

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

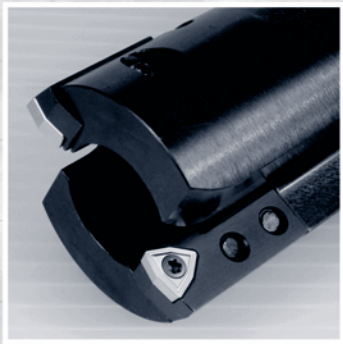
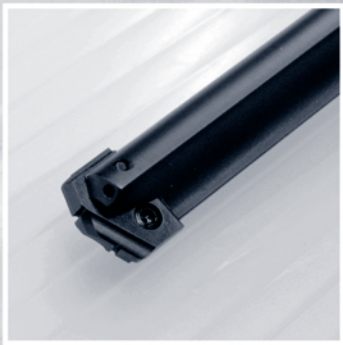
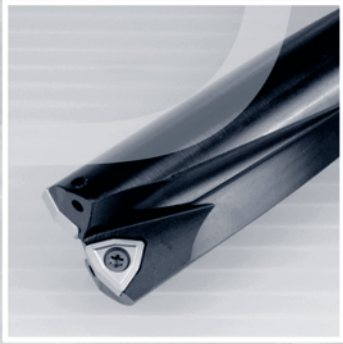
Porcupine cutters

Specific applications and Sets

Profile milling

Solid carbide

Drills



# Drills

|                       |      |
|-----------------------|------|
| Inserts               | I.02 |
| Code key              | I.03 |
| Drills                | I.04 |
| Trepanning drills     | I.11 |
| Technical information | I.13 |

Inserts  
Face milling cutters

Positive 11° clearance - Square insert

Normally available for immediate delivery ●  
Only available in a limited quantity ○

| SPMT        | l     | s    | d     | r   | KM15 | PM25 | PM40 | NC40 | TiN16 | ZR10 | TiN22 | TiN25 | TiN35 | TL40 |
|-------------|-------|------|-------|-----|------|------|------|------|-------|------|-------|-------|-------|------|
|             |       |      |       |     |      |      |      |      |       |      |       |       |       |      |
| SPMT 060304 | 6,35  | 3,18 | 6,35  | 0,4 |      |      |      |      |       |      |       | ●     | ●     | ●    |
| SPMT 070308 | 7,94  | 3,18 | 7,94  | 0,8 |      |      |      |      |       |      |       | ●     | ●     | ●    |
| SPMT 090308 | 9,52  | 3,18 | 9,52  | 0,8 |      |      |      |      |       |      |       | ●     | ●     | ●    |
| SPMT 120408 | 12,70 | 4,76 | 12,70 | 0,8 |      |      |      |      |       |      |       | ●     | ●     | ●    |

Square shoulder cutters  
Slot cutters

Positive 7° clearance - 80° Trigon insert.

Normally available for immediate delivery ●  
Only available in a limited quantity ○

| WCMX        | l    | s    | d     | r   | KM15 | PM25 | PM40 | NC40 | TiN16 | ZR10 | TiN22 | TiN32 | TiN35 | TL40 |
|-------------|------|------|-------|-----|------|------|------|------|-------|------|-------|-------|-------|------|
|             |      |      |       |     |      |      |      |      |       |      |       |       |       |      |
| WCMX 030208 | 3,46 | 2,38 | 5,56  | 0,8 |      |      |      |      |       |      |       | ●     | ●     | ●    |
| WCMX 040208 | 3,99 | 2,38 | 6,35  | 0,8 |      |      |      |      |       |      |       | ●     | ●     | ●    |
| WCMX 050308 | 5,07 | 3,18 | 7,94  | 0,8 |      |      |      |      |       |      |       | ●     | ●     | ●    |
| WCMX 06T308 | 6,14 | 3,97 | 9,52  | 0,8 |      |      |      |      |       |      |       | ●     | ●     | ●    |
| WCMX 080412 | 8,14 | 4,76 | 12,70 | 1,2 |      |      |      |      |       |      |       | ●     | ●     | ●    |

Porcupine cutters  
Specific applications and Sets  
Profile milling  
Solid carbide  
Drills

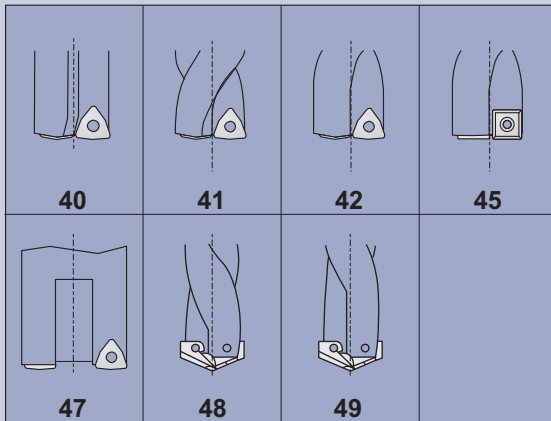
Positive inserts

Normally available for immediate delivery ●  
Only available in a limited quantity ○

| XPMT    | Diameter |       | s   | HS15 | TL40 |
|---------|----------|-------|-----|------|------|
|         | Metric   | Inch  |     |      |      |
| XPMT095 | 9,50     | 3/8   | 2,4 | ○    | ○    |
| XPMT098 | 9,80     | -     | 2,4 | ○    | ●    |
| XPMT099 | 9,92     | 25/64 | 2,4 | ○    | ○    |
| XPMT100 | 10,00    | -     | 2,4 | ○    | ○    |
| XPMT102 | 10,20    | -     | 2,4 | ●    | ●    |
| XPMT103 | 10,32    | 13/32 | 2,4 | ○    | ○    |
| XPMT105 | 10,50    | -     | 2,4 | ○    | ●    |
| XPMT107 | 10,72    | 27/64 | 2,4 | ○    | ○    |
| XPMT108 | 10,80    | -     | 2,4 | ○    | ●    |
| XPMT110 | 11,00    | -     | 2,4 | ○    | ●    |
| XPMT111 | 11,11    | 7/16  | 2,4 | ○    | ○    |
| XPMT115 | 11,50    | 29/64 | 2,4 | ○    | ○    |
| XPMT119 | 11,91    | 15/32 | 2,4 | ○    | ○    |
| XPMT120 | 12,00    | -     | 2,4 | ○    | ○    |
| XPMT123 | 12,30    | 31/64 | 2,4 | ○    | ○    |
| XPMT125 | 12,50    | -     | 2,4 | ○    | ○    |
| XPMT127 | 12,70    | 1/2   | 2,4 | ○    | ○    |
| XPMT130 | 13,00    | -     | 3,2 | ○    | ○    |
| XPMT131 | 13,10    | 33/64 | 3,2 | ○    | ○    |
| XPMT135 | 13,50    | 17/32 | 3,2 | ○    | ○    |
| XPMT138 | 13,89    | 35/64 | 3,2 | ○    | ○    |
| XPMT140 | 14,00    | -     | 3,2 | ○    | ○    |
| XPMT142 | 14,29    | 9/16  | 3,2 | ○    | ○    |
| XPMT145 | 14,50    | -     | 3,2 | ○    | ○    |
| XPMT146 | 14,68    | 37/64 | 3,2 | ○    | ○    |
| XPMT150 | 15,00    | -     | 3,2 | ○    | ○    |
| XPMT155 | 15,50    | 39/64 | 3,2 | ○    | ○    |
| XPMT158 | 15,88    | 5/8   | 3,2 | ○    | ○    |
| XPMT160 | 16,00    | -     | 3,2 | ○    | ○    |
| XPMT162 | 16,27    | 41/64 | 3,2 | ○    | ○    |
| XPMT165 | 16,50    | -     | 3,2 | ○    | ○    |
| XPMT166 | 16,67    | 21/32 | 3,2 | ○    | ○    |
| XPMT170 | 17,00    | -     | 3,2 | ○    | ○    |
| XPMT174 | 17,46    | 11/16 | 3,2 | ○    | ○    |
| XPMT175 | 17,50    | -     | 3,2 | ○    | ○    |

|          |          |          |          |           |            |
|----------|----------|----------|----------|-----------|------------|
| <b>4</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>63</b> | <b>027</b> |
| <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b>  |            |

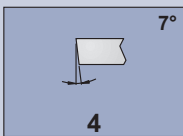
**1**



**2**

| 1                    | 2                    | 3                    | 4                    | 5         |
|----------------------|----------------------|----------------------|----------------------|-----------|
| WCMX 0302            | WCMX 0402            | WCMX 0503            | WCMX 06T3            | WCMX 0804 |
| SPMT 0603            | SPMT 0703            | SPMT 0903            | SPMT 1204            |           |
| XPMT 095<br>XPMT 110 | XPMT 115<br>XPMT 127 | XPMT 130<br>XPMT 175 | XPMT 150<br>XPMT 175 |           |

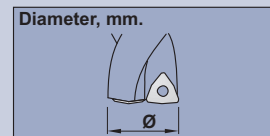
**3**



**4**

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| Ø20 | Ø25 | Ø32 | Ø40 | Ø20 | Ø24 | Ø28 | Ø36 |
| 61  | 62  | 63  | 64  | 72  | 73  | 74  | 75  |

**5**



Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

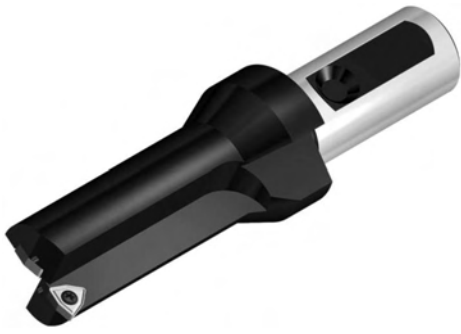
Porcupine cutters

Specific applications and Sets

Profile milling

Solid carbide

Drills



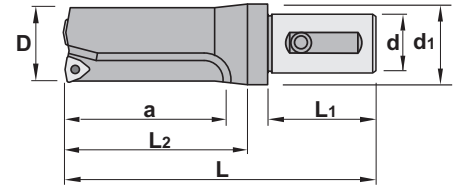
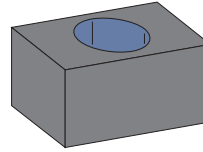
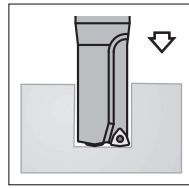
**Characteristics:**

Straight flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. lathes. This type of drills incorporates a neutral-rake geometry and screw-down trigon inserts for stability and clean through-hole putting.

Drills available from 17,5 to 55 mm.

**Applications:**

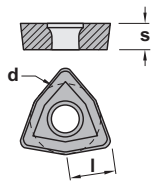
This drill works well on steels, alloyed steels, stainless steels and refractories.



Max. hole depth = 2xDiameter (D)

| 40.. |               | D    | L   | L1 | L2  | a   | d  | d1 | Radial Adj. D <sub>max</sub> |      |      | Insert size |       |
|------|---------------|------|-----|----|-----|-----|----|----|------------------------------|------|------|-------------|-------|
| Ref. | 4014.61.017,5 | 17,5 | 103 | 50 | 39  | 35  | 20 | 32 | +1,00 ↻ 19,5                 | 1622 | 5507 | WCMX 0302.. | 0,200 |
|      | 4014.61.018   | 18   | 103 | 50 | 40  | 36  | 20 | 32 | +0,90 ↻ 19,8                 | 1622 | 5507 | WCMX 0302.. | 0,200 |
|      | 4014.61.018,5 | 18,5 | 103 | 50 | 41  | 37  | 20 | 32 | +0,85 ↻ 20,2                 | 1622 | 5507 | WCMX 0302.. | 0,200 |
|      | 4014.61.019   | 19   | 103 | 50 | 42  | 38  | 20 | 32 | +0,80 ↻ 20,6                 | 1622 | 5507 | WCMX 0302.. | 0,250 |
|      | 4014.61.020   | 20   | 103 | 50 | 44  | 40  | 20 | 32 | +0,75 ↻ 21,5                 | 1622 | 5507 | WCMX 0302.. | 0,250 |
|      | 4024.62.022   | 22   | 123 | 55 | 48  | 44  | 25 | 40 | +1,25 ↻ 24,5                 | 1225 | 5507 | WCMX 0402.. | 0,385 |
|      | 4024.62.024   | 24   | 123 | 55 | 52  | 48  | 25 | 40 | +0,75 ↻ 25,5                 | 1225 | 5507 | WCMX 0402.. | 0,380 |
|      | 4024.62.025   | 25   | 123 | 55 | 54  | 50  | 25 | 40 | +0,50 ↻ 26,0                 | 1225 | 5507 | WCMX 0402.. | 0,400 |
|      | 4034.62.026   | 26   | 133 | 55 | 56  | 52  | 25 | 40 | +2,50 ↻ 31,0                 | 1630 | 5509 | WCMX 0503.. | 0,430 |
|      | 4034.62.027   | 27   | 133 | 55 | 58  | 54  | 25 | 40 | +2,20 ↻ 31,4                 | 1630 | 5509 | WCMX 0503.. | 0,430 |
|      | 4034.62.028   | 28   | 133 | 55 | 60  | 56  | 25 | 40 | +2,10 ↻ 32,2                 | 1630 | 5509 | WCMX 0503.. | 0,485 |
|      | 4034.62.029   | 29   | 133 | 55 | 62  | 58  | 25 | 40 | +1,80 ↻ 32,6                 | 1630 | 5509 | WCMX 0503.. | 0,465 |
|      | 4034.62.030   | 30   | 133 | 55 | 64  | 60  | 25 | 40 | +1,80 ↻ 33,0                 | 1630 | 5509 | WCMX 0503.. | 0,475 |
|      | 4044.63.031   | 31   | 153 | 60 | 66  | 62  | 32 | 50 | +3,50 ↻ 38,0                 | 1635 | 5510 | WCMX 06T3.. | 0,785 |
|      | 4044.63.032   | 32   | 153 | 60 | 68  | 64  | 32 | 50 | +3,20 ↻ 38,4                 | 1635 | 5510 | WCMX 06T3.. | 0,800 |
|      | 4044.63.034   | 34   | 153 | 60 | 73  | 68  | 32 | 50 | +2,80 ↻ 39,6                 | 1635 | 5510 | WCMX 06T3.. | 0,850 |
|      | 4044.63.035   | 35   | 153 | 60 | 75  | 70  | 32 | 50 | +2,50 ↻ 40,0                 | 1635 | 5510 | WCMX 06T3.. | 0,850 |
|      | 4044.63.038   | 38   | 163 | 60 | 80  | 76  | 32 | 50 | +1,80 ↻ 41,0                 | 1635 | 5510 | WCMX 06T3.. | 0,950 |
|      | 4044.63.039   | 39   | 163 | 60 | 82  | 78  | 32 | 50 | +1,50 ↻ 41,6                 | 1635 | 5510 | WCMX 06T3.. | 0,950 |
|      | 4044.63.040   | 40   | 163 | 60 | 84  | 80  | 32 | 50 | +1,20 ↻ 42,0                 | 1635 | 5510 | WCMX 06T3.. | 1,000 |
|      | 4054.64.042   | 42   | 193 | 65 | 89  | 84  | 40 | 60 | +4,20 ↻ 51,0                 | 1640 | 5515 | WCMX 0804.. | 1,570 |
|      | 4054.64.043   | 43   | 193 | 65 | 91  | 86  | 40 | 60 | +4,00 ↻ 51,4                 | 1640 | 5515 | WCMX 0804.. | 1,560 |
|      | 4054.64.045   | 45   | 193 | 65 | 95  | 90  | 40 | 60 | +3,60 ↻ 52,2                 | 1640 | 5515 | WCMX 0804.. | 1,700 |
|      | 4054.64.048   | 48   | 193 | 65 | 101 | 96  | 40 | 60 | +2,70 ↻ 53,4                 | 1640 | 5515 | WCMX 0804.. | 2,050 |
|      | 4054.64.049   | 49   | 213 | 65 | 103 | 98  | 40 | 60 | +2,50 ↻ 54,0                 | 1640 | 5515 | WCMX 0804.. | 2,000 |
|      | 4054.64.050   | 50   | 213 | 65 | 105 | 100 | 40 | 60 | +2,20 ↻ 54,4                 | 1640 | 5515 | WCMX 0804.. | 2,215 |
|      | 4054.64.052   | 52   | 213 | 65 | 110 | 104 | 40 | 60 | +1,80 ↻ 55,6                 | 1640 | 5515 | WCMX 0804.. | 2,210 |
|      | 4054.64.054   | 54   | 213 | 65 | 114 | 108 | 40 | 60 | +1,20 ↻ 56,4                 | 1640 | 5515 | WCMX 0804.. | 2,300 |
|      | 4054.64.055   | 55   | 213 | 65 | 116 | 110 | 40 | 60 | +0,80 ↻ 56,6                 | 1640 | 5515 | WCMX 0804.. | 2,400 |

| WCMX |             | l    | s    | d     | Positive 7° clearance - 80° Trigon insert. |
|------|-------------|------|------|-------|--|
| Ref. | WCMX 0302.. | 3,46 | 2,38 | 5,56  |  |
|      | WCMX 0402.. | 3,99 | 2,38 | 6,35  |  |
|      | WCMX 0503.. | 5,07 | 3,18 | 7,94  |  |
|      | WCMX 06T3.. | 6,14 | 3,97 | 9,52  |  |
|      | WCMX 0804.. | 8,14 | 4,76 | 12,70 |  |



For more information see page: I.02



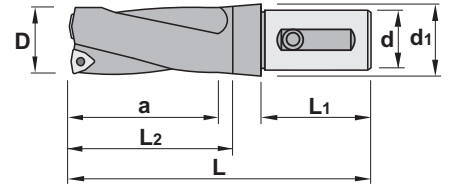
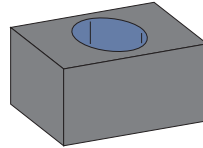
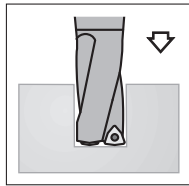
Max. hole depth = 2xDiameter (D)

**Characteristics:**

Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down trigon inserts for stability and clean through-hole putting. Drills available from 17,5 to 55 mm.

**Applications:**

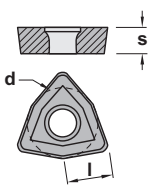
This drill works well on steels, alloyed steels, stainless steels and refractories.



| 41..          |      |     |    |     |     |    |    |                  |      |      |             |       |  |
|---------------|------|-----|----|-----|-----|----|----|------------------|------|------|-------------|-------|--|
| Ref.          | D    | L   | L1 | L2  | a   | d  | d1 | Radial Adj. Dmax |      |      | Insert size |       |  |
| 4114.62.017,5 | 17,5 | 108 | 55 | 39  | 35  | 25 | 40 | +1,00 ↻ 19,5     | 1622 | 5507 | WCMX 0302.. | 0,200 |  |
| 4114.62.018   | 18   | 108 | 55 | 40  | 36  | 25 | 40 | +0,90 ↻ 19,8     | 1622 | 5507 | WCMX 0302.. | 0,200 |  |
| 4114.62.018,5 | 18,5 | 113 | 55 | 41  | 37  | 25 | 40 | +0,85 ↻ 20,2     | 1622 | 5507 | WCMX 0302.. | 0,200 |  |
| 4114.62.019   | 19   | 113 | 55 | 42  | 38  | 25 | 40 | +0,80 ↻ 20,6     | 1622 | 5507 | WCMX 0302.. | 0,250 |  |
| 4114.62.020   | 20   | 113 | 55 | 44  | 40  | 25 | 40 | +0,75 ↻ 21,5     | 1622 | 5507 | WCMX 0302.. | 0,250 |  |
| 4124.62.022   | 22   | 123 | 55 | 48  | 44  | 25 | 40 | +1,25 ↻ 24,5     | 1225 | 5507 | WCMX 0402.. | 0,375 |  |
| 4124.62.024   | 24   | 123 | 55 | 52  | 48  | 25 | 40 | +0,75 ↻ 25,5     | 1225 | 5507 | WCMX 0402.. | 0,385 |  |
| 4124.62.025   | 25   | 123 | 55 | 54  | 50  | 25 | 40 | +0,50 ↻ 26,0     | 1225 | 5507 | WCMX 0402.. | 0,390 |  |
| 4134.63.026   | 26   | 138 | 60 | 56  | 52  | 32 | 50 | +2,50 ↻ 31,0     | 1630 | 5509 | WCMX 0503.. | 0,425 |  |
| 4134.63.027   | 27   | 138 | 60 | 58  | 54  | 32 | 50 | +2,20 ↻ 31,4     | 1630 | 5509 | WCMX 0503.. | 0,430 |  |
| 4134.63.028   | 28   | 138 | 60 | 60  | 56  | 32 | 50 | +2,10 ↻ 32,2     | 1630 | 5509 | WCMX 0503.. | 0,440 |  |
| 4134.63.029   | 29   | 138 | 60 | 62  | 58  | 32 | 50 | +1,80 ↻ 32,6     | 1630 | 5509 | WCMX 0503.. | 0,450 |  |
| 4134.63.030   | 30   | 138 | 60 | 64  | 60  | 32 | 50 | +1,80 ↻ 33,0     | 1630 | 5509 | WCMX 0503.. | 0,470 |  |
| 4144.64.031   | 31   | 158 | 65 | 66  | 62  | 40 | 60 | +3,50 ↻ 38,0     | 1635 | 5510 | WCMX 06T3.. | 0,765 |  |
| 4144.64.032   | 32   | 158 | 65 | 68  | 64  | 40 | 60 | +3,20 ↻ 38,4     | 1635 | 5510 | WCMX 06T3.. | 0,780 |  |
| 4144.64.034   | 34   | 158 | 65 | 73  | 68  | 40 | 60 | +2,80 ↻ 39,6     | 1635 | 5510 | WCMX 06T3.. | 0,800 |  |
| 4144.64.035   | 35   | 158 | 65 | 75  | 70  | 40 | 60 | +2,50 ↻ 40,0     | 1635 | 5510 | WCMX 06T3.. | 0,815 |  |
| 4144.64.038   | 38   | 168 | 65 | 80  | 76  | 40 | 60 | +1,80 ↻ 41,0     | 1635 | 5510 | WCMX 06T3.. | 0,930 |  |
| 4144.64.039   | 39   | 168 | 65 | 82  | 78  | 40 | 60 | +1,50 ↻ 41,6     | 1635 | 5510 | WCMX 06T3.. | 0,950 |  |
| 4144.64.040   | 40   | 168 | 65 | 84  | 80  | 40 | 60 | +1,20 ↻ 42,0     | 1635 | 5510 | WCMX 06T3.. | 0,970 |  |
| 4154.64.042   | 42   | 193 | 65 | 89  | 84  | 40 | 60 | +4,20 ↻ 51,0     | 1640 | 5515 | WCMX 0804.. | 1,550 |  |
| 4154.64.043   | 43   | 193 | 65 | 91  | 86  | 40 | 60 | +4,00 ↻ 51,4     | 1640 | 5515 | WCMX 0804.. | 1,530 |  |
| 4154.64.045   | 45   | 193 | 65 | 95  | 90  | 40 | 60 | +3,60 ↻ 52,2     | 1640 | 5515 | WCMX 0804.. | 1,630 |  |
| 4154.64.048   | 48   | 193 | 65 | 101 | 96  | 40 | 60 | +2,70 ↻ 53,4     | 1640 | 5515 | WCMX 0804.. | 1,700 |  |
| 4154.64.049   | 49   | 213 | 65 | 103 | 98  | 40 | 60 | +2,50 ↻ 54,0     | 1640 | 5515 | WCMX 0804.. | 2,050 |  |
| 4154.64.050   | 50   | 213 | 65 | 105 | 100 | 40 | 60 | +2,20 ↻ 54,4     | 1640 | 5515 | WCMX 0804.. | 2,100 |  |
| 4154.64.052   | 52   | 213 | 65 | 110 | 104 | 40 | 60 | +1,80 ↻ 55,6     | 1640 | 5515 | WCMX 0804.. | 2,120 |  |
| 4154.64.054   | 54   | 213 | 65 | 114 | 108 | 40 | 60 | +1,20 ↻ 56,4     | 1640 | 5515 | WCMX 0804.. | 2,150 |  |
| 4154.64.055   | 55   | 213 | 65 | 116 | 110 | 40 | 60 | +0,80 ↻ 56,6     | 1640 | 5515 | WCMX 0804.. | 2,200 |  |

| WCMX        |      |      |       | Positive 7° clearance - 80° Trigon insert. |  |
|-------------|------|------|-------|--|--|
| Ref.        | l    | s    | d     |  |  |
| WCMX 0302.. | 3,46 | 2,38 | 5,56  |  |  |
| WCMX 0402.. | 3,99 | 2,38 | 6,35  |  |  |
| WCMX 0503.. | 5,07 | 3,18 | 7,94  |  |  |
| WCMX 06T3.. | 6,14 | 3,97 | 9,52  |  |  |
| WCMX 0804.. | 8,14 | 4,76 | 12,70 |  |  |

For more information see page: I.02



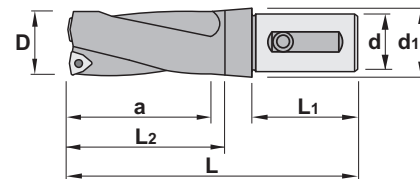
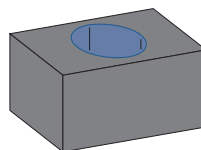
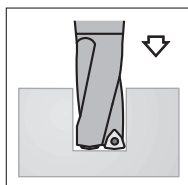


**Characteristics:**

Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down trigon inserts for stability and clean through-hole putting. Drills available from 17,5 to 55 mm.

**Applications:**

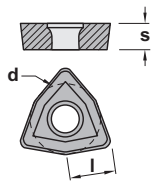
This drill works well on steels, alloyed steels, stainless steels and refractories.



Max. hole depth = 3xDiameter (D)

**42..**

| Ref.          | D    | L   | L1 | L2  | a   | d  | d1 | Radial Adj. D <sub>max</sub> | 1622 | 5507 | Insert size | Kg    |
|---------------|------|-----|----|-----|-----|----|----|------------------------------|------|------|-------------|-------|
|               |      |     |    |     |     |    |    |                              |      |      |             |       |
| 4214.62.017,5 | 17,5 | 127 | 55 | 56  | 53  | 25 | 40 | +1,00 ↻ 19,5                 | 1622 | 5507 | WCMX 0302.. | 0,220 |
| 4214.62.018   | 18   | 128 | 55 | 57  | 54  | 25 | 40 | +0,90 ↻ 19,8                 | 1622 | 5507 | WCMX 0302.. | 0,230 |
| 4214.62.018,5 | 18,5 | 130 | 55 | 59  | 56  | 25 | 40 | +0,85 ↻ 20,2                 | 1622 | 5507 | WCMX 0302.. | 0,240 |
| 4214.62.019   | 19   | 131 | 55 | 60  | 57  | 25 | 40 | +0,80 ↻ 20,6                 | 1622 | 5507 | WCMX 0302.. | 0,240 |
| 4214.62.020   | 20   | 136 | 55 | 64  | 60  | 25 | 40 | +0,75 ↻ 21,5                 | 1622 | 5507 | WCMX 0302.. | 0,250 |
| 4224.62.022   | 22   | 142 | 55 | 69  | 66  | 25 | 40 | +1,25 ↻ 24,5                 | 1225 | 5507 | WCMX 0402.. | 0,400 |
| 4224.62.024   | 24   | 150 | 55 | 76  | 72  | 25 | 40 | +0,75 ↻ 25,5                 | 1225 | 5507 | WCMX 0402.. | 0,450 |
| 4224.62.025   | 25   | 154 | 55 | 79  | 75  | 25 | 40 | +0,50 ↻ 26,0                 | 1225 | 5507 | WCMX 0402.. | 0,475 |
| 4234.63.026   | 26   | 162 | 60 | 81  | 78  | 32 | 50 | +2,50 ↻ 31,0                 | 1630 | 5509 | WCMX 0503.. | 0,475 |
| 4234.63.027   | 27   | 165 | 60 | 84  | 81  | 32 | 50 | +2,20 ↻ 31,4                 | 1630 | 5509 | WCMX 0503.. | 0,500 |
| 4234.63.028   | 28   | 169 | 60 | 87  | 84  | 32 | 50 | +2,10 ↻ 32,2                 | 1630 | 5509 | WCMX 0503.. | 0,550 |
| 4234.63.029   | 29   | 172 | 60 | 90  | 87  | 32 | 50 | +1,80 ↻ 32,6                 | 1630 | 5509 | WCMX 0503.. | 0,570 |
| 4234.63.030   | 30   | 177 | 60 | 94  | 90  | 32 | 50 | +1,80 ↻ 33,0                 | 1630 | 5509 | WCMX 0503.. | 0,600 |
| 4244.64.031   | 31   | 186 | 65 | 97  | 93  | 40 | 60 | +3,50 ↻ 38,0                 | 1635 | 5510 | WCMX 06T3.. | 0,850 |
| 4244.64.032   | 32   | 189 | 65 | 100 | 96  | 40 | 60 | +3,20 ↻ 38,4                 | 1635 | 5510 | WCMX 06T3.. | 0,900 |
| 4244.64.034   | 34   | 196 | 65 | 106 | 102 | 40 | 60 | +2,80 ↻ 39,6                 | 1635 | 5510 | WCMX 06T3.. | 0,975 |
| 4244.64.035   | 35   | 200 | 65 | 109 | 105 | 40 | 60 | +2,50 ↻ 40,0                 | 1635 | 5510 | WCMX 06T3.. | 1,000 |
| 4244.64.038   | 38   | 211 | 65 | 118 | 114 | 40 | 60 | +1,80 ↻ 41,0                 | 1635 | 5510 | WCMX 06T3.. | 1,170 |
| 4244.64.039   | 39   | 214 | 65 | 121 | 117 | 40 | 60 | +1,50 ↻ 41,6                 | 1635 | 5510 | WCMX 06T3.. | 1,200 |
| 4244.64.040   | 40   | 218 | 65 | 124 | 120 | 40 | 60 | +1,20 ↻ 42,0                 | 1635 | 5510 | WCMX 06T3.. | 1,300 |
| 4254.64.042   | 42   | 225 | 65 | 130 | 126 | 40 | 60 | +4,20 ↻ 51,0                 | 1640 | 5515 | WCMX 0804.. | 1,600 |
| 4254.64.043   | 43   | 229 | 65 | 133 | 129 | 40 | 60 | +4,00 ↻ 51,4                 | 1640 | 5515 | WCMX 0804.. | 1,750 |
| 4254.64.045   | 45   | 237 | 65 | 140 | 135 | 40 | 60 | +3,60 ↻ 52,2                 | 1640 | 5515 | WCMX 0804.. | 1,900 |
| 4254.64.048   | 48   | 248 | 65 | 149 | 144 | 40 | 60 | +2,70 ↻ 53,4                 | 1640 | 5515 | WCMX 0804.. | 2,250 |
| 4254.64.049   | 49   | 251 | 65 | 152 | 147 | 40 | 60 | +2,50 ↻ 54,0                 | 1640 | 5515 | WCMX 0804.. | 2,200 |
| 4254.64.050   | 50   | 255 | 65 | 155 | 150 | 40 | 60 | +2,20 ↻ 54,4                 | 1640 | 5515 | WCMX 0804.. | 2,400 |
| 4254.64.052   | 52   | 262 | 65 | 161 | 156 | 40 | 60 | +1,80 ↻ 55,6                 | 1640 | 5515 | WCMX 0804.. | 2,500 |
| 4254.64.054   | 54   | 269 | 65 | 167 | 162 | 40 | 60 | +1,20 ↻ 56,4                 | 1640 | 5515 | WCMX 0804.. | 2,700 |
| 4254.64.055   | 55   | 274 | 65 | 171 | 165 | 40 | 60 | +0,80 ↻ 56,6                 | 1640 | 5515 | WCMX 0804.. | 2,850 |



| WCMX |             | l    | s    | d     | Positive 7° clearance - 80° Trigon insert. |
|------|-------------|------|------|-------|--|
| Ref. | WCMX 0302.. | 3,46 | 2,38 | 5,56  |  |
|      | WCMX 0402.. | 3,99 | 2,38 | 6,35  |  |
|      | WCMX 0503.. | 5,07 | 3,18 | 7,94  |  |
|      | WCMX 06T3.. | 6,14 | 3,97 | 9,52  |  |
|      | WCMX 0804.. | 8,14 | 4,76 | 12,70 |  |

For more information see page: I.02





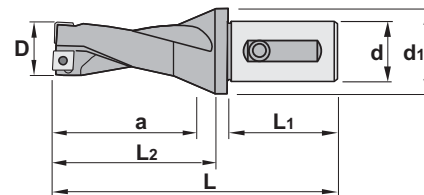
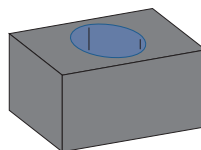
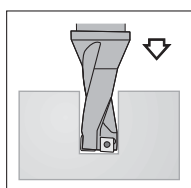
**Characteristics:**

Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down square inserts for stability and clean through-hole putting. Drills available from 15 to 55 mm.

**Applications:**

This drill works well on steels, alloyed steels, stainless steels and refractories.

Max. hole depth = 3xDiameter (D)



| 45.. |               | D    | L   | L1 | L2  | a   | d  | d1 | Radial Adj. D <sub>max</sub> |      |      | Insert size |       |
|------|---------------|------|-----|----|-----|-----|----|----|------------------------------|------|------|-------------|-------|
| Ref. | 4514.62.015   | 15   | 120 | 55 | 56  | 45  | 25 | 40 | +0,50 ↻ 16,0                 | 1225 | 5507 | SPMT 0603.. | 0,240 |
|      | 4514.62.016   | 16   | 121 | 55 | 56  | 48  | 25 | 40 | +0,50 ↻ 17,0                 | 1225 | 5007 | SPMT 0603.. | 0,250 |
|      | 4514.62.017   | 17   | 127 | 55 | 54  | 51  | 25 | 40 | +0,50 ↻ 18,0                 | 1225 | 5007 | SPMT 0603.. | 0,250 |
|      | 4514.62.017,5 | 17,5 | 127 | 55 | 56  | 53  | 25 | 40 | +1,00 ↻ 19,5                 | 1225 | 5507 | SPMT 0603.. | 0,250 |
|      | 4514.62.018   | 18   | 128 | 55 | 57  | 54  | 25 | 40 | +0,90 ↻ 19,8                 | 1225 | 5507 | SPMT 0603.. | 0,230 |
|      | 4514.62.018,5 | 18,5 | 130 | 55 | 59  | 56  | 25 | 40 | +0,85 ↻ 20,2                 | 1225 | 5507 | SPMT 0603.. | 0,240 |
|      | 4514.62.019   | 19   | 131 | 55 | 60  | 57  | 25 | 40 | +0,80 ↻ 20,6                 | 1225 | 5507 | SPMT 0603.. | 0,240 |
|      | 4514.62.020   | 20   | 136 | 55 | 64  | 60  | 25 | 40 | +0,75 ↻ 21,5                 | 1225 | 5507 | SPMT 0603.. | 0,250 |
|      | 4524.62.022   | 22   | 142 | 55 | 69  | 66  | 25 | 40 | +1,25 ↻ 24,5                 | 1225 | 5507 | SPMT 0703.. | 0,400 |
|      | 4524.62.024   | 24   | 150 | 55 | 76  | 72  | 25 | 40 | +0,75 ↻ 25,5                 | 1225 | 5507 | SPMT 0703.. | 0,450 |
|      | 4524.62.025   | 25   | 154 | 55 | 79  | 75  | 25 | 40 | +0,50 ↻ 26,0                 | 1225 | 5507 | SPMT 0703.. | 0,475 |
|      | 4534.63.026   | 26   | 162 | 55 | 81  | 78  | 32 | 50 | +2,50 ↻ 31,0                 | 1230 | 5508 | SPMT 0903.. | 0,475 |
|      | 4534.63.027   | 27   | 165 | 55 | 84  | 81  | 32 | 50 | +2,20 ↻ 31,4                 | 1230 | 5508 | SPMT 0903.. | 0,500 |
|      | 4534.63.028   | 28   | 169 | 55 | 87  | 84  | 32 | 50 | +2,10 ↻ 32,2                 | 1230 | 5508 | SPMT 0903.. | 0,550 |
|      | 4534.63.029   | 29   | 172 | 55 | 90  | 87  | 32 | 50 | +1,80 ↻ 32,6                 | 1230 | 5508 | SPMT 0903.. | 0,570 |
|      | 4534.63.030   | 30   | 177 | 55 | 94  | 90  | 32 | 50 | +1,80 ↻ 33,0                 | 1230 | 5508 | SPMT 0903.. | 0,600 |
|      | 4544.64.031   | 31   | 186 | 65 | 97  | 93  | 40 | 60 | +3,50 ↻ 38,0                 | 1230 | 5508 | SPMT 0903.. | 0,850 |
|      | 4544.64.032   | 32   | 189 | 65 | 100 | 96  | 40 | 60 | +3,20 ↻ 38,4                 | 1230 | 5508 | SPMT 0903.. | 0,900 |
|      | 4544.64.034   | 34   | 196 | 65 | 106 | 102 | 40 | 60 | +2,80 ↻ 39,6                 | 1230 | 5508 | SPMT 0903.. | 0,975 |
|      | 4544.64.035   | 35   | 200 | 65 | 109 | 105 | 40 | 60 | +2,50 ↻ 40,0                 | 1550 | 5520 | SPMT 1204.. | 1,000 |
|      | 4544.64.038   | 38   | 211 | 65 | 118 | 114 | 40 | 60 | +1,80 ↻ 41,0                 | 1550 | 5520 | SPMT 1204.. | 1,170 |
|      | 4544.64.039   | 39   | 214 | 65 | 121 | 117 | 40 | 60 | +1,50 ↻ 41,6                 | 1550 | 5520 | SPMT 1204.. | 1,200 |
|      | 4544.64.040   | 40   | 218 | 65 | 124 | 120 | 40 | 60 | +1,20 ↻ 42,0                 | 1550 | 5520 | SPMT 1204.. | 1,300 |
|      | 4554.64.042   | 42   | 225 | 65 | 130 | 126 | 40 | 60 | +4,20 ↻ 51,0                 | 1550 | 5520 | SPMT 1204.. | 1,600 |
|      | 4554.64.043   | 43   | 229 | 65 | 133 | 129 | 40 | 60 | +4,00 ↻ 51,4                 | 1550 | 5520 | SPMT 1204.. | 1,750 |
|      | 4554.64.045   | 45   | 237 | 65 | 140 | 135 | 40 | 60 | +3,60 ↻ 52,2                 | 1550 | 5520 | SPMT 1204.. | 1,900 |

|      |             | SPMT  |      |       | Positive 11° clearance - Square inserts |
|------|-------------|-------|------|-------|---|
| Ref. | SPMT        | l     | s    | d     |   |
|      | SPMT 060304 | 6,35  | 3,18 | 6,35  | For more information see page: I.02     |
|      | SPMT 070308 | 7,94  | 3,18 | 7,94  |   |
|      | SPMT 090308 | 9,52  | 3,18 | 9,52  |   |
|      | SPMT 120408 | 12,70 | 4,76 | 12,70 |   |
|      |             |       |      |       |   |

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and Sets

Profile milling

Solid carbide

Drills



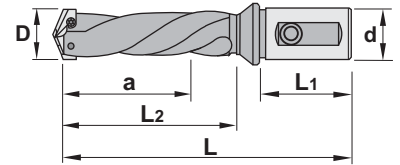
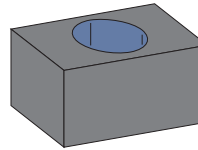
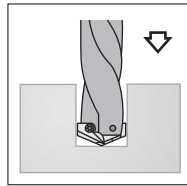
**Characteristics:**

Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down spade inserts for stability and clean through-hole putting. Drills available from 9,5 to 17,5 mm.

**Applications:**

This drill works well on steels, alloyed steels, stainless steels and refractories.

Max. hole depth = 3xDiameter (D)



**48..**

| Ref.          | D           | L     | L1 | L2 | a  | d  | Insert size         | kg    |
|---------------|-------------|-------|----|----|----|----|---------------------|-------|
| 4814.61.009,5 | 9,50 ~ 11,0 | 120,0 | 42 | 50 | 35 | 20 | XPMT 095 ~ XPMT 110 | 0,200 |
| 4824.61.011,5 | 11,5 ~ 12,7 | 125,0 | 42 | 55 | 40 | 20 | XPMT 115 ~ XPMT 127 | 0,250 |
| 4834.61.013   | 13,0 ~ 17,5 | 140,0 | 42 | 65 | 53 | 20 | XPMT 130 ~ XPMT 175 | 0,300 |
| 4834.61.015   | 15,5 ~ 17,5 | 140,0 | 42 | 75 | 53 | 20 | XPMT 150 ~ XPMT 175 | 0,380 |

| Ref. | 4814.61.009,5 | 4824.61.011,5 | 4834.61.013 | 4834.61.015 |
|------|---------------|---------------|-------------|-------------|
|      | 1420          | 1422          | 1425        | 1425        |
|      | 5506          | 5506          | 5507        | 5507        |

| XPMT |                     | s   |
|------|---------------------|-----|
| Ref. | XPMT 095 ~ XPMT 110 | 2,4 |
|      | XPMT 115 ~ XPMT 127 | 2,4 |
|      | XPMT 130 ~ XPMT 175 | 3,2 |
|      | XPMT 150 ~ XPMT 175 | 3,2 |

For more information see page: I.02

| XPMT |  |  |  |  |  |  |
|------|--|--|--|--|--|--|
|      |  |  |  |  |  |  |



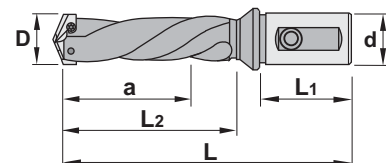
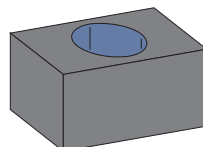
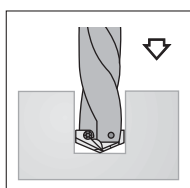
Long Series

**Characteristics:**

Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down spade inserts for stability and clean through-hole putting. Drills available from 9,5 to 17,5 mm.

**Applications:**

This drill works well on steels, alloyed steels, stainless steels and refractories.

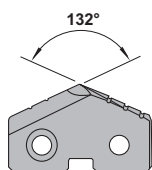


**49..**

| Ref.          |  | D           | L   | L <sub>1</sub> | L <sub>2</sub> | a   | d  | Insert size         | Kg    |
|---------------|--|-------------|-----|----------------|----------------|-----|----|---------------------|-------|
| 4914.61.009,5 |  | 9,50 ~ 11,0 | 132 | 42             | 65             | 57  | 20 | XPMT 095 ~ XPMT 110 | 0,200 |
| 4924.61.011,5 |  | 11,5 ~ 12,7 | 142 | 42             | 75             | 69  | 20 | XPMT 115 ~ XPMT 127 | 0,250 |
| 4934.61.013   |  | 13,0 ~ 17,5 | 188 | 42             | 125            | 112 | 20 | XPMT 130 ~ XPMT 175 | 0,300 |
| 4934.61.015   |  | 15,5 ~ 17,5 | 198 | 42             | 135            | 122 | 20 | XPMT 150 ~ XPMT 175 | 0,380 |

| Ref.          |  |      |      |
|---------------|--|------|------|
| 4914.61.009,5 |  | 1420 | 5506 |
| 4924.61.011,5 |  | 1422 | 5506 |
| 4934.61.013   |  | 1425 | 5507 |
| 4934.61.015   |  | 1425 | 5507 |

| XPMT                                |                     | s   |  |  |  |  |
|-------------------------------------|---------------------|-----|--|--|--|--|
| Ref.                                | XPMT 095 ~ XPMT 110 | 2,4 |  |  |  |  |
|                                     | XPMT 115 ~ XPMT 127 | 2,4 |  |  |  |  |
|                                     | XPMT 130 ~ XPMT 175 | 3,2 |  |  |  |  |
|                                     | XPMT 150 ~ XPMT 175 | 3,2 |  |  |  |  |
| For more information see page: I.02 |                     |     |  |  |  |  |
| XPMT                                |                     |     |  |  |  |  |
|                                     |                     |     |  |  |  |  |



Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and Sets

Profile milling

Solid carbide

Drills



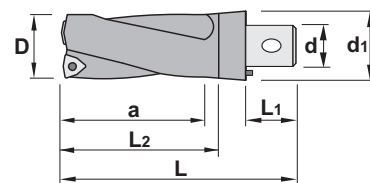
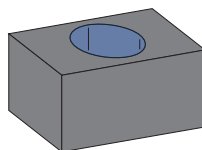
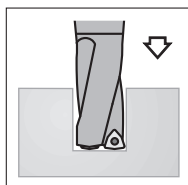
Max. hole depth = 3xDiameter (D)

**Characteristics:**

Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down trigon inserts for stability and clean through-hole putting. Drills available from 17,5 to 40 mm.

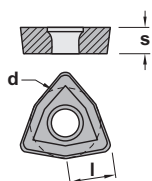
**Applications:**

This drill works well on steels, alloyed steels, stainless steels and refractories.



| 42 <sup>1</sup> 4.72<br>44.75 |               | D    | L   | L1  | L2  | a   | d  | d1           | Radial Adj.<br>D <sub>max</sub> |      |             | Insert size |       |
|-------------------------------|---------------|------|-----|-----|-----|-----|----|--------------|---------------------------------|------|-------------|-------------|-------|
| Ref.                          | 4214.72.017,5 | 17,5 | 92  | 20  | 56  | 53  | 20 | 32           | +1,00 ↻ 19,5                    | 1622 | 5507        | WCMX 0302.. | 0,070 |
|                               | 4214.72.018   | 18   | 93  | 20  | 57  | 54  | 20 | 32           | +0,90 ↻ 19,8                    | 1622 | 5507        | WCMX 0302.. | 0,080 |
|                               | 4214.72.018,5 | 18,5 | 95  | 20  | 59  | 56  | 20 | 32           | +0,85 ↻ 20,2                    | 1622 | 5507        | WCMX 0302.. | 0,080 |
|                               | 4214.72.019   | 19   | 96  | 20  | 60  | 57  | 20 | 32           | +0,80 ↻ 20,6                    | 1622 | 5507        | WCMX 0302.. | 0,090 |
|                               | 4214.72.020   | 20   | 101 | 20  | 64  | 60  | 20 | 32           | +0,75 ↻ 21,5                    | 1622 | 5507        | WCMX 0302.. | 0,110 |
|                               | 4224.73.022   | 22   | 112 | 25  | 69  | 66  | 24 | 42           | +1,25 ↻ 24,5                    | 1225 | 5507        | WCMX 0402.. | 0,320 |
|                               | 4224.73.024   | 24   | 120 | 25  | 76  | 72  | 24 | 42           | +0,75 ↻ 26,5                    | 1225 | 5507        | WCMX 0402.. | 0,370 |
|                               | 4224.73.025   | 25   | 124 | 25  | 79  | 75  | 24 | 42           | +0,50 ↻ 26,0                    | 1225 | 5507        | WCMX 0402.. | 0,400 |
|                               | 4234.74.026   | 26   | 132 | 30  | 81  | 78  | 28 | 50           | +2,50 ↻ 31,0                    | 1630 | 5509        | WCMX 0503.. | 0,375 |
|                               | 4234.74.027   | 27   | 135 | 30  | 84  | 81  | 28 | 50           | +2,20 ↻ 31,4                    | 1630 | 5509        | WCMX 0503.. | 0,400 |
|                               | 4234.74.028   | 28   | 139 | 30  | 87  | 84  | 28 | 50           | +2,10 ↻ 32,2                    | 1630 | 5509        | WCMX 0503.. | 0,450 |
|                               | 4234.74.029   | 29   | 142 | 30  | 90  | 87  | 28 | 50           | +1,80 ↻ 32,6                    | 1630 | 5509        | WCMX 0503.. | 0,470 |
|                               | 4234.74.030   | 30   | 147 | 30  | 94  | 90  | 28 | 50           | +1,80 ↻ 33,0                    | 1630 | 5509        | WCMX 0503.. | 0,500 |
|                               | 4244.75.031   | 31   | 161 | 40  | 97  | 93  | 36 | 68           | +3,50 ↻ 38,0                    | 1635 | 5510        | WCMX 06T3.. | 0,600 |
|                               | 4244.75.032   | 32   | 164 | 40  | 100 | 96  | 36 | 68           | +3,20 ↻ 38,4                    | 1635 | 5510        | WCMX 06T3.. | 0,750 |
|                               | 4244.75.034   | 34   | 171 | 40  | 106 | 102 | 36 | 68           | +2,80 ↻ 39,6                    | 1635 | 5510        | WCMX 06T3.. | 0,800 |
| 4244.75.035                   | 35            | 175  | 40  | 109 | 105 | 36  | 68 | +2,50 ↻ 40,0 | 1635                            | 5510 | WCMX 06T3.. | 0,850       |       |
| 4244.75.038                   | 38            | 186  | 40  | 118 | 114 | 36  | 68 | +1,80 ↻ 41,0 | 1635                            | 5510 | WCMX 06T3.. | 1,000       |       |
| 4244.75.039                   | 39            | 189  | 40  | 121 | 117 | 36  | 68 | +1,50 ↻ 41,6 | 1635                            | 5510 | WCMX 06T3.. | 1,050       |       |
| 4244.75.040                   | 40            | 193  | 40  | 124 | 120 | 36  | 68 | +1,20 ↻ 42,0 | 1635                            | 5510 | WCMX 06T3.. | 1,150       |       |

| WCMX |             | l    | s    | d    | Positive 7° clearance - 80° Trigon insert.<br><br>For more information see page: I.02 |
|------|-------------|------|------|------|---|
| Ref. | WCMX 0302.. | 3,46 | 2,38 | 5,56 |   |
|      | WCMX 0402.. | 3,99 | 2,38 | 6,35 |   |
|      | WCMX 0503.. | 5,07 | 3,18 | 7,94 |   |
|      | WCMX 06T3.. | 6,14 | 3,97 | 9,52 |   |
| WCMX |             |      |      |      |   |
|      |             |      |      |      |   |





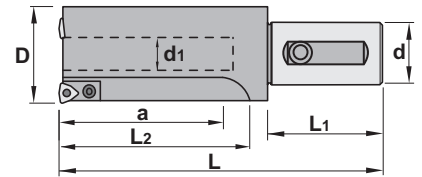
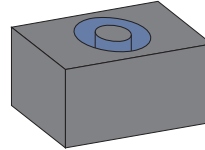
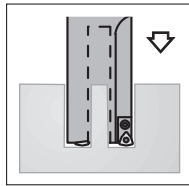
**Characteristics:**

Straight flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down trigon inserts for stability and clean through-hole putting.

Drills available from 60 to 100 mm.  
Specially recommended for low power machines.

**Applications:**

This drill works well on steels, alloyed steels, stainless steels and refractories.



Max. hole depth = 2.5xDiameter (D)

# 4744.64

| Ref.        | D   | L   | L1 | L2  | a   | d  | d1 | Insert size | kg    |
|-------------|-----|-----|----|-----|-----|----|----|-------------|-------|
| 4744.64.060 | 60  | 260 | 65 | 160 | 150 | 40 | 24 | WCMX 06T3.. | 3,100 |
| 4744.64.065 | 65  | 275 | 65 | 175 | 165 | 40 | 29 | WCMX 06T3.. | 3,700 |
| 4744.64.070 | 70  | 285 | 65 | 185 | 175 | 40 | 34 | WCMX 06T3.. | 4,250 |
| 4744.64.075 | 75  | 300 | 65 | 200 | 190 | 40 | 39 | WCMX 06T3.. | 5,100 |
| 4744.64.080 | 80  | 310 | 65 | 210 | 200 | 40 | 44 | WCMX 06T3.. | 5,800 |
| 4744.64.085 | 85  | 325 | 65 | 225 | 215 | 40 | 49 | WCMX 06T3.. | 6,500 |
| 4744.64.090 | 90  | 335 | 65 | 235 | 225 | 40 | 54 | WCMX 06T3.. | 7,250 |
| 4744.64.095 | 95  | 350 | 65 | 250 | 240 | 40 | 59 | WCMX 06T3.. | 8,200 |
| 4744.64.100 | 100 | 360 | 65 | 260 | 250 | 40 | 64 | WCMX 06T3.. | 9,050 |

| Ref.        | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 |
|-------------|------|------|------|------|------|------|------|------|------|
| 4744.64.060 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 |
| 4744.64.065 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 |
| 4744.64.070 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 |
| 4744.64.075 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 |
| 4744.64.080 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 |
| 4744.64.085 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 |
| 4744.64.090 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 |
| 4744.64.095 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 |
| 4744.64.100 | 1396 | 5510 | 1405 | 1635 | 1503 | 5002 | 5005 | 6806 | 6816 |

| WCMX                                |             | l    | s    | d    | Positive 7° clearance - 80° Trigon insert. |
|-------------------------------------|-------------|------|------|------|--|
| Ref.                                | WCMX 06T3.. | 6,14 | 3,97 | 9,52 |  |
| For more information see page: I.02 |             |      |      |      |  |
| WCMX                                |             |      |      |      |  |
|                                     |             |      |      |      |  |
|                                     |             |      |      |      |  |

Inserts

Face milling cutters

Square shoulder cutters

Slot cutters

Porcupine cutters

Specific applications and Sets

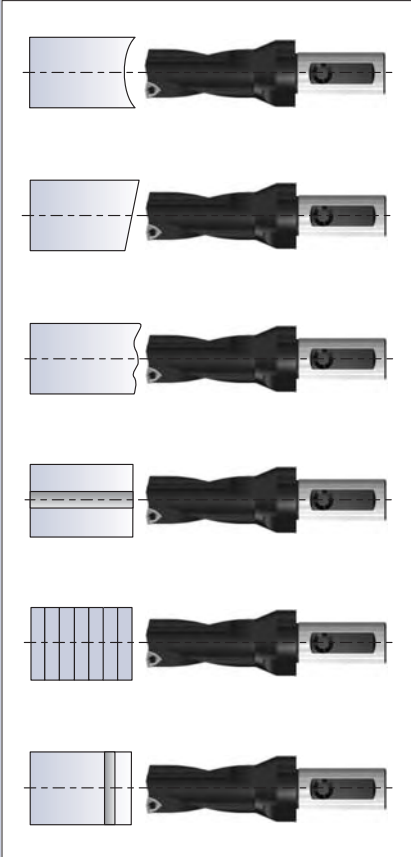
Profile milling

Solid carbide

Drills



## Drills - Recommendations for the assembly



### Drills for indexable inserts

A concave surface is not normally recommended because there is the possibility that the tool turns away from the center. Feed should be reduced to 1/3 of the recommended.

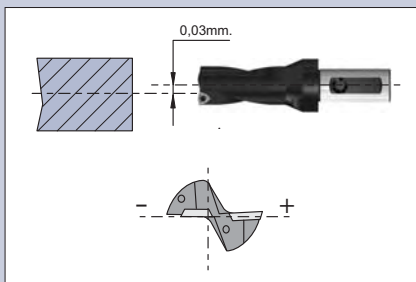
The surface of the tool to be drilled on should be preferably even. If the angles exceed 2°, feed should be reduced to 1/3 of the recommended.

If the starting surface is an uneven surface of the component, feed should be reduced so that the chip of the cutting edges can be avoided. The same can also happen at the way out from the tool.

When working with a hole made beforehand, this should not be bigger than 1/4 of the final size, because the tool could turn away.

There is the possibility to drill sets of more than one piece.

When the tool has a crossed hole, which is 1/4 bigger than the diameter of the drill, feed should be reduced when going through it.



### Fixed drills

The axis of the tool should not be deviated from the center of the piece more than 0,03 mm. so that the pointed tolerances are acquired.

The tool should be assembled in a way that the face of the central insert goes parallel to the cross movement axis of the machine.

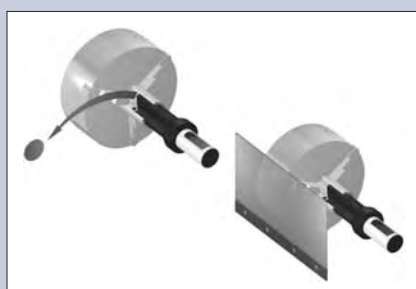


### Drilling with drill-holders with housing for cutting fluid supply

When a drillholder with a housing supplier of cutting fluid is used, it has to have a fixed top so as to avoid that the housing turns around.

If it is the case that the cutting fluid has some dirty rests, this could lock the rotary housing and, consequently, the supplier tube will roll up around it, which can cause a serious accident.

If it is the case that the drillholder has not been used for a long time, check if it turns round in the housing before the spindle starts working.



### Drilling of through-holes

When through holes are drilled a disk is produced after the drill has finished the hole. This disk is often thrown away at high speed through the dish claws and can cause injuries and accidents.

In order to avoid this accident, a suitable safety system has to be placed around the dish.

Inserts

Face milling  
cuttersSquare shoulder  
cutters

Slot cutters

Porcupine cutters

Specific applications  
and Sets

Profile milling

Solid carbide

Drills

| Material                               | HB                                 | Condition   | D mm.  | Feed<br>mm./Rev.                                 | Cutting speed<br>m./min.                         |         |
|--|------------------------------------|---|--|--|--|---------|
| <b>Unalloyed steel</b><br><b>P</b>     | 90-200                             | Non-hardened 0,05-0,25%C  | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0                             | 0,04-0,08<br>0,06-0,10<br>0,08-0,12<br>0,08-0,12 | 100-250  |         |
|  | 125-225<br>150-225<br>180-225      | Non-hardened 0,25-0,55%C<br>Non-hardened 0,55-0,80%C<br>High carbon & carbon tool steel | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0                             | 0,04-0,12<br>0,09-0,19<br>0,11-0,20<br>0,14-0,25 | 100-250  |         |
|  | 150-260                            | Non-hardened  | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0                             | 0,08-0,12<br>0,09-0,16<br>0,11-0,20<br>0,14-0,22 | 90-250   |         |
|  | 220-400                            | Hardened  | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0                             | 0,06-0,10<br>0,08-0,15<br>0,08-0,15<br>0,11-0,20 | 80-220   |         |
|  | 150-250<br>150-250                 | Annealed<br>Annealed HSS  | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0                             | 0,08-0,12<br>0,09-0,18<br>0,11-0,22<br>0,14-0,25 | 100-220  |         |
|  | 250-350<br>250-400                 | Hardened tool steel<br>Hardened steel   | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0                             | 0,08-0,12<br>0,09-0,15<br>0,11-0,17<br>0,12-0,20 | 90-200   |         |
|  | 150-270                            | Ferritic,<br>Martensitic 13-25%Cr   | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0                             | 0,04-0,12<br>0,10-0,16<br>0,11-0,18<br>0,11-0,18 | 90-190   |         |
|  | 150-270                            | Unalloyed   | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0                             | 0,05-0,08<br>0,06-0,10<br>0,09-0,15<br>0,11-0,18 | 100-230  |         |
|  | 90-225                             | Low alloyed<br>(alloying elements < 5%)   | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0                             | 0,08-0,12<br>0,09-0,15<br>0,12-0,20<br>0,14-0,22 | 90-200   |         |
|  | <b>Stainless steel</b><br><b>M</b> | 150-250   | Austenitic<br>Ni > 8%, 18-25% Cr   | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,04-0,12<br>0,10-0,16<br>0,11-0,18<br>0,11-0,18 | 70-150  |
| <b>Malleable cast iron</b><br><b>K</b> |                                    | 110-145   | Ferritic (short chipping)  | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,11-0,18<br>0,14-0,22<br>0,17-0,27<br>0,18-0,30 | 90-200  |
|  |                                    | 150-270   | Pearlitic (long chipping)  | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,11-0,19<br>0,12-0,20<br>0,14-0,22 | 80-180  |
|  |                                    | 150-220   | Low tensile strength   | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,14-0,22<br>0,15-0,25<br>0,18-0,30 | 80-180  |
|  |                                    | 200-330   | High tensile strength  | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,12-0,20<br>0,14-0,22<br>0,15-0,25 | 70-150  |
|  |                                    | 125-230   | Ferritic   | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,14-0,22<br>0,15-0,25<br>0,17-0,28 | 80-180  |
|  |                                    | 200-300   | Pearlitic  | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,12-0,20<br>0,14-0,22<br>0,15-0,30 | 70-150  |
|  |                                    | 75-150<br>40-100<br>70-125  | Wrought,<br>solution treated & aged<br>Cast<br>Cast, solution treated & aged | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,08-0,12<br>0,11-0,17<br>0,17-0,27<br>0,17-0,27 | 150-375 |
|  |                                    | 50 - 160  | Free cutting alloys (pb>1%)<br>Brass and<br>lead bronzes (pb<1%)             | 17,5-25,4<br>26,0-30,0<br>31,0-41,3<br>42,0-80,0 | 0,09-0,15<br>0,09-0,15<br>0,15-0,25<br>0,15-0,25 | 80-160  |

| Material                        | HB      | Condition                       | D mm.  | Cutting speed m/min | Feed mm/Rev |
|---------------------------------|---------|---------------------------------|--------|---------------------|-------------|
| <b>Unalloyed steel</b> <b>P</b> | 90-200  | Non-hardened 0,05-0,25%C        | 60-100 | 150-250             | 0,08-0,12   |
|                                 | 125-225 | Non-hardened 0,25-0,55%C        |        | 100-250             | 0,11-0,18   |
|                                 | 150-225 | Non-hardened 0,55-0,80%C        |        | 100-250             | 0,11-0,18   |
|                                 | 180-225 | High carbon & carbon tool steel |        | 100-250             | 0,11-0,18   |
| <b>Low alloyed steel</b>        | 150-260 | Non-hardened                    | 60-100 | 100-250             | 0,11-0,18   |
|                                 | 220-400 | Hardened                        |        | 100-220             | 0,08-0,12   |
| <b>High alloyed steel</b>       | 150-250 | Annealed                        | 60-100 | 100-220             | 0,11-0,19   |
|                                 | 150-250 | Annealed HSS                    |        | 100-220             | 0,11-0,19   |
|                                 | 250-350 | Hardened tool steel             |        | 100-200             | 0,11-0,18   |
|                                 | 250-400 | Hardened steel                  |        | 100-200             | 0,11-0,17   |
| <b>Stainless steel</b>          | 150-270 | Ferritic, Martensitic 13-25%Cr  | 60-100 | 100-200             | 0,11-0,17   |
| <b>Steel castings</b>           | 90-225  | Unalloyed                       | 60-100 | 100-200             | 0,12-0,20   |
|                                 | 150-250 | Low alloyed (< 5%)              |        | 100-150             | 0,11-0,17   |

|                                 |         |                                  |        |         |           |
|---------------------------------|---------|----------------------------------|--------|---------|-----------|
| <b>Stainless steel</b> <b>M</b> | 150-270 | Austenitic<br>Ni > 8%, 18-25% Cr | 60-100 | 100-230 | 0,09-0,15 |
|---------------------------------|---------|----------------------------------|--------|---------|-----------|

|                                     |         |   |        |         |           |
|-------------------------------------|---------|---|--------|---------|-----------|
| <b>Malleable cast iron</b> <b>K</b> | 110-145 | Ferritic (short chipping)                                       | 60-100 | 100-200 | 0,17-0,27 |
|                                     | 150-270 | Pearlitic (long chipping)                                       | 60-100 | 90-180  | 0,12-0,20 |
| <b>Grey cast iron</b>               | 150-220 | Low tensile strength  | 60-100 | 90-180  | 0,15-0,25 |
|                                     | 200-300 | High tensile strength   | 60-100 | 90-150  | 0,14-0,22 |
| <b>Nodular cast iron</b>            | 125-230 | Ferritic  | 60-100 | 100-180 | 0,15-0,25 |
|                                     | 200-300 | Pearlitic   | 60-100 | 90-150  | 0,14-0,22 |
| <b>Aluminium alloys</b>             | 75-150  | Wrought, solution treated & aged                                | 60-100 | 150-375 | 0,17-0,27 |
|                                     | 40-100  | Cast  | 60-100 | 150-375 | 0,17-0,27 |
|                                     | 70-125  | Cast, solution treated & aged                                   | 60-100 | 150-375 | 0,17-0,27 |
| <b>Copper and copper alloys</b>     | 50-160  | Free cutting alloys (pb>1%)<br>Brass and leaded bronzes (pb<1%) | 60-100 | 100-160 | 0,15-0,25 |