061 | 0.138/0.072 | 0.157/0.082 |
| 5                                          | 0.078/0.040                              | 0.103/0.054 | 0.121/0.063 | 0.138/0.072 |
| 6                                          |                                          | 0.093/0.049 | 0.110/0.057 | 0.125/0.065 |
| 7                                          |                                          |             | 0.101/0.052 | 0.115/0.060 |
| 8                                          |                                          |             | 0.094/0.049 | 0.107/0.056 |
| 9                                          |                                          |             |             | 0.100/0.052 |
| 10                                         |                                          |             |             | 0.095/0.049 |

- Table of recommended infeed for **NPTF 60° internal and external threading inserts**  
 Empfohlene Zustellungswerte für **NPTF 60° Innen- und Außengewinde Schneidplatten**

## External / Außen

| Pitch(mm)<br>Steigung                     | 8                    | 11.5 | 14   | 18   | 27   |
|-------------------------------------------|----------------------|------|------|------|------|
| Total feed(a)<br>Gesamtzustellung         | 2.38                 | 1.63 | 1.35 | 1.00 | 0.64 |
| Cutting times(nap)<br>Anzahl der Schnitte | 15                   | 12   | 10   | 8    | 6    |
| Cutting order<br>Schnittaufteilung        | Radial X<br>Radial X |      |      |      |      |
| 1                                         | 0.32                 | 0.24 | 0.23 | 0.19 | 0.16 |
| 2                                         | 0.27                 | 0.23 | 0.21 | 0.16 | 0.14 |
| 3                                         | 0.23                 | 0.19 | 0.16 | 0.14 | 0.11 |
| 4                                         | 0.19                 | 0.15 | 0.14 | 0.13 | 0.09 |
| 5                                         | 0.17                 | 0.13 | 0.13 | 0.12 | 0.08 |
| 6                                         | 0.16                 | 0.11 | 0.12 | 0.11 | 0.06 |
| 7                                         | 0.15                 | 0.11 | 0.11 | 0.09 |      |
| 8                                         | 0.14                 | 0.11 | 0.10 | 0.06 |      |
| 9                                         | 0.13                 | 0.10 | 0.09 |      |      |
| 10                                        | 0.12                 | 0.10 | 0.06 |      |      |
| 11                                        | 0.12                 | 0.10 |      |      |      |
| 12                                        | 0.11                 | 0.06 |      |      |      |
| 13                                        | 0.11                 |      |      |      |      |
| 14                                        | 0.10                 |      |      |      |      |
| 15                                        | 0.06                 |      |      |      |      |

## Internal / Innen

| Pitch(mm)<br>Steigung                     | 8                    | 11.5 | 14   | 18   | 27   |
|-------------------------------------------|----------------------|------|------|------|------|
| Total feed(a)<br>Gesamtzustellung         | 2.38                 | 1.63 | 1.35 | 1.00 | 0.64 |
| Cutting times(nap)<br>Anzahl der Schnitte | 15                   | 12   | 10   | 8    | 6    |
| Cutting order<br>Schnittaufteilung        | Radial X<br>Radial X |      |      |      |      |
| 1                                         | 0.35                 | 0.27 | 0.25 | 0.2  | 0.15 |
| 2                                         | 0.29                 | 0.22 | 0.20 | 0.17 | 0.13 |
| 3                                         | 0.26                 | 0.20 | 0.18 | 0.15 | 0.12 |
| 4                                         | 0.20                 | 0.16 | 0.14 | 0.12 | 0.09 |
| 5                                         | 0.17                 | 0.13 | 0.12 | 0.1  | 0.08 |
| 6                                         | 0.15                 | 0.12 | 0.11 | 0.09 | 0.08 |
| 7                                         | 0.14                 | 0.10 | 0.10 | 0.09 |      |
| 8                                         | 0.12                 | 0.10 | 0.09 | 0.08 |      |
| 9                                         | 0.12                 | 0.09 | 0.08 |      |      |
| 10                                        | 0.11                 | 0.08 | 0.08 |      |      |
| 11                                        | 0.10                 | 0.08 |      |      |      |
| 12                                        | 0.10                 | 0.08 |      |      |      |
| 13                                        | 0.09                 |      |      |      |      |
| 14                                        | 0.09                 |      |      |      |      |
| 15                                        | 0.09                 |      |      |      |      |

- Table of recommended infeed for **30° round screw internal and external threading inserts**  
 Empfohlene Zustellungswerte für **30° runde Gewinde Innen- und Außengewinde Schneidplatten**

## External / Außen

| Pitch(mm)<br>Steigung                     | 6                    | 8    | 10   |
|-------------------------------------------|----------------------|------|------|
| Total feed(a)<br>Gesamtzustellung         | 2.12                 | 1.59 | 1.27 |
| Cutting times(nap)<br>Anzahl der Schnitte | 12                   | 10   | 8    |
| Cutting order<br>Schnittaufteilung        | Radial X<br>Radial X |      |      |
| 1                                         | 0.26                 | 0.23 | 0.23 |
| 2                                         | 0.225                | 0.21 | 0.21 |
| 3                                         | 0.24                 | 0.20 | 0.20 |
| 4                                         | 0.22                 | 0.19 | 0.19 |
| 5                                         | 0.21                 | 0.18 | 0.16 |
| 6                                         | 0.19                 | 0.16 | 0.12 |
| 7                                         | 0.17                 | 0.14 | 0.10 |
| 8                                         | 0.16                 | 0.12 | 0.06 |
| 9                                         | 0.14                 | 0.10 |      |
| 10                                        | 0.12                 | 0.06 |      |
| 11                                        | 0.10                 |      |      |
| 12                                        | 0.06                 |      |      |

## Internal / Innen

| Pitch(mm)<br>Steigung                     | 6                    | 8    | 10   |
|-------------------------------------------|----------------------|------|------|
| Total feed(a)<br>Gesamtzustellung         | 2.12                 | 1.59 | 1.27 |
| Cutting times(nap)<br>Anzahl der Schnitte | 12                   | 10   | 8    |
| Cutting order<br>Schnittaufteilung        | Radial X<br>Radial X |      |      |
| 1                                         | 0.35                 | 0.29 | 0.26 |
| 2                                         | 0.29                 | 0.24 | 0.22 |
| 3                                         | 0.26                 | 0.22 | 0.20 |
| 4                                         | 0.20                 | 0.17 | 0.15 |
| 5                                         | 0.17                 | 0.14 | 0.13 |
| 6                                         | 0.15                 | 0.13 | 0.11 |
| 7                                         | 0.14                 | 0.11 | 0.10 |
| 8                                         | 0.13                 | 0.10 | 0.09 |
| 9                                         | 0.12                 | 0.10 |      |
| 10                                        | 0.11                 | 0.09 |      |
| 11                                        | 0.10                 |      |      |
| 12                                        | 0.10                 |      |      |

# Turning · Drehen

## Threading tools · Gewindedrehwerkzeuge

### Table of recommended infeed for **MJ und UNJ external threading inserts**

Empfohlene Zustellungswerte für **MJ und UNJ Außengewinde Schneidplatten**

#### MJ

| Pitch(mm)<br>Steigung                           | 1.5                  | 2.0  |
|-------------------------------------------------|----------------------|------|
| Total feed(a)<br>Gesamtzustellung               | 0.87                 | 1.16 |
| Cutting<br>times(nap)<br>Anzahl der<br>Schnitte | 6                    | 8    |
| Cutting order<br>Schnittaufteilung              | Radial X<br>Radial X |      |
| 1                                               | 0.22                 | 0.25 |
| 2                                               | 0.19                 | 0.21 |
| 3                                               | 0.16                 | 0.18 |
| 4                                               | 0.13                 | 0.15 |
| 5                                               | 0.11                 | 0.12 |
| 6                                               | 0.06                 | 0.10 |
| 7                                               |                      | 0.09 |
| 8                                               |                      | 0.06 |
|                                                 |                      |      |
|                                                 |                      |      |
|                                                 |                      |      |

#### UNJ

| Pitch(mm)<br>Steigung                           | 8                    | 10   | 12   | 14   | 16   | 18    | 20   | 24   | 28   | 32   |
|-------------------------------------------------|----------------------|------|------|------|------|-------|------|------|------|------|
| Total feed(a)<br>Gesamtzustellung               | 1.83                 | 1.47 | 1.22 | 1.05 | 0.92 | 0.81  | 0.73 | 0.61 | 0.52 | 0.46 |
| Cutting<br>times(nap)<br>Anzahl der<br>Schnitte | 11                   | 9    | 7    | 7    | 6    | 6     | 6    | 5    | 5    | 4    |
| Cutting order<br>Schnittaufteilung              | Radial X<br>Radial X |      |      |      |      |       |      |      |      |      |
| 1                                               | 0.31                 | 0.30 | 0.28 | 0.26 | 0.26 | 0.23  | 0.19 | 0.17 | 0.16 | 0.16 |
| 2                                               | 0.30                 | 0.29 | 0.27 | 0.23 | 0.21 | 0.18  | 0.16 | 0.14 | 0.12 | 0.14 |
| 3                                               | 0.23                 | 0.21 | 0.20 | 0.17 | 0.14 | 0.14  | 0.13 | 0.14 | 0.09 | 0.10 |
| 4                                               | 0.18                 | 0.15 | 0.17 | 0.12 | 0.12 | 0.10  | 0.10 | 0.10 | 0.09 | 0.06 |
| 5                                               | 0.15                 | 0.13 | 0.13 | 0.11 | 0.10 | 0.010 | 0.09 | 0.06 | 0.06 |      |
| 6                                               | 0.14                 | 0.12 | 0.11 | 0.10 | 0.09 | 0.06  | 0.06 |      |      |      |
| 7                                               | 0.13                 | 0.11 | 0.06 | 0.06 |      |       |      |      |      |      |
| 8                                               | 0.12                 | 0.10 |      |      |      |       |      |      |      |      |
| 9                                               | 0.11                 | 0.06 |      |      |      |       |      |      |      |      |
| 10                                              | 0.10                 |      |      |      |      |       |      |      |      |      |
| 11                                              | 0.06                 |      |      |      |      |       |      |      |      |      |

### Table of recommended infeed for **Tr internal and external threading inserts**

Empfohlene Zustellungswerte für **Tr Innen- und Außengewinde Schneidplatten**

#### External / Außen

| Pitch(mm)<br>Steigung                           | 1.5                  | 2    | 3    |
|-------------------------------------------------|----------------------|------|------|
| Total feed(a)<br>Gesamtzustellung               | 0.90                 | 1.25 | 1.75 |
| Cutting<br>times(nap)<br>Anzahl der<br>Schnitte | 6                    | 7    | 9    |
| Cutting order<br>Schnittaufteilung              | Radial X<br>Radial X |      |      |
| 1                                               | 0.23                 | 0.29 | 0.32 |
| 2                                               | 0.21                 | 0.26 | 0.31 |
| 3                                               | 0.16                 | 0.21 | 0.24 |
| 4                                               | 0.13                 | 0.17 | 0.19 |
| 5                                               | 0.11                 | 0.14 | 0.18 |
| 6                                               | 0.06                 | 0.12 | 0.17 |
| 7                                               |                      | 0.06 | 0.15 |
| 8                                               |                      |      | 0.13 |
| 9                                               |                      |      | 0.06 |
|                                                 |                      |      |      |
|                                                 |                      |      |      |
|                                                 |                      |      |      |

#### Internal / Innen

| Pitch(mm)<br>Steigung                           | 1.5                  | 2    | 3    |
|-------------------------------------------------|----------------------|------|------|
| Total feed(a)<br>Gesamtzustellung               | 0.90                 | 1.25 | 1.75 |
| Cutting<br>times(nap)<br>Anzahl der<br>Schnitte | 6                    | 7    | 9    |
| Cutting order<br>Schnittaufteilung              | Radial X<br>Radial X |      |      |
| 1                                               | 0.22                 | 0.28 | 0.34 |
| 2                                               | 0.18                 | 0.23 | 0.28 |
| 3                                               | 0.17                 | 0.21 | 0.26 |
| 4                                               | 0.13                 | 0.16 | 0.20 |
| 5                                               | 0.11                 | 0.14 | 0.17 |
| 6                                               | 0.10                 | 0.12 | 0.15 |
| 7                                               |                      | 0.11 | 0.13 |
| 8                                               |                      |      | 0.12 |
| 9                                               |                      |      | 0.10 |
|                                                 |                      |      |      |
|                                                 |                      |      |      |
|                                                 |                      |      |      |

**For ACME internal and external threading inserts  
Für ACME Innen- und Außengewinde Schneidplatten**

| Pitch(mm)<br>Steigung                     | 8                    | 10   | 12   | 14   | 16   |
|-------------------------------------------|----------------------|------|------|------|------|
| Total feed (a)<br>Gesamtzustellung        | 1.86                 | 1.55 | 1.21 | 1.05 | 0.94 |
| Cutting times(nap)<br>Anzahl der Schnitte | 12                   | 10   | 8    | 7    | 6    |
| Cutting order<br>Schnittaufteilung        | Radial X<br>Radial X |      |      |      |      |
| 1                                         | 0.31                 | 0.28 | 0.25 | 0.23 | 0.23 |
| 2                                         | 0.26                 | 0.23 | 0.21 | 0.20 | 0.19 |
| 3                                         | 0.23                 | 0.21 | 0.18 | 0.18 | 0.17 |
| 4                                         | 0.18                 | 0.16 | 0.15 | 0.14 | 0.14 |
| 5                                         | 0.15                 | 0.15 | 0.12 | 0.11 | 0.11 |
| 6                                         | 0.14                 | 0.13 | 0.11 | 0.10 | 0.10 |
| 7                                         | 0.12                 | 0.11 | 0.10 | 0.09 |      |
| 8                                         | 0.11                 | 0.10 | 0.09 |      |      |
| 9                                         | 0.10                 | 0.09 |      |      |      |
| 10                                        | 0.09                 | 0.09 |      |      |      |
| 11                                        | 0.09                 |      |      |      |      |
| 12                                        | 0.08                 |      |      |      |      |

**For STUB-ACME internal and external threading inserts  
Für STUB-ACME Innen- und Außengewinde Schneidplatten**

| Pitch(mm)<br>Steigung                     | 8                    | 10   | 12   | 14   | 16   |
|-------------------------------------------|----------------------|------|------|------|------|
| Total feed (a)<br>Gesamtzustellung        | 1.28                 | 1.08 | 0.81 | 0.73 | 0.66 |
| Cutting times(nap)<br>Anzahl der Schnitte | 9                    | 8    | 7    | 6    | 5    |
| Cutting order<br>Schnittaufteilung        | Radial X<br>Radial X |      |      |      |      |
| 1                                         | 0.22                 | 0.20 | 0.17 | 0.17 | 0.17 |
| 2                                         | 0.20                 | 0.18 | 0.14 | 0.14 | 0.15 |
| 3                                         | 0.18                 | 0.15 | 0.12 | 0.12 | 0.14 |
| 4                                         | 0.15                 | 0.13 | 0.1  | 0.11 | 0.11 |
| 5                                         | 0.12                 | 0.12 | 0.1  | 0.1  | 0.09 |
| 6                                         | 0.11                 | 0.11 | 0.09 | 0.09 |      |
| 7                                         | 0.11                 | 0.10 | 0.09 |      |      |
| 8                                         | 0.10                 | 0.09 |      |      |      |
| 9                                         | 0.09                 |      |      |      |      |
|                                           |                      |      |      |      |      |
|                                           |                      |      |      |      |      |
|                                           |                      |      |      |      |      |

**Table of recommended infeed for API 60° internal and external threading inserts  
Empfohlene Zustellungswerte für API 60° Innen- und Außengewinde Schneidplatten**

**External / Außen**

| Pitch(mm)<br>Steigung                     | 4(382)               | 4(383) | 5(403) | 4(502) | 4(503) |
|-------------------------------------------|----------------------|--------|--------|--------|--------|
| Total feed (a)<br>Gesamtzustellung        | 3.12                 | 3.11   | 3.00   | 3.78   | 3.77   |
| Cutting times(nap)<br>Anzahl der Schnitte | 12                   | 12     | 12     | 15     | 15     |
| Cutting order<br>Schnittaufteilung        | Radial X<br>Radial X |        |        |        |        |
| 1                                         | 0.51                 | 0.50   | 0.47   | 0.51   | 0.51   |
| 2                                         | 0.47                 | 0.47   | 0.44   | 0.48   | 0.48   |
| 3                                         | 0.42                 | 0.42   | 0.40   | 0.44   | 0.44   |
| 4                                         | 0.35                 | 0.35   | 0.35   | 0.39   | 0.39   |
| 5                                         | 0.31                 | 0.31   | 0.30   | 0.34   | 0.34   |
| 6                                         | 0.26                 | 0.26   | 0.25   | 0.30   | 0.30   |
| 7                                         | 0.22                 | 0.22   | 0.21   | 0.26   | 0.26   |
| 8                                         | 0.18                 | 0.18   | 0.17   | 0.22   | 0.22   |
| 9                                         | 0.13                 | 0.13   | 0.14   | 0.19   | 0.19   |
| 10                                        | 0.11                 | 0.11   | 0.11   | 0.16   | 0.16   |
| 11                                        | 0.10                 | 0.10   | 0.10   | 0.13   | 0.13   |
| 12                                        | 0.06                 | 0.06   | 0.06   | 0.11   | 0.10   |
| 13                                        |                      |        |        | 0.10   | 0.10   |
| 14                                        |                      |        |        | 0.09   | 0.09   |
| 15                                        |                      |        |        | 0.06   | 0.06   |

**Internal / Innen**

| Pitch(mm)<br>Steigung                     | 4(382)               | 4(383) | 5(403) | 4(502) | 4(503) |
|-------------------------------------------|----------------------|--------|--------|--------|--------|
| Total feed (a)<br>Gesamtzustellung        | 3.12                 | 3.11   | 3.00   | 3.78   | 3.77   |
| Cutting times(nap)<br>Anzahl der Schnitte | 12                   | 12     | 12     | 15     | 15     |
| Cutting order<br>Schnittaufteilung        | Radial X<br>Radial X |        |        |        |        |
| 1                                         | 0.52                 | 0.52   | 0.51   | 0.55   | 0.54   |
| 2                                         | 0.43                 | 0.43   | 0.42   | 0.46   | 0.46   |
| 3                                         | 0.39                 | 0.39   | 0.38   | 0.42   | 0.42   |
| 4                                         | 0.30                 | 0.30   | 0.29   | 0.32   | 0.32   |
| 5                                         | 0.25                 | 0.25   | 0.24   | 0.27   | 0.27   |
| 6                                         | 0.22                 | 0.22   | 0.21   | 0.24   | 0.24   |
| 7                                         | 0.20                 | 0.20   | 0.19   | 0.22   | 0.22   |
| 8                                         | 0.18                 | 0.18   | 0.17   | 0.20   | 0.20   |
| 9                                         | 0.17                 | 0.17   | 0.16   | 0.18   | 0.18   |
| 10                                        | 0.16                 | 0.16   | 0.15   | 0.17   | 0.17   |
| 11                                        | 0.15                 | 0.15   | 0.14   | 0.16   | 0.16   |
| 12                                        | 0.15                 | 0.14   | 0.14   | 0.16   | 0.16   |
| 13                                        |                      |        |        | 0.15   | 0.15   |
| 14                                        |                      |        |        | 0.14   | 0.14   |
| 15                                        |                      |        |        | 0.14   | 0.14   |

# Turning · Drehen

Threading tools · Gewindedrehwerkzeuge

Table of recommended infeed for **API round internal and external threading inserts**  
Empfohlene Zustellungswerte für **API rund Innen- und Außengewinde Schneidplatten**

## External / Außen

| Pitch(mm)<br>Steigung                     | 8                    | 10   |
|-------------------------------------------|----------------------|------|
| Total feed (a)<br>Gesamtzustellung        | 1.81                 | 1.41 |
| Cutting times(nap)<br>Anzahl der Schnitte | 12                   | 10   |
| Cutting order<br>Schnittaufteilung        | Radial X<br>Radial X |      |
| 1                                         | 0.25                 | 0.25 |
| 2                                         | 0.24                 | 0.23 |
| 3                                         | 0.19                 | 0.16 |
| 4                                         | 0.16                 | 0.14 |
| 5                                         | 0.14                 | 0.12 |
| 6                                         | 0.14                 | 0.12 |
| 7                                         | 0.13                 | 0.12 |
| 8                                         | 0.13                 | 0.11 |
| 9                                         | 0.13                 | 0.1  |
| 10                                        | 0.13                 | 0.06 |
| 11                                        | 0.11                 |      |
| 12                                        | 0.06                 |      |

## Internal / Innen

| Pitch(mm)<br>Steigung                     | 8                    | 10   |
|-------------------------------------------|----------------------|------|
| Total feed (a)<br>Gesamtzustellung        | 1.81                 | 1.41 |
| Cutting times(nap)<br>Anzahl der Schnitte | 12                   | 10   |
| Cutting order<br>Schnittaufteilung        | Radial X<br>Radial X |      |
| 1                                         | 0.30                 | 0.26 |
| 2                                         | 0.25                 | 0.21 |
| 3                                         | 0.22                 | 0.19 |
| 4                                         | 0.17                 | 0.15 |
| 5                                         | 0.15                 | 0.13 |
| 6                                         | 0.13                 | 0.11 |
| 7                                         | 0.12                 | 0.10 |
| 8                                         | 0.11                 | 0.09 |
| 9                                         | 0.10                 | 0.09 |
| 10                                        | 0.09                 | 0.08 |
| 11                                        | 0.09                 |      |
| 12                                        | 0.08                 |      |

Table of recommended infeed for **API inclined trapezoidal screw internal and external threading inserts**  
Empfohlene Zustellungswerte für **API Amerikanisches Säge Innen- und Außengewinde Schneidplatten**

## External / Außen

| Pitch(mm)<br>Steigung                     | 5                    |
|-------------------------------------------|----------------------|
| Total feed (a)<br>Gesamtzustellung        | 1.55                 |
| Cutting times(nap)<br>Anzahl der Schnitte | 11                   |
| Cutting order<br>Schnittaufteilung        | Radial X<br>Radial X |
| 1                                         | 0.25                 |
| 2                                         | 0.23                 |
| 3                                         | 0.17                 |
| 4                                         | 0.15                 |
| 5                                         | 0.13                 |
| 6                                         | 0.12                 |
| 7                                         | 0.12                 |
| 8                                         | 0.11                 |
| 9                                         | 0.11                 |
| 10                                        | 0.1                  |
| 11                                        | 0.06                 |

## Internal / Innen

| Pitch(mm)<br>Steigung                     | 5                    |
|-------------------------------------------|----------------------|
| Total feed (a)<br>Gesamtzustellung        | 1.55                 |
| Cutting times(nap)<br>Anzahl der Schnitte | 11                   |
| Cutting order<br>Schnittaufteilung        | Radial X<br>Radial X |
| 1                                         | 0.27                 |
| 2                                         | 0.22                 |
| 3                                         | 0.20                 |
| 4                                         | 0.16                 |
| 5                                         | 0.13                 |
| 6                                         | 0.12                 |
| 7                                         | 0.10                 |
| 8                                         | 0.10                 |
| 9                                         | 0.09                 |
| 10                                        | 0.08                 |
| 11                                        | 0.08                 |

### ■ Recommended Cutting parameters · Empfohlene Schnittparameter

| ISO                         | Workpiece Material<br>Werkstück Material             |                                                | Hardness HB<br>Harte | Grade<br>Sorte                                          |
|-----------------------------|------------------------------------------------------|------------------------------------------------|----------------------|---------------------------------------------------------|
|                             |                                                      |                                                |                      | YBG201                                                  |
|                             |                                                      |                                                |                      | Cutting speed (m·min)<br>Schnittgeschwindigkeit (m·min) |
| P                           | Carbon steel<br>Kohlenstoffstahl                     | C=0.15%                                        | 125                  | 150-175                                                 |
|                             |                                                      | C=0.35%                                        | 150                  | 140-155                                                 |
|                             |                                                      | C=0.60%                                        | 200                  | 130-145                                                 |
|                             | Alloy steel<br>Legierter Stahl                       | Anneal / Geglüht                               | 180                  | 110-130                                                 |
|                             |                                                      | Tempered / Vergütet                            | 275                  | 80-100                                                  |
|                             |                                                      | Tempered / Vergütet                            | 300                  | 70-90                                                   |
|                             |                                                      | Tempered / Vergütet                            | 350                  | 60-80                                                   |
|                             | High alloy steel<br>Hochlegierter Stahl              | Anneal / Geglüht                               | 200                  | 90-115                                                  |
|                             |                                                      | Hardened / Vergütet                            | 325                  | 70-90                                                   |
|                             | Cast steel<br>Gussstahl                              | Non-alloy / Unlegiert                          | 180                  | 180-210                                                 |
|                             |                                                      | Low alloy / Niedrig legiert                    | 200                  | 90-115                                                  |
|                             |                                                      | High alloy / Hoch legiert                      | 225                  | 90-115                                                  |
| Martensite steel 12%Mn      |                                                      | 250                                            | 90-115               |                                                         |
| Martensit Stahl 12%Mn       |                                                      | 250                                            | 40-50                |                                                         |
| M                           | Stainless steel<br>Rostfreier Stahl                  | Austenite<br>Austenitisch                      | 180                  | 110-130                                                 |
|                             |                                                      | Martensite-Ferrite<br>Martensitisch-Ferritisch | 200                  | 130-170                                                 |
| K                           | Malleable cast iron<br>Temperguss                    | Ferrite / Ferritisch                           | 130                  | 110-140                                                 |
|                             |                                                      | Pearlite / Perlitisch                          | 230                  | 85-105                                                  |
|                             | Grey cast iron<br>Grauguss                           | Martensite / Martensitisch                     | 180                  | 110-140                                                 |
|                             |                                                      | Ferrite / Ferritisch                           | 260                  | 90-115                                                  |
|                             | Nodular cast iron<br>Kugelgraphitguss                | Ferrite / Ferritisch                           | 160                  | 110-130                                                 |
|                             |                                                      | Pearlite / Perlitisch                          | 250                  | 80-100                                                  |
| N                           | Al alloy<br>Aluminiumlegierung                       | Non-aging treatment<br>Unbehandelt             | 60                   | 1300-1450                                               |
|                             |                                                      | Aging treatment<br>Vergütet                    | 100                  | 450-500                                                 |
|                             | Cast aluminum alloy<br>Aluminium-<br>Gusslegierung   | Non-aging treatment<br>Unbehandelt             | 75                   | 430-470                                                 |
| Aging treatment<br>Vergütet |                                                      | 90                                             | 250-290              |                                                         |
| S                           | Heat resistant alloy<br>Hitzebeständige<br>Legierung | Iron Base<br>Eisen Basis                       | Anneal<br>Geglüht    | 35-50                                                   |
|                             |                                                      |                                                | Aging<br>Vergütet    | 25-35                                                   |
|                             |                                                      | Ni- Or Co-<br>Base<br>Basis                    | Anneal<br>Geglüht    | 15-25                                                   |
|                             |                                                      |                                                | Aging<br>Vergütet    | 10-20                                                   |
|                             |                                                      | Casting<br>Guss                                | 320                  | 10-15                                                   |
| H                           | Hardened steel<br>Gehärteter Stahl                   | Hardened<br>Gehärtet                           | HRC55                | 40-50                                                   |

A

General Turning  
Allgemeine Drehbearbeitung

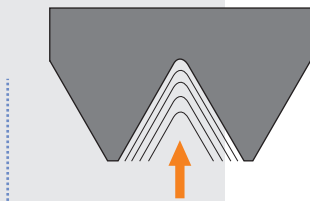
Threading  
Gewindedrehen

### Infeed way of threading · Zustellarten beim Gewindedrehen

The Number of passes and infeed are the key points of threading operation. Please choose the cutting parameters with the recommended form according to experience data. In case of breakages or to much wear. Please have a look at page 302 (Troubleshooting).

Die Anzahl der Durchgänge und die Zustellungsgröße sind ein entscheidender Faktor bei der Gewindebearbeitung. Die empfohlenen Daten sind als Startwerte zu betrachten. Im Falle von erhöhtem Verschleiß, schauen Sie bitte auf Seite 302 (Problemlösung).

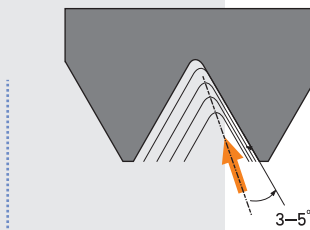
#### Radial infeed Radiale Zustellung



Radial infeed requires low cutting depth, sharp cutting edge and tough grade. It is recommended when the pitch is smaller than 2mm, not ideal for material with long chips.

Radiale Zustellung fordert eine niedrige Schnitttiefe, eine scharfe Schneidkante und zähe Sorte.

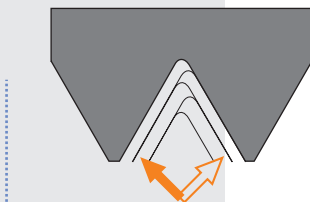
#### Modified flank infeed Modifizierte Flanken-zustellung



Infeed at an angle of 3-5° to the flank of the teeth. It is easy for chips flow. Suitable for long chip material and internal threading.

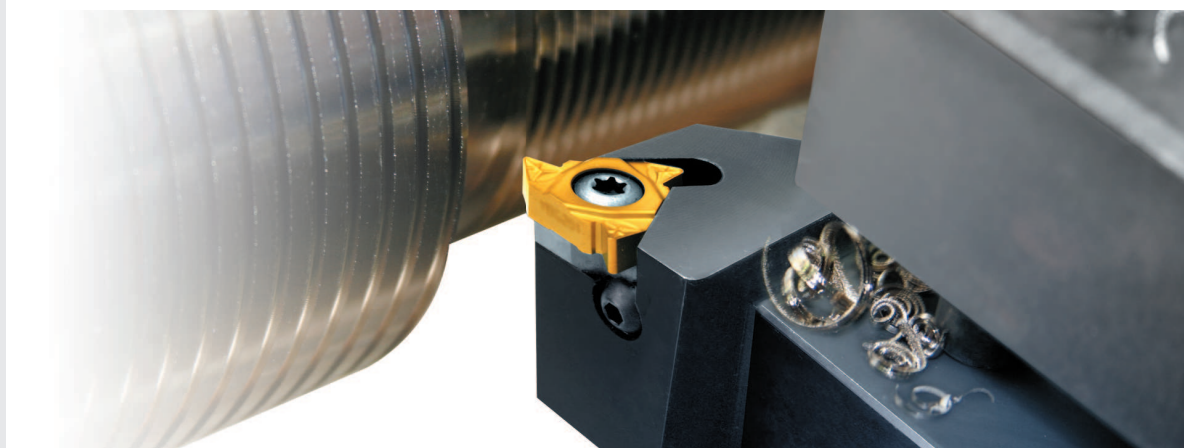
Zustellung unter einem Winkel von 3-5° zur Flanke des Gewindes, guter Spanablauf. Geeignet für langspanende Werkstoffe und Innengewinde.

#### Alternate flank infeed Wechselseitige Zustellung



Alternating flank infeed is mainly used for large pitches and long chip materials. To get equal insert wear on both edges.

Wechselseitige Zustellung entlang beider Flanken. Anwendung bei großen Steigungen und langspanenden Werkstoffen. Gleichmäßiger Flankenverschleiß an beiden Schneidkanten.



## Typical problem in threading and its solution

### Typische Probleme bei der Gewindebearbeitung und Lösungsvorschläge

| Problem / Problemstellung                                                                                       | Cause / Ursache                                                                                                                                                                                   | Solution / Lösung                                                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Big flank wear<br>Großer Freiflächenverschleiß                                                                  | Cutting speed too high<br>Schnittgeschwindigkeit zu hoch                                                                                                                                          | Reduce cutting speed<br>Schnittgeschwindigkeit verringern                                                                                                                                                                                                               |
|                                                                                                                 | Infeed depth too small / Zustellung zu gering                                                                                                                                                     | Reduce number of infeeds / Anzahl der Zustellungen verringern                                                                                                                                                                                                           |
|                                                                                                                 | Inserts is over centre line / Platte steht über Mitte                                                                                                                                             | Adjust correct centre line / Plattenhöhe korrigieren                                                                                                                                                                                                                    |
| Asymmetric wear on left and right cutting edge<br>Unterschiedliche Verschleißmarken an linker und rechter Seite | Incorrect method for flank infeed / Seitliche Zustellung nicht optimal                                                                                                                            | Change method of flank infeed<br>Seitliche Zustellung korrigieren                                                                                                                                                                                                       |
|                                                                                                                 | Insert inclination angle does not correspond to the lead angle of the thread<br>Neigungswinkel und Hauptwinkel stehen nicht optimal zueinander                                                    | Change shim to obtain correct angle of inclination<br>Wechsel der Unterlage um korrekten Winkel zu erzeugen                                                                                                                                                             |
| Breakage / Bruch                                                                                                | Cutting speed too low / Schnittgeschwindigkeit zu niedrig                                                                                                                                         | Increase cutting speed / Schnittgeschwindigkeit erhöhen                                                                                                                                                                                                                 |
|                                                                                                                 | Cutting force too big                                                                                                                                                                             | Increase number of infeeds. Reduce size of the largest infeeds                                                                                                                                                                                                          |
|                                                                                                                 | Schnittkraft zu hoch                                                                                                                                                                              | Anzahl der Zustellungen erhöhen, Zustellgröße verringern                                                                                                                                                                                                                |
|                                                                                                                 | Unstable condition<br>Instabile Verhältnisse                                                                                                                                                      | Check and improve clamping and tool overhang to prevent vibration<br>Werkstückspannung und Auskraglänge verbessern, um Vibrationen zu verhindern                                                                                                                        |
|                                                                                                                 | Bad chip control                                                                                                                                                                                  | Increase pressure of cooling for better chip evacuation<br>Kühlmitteldruck erhöhen für bessere Spanabfuhr                                                                                                                                                               |
| Plastic deformation<br>Plastische Deformation                                                                   | Schlechte Spankontrolle<br>Cutting speed and temperature too high<br>Schnittgeschwindigkeit und Temperatur zu hoch                                                                                | Decrease cutting speed / Schnittgeschwindigkeit verringern<br>Increase number of infeeds. Reduce size of the largest infeeds<br>Anzahl der Zustellungen erhöhen, Zustellgröße verringern                                                                                |
|                                                                                                                 | Insufficient cooling supply / Schlechte Kühlmittelzufuhr                                                                                                                                          | Improve coolant supply / Kühlzufuhr verbessern                                                                                                                                                                                                                          |
| Thread surface quality is poor<br>Oberflächenqualität des Gewindes nicht gut                                    | Cutting speed too low / Schnittgeschwindigkeit zu niedrig                                                                                                                                         | Increase cutting speed<br>Schnittgeschwindigkeit erhöhen                                                                                                                                                                                                                |
|                                                                                                                 | Inserts is over centre line / Platte steht über Mitte                                                                                                                                             | Adjust correct centre line / Plattenhöhe korrigieren                                                                                                                                                                                                                    |
|                                                                                                                 | Bad chip control / Schlechte Spankontrolle                                                                                                                                                        | Modified flank infeed / Zustellung verändern                                                                                                                                                                                                                            |
| Incorrect profile<br>Gewindeprofil nicht korrekt                                                                | Wrong centre height<br>Plattenhöhe nicht korrekt                                                                                                                                                  | Change centre height<br>Plattenhöhe verändern                                                                                                                                                                                                                           |
|                                                                                                                 | Toolholder not 90° to centre line / Halter steht nicht im 90° Winkel                                                                                                                              | Adjust tool holder / Halter neu ausrichten                                                                                                                                                                                                                              |
|                                                                                                                 | Pitch error in machine / Steigungsfehler der Maschine                                                                                                                                             | Adjust machine / Maschine neu ausrichten                                                                                                                                                                                                                                |
| Shallow profile / Gewindeprofil                                                                                 | Wrong centre height / Plattenhöhe nicht korrekt                                                                                                                                                   | Change centre height / Plattenhöhe verändern                                                                                                                                                                                                                            |
|                                                                                                                 | Breakage of insert / Schneidkantenbruch                                                                                                                                                           | Change insert / Plattenwechsel                                                                                                                                                                                                                                          |
|                                                                                                                 | Wear to big / Verschleiß zu groß                                                                                                                                                                  | Change insert / Plattenwechsel                                                                                                                                                                                                                                          |
| Build up edge<br>Aufbauschneidenbildung                                                                         | Temperature on cutting edge too low / Temperatur an der Schneide zu gering<br>Often occurs in low carbon or stainless steel<br>Oft bei der Bearbeitung von Kohlenstoffstahl oder rostfreiem Stahl | Increase cutting speed<br>Schnittgeschwindigkeit erhöhen<br>Choose grade with good toughness (PVD coated)<br>Sorte mit ausreichend Zähigkeit verwenden (PVD beschichtet)                                                                                                |
| Vibration<br>Vibrationen                                                                                        | Incorrect cutting parameter<br>Falsche Schnittparameter<br>Wrong centre height / Plattenhöhe nicht korrekt<br>Clamping of work piece not good<br>Werkstückspannung nicht ausreichend              | Increase cutting speed or slow down cutting speed<br>Schnittgeschwindigkeit erhöhen oder stark verringern<br>Change centre height / Plattenhöhe verändern<br>Improve clamping system and minimize over hang<br>Spannsystem verbessern und Werkzeugauskragung minimieren |

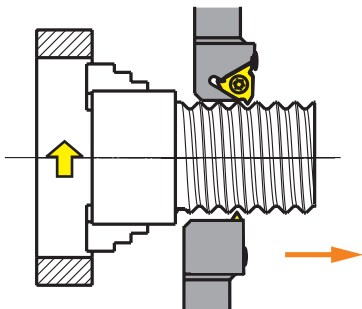
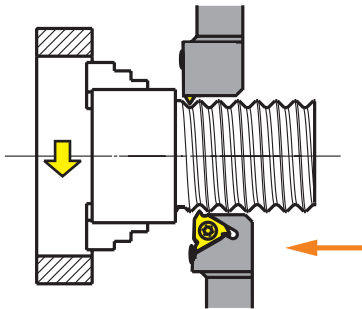
Steps to get the best threading result:

Bearbeitungsfolge für beste Ergebnisse beim Gewindeschneiden:

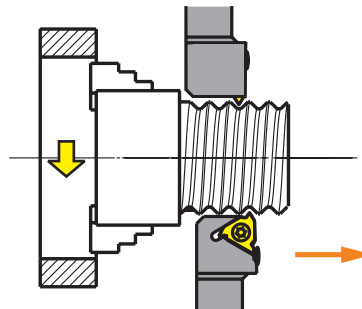
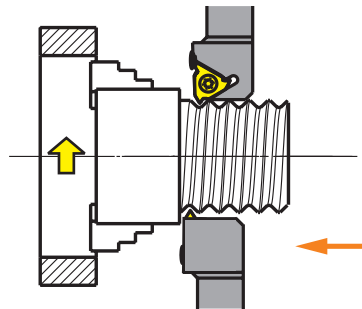
- 1 Select thread machining method  
Wahl der Gewindedrehmethode
- 2 Decide helical angle, select shim  
Auswahl des Winkels und der Unterlage
- 3 Choose insert and toolholder size  
Auswahl der Halter und Platten
- 4 By checking reference table of standard threading program, select feasible cutting parameters.  
Auswahl der Schnittparameter
- 5 Select feed way  
Auswahl der Schnitttrichtung

### Thread machining method · Gewindedrehmethode

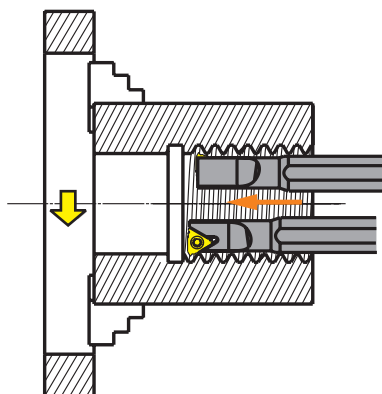
External threading machining (Right thread)  
Außenbearbeitung (Rechtausführung)



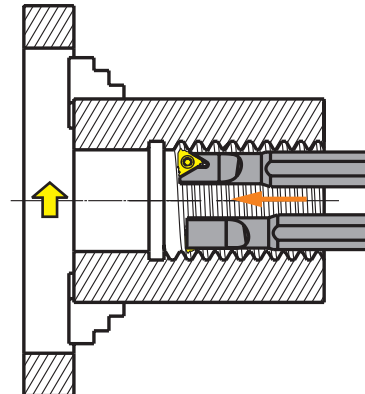
External threading machining (Left thread)  
Außenbearbeitung (Linksausführung)



Internal threading machining (Right thread)  
Innenbearbeitung (Rechtausführung)



Internal threading machining (Left thread)  
Innenbearbeitung (Linksausführung)



# Turning · Drehen

Threading tools · Gewindedrehwerkzeuge

## Decide helical angle, select shim · Auswahl des Winkels und der Unterlage

The flank clearance angles of the thread profile is dependent on the helix angle of the thread. The helix angle of the thread must coincide with the insert's angle of inclination angle as far as possible to get the ideal profile, to avoid longer unfavourable wear on one of the flanks and thus to ensure tool life.

Die Flankenfreiwinkel des Gewindeprofils sind vom Steigungswinkel des Gewindes abhängig. Der Steigungswinkel des Gewindes muss mit dem Neigungswinkel der Gewindeplatte soweit wie möglich übereinstimmen, um Profil-Genauigkeit zu erzielen, ungleichmäßigen Freiflächenverschleiß der Gewindeplatte zu vermeiden und eine längere Standzeit zu gewährleisten.

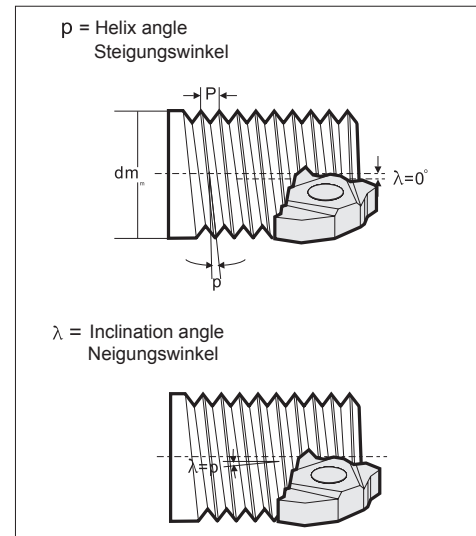
$$\lambda = \arctan \frac{p}{d_2 \times \pi}$$

Shim specification table are as following:  
Wahl der Unterlegplatte

| Screw pitch range<br>Steigungs-<br>bereich | Insert dimensions<br>Abmessung | Inclined angle<br>Neigungs-<br>winkel | Shim<br>Unterlage |
|--------------------------------------------|--------------------------------|---------------------------------------|-------------------|
| 0.5-3.0                                    | 16                             | 0                                     | MT16-00M          |
|                                            |                                | 1                                     | MT16-01M          |
|                                            |                                | 2                                     | MT16-02M          |
|                                            |                                | 3                                     | MT16-03M          |
| 3.5-6.0                                    | 22                             | 0                                     | MT22-00M          |
|                                            |                                | 1                                     | MT22-01M          |
|                                            |                                | 2                                     | MT22-02M          |
|                                            |                                | 3                                     | MT22-03M          |

Shim for  $\lambda = 1^\circ$  is as the standard shim with the toolholder.

Die Unterlage  $\lambda=1^\circ$  wird mit dem Halter geliefert.



p = Pitch  
Steigung

$d_2$  = Effective diameter of thread  
Flankendurchmesser

λ = Inclination angle  
Neigungswinkel

Select shim:  
Wahl der richtigen Unterlage:

