

| | | | | | | | |
|--------|-----------|----------------------|---------------|------------------|------------------------|-----------------|---------|
| Drills | Threading | Parting and grooving | Ceramic tools | Automatic lathes | Aluminum wheel turning | General turning | Inserts |
|--------|-----------|----------------------|---------------|------------------|------------------------|-----------------|---------|



Drills

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

Inserts

General turning

Aluminium wheel turning


Automatic lathes


Ceramic tools


Parting and grooving


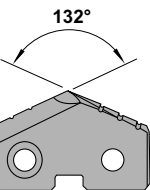
Threading

Drills

| | | | | | | | | | | | | | | | | |
|---|--|----------|----------|----------|----------|--|---|-------------|-------------|-------------|--------------|-------------|--------------|--------------|--------------|-------------|
|  | 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 | TIN32 | 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 | | | | | | | | | ● | | ● | |

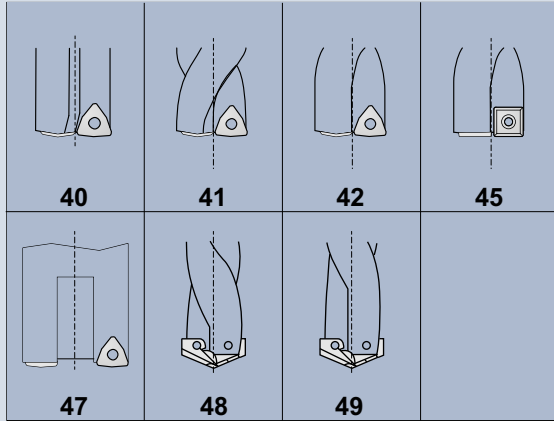
| | | | | | | | | | | | | | | | | |
|---|--|----------|----------|----------|----------|--|---|-------------|-------------|-------------|--------------|-------------|--------------|--------------|--------------|-------------|
|  | Positive 7° clearance - 80° Trigon insert. | | | | | | Normally available for immediate delivery ● Only available in a limited quantity ○ | | | | | | | | | |
| | WCMT | l | s | d | r | | KM15 | PM25 | PM40 | NC40 | TIN16 | ZR10 | TIN22 | TIN32 | TIN35 | TL40 |
| | WCMT 030204 | 3,46 | 2,38 | 5,56 | 0,4 | | | | | | | | | ● | | ● |
| | WCMT 040204 | 3,99 | 2,38 | 6,35 | 0,4 | | | | | | | | | ● | | ● |
| | WCMT 050308 | 5,07 | 3,18 | 7,94 | 0,8 | | | | | | | | | ● | | ● |
| WCMT 06T308 | 6,14 | 3,97 | 9,52 | 0,8 | | | | | | | | | ● | | ● | |

| | | | | | | | | | | | | | | | | |
|---|--|----------|----------|----------|----------|--|---|-------------|-------------|-------------|--------------|-------------|--------------|--------------|--------------|-------------|
|  | 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 | | | | | | | | | ● | | ● | |

| | | | | | | | | | | |
|---|------------------|-----------------|-------------|----------|---|---|---|-------------|--|--|
|  | 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 | | ● | ● | | | | |

| | | | | | |
|----------|----------|----------|----------|-----------|------------|
| 4 | 2 | 3 | 4 | 63 | 027 |
| 1 | 2 | 3 | 4 | 5 | |

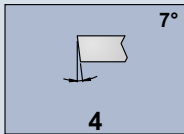
1



2

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

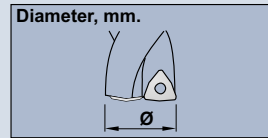
3



4

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

5



Inserts

General turning

Aluminium wheel turning

Automatic lathes

Ceramic tools

Parting and grooving

Threading

Drills



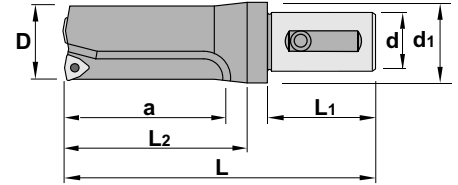
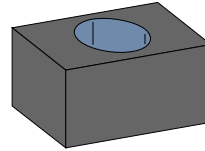
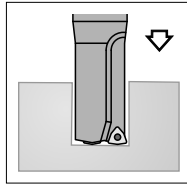
Max. hole depth = 2xDiameter (D)

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.



40..

| Ref. | D | L | L1 | L2 | a | d | d1 | Radial Adj. Dmax | 1622 | 5507 | Insert size | Kg |
|---------------|------|-----|----|-----|-----|----|----|------------------|------|------|--------------|-------|
| | | | | | | | | | | | | |
| 4014.61.017,5 | 17,5 | 103 | 50 | 39 | 35 | 20 | 32 | +1,00 ↻ 19,5 | 1622 | 5507 | WCM.. 0302.. | 0,200 |
| 4014.61.018 | 18 | 103 | 50 | 40 | 36 | 20 | 32 | +0,90 ↻ 19,8 | 1622 | 5507 | WCM.. 0302.. | 0,200 |
| 4014.61.018,5 | 18,5 | 103 | 50 | 41 | 37 | 20 | 32 | +0,85 ↻ 20,2 | 1622 | 5507 | WCM.. 0302.. | 0,200 |
| 4014.61.019 | 19 | 103 | 50 | 42 | 38 | 20 | 32 | +0,80 ↻ 20,6 | 1622 | 5507 | WCM.. 0302.. | 0,250 |
| 4014.61.020 | 20 | 103 | 50 | 44 | 40 | 20 | 32 | +0,75 ↻ 21,5 | 1622 | 5507 | WCM.. 0302.. | 0,250 |
| 4024.62.022 | 22 | 123 | 55 | 48 | 44 | 25 | 40 | +1,25 ↻ 24,5 | 1625 | 5508 | WCM.. 0402.. | 0,385 |
| 4024.62.024 | 24 | 123 | 55 | 52 | 48 | 25 | 40 | +0,75 ↻ 25,5 | 1625 | 5508 | WCM.. 0402.. | 0,380 |
| 4024.62.025 | 25 | 123 | 55 | 54 | 50 | 25 | 40 | +0,50 ↻ 26,0 | 1625 | 5508 | WCM.. 0402.. | 0,400 |
| 4034.62.026 | 26 | 133 | 55 | 56 | 52 | 25 | 40 | +2,50 ↻ 31,0 | 1630 | 5509 | WCM.. 0503.. | 0,430 |
| 4034.62.027 | 27 | 133 | 55 | 58 | 54 | 25 | 40 | +2,20 ↻ 31,4 | 1630 | 5509 | WCM.. 0503.. | 0,430 |
| 4034.62.028 | 28 | 133 | 55 | 60 | 56 | 25 | 40 | +2,10 ↻ 32,2 | 1630 | 5509 | WCM.. 0503.. | 0,485 |
| 4034.62.029 | 29 | 133 | 55 | 62 | 58 | 25 | 40 | +1,80 ↻ 32,6 | 1630 | 5509 | WCM.. 0503.. | 0,465 |
| 4034.62.030 | 30 | 133 | 55 | 64 | 60 | 25 | 40 | +1,80 ↻ 33,0 | 1630 | 5509 | WCM.. 0503.. | 0,475 |
| 4044.63.031 | 31 | 153 | 60 | 66 | 62 | 32 | 50 | +3,50 ↻ 38,0 | 1635 | 5510 | WCM.. 06T3.. | 0,785 |
| 4044.63.032 | 32 | 153 | 60 | 68 | 64 | 32 | 50 | +3,20 ↻ 38,4 | 1635 | 5510 | WCM.. 06T3.. | 0,800 |
| 4044.63.034 | 34 | 153 | 60 | 73 | 68 | 32 | 50 | +2,80 ↻ 39,6 | 1635 | 5510 | WCM.. 06T3.. | 0,850 |
| 4044.63.035 | 35 | 153 | 60 | 75 | 70 | 32 | 50 | +2,50 ↻ 40,0 | 1635 | 5510 | WCM.. 06T3.. | 0,850 |
| 4044.63.038 | 38 | 163 | 60 | 80 | 76 | 32 | 50 | +1,80 ↻ 41,0 | 1635 | 5510 | WCM.. 06T3.. | 0,950 |
| 4044.63.039 | 39 | 163 | 60 | 82 | 78 | 32 | 50 | +1,50 ↻ 41,6 | 1635 | 5510 | WCM.. 06T3.. | 0,950 |
| 4044.63.040 | 40 | 163 | 60 | 84 | 80 | 32 | 50 | +1,20 ↻ 42,0 | 1635 | 5510 | WCM.. 06T3.. | 1,000 |
| 4054.64.042 | 42 | 193 | 65 | 89 | 84 | 40 | 60 | +4,20 ↻ 51,0 | 1640 | 5515 | WCM.. 0804.. | 1,570 |
| 4054.64.043 | 43 | 193 | 65 | 91 | 86 | 40 | 60 | +4,00 ↻ 51,4 | 1640 | 5515 | WCM.. 0804.. | 1,560 |
| 4054.64.045 | 45 | 193 | 65 | 95 | 90 | 40 | 60 | +3,60 ↻ 52,2 | 1640 | 5515 | WCM.. 0804.. | 1,700 |
| 4054.64.048 | 48 | 193 | 65 | 101 | 96 | 40 | 60 | +2,70 ↻ 53,4 | 1640 | 5515 | WCM.. 0804.. | 2,050 |
| 4054.64.049 | 49 | 213 | 65 | 103 | 98 | 40 | 60 | +2,50 ↻ 54,0 | 1640 | 5515 | WCM.. 0804.. | 2,000 |
| 4054.64.050 | 50 | 213 | 65 | 105 | 100 | 40 | 60 | +2,20 ↻ 54,4 | 1640 | 5515 | WCM.. 0804.. | 2,215 |
| 4054.64.052 | 52 | 213 | 65 | 110 | 104 | 40 | 60 | +1,80 ↻ 55,6 | 1640 | 5515 | WCM.. 0804.. | 2,210 |
| 4054.64.054 | 54 | 213 | 65 | 114 | 108 | 40 | 60 | +1,20 ↻ 56,4 | 1640 | 5515 | WCM.. 0804.. | 2,300 |
| 4054.64.055 | 55 | 213 | 65 | 116 | 110 | 40 | 60 | +0,80 ↻ 56,6 | 1640 | 5515 | WCM.. 0804.. | 2,400 |

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

Positive 7° clearance - 80° Trigon insert.

For more information see page: 1.02

| WCMT | WCMX |
|------|------|
| | |



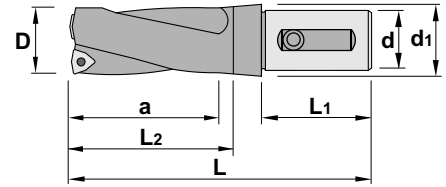
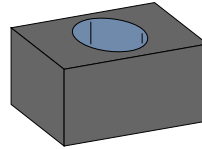
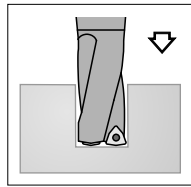
Max. hole depth = 2xDiameter (D)

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.. | | D | L | L1 | L2 | a | d | d1 | Radial Adj. Dmax | | | Insert size | |
|-------------|---------------|------|-----|-----|-----|----|----|--------------|------------------|------|--------------|--------------|-------|
| Ref. | 4114.62.017,5 | 17,5 | 108 | 55 | 39 | 35 | 25 | 40 | +1,00 ↻ 19,5 | 1622 | 5507 | WCM.. 0302.. | 0,200 |
| | 4114.62.018 | 18 | 108 | 55 | 40 | 36 | 25 | 40 | +0,90 ↻ 19,8 | 1622 | 5507 | WCM.. 0302.. | 0,200 |
| | 4114.62.018,5 | 18,5 | 113 | 55 | 41 | 37 | 25 | 40 | +0,85 ↻ 20,2 | 1622 | 5507 | WCM.. 0302.. | 0,200 |
| | 4114.62.019 | 19 | 113 | 55 | 42 | 38 | 25 | 40 | +0,80 ↻ 20,6 | 1622 | 5507 | WCM.. 0302.. | 0,250 |
| | 4114.62.020 | 20 | 113 | 55 | 44 | 40 | 25 | 40 | +0,75 ↻ 21,5 | 1622 | 5507 | WCM.. 0302.. | 0,250 |
| | 4124.62.022 | 22 | 123 | 55 | 48 | 44 | 25 | 40 | +1,25 ↻ 24,5 | 1625 | 5508 | WCM.. 0402.. | 0,375 |
| | 4124.62.024 | 24 | 123 | 55 | 52 | 48 | 25 | 40 | +0,75 ↻ 25,5 | 1625 | 5508 | WCM.. 0402.. | 0,385 |
| | 4124.62.025 | 25 | 123 | 55 | 54 | 50 | 25 | 40 | +0,50 ↻ 26,0 | 1625 | 5508 | WCM.. 0402.. | 0,390 |
| | 4134.63.026 | 26 | 138 | 60 | 56 | 52 | 32 | 50 | +2,50 ↻ 31,0 | 1630 | 5509 | WCM.. 0503.. | 0,425 |
| | 4134.63.027 | 27 | 138 | 60 | 58 | 54 | 32 | 50 | +2,20 ↻ 31,4 | 1630 | 5509 | WCM.. 0503.. | 0,430 |
| | 4134.63.028 | 28 | 138 | 60 | 60 | 56 | 32 | 50 | +2,10 ↻ 32,2 | 1630 | 5509 | WCM.. 0503.. | 0,440 |
| | 4134.63.029 | 29 | 138 | 60 | 62 | 58 | 32 | 50 | +1,80 ↻ 32,6 | 1630 | 5509 | WCM.. 0503.. | 0,450 |
| | 4134.63.030 | 30 | 138 | 60 | 64 | 60 | 32 | 50 | +1,80 ↻ 33,0 | 1630 | 5509 | WCM.. 0503.. | 0,470 |
| | 4144.64.031 | 31 | 158 | 65 | 66 | 62 | 40 | 60 | +3,50 ↻ 38,0 | 1635 | 5510 | WCM.. 06T3.. | 0,765 |
| | 4144.64.032 | 32 | 158 | 65 | 68 | 64 | 40 | 60 | +3,20 ↻ 38,4 | 1635 | 5510 | WCM.. 06T3.. | 0,780 |
| | 4144.64.034 | 34 | 158 | 65 | 73 | 68 | 40 | 60 | +2,80 ↻ 39,6 | 1635 | 5510 | WCM.. 06T3.. | 0,800 |
| | 4144.64.035 | 35 | 158 | 65 | 75 | 70 | 40 | 60 | +2,50 ↻ 40,0 | 1635 | 5510 | WCM.. 06T3.. | 0,815 |
| | 4144.64.038 | 38 | 168 | 65 | 80 | 76 | 40 | 60 | +1,80 ↻ 41,0 | 1635 | 5510 | WCM.. 06T3.. | 0,930 |
| | 4144.64.039 | 39 | 168 | 65 | 82 | 78 | 40 | 60 | +1,50 ↻ 41,6 | 1635 | 5510 | WCM.. 06T3.. | 0,950 |
| | 4144.64.040 | 40 | 168 | 65 | 84 | 80 | 40 | 60 | +1,20 ↻ 42,0 | 1635 | 5510 | WCM.. 06T3.. | 0,970 |
| 4154.64.042 | 42 | 193 | 65 | 89 | 84 | 40 | 60 | +4,20 ↻ 51,0 | 1640 | 5515 | WCM.. 0804.. | 1,550 | |
| 4154.64.043 | 43 | 193 | 65 | 91 | 86 | 40 | 60 | +4,00 ↻ 51,4 | 1640 | 5515 | WCM.. 0804.. | 1,530 | |
| 4154.64.045 | 45 | 193 | 65 | 95 | 90 | 40 | 60 | +3,60 ↻ 52,2 | 1640 | 5515 | WCM.. 0804.. | 1,630 | |
| 4154.64.048 | 48 | 193 | 65 | 101 | 96 | 40 | 60 | +2,70 ↻ 53,4 | 1640 | 5515 | WCM.. 0804.. | 1,700 | |
| 4154.64.049 | 49 | 213 | 65 | 103 | 98 | 40 | 60 | +2,50 ↻ 54,0 | 1640 | 5515 | WCM.. 0804.. | 2,050 | |
| 4154.64.050 | 50 | 213 | 65 | 105 | 100 | 40 | 60 | +2,20 ↻ 54,4 | 1640 | 5515 | WCM.. 0804.. | 2,100 | |
| 4154.64.052 | 52 | 213 | 65 | 110 | 104 | 40 | 60 | +1,80 ↻ 55,6 | 1640 | 5515 | WCM.. 0804.. | 2,120 | |
| 4154.64.054 | 54 | 213 | 65 | 114 | 108 | 40 | 60 | +1,20 ↻ 56,4 | 1640 | 5515 | WCM.. 0804.. | 2,150 | |
| 4154.64.055 | 55 | 213 | 65 | 116 | 110 | 40 | 60 | +0,80 ↻ 56,6 | 1640 | 5515 | WCM.. 0804.. | 2,200 | |

| Ref. | WCM.. | | l | s | d |
|------|--------------|--------------|------|------|-------|
| | | WCM.. 0302.. | | 3,46 | 2,38 |
| | WCM.. 0402.. | | 3,99 | 2,38 | 6,35 |
| | WCM.. 0503.. | | 5,07 | 3,18 | 7,94 |
| | WCM.. 06T3.. | | 6,14 | 3,97 | 9,52 |
| | WCM.. 0804.. | | 8,14 | 4,76 | 12,70 |

Positive 7° clearance - 80° Trigon insert.

For more information see page: I.02

| WCMT | WCMX |
|------|------|
| | |

Drills

Cartridges

Brazed tools

Tooling

Inserts

General turning

Aluminium wheel turning

Automatic lathes

Ceramic tools

Parting and grooving

Threading

Drills

Characteristics:

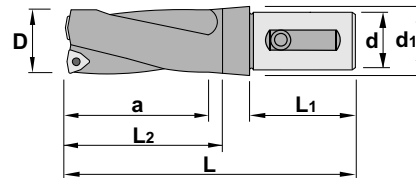
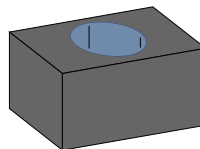
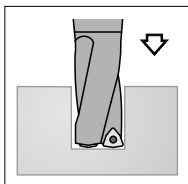
Helical flute indexable insert drills provide faster cutting speeds and efficient chip removal for use on conventional C.N.C. machines. This type of drills incorporates a neutral-rake geometry and screw-down trigon inserts for stability and clean through-hole putting. Drills available from 17,5 to 55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

Applications:

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



Max. hole depth = 3xDiameter (D)



| 42.. | | D | L | L1 | L2 | a | d | d1 | Radial Adj. Dmax | | | Insert size | |
|------|---------------|------|-----|----|-----|-----|----|----|------------------|------|------|--------------|-------|
| Ref. | 4214.62.017,5 | 17,5 | 127 | 55 | 56 | 53 | 25 | 40 | +1,00 ↻ 19,5 | 1622 | 5507 | WCM.. 0302.. | 0,220 |
| | 4214.62.018 | 18 | 128 | 55 | 57 | 54 | 25 | 40 | +0,90 ↻ 19,8 | 1622 | 5507 | WCM.. 0302.. | 0,230 |
| | 4214.62.018,5 | 18,5 | 130 | 55 | 59 | 56 | 25 | 40 | +0,85 ↻ 20,2 | 1622 | 5507 | WCM.. 0302.. | 0,240 |
| | 4214.62.019 | 19 | 131 | 55 | 60 | 57 | 25 | 40 | +0,80 ↻ 20,6 | 1622 | 5507 | WCM.. 0302.. | 0,240 |
| | 4214.62.020 | 20 | 136 | 55 | 64 | 60 | 25 | 40 | +0,75 ↻ 21,5 | 1622 | 5507 | WCM.. 0302.. | 0,250 |
| | 4224.62.022 | 22 | 142 | 55 | 69 | 66 | 25 | 40 | +1,25 ↻ 24,5 | 1625 | 5508 | WCM.. 0402.. | 0,400 |
| | 4224.62.024 | 24 | 150 | 55 | 76 | 72 | 25 | 40 | +0,75 ↻ 25,5 | 1625 | 5508 | WCM.. 0402.. | 0,450 |
| | 4224.62.025 | 25 | 154 | 55 | 79 | 75 | 25 | 40 | +0,50 ↻ 26,0 | 1625 | 5508 | WCM.. 0402.. | 0,475 |
| | 4234.63.026 | 26 | 162 | 60 | 81 | 78 | 32 | 50 | +2,50 ↻ 31,0 | 1630 | 5509 | WCM.. 0503.. | 0,475 |
| | 4234.63.027 | 27 | 165 | 60 | 84 | 81 | 32 | 50 | +2,20 ↻ 31,4 | 1630 | 5509 | WCM.. 0503.. | 0,500 |
| | 4234.63.028 | 28 | 169 | 60 | 87 | 84 | 32 | 50 | +2,10 ↻ 32,2 | 1630 | 5509 | WCM.. 0503.. | 0,550 |
| | 4234.63.029 | 29 | 172 | 60 | 90 | 87 | 32 | 50 | +1,80 ↻ 32,6 | 1630 | 5509 | WCM.. 0503.. | 0,570 |
| | 4234.63.030 | 30 | 177 | 60 | 94 | 90 | 32 | 50 | +1,80 ↻ 33,0 | 1630 | 5509 | WCM.. 0503.. | 0,600 |
| | 4244.64.031 | 31 | 186 | 65 | 97 | 93 | 40 | 60 | +3,50 ↻ 38,0 | 1635 | 5510 | WCM.. 06T3.. | 0,850 |
| | 4244.64.032 | 32 | 189 | 65 | 100 | 96 | 40 | 60 | +3,20 ↻ 38,4 | 1635 | 5510 | WCM.. 06T3.. | 0,900 |
| | 4244.64.034 | 34 | 196 | 65 | 106 | 102 | 40 | 60 | +2,80 ↻ 39,6 | 1635 | 5510 | WCM.. 06T3.. | 0,975 |
| | 4244.64.035 | 35 | 200 | 65 | 109 | 105 | 40 | 60 | +2,50 ↻ 40,0 | 1635 | 5510 | WCM.. 06T3.. | 1,000 |
| | 4244.64.038 | 38 | 211 | 65 | 118 | 114 | 40 | 60 | +1,80 ↻ 41,0 | 1635 | 5510 | WCM.. 06T3.. | 1,170 |
| | 4244.64.039 | 39 | 214 | 65 | 121 | 117 | 40 | 60 | +1,50 ↻ 41,6 | 1635 | 5510 | WCM.. 06T3.. | 1,200 |
| | 4244.64.040 | 40 | 218 | 65 | 124 | 120 | 40 | 60 | +1,20 ↻ 42,0 | 1635 | 5510 | WCM.. 06T3.. | 1,300 |
| | 4254.64.042 | 42 | 225 | 65 | 130 | 126 | 40 | 60 | +4,20 ↻ 51,0 | 1640 | 5515 | WCM.. 0804.. | 1,600 |
| | 4254.64.043 | 43 | 229 | 65 | 133 | 129 | 40 | 60 | +4,00 ↻ 51,4 | 1640 | 5515 | WCM.. 0804.. | 1,750 |
| | 4254.64.045 | 45 | 237 | 65 | 140 | 135 | 40 | 60 | +3,60 ↻ 52,2 | 1640 | 5515 | WCM.. 0804.. | 1,900 |
| | 4254.64.048 | 48 | 248 | 65 | 149 | 144 | 40 | 60 | +2,70 ↻ 53,4 | 1640 | 5515 | WCM.. 0804.. | 2,250 |
| | 4254.64.049 | 49 | 251 | 65 | 152 | 147 | 40 | 60 | +2,50 ↻ 54,0 | 1640 | 5515 | WCM.. 0804.. | 2,200 |
| | 4254.64.050 | 50 | 255 | 65 | 155 | 150 | 40 | 60 | +2,20 ↻ 54,4 | 1640 | 5515 | WCM.. 0804.. | 2,400 |
| | 4254.64.052 | 52 | 262 | 65 | 161 | 156 | 40 | 60 | +1,80 ↻ 55,6 | 1640 | 5515 | WCM.. 0804.. | 2,500 |
| | 4254.64.054 | 54 | 269 | 65 | 167 | 162 | 40 | 60 | +1,20 ↻ 56,4 | 1640 | 5515 | WCM.. 0804.. | 2,700 |
| | 4254.64.055 | 55 | 274 | 65 | 171 | 165 | 40 | 60 | +0,80 ↻ 56,6 | 1640 | 5515 | WCM.. 0804.. | 2,850 |

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

For more information see page: I.02



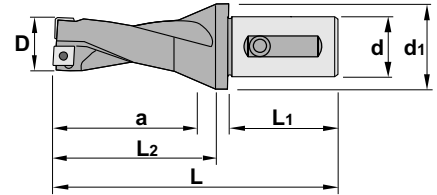
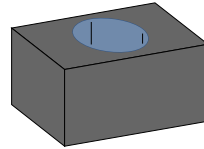
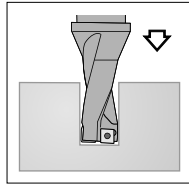
Max. hole depth = 3xDiameter (D)

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 square inserts for stability and clean through-hole putting. Drills available from 15 to 55 mm.

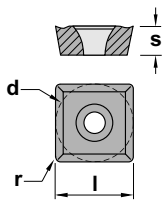
Applications:

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



| 45.. | | D | L | L1 | L2 | a | d | d1 | Radial Adj. D _{max} | | | 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 |
| | 4514.62.017,5 | 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 | 5510 | SPMT 0903.. | 0,475 |
| | 4534.63.027 | 27 | 165 | 55 | 84 | 81 | 32 | 50 | +2,20 ↻ 31,4 | 1230 | 5510 | SPMT 0903.. | 0,500 |
| | 4534.63.028 | 28 | 169 | 55 | 87 | 84 | 32 | 50 | +2,10 ↻ 32,2 | 1230 | 5510 | SPMT 0903.. | 0,550 |
| | 4534.63.029 | 29 | 172 | 55 | 90 | 87 | 32 | 50 | +1,80 ↻ 32,6 | 1230 | 5510 | SPMT 0903.. | 0,570 |
| | 4534.63.030 | 30 | 177 | 55 | 94 | 90 | 32 | 50 | +1,80 ↻ 33,0 | 1230 | 5510 | SPMT 0903.. | 0,600 |
| | 4544.64.031 | 31 | 186 | 60 | 97 | 93 | 40 | 60 | +3,50 ↻ 38,0 | 1230 | 5510 | SPMT 0903.. | 0,850 |
| | 4544.64.032 | 32 | 189 | 60 | 100 | 96 | 40 | 60 | +3,20 ↻ 38,4 | 1230 | 5510 | SPMT 0903.. | 0,900 |
| | 4544.64.034 | 34 | 196 | 60 | 106 | 102 | 40 | 60 | +2,80 ↻ 39,6 | 1230 | 5510 | SPMT 0903.. | 0,975 |
| | 4544.64.035 | 35 | 200 | 60 | 109 | 105 | 40 | 60 | +2,50 ↻ 40,0 | 1550 | 5520 | SPMT 1204.. | 1,000 |
| | 4544.64.038 | 38 | 211 | 60 | 118 | 114 | 40 | 60 | +1,80 ↻ 41,0 | 1550 | 5520 | SPMT 1204.. | 1,170 |
| | 4544.64.039 | 39 | 214 | 60 | 121 | 117 | 40 | 60 | +1,50 ↻ 41,6 | 1550 | 5520 | SPMT 1204.. | 1,200 |
| | 4544.64.040 | 40 | 218 | 60 | 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 | | | |
| | SPMT 070308 | 7,94 | 3,18 | 7,94 | | | |
| | SPMT 090308 | 9,52 | 3,18 | 9,52 | | | |
| | SPMT 120408 | 12,70 | 4,76 | 12,70 | | | |
| | | | | | For more information see page: I.02 | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |



Inserts

General turning

Aluminium wheel turning

Automatic lathes

Ceramic tools

Parting and grooving

Threading

Drills



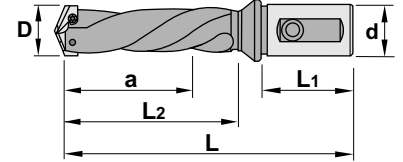
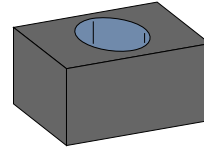
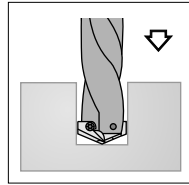
Max. hole depth = 3xDiameter (D)

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 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.



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 | 1222 | 5506 |
| | 4824.61.011,5 | 1222 | 5506 |
| | 4834.61.013 | 1225 | 5507 |
| | 4834.61.015 | 1225 | 5507 |

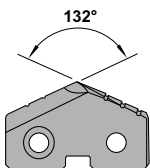
XPMT

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: 1.02

XPMT





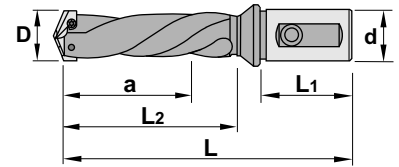
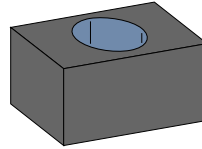
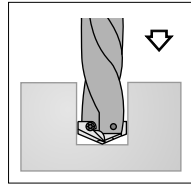
Long Series

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.. | | D | L | L ₁ | L ₂ | a | d | Insert size | kg |
|------|---------------|-------------|-----|----------------|----------------|-----|----|---------------------|-------|
| Ref. | 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 | 4924.61.011,5 | 4934.61.013 | 4934.61.015 |
|------|---------------|---------------|-------------|-------------|
| | 1222 | 1222 | 1225 | 1225 |
| | 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 | | | | | | |
|------|--|--|--|--|--|--|
| | | | | | | |

Drills
Cartridges
Brazed tools
Tooling

Inserts

General turning

Aluminium wheel turning

Automatic lathes

Ceramic tools

Parting and grooving

Threading

Drills



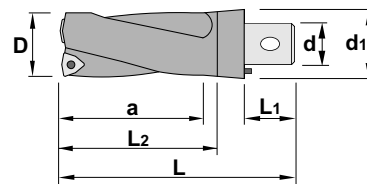
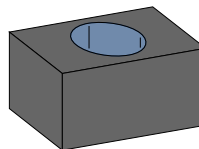
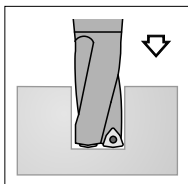
Characteristics:

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 trigon inserts for stability and clean through-hole putting. Drills available from 17,5 to 40 mm.

Drills available from 17,5 to 40 mm.

Applications:

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



Max. hole depth = 3xDiameter (D)

| 42 1 4. 72 4 4. 75 | | | | | | | | | | Radial Adj. D _{max} | | | | Insert size | | Kg |
|-----------------------|------|-----|----|-----|-----|----|----|-------|---|------------------------------|------|------|--------------|-------------|--|----|
| Ref. | D | L | L1 | L2 | a | d | d1 | | | | | | | | | |
| 4214.72.017,5 | 17,5 | 92 | 20 | 56 | 53 | 20 | 32 | +1,00 | ↻ | 19,5 | 1622 | 5507 | WCM.. 0302.. | 0,070 | | |
| 4214.72.018 | 18 | 93 | 20 | 57 | 54 | 20 | 32 | +0,90 | ↻ | 19,8 | 1622 | 5507 | WCM.. 0302.. | 0,080 | | |
| 4214.72.018,5 | 18,5 | 95 | 20 | 59 | 56 | 20 | 32 | +0,85 | ↻ | 20,2 | 1622 | 5507 | WCM.. 0302.. | 0,080 | | |
| 4214.72.019 | 19 | 96 | 20 | 60 | 57 | 20 | 32 | +0,80 | ↻ | 20,6 | 1622 | 5507 | WCM.. 0302.. | 0,090 | | |
| 4214.72.020 | 20 | 101 | 20 | 64 | 60 | 20 | 32 | +0,75 | ↻ | 21,5 | 1622 | 5507 | WCM.. 0302.. | 0,110 | | |
| 4224.73.022 | 22 | 112 | 25 | 69 | 66 | 24 | 40 | +1,25 | ↻ | 24,5 | 1625 | 5508 | WCM.. 0402.. | 0,320 | | |
| 4224.73.024 | 24 | 120 | 25 | 76 | 72 | 24 | 40 | +0,75 | ↻ | 26,5 | 1625 | 5508 | WCM.. 0402.. | 0,370 | | |
| 4224.73.025 | 25 | 124 | 25 | 79 | 75 | 24 | 40 | +0,50 | ↻ | 26,0 | 1625 | 5508 | WCM.. 0402.. | 0,400 | | |
| 4234.74.026 | 26 | 132 | 30 | 81 | 78 | 28 | 40 | +2,50 | ↻ | 31,0 | 1630 | 5509 | WCM.. 0503.. | 0,375 | | |
| 4234.74.027 | 27 | 135 | 30 | 84 | 81 | 28 | 40 | +2,20 | ↻ | 31,4 | 1630 | 5509 | WCM.. 0503.. | 0,400 | | |
| 4234.74.028 | 28 | 139 | 30 | 87 | 84 | 28 | 40 | +2,10 | ↻ | 32,2 | 1630 | 5509 | WCM.. 0503.. | 0,450 | | |
| 4234.74.029 | 29 | 142 | 30 | 90 | 87 | 28 | 40 | +1,80 | ↻ | 32,6 | 1630 | 5509 | WCM.. 0503.. | 0,470 | | |
| 4234.74.030 | 30 | 147 | 30 | 94 | 90 | 28 | 40 | +1,80 | ↻ | 33,0 | 1630 | 5509 | WCM.. 0503.. | 0,500 | | |
| 4244.75.031 | 31 | 161 | 40 | 97 | 93 | 36 | 50 | +3,50 | ↻ | 38,0 | 1635 | 5510 | WCM.. 06T3.. | 0,600 | | |
| 4244.75.032 | 32 | 164 | 40 | 100 | 96 | 36 | 50 | +3,20 | ↻ | 38,4 | 1635 | 5510 | WCM.. 06T3.. | 0,750 | | |
| 4244.75.034 | 34 | 171 | 40 | 106 | 102 | 36 | 50 | +2,80 | ↻ | 39,6 | 1635 | 5510 | WCM.. 06T3.. | 0,800 | | |
| 4244.75.035 | 35 | 175 | 40 | 109 | 105 | 36 | 50 | +2,50 | ↻ | 40,0 | 1635 | 5510 | WCM.. 06T3.. | 0,850 | | |
| 4244.75.038 | 38 | 186 | 40 | 118 | 114 | 36 | 50 | +1,80 | ↻ | 41,0 | 1635 | 5510 | WCM.. 06T3.. | 1,000 | | |
| 4244.75.039 | 39 | 189 | 40 | 121 | 117 | 36 | 50 | +1,50 | ↻ | 41,6 | 1635 | 5510 | WCM.. 06T3.. | 1,050 | | |
| 4244.75.040 | 40 | 193 | 40 | 124 | 120 | 36 | 50 | +1,20 | ↻ | 42,0 | 1635 | 5510 | WCM.. 06T3.. | 1,150 | | |

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



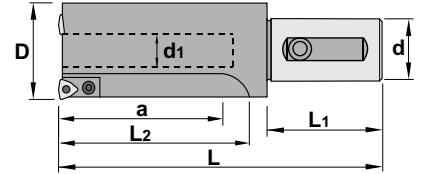
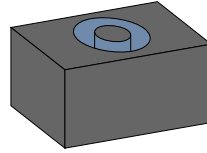
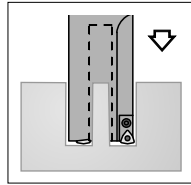
Max. hole depth = 2.5xDiameter (D)

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.



| 4744.64 | | D | L | L1 | L2 | a | d | d1 | Insert size | Kg |
|---------|-------------|-----|-----|----|-----|-----|----|----|--------------|-------|
| Ref. | 4744.64.060 | 60 | 260 | 65 | 160 | 150 | 40 | 24 | WCM.. 06T3.. | 3,100 |
| | 4744.64.065 | 65 | 275 | 65 | 175 | 165 | 40 | 29 | WCM.. 06T3.. | 3,700 |
| | 4744.64.070 | 70 | 285 | 65 | 185 | 175 | 40 | 34 | WCM.. 06T3.. | 4,250 |
| | 4744.64.075 | 75 | 300 | 65 | 200 | 190 | 40 | 39 | WCM.. 06T3.. | 5,100 |
| | 4744.64.080 | 80 | 310 | 65 | 210 | 200 | 40 | 44 | WCM.. 06T3.. | 5,800 |
| | 4744.64.085 | 85 | 325 | 65 | 225 | 215 | 40 | 49 | WCM.. 06T3.. | 6,500 |
| | 4744.64.090 | 90 | 335 | 65 | 235 | 225 | 40 | 54 | WCM.. 06T3.. | 7,250 |
| | 4744.64.095 | 95 | 350 | 65 | 250 | 240 | 40 | 59 | WCM.. 06T3.. | 8,200 |
| | 4744.64.100 | 100 | 360 | 65 | 260 | 250 | 40 | 64 | WCM.. 06T3.. | 9,050 |

| Ref. | | | | | | | | | | |
|-------------|------|------|------|------|------|------|------|------|------|--|
| 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 | |

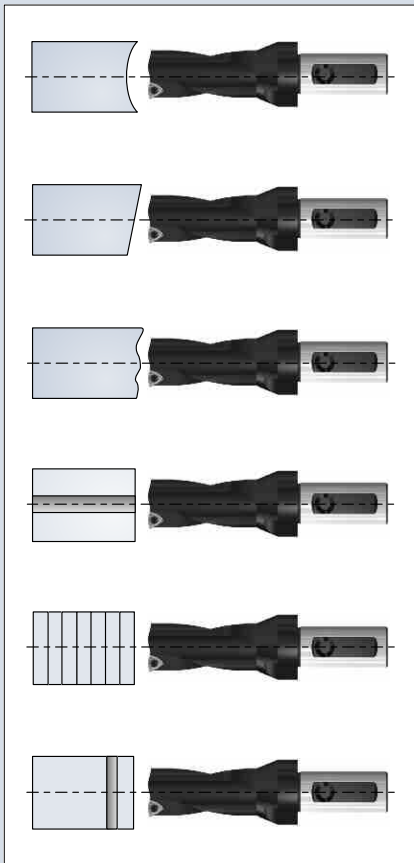
| | WCM.. | | | | Positive 7° clearance - 80° Trigon insert. | |
|------|--------------|------|------|------|--|--|
| | Ref. | l | s | d | | |
| | WCM.. 06T3.. | 6,14 | 3,97 | 9,52 | | |
| WCMT | WCMX | | | | | |
| | | | | | | |

For more information see page: I.02

- Inserts
- General turning
- Aluminium wheel turning
- Automatic lathes
- Ceramic tools
- Parting and grooving
- Threading
- 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 centre. Feed should be reduced to 1/3 of the recommended.

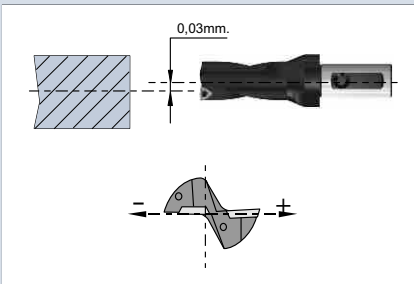
The surface of the tool to be drilled on should be preferably even. If the angles exceed 2°, feed should be reduced to 1/3 of the recommended.

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 centre 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.

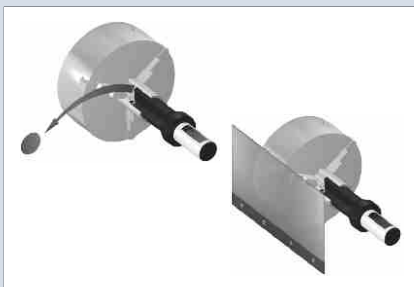


Drilling with drill-holders with housing for cutting fluid supply

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 round.

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 oftenly 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

General turning

Aluminium wheel turning

Automatic lathes

Ceramic tools

Parting and grooving

Threading

Drills

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

| Material | HB | Condition | D mm. | Cutting speed m/min | Feed mm/Rev |
|---------------------------------|---------|---------------------------------|--------|---------------------|-------------|
| Unalloyed steel P | 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 |
| Low alloyed steel | 150-260 | Non-hardened | 60-100 | 100-250 | 0,11-0,18 |
| | 220-400 | Hardened | | 100-220 | 0,08-0,12 |
| High alloyed steel | 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 |
| Stainless steel | 150-270 | Ferritic, Martensitic 13-25%Cr | 60-100 | 100-200 | 0,11-0,17 |
| Steel castings | 90-225 | Unalloyed | 60-100 | 100-200 | 0,12-0,20 |
| | 150-250 | Low alloyed (< 5%) | | 100-150 | 0,11-0,17 |

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

| | | | | | |
|-------------------------------------|---------|--|--------|---------|-----------|
| Malleable cast iron K | 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 |
| Grey cast iron | 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 |
| Nodular cast iron | 125-230 | Ferritic | 60-100 | 100-180 | 0,15-0,25 |
| | 200-300 | Pearlitic | 60-100 | 90-150 | 0,14-0,22 |
| Aluminium alloys | 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 |
| Copper and copper alloys | 50-160 | Free cutting alloys (pb>1%) Brass and lead bronzes (pb<1%) | 60-100 | 100-160 | 0,15-0,25 |