

**MACH
SPECIAL**



Where **high performance** is the **standard**



New Products Catalogue 2016

www.mafordeurope.com

**MACH
2016**
11-15 April
NEC • Birmingham UK
machexhibition.com



Where **high performance** is the **standard***



For more than 90 years, M.A.FORD has been at the cutting edge of tooling design and manufacture and has developed an enviable global reputation for performance and precision in advanced solid carbide tooling, serving over 60 countries worldwide.

Our innovative cutting geometries, materials and coating technologies are providing effective manufacturing solutions to an expanding and increasingly diverse range of industries from agriculture and construction to aerospace, power generation and automotive, to name but a few.

From our European HQ and custom tooling production facilities here in the UK, we ensure that our customers not only obtain the latest cutting tool technologies direct from our extensive stocks, but also have access to specialist tool design and manufacturing solutions to meet unique applications.



































M.A.FORD – Where high performance is the standard.



Contents

MACH 2016 sees the launch of several new product lines to enhance our already impressive portfolio of high performance cutting tools.

From additions to our highly successful XR, XT and X-AL programmes to HSSCo drills and roll taps, M.A.FORD brings even more manufacturing solutions to both new and existing customers.

| | | | | | | | | | | | | | | | |
|---|--|--|---|---|--------------------------|---|-----------|---|---------------------------|---|----------------|---|------------------|---|-------------|
|  VHM Tool Material |  Z2 Z3 Number of Flutes |  55° Helix Angle |  Centre Cutting | | | | | | | | | | | | |
|  Lengths |  Cutting Direction |  Profiling |  Slotting | | | | | | | | | | | | |
|  3D Scanning |  HA Shank |  <48HRC Material Hardness |  ALtima® Coating | | | | | | | | | | | | |
|  UNCOATED ALtima® Uncoated or Coated | <table border="0"> <tr> <td></td> <td>Steel</td> <td></td> <td>Cast Iron</td> </tr> <tr> <td></td> <td>Hardened Steels (35-65Rc)</td> <td></td> <td>Special Alloys</td> </tr> <tr> <td></td> <td>Stainless Steels</td> <td></td> <td>Non-Ferrous</td> </tr> </table> | | |  | Steel |  | Cast Iron |  | Hardened Steels (35-65Rc) |  | Special Alloys |  | Stainless Steels |  | Non-Ferrous |
|  | Steel |  | Cast Iron | | | | | | | | | | | | |
|  | Hardened Steels (35-65Rc) |  | Special Alloys | | | | | | | | | | | | |
|  | Stainless Steels |  | Non-Ferrous | | | | | | | | | | | | |
| <table border="0"> <tr> <td></td> <td>Workpiece Material Group</td> </tr> </table> | | | |  | Workpiece Material Group | | | | | | | | | | |
|  | Workpiece Material Group | | | | | | | | | | | | | | |

| | Page |
|-------------------------------------|------|
| TuffCut® X-AL | |
| Series 137VR N3 | 2 |
| Technical Information | 2 |
| TuffCut® XT | |
| Series 279 | 3 |
| Technical Information | 3 |
| TuffCut® XR | |
| Series 180 & 180R | 3 |
| V5LCB | |
| End Mills | 5 |
| Technical Information | 6 |
| Diamond Grind Routers | |
| Series 230, 231 & 239 | 7 |
| Technical Information | 9 |
| Cyclone™ CDACR | |
| Aluminium Drill | 10 |
| Technical Information | 12 |
| Cyclone™ CXD | |
| High Performance Drills | 13 |
| Technical Information | 14 |
| HSSCo Platinum Drills | |
| Series PRM-KSN, PRXS-KST & PRXS-KMT | 15 |
| Technical Information | 19 |
| HSS-E Roll Taps | 20 |
| Technical Information | 20 |
| Carbide Thread Mills | 21 |
| Technical Information | 21 |

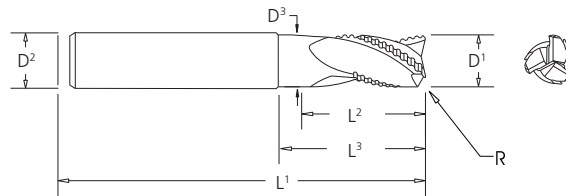
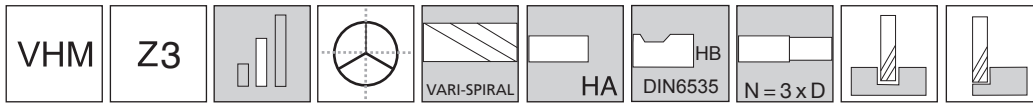


TuffCut® X-AL Series 137VR N3



Based on our highly successful 137V Vari-Spiral end mills, 137VR has been developed to bring an even more aggressive roughing platform when machining Aluminium and other non-ferrous materials. The unique flute form and chip breaker design provides exceptional metal removal rates and chip evacuation.

- Due to the reduction in chip size, 137VR provides effective swarf management when machining large Aluminium components.
- The versatility of 137VR allows for slotting, pocketing and external profiling applications up to $3 \times D^1$ depths due to its neck relieved shank.
- Suitable for both high and lower powered machines alike, 137VR provides a highly efficient Aluminium machining solution.



| Tool No. | Ø D1 | Ø D2 | Ø D3 | L1 | L2 | L3 | R | Shank |
|------------------|------|------|------|-----|----|----|---|-------|
| 137VR 12N3-1.0R | 12 | 12 | 11.8 | 84 | 26 | 38 | 1 | HA |
| 137VR 12N3-1.0RW | 12 | 12 | 11.8 | 84 | 26 | 38 | 1 | HB |
| 137VR 16N3-1.0R | 16 | 16 | 15.8 | 93 | 32 | 50 | 1 | HA |
| 137VR 16N3-1.0RW | 16 | 16 | 15.8 | 93 | 32 | 50 | 1 | HB |
| 137VR 20N3-1.0R | 20 | 20 | 19.8 | 105 | 38 | 62 | 1 | HA |
| 137VR 20N3-1.0RW | 20 | 20 | 19.8 | 105 | 38 | 62 | 1 | HB |

| Series | Type of cut | Vc | | | Ø 12.0 | | | Ø 16.0 | | | Ø 20.0 | | |
|----------|-------------|-----------|------------------------|----------|--------|--|--|--------|--|--|--------|--|--|
| | | Ae | Ap | M/Min | fz | | | fz | | | fz | | |
| | | | | | | | | | | | | | |
| 137VR N3 | | 1 x D | 0.25 x D | 400-600 | 0.12 | | | 0.16 | | | 0.2 | | |
| | | 1 x D | 0.5 x D | 400-600 | 0.12 | | | 0.16 | | | 0.2 | | |
| | | 1 x D | 1 x D | 400-600 | 0.11 | | | 0.15 | | | 0.19 | | |
| | | 0.75 x D | 0.5 x D | 500-700 | 0.18 | | | 0.24 | | | 0.3 | | |
| | | 0.5 x D | 1 x D | 500-700 | 0.12 | | | 0.16 | | | 0.2 | | |
| | | 0.5 x D | 1.5 x D | 500-700 | 0.12 | | | 0.16 | | | 0.2 | | |
| | | ≤ 0.1 x D | ≤ 0.9 x L ² | 800-1000 | 0.2 | | | 0.27 | | | 0.342 | | |

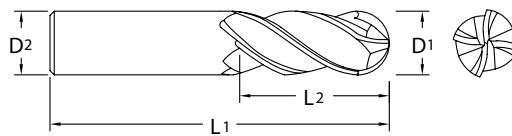


TuffCut® XT Series 279



Following the highly successful launch of our series 179 ballnose end mill, M.A. FORD is introducing the 2nd generation series 279 programme. A new substrate, geometry and advanced coating allows series 279 to enhance your machining of Steels, Stainless Steels and Titanium alloys.

- Designed for specific applications in steels, stainless steels, special alloys, and cast irons.
- Variable helix and flute spacing for improved machining harmonics.
- Advanced ALtima® Blaze coating for extended tool life.

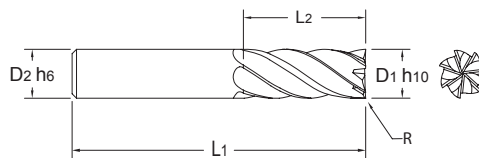
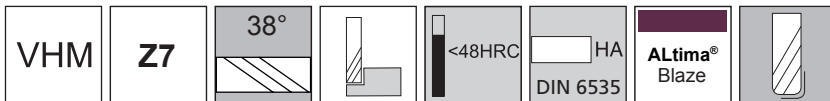


| Tool Number | D1 (m7) | D2 (h6) | L1 | L2 (max) |
|-------------|---------|---------|----|----------|
| 279 0300B | 3 | 6 | 57 | 8 |
| 279 0400B | 4 | 6 | 57 | 11 |
| 279 0500B | 5 | 6 | 57 | 13 |
| 279 0600B | 6 | 6 | 57 | 13 |
| 279 0800B | 8 | 8 | 63 | 19 |
| 279 1000B | 10 | 10 | 72 | 22 |
| 279 1200B | 12 | 12 | 83 | 26 |
| 279 1600B | 16 | 16 | 92 | 32 |



TuffCut® XR Series 180 & 180R

By popular demand, our Series 180 range of 7 flute end mills sees the addition of new diameters below the current 12.0mm – 20.0mm programme. The new additions are 6.0mm, 8.0mm and 10.0mm and are available with or without corner radius.



| Tool Number | D1 (m7) | D2 (h6) | L1 | L2 (max) | R |
|----------------|---------|---------|----|----------|-----|
| 180 0600B | 6 | 6 | 57 | 13 | - |
| 180 0600-0.5RB | 6 | 6 | 57 | 13 | 0.5 |
| 180 0800B | 8 | 8 | 63 | 19 | - |
| 180 0800-0.5RB | 8 | 8 | 63 | 19 | 0.5 |
| 180 1000B | 10 | 10 | 72 | 22 | - |
| 180 1000-0.5RB | 10 | 10 | 72 | 22 | 0.5 |



| Workpiece Material Group | Material Type | Coolant | | | 1 x D | 1 x D | 0.05 x D | 0.1 x D | 0.2 x D | 0.3 x D | 0.5 x D | |
|--------------------------|---------------|----------------------------|-----|-----|-------|-------|----------|---------|---------|---------|---------|-----|
| | | Max | Air | MMS | | | | | | | | |
| Vc-M/Min | | | | | | | | | | | | |
| Steels | P | Low Carbon | ● | ● | ● | 230 | 220 | 480 | 385 | 330 | 275 | 220 |
| | | Medium Carbon | ● | ● | ● | 200 | 185 | 345 | 275 | 255 | 220 | 185 |
| | | Alloy Steels | ● | ● | ● | 175 | 165 | 315 | 255 | 230 | 200 | 165 |
| | | Die/Tool Steels | ● | ● | ● | 145 | 130 | 275 | 220 | 187 | 145 | 130 |
| Stainless Steels | M | Free Machining | ● | X | ○ | 120 | 110 | 205 | 165 | 130 | 115 | 110 |
| | | Austenitic | ● | X | ○ | 110 | 100 | 160 | 130 | 120 | 110 | 100 |
| | | Difficult Stainless | ● | X | ○ | 75 | 65 | 125 | 100 | 90 | 75 | 65 |
| | | PH Stainless | ● | X | ○ | 110 | 100 | 160 | 130 | 120 | 110 | 100 |
| | | Cobalt Chrome Alloys | ● | X | ○ | 75 | 65 | 125 | 100 | 90 | 75 | 65 |
| | | Duplex (22%) | ● | X | ○ | 75 | 65 | 125 | 100 | 90 | 75 | 65 |
| | | Super Duplex (25%) | ● | X | ○ | 55 | 45 | 75 | 60 | 55 | 50 | 45 |
| Special Alloys | S | High Temp Alloys | ● | X | X | 35 | 28 | 55 | 45 | 40 | 35 | 28 |
| | | | ● | X | X | 35 | 28 | 55 | 45 | 40 | 35 | 28 |
| | | Titanium Alloys | ● | X | X | 75 | 66 | 160 | 130 | 100 | 85 | 65 |
| Cast Irons | K | Gray Cast Iron | ● | ○ | ○ | 200 | 175 | 495 | 395 | 265 | 210 | 175 |
| | | Ductile Cast Iron | ● | ○ | ○ | 185 | 165 | 370 | 300 | 210 | 185 | 165 |
| | | Malleable Iron | ● | ○ | ○ | 145 | 132 | 205 | 165 | 155 | 145 | 130 |
| Hardened Steels | H | Hardened Steels 35 - 45 Rc | ● | ○ | ○ | 60 | 50 | 185 | 150 | 100 | 55 | 50 |
| | | Hardened Steels 45 - 55 Rc | ● | ○ | ○ | 50 | 45 | 155 | 125 | 85 | 50 | 45 |

● Preferred ○ Possible X Not Possible

| Workpiece Material Group | Machining type | Tool Diameter | | | | | | | | | |
|--------------------------|----------------|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 3mm | 5mm | 6mm | 8mm | 10mm | 12mm | 16mm | 20mm | 25mm | |
| fz-mm/tooth | | | | | | | | | | | |
| Steels | P | Profiling | 0.030 | 0.050 | 0.060 | 0.080 | 0.100 | 0.120 | 0.160 | 0.200 | 0.250 |
| | | Slotting | 0.015 | 0.025 | 0.030 | 0.040 | 0.050 | 0.060 | 0.080 | 0.100 | 0.125 |
| Stainless Steels | M | Profiling | 0.030 | 0.050 | 0.060 | 0.080 | 0.100 | 0.120 | 0.160 | 0.200 | 0.250 |
| | | Slotting | 0.015 | 0.025 | 0.030 | 0.040 | 0.050 | 0.060 | 0.080 | 0.100 | 0.125 |
| Special Alloys | S | Profiling | 0.009 | 0.013 | 0.032 | 0.038 | 0.044 | 0.064 | 0.076 | 0.089 | 0.127 |
| | | Slotting | 0.005 | 0.007 | 0.016 | 0.019 | 0.022 | 0.032 | 0.038 | 0.045 | 0.065 |
| Titanium | S | Profiling | 0.030 | 0.050 | 0.060 | 0.080 | 0.100 | 0.120 | 0.160 | 0.200 | 0.250 |
| | | Slotting | 0.015 | 0.025 | 0.030 | 0.040 | 0.050 | 0.060 | 0.080 | 0.100 | 0.125 |
| Cast Irons | K | Profiling | 0.030 | 0.050 | 0.060 | 0.080 | 0.100 | 0.120 | 0.160 | 0.200 | 0.250 |
| | | Slotting | 0.015 | 0.025 | 0.030 | 0.040 | 0.050 | 0.060 | 0.080 | 0.100 | 0.125 |
| Hardened Steels | H | Profiling 35 - 45 Rc | 0.016 | 0.023 | 0.057 | 0.069 | 0.080 | 0.114 | 0.137 | 0.160 | 0.229 |
| | | Slotting 35 - 45 Rc | 0.010 | 0.015 | 0.025 | 0.035 | 0.045 | 0.065 | 0.070 | 0.075 | 0.100 |
| | | Profiling 45 - 55 Rc | 0.010 | 0.015 | 0.041 | 0.051 | 0.058 | 0.084 | 0.102 | 0.119 | 0.170 |
| | | Slotting 45 - 55 Rc | 0.008 | 0.011 | 0.020 | 0.030 | 0.040 | 0.050 | 0.055 | 0.080 | 0.090 |

During profile milling less than 50% of the cutter diameter radial width, the actual chip thickness at the cutting edge is less than the programmed chipload. The accompanying table shows the increase in tooth load by given radial percentage engagement. Multiply your feed per tooth by the factor before finalising your table feed.

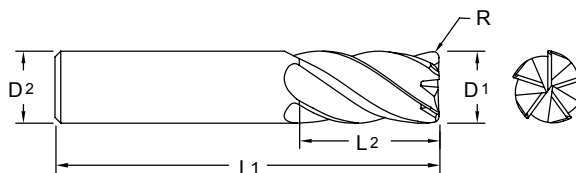
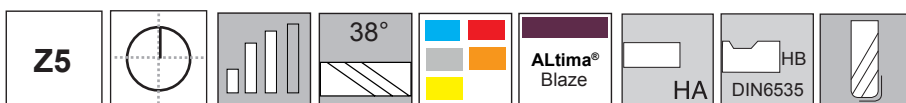
| Radial Cut (Ae) | Chip thickness Compensation factor |
|-----------------|------------------------------------|
| 30% | 1.10 |
| 20% | 1.20 |
| 15% | 1.40 |
| 10% | 1.80 |
| 5% | 2.30 |
| 1% | 5.00 |



V5LCB End Mill

M.A.FORD's unique chip breaker and flute design technology ensures V5LCB provides exceptional metal removal rates and effective swarf control at increased axial depths. V5LCB's 5 flute variable pitch design with an enhanced core strength profile and advanced flute geometry for vibration free machining at extended axial depths of cut.

- State-of-the-art surface coating for extended tool life.
- Axial depths of up to 4 times the tool's diameter!
- Designed for high speed profiling in Steels, Stainless Steels and Titanium Alloys.
- HA and HB shank options available.
- Available in diameters 6, 8, 10, 12 and 16mm – all with 4 x D cutting lengths.



Cylindrical Shank (HA)

| Tool Number | D1 | D2 | L1 | L2 | R |
|------------------|----|----|-----|----|-----|
| V5LCB 0604-0.5RB | 6 | 6 | 75 | 24 | 0.5 |
| V5LCB 0804-0.5RB | 8 | 8 | 75 | 32 | 0.5 |
| V5LCB 1004-0.5RB | 10 | 10 | 90 | 40 | 0.5 |
| V5LCB 1204-0.5RB | 12 | 12 | 100 | 48 | 0.5 |
| V5LCB 1604-0.5RB | 16 | 16 | 120 | 64 | 0.5 |

Weldon Shank (HB)

| Tool Number | D1 | D2 | L1 | L2 | R |
|-------------------|----|----|-----|----|-----|
| V5LCB 0804-0.5RBW | 8 | 8 | 75 | 32 | 0.5 |
| V5LCB 1004-0.5RBW | 10 | 10 | 90 | 40 | 0.5 |
| V5LCB 1204-0.5RBW | 12 | 12 | 100 | 48 | 0.5 |
| V5LCB 1604-0.5RBW | 16 | 16 | 120 | 64 | 0.5 |



V5LCB Cutting Parameters Axial Depth of Cut (ap) ≤ 4 x D

| Material Groups | Vc | | Ø6.0 | Ø8.0 | Ø10.0 | Ø12.0 | Ø16.0 |
|---|-----|-----------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | | ae 10% | ae 10% | ae 10% | ae 10% | ae 10% |
| | | | 0.1 x Ø | 0.1 x Ø | 0.1 x Ø | 0.1 x Ø | 0.1 x Ø |
| | | | Radial Depth of Cut (ae) | Radial Depth of Cut (ae) | Radial Depth of Cut (ae) | Radial Depth of Cut (ae) | Radial Depth of Cut (ae) |
| | | | 0.6mm | 0.8mm | 1.0mm | 1.2mm | 1.6mm |
| Low Carbon, Free Machining Steels | 300 | RPM | 15,900 | 11,925 | 9,540 | 7,950 | 5,963 |
| | | Feed (Vf) | 5,724 | 5,724 | 5,724 | 5,724 | 5,724 |
| Alloy Steels, Tool Steels & Nitriding Steels | 200 | RPM | 10,600 | 7,950 | 5,300 | 3,975 | 3,180 |
| | | Feed (Vf) | 3,816 | 3,816 | 3,816 | 3,816 | 3,816 |
| Free Machining & Austenitic Stainless Steels ≤ 32 HRC | 150 | RPM | 7,950 | 5,963 | 4,770 | 3,975 | 2,981 |
| | | Feed (Vf) | 2,862 | 2,862 | 2,862 | 2,862 | 2,862 |
| Moderate Machining & PH Stainless Steels | 130 | RPM | 6,890 | 5,168 | 4,134 | 3,445 | 2,584 |
| | | Feed (Vf) | 2,480 | 2,480 | 2,480 | 2,480 | 2,480 |
| Duplex & Super Duplex Stainless Steels | 80 | RPM | 4,240 | 3,180 | 2,544 | 2,120 | 1,590 |
| | | Feed (Vf) | 1,526 | 1,526 | 1,526 | 1,526 | 1,526 |
| Titanium Alloys | 80 | RPM | 4,240 | 3,180 | 2,544 | 2,120 | 1,590 |
| | | Feed (Vf) | 1,526 | 1,526 | 1,526 | 1,526 | 1,526 |



Diamond Grind Routers

Series 230, 231 & 239

With the ever increasing need for components manufactured from composite materials, M.A.FORD is introducing a new range of diamond grind routers to compliment its existing range of PCD end mills, drills and countersinks.

This new programme brings composite routers with our exclusive CERAedge™ ceramic and GEM-X amorphous diamond coatings for extended tool life when machining advanced composites.



Standard Uncoated



Series 230 Down Cut Safe End



Series 231 Down Cut End Mill



Series 231B Down Cut Burr End



Series 231D Down Cut Drill Point



Series 231F Down Cut Fishtail

CERAedge™ Coating



Series 230CE CERAedge® Down Cut Safe End



Series 231CE CERAedge® Down Cut End Mill



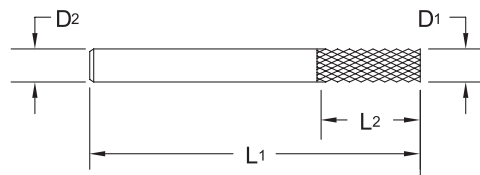
Series 231BCE CERAedge® Down Cut Burr End



Series 231DCE CERAedge® Down Cut Drill Point

CERAedge® Coating

- Diamond grind designed for routing glass-reinforced printed circuit boards, phenolic-epoxy, composites and other highly abrasive materials.
- Available with a non-cutting safe end, or in three popular end-cutting styles with down cut geometries.



| Diameter mm | Series 230 | Series 230CE | Series 231 | Series 231CE | Series 231B | Series 231BCE | Series 231D | Series 231DCE | Series 231F |
|-------------|------------|--------------|------------|--------------|-------------|---------------|-------------|---------------|-------------|
| 0.8 | 230 0080 | - | 231 0080 | - | 231 0080B | - | 231 0080D | - | 231 0080F |
| 1 | 230 0100 | - | 231 0100 | - | 231 0100B | - | 231 0100D | - | 231 0100F |
| 1.2 | 230 0120 | - | 231 0120 | - | 231 0120B | - | 231 0120D | - | 231 0120F |
| 1.5 | 230 0150 | - | 231 0150 | - | 231 0150B | - | 231 0150D | - | 231 0150F |
| 1.6 | 230 0160 | - | 231 0160 | - | 231 0160BC | - | - | - | 231 0160F |
| 2 | 230 0200 | - | 231 0200 | - | 231 0200B | - | 231 0200D | - | 231 0200F |
| 2.4 | 230 0240 | - | 231 0240 | - | 231 0240B | - | 231 0240D | - | 231 0240F |
| 3 | 230 0300 | 230 0300CE | 231 0300 | 231 0300CE | 231 0300B | 231 0300BCE | 231 0300D | 231 0300DCE | 231 0300F |
| 5 | 230 0500 | - | 231 0500 | 231 0500CE | 231 0500B | 231 0500BCE | 231 0500D | 231 0500DCE | 231 0500F |
| 6 | 230 0600 | 230 0600CE | 231 0600 | 231 0600CE | 231 0600B | 231 0600BCE | 231 0600D | 231 0600DCE | 231 0600F |
| 8 | 230 0800 | - | 231 0800 | - | 231 0800B | - | 231 0800D | - | 231 0800F |



Diamond Grind Routers

Series 239 'The "Black" Diamond'

GemX Coating

- Microhardness (HV) – 10,000
- Maximum Service Temp. 600° C / 1100° F
- Friction Coefficient 0.10

Features

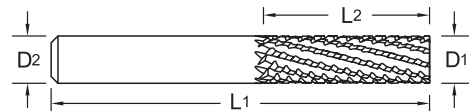
- GemX coating
- Unique carbide substrate
- Specially treated cutting edges

Benefits

- Longer tool life
- Faster cycle times
- No delamination or flaking
- Great edge quality
- Excellent for composite materials and fiberglass

Applications

- Trimming
- Routing
- Pocketing
- Interpolation of holes
- Low plastic content CFRP



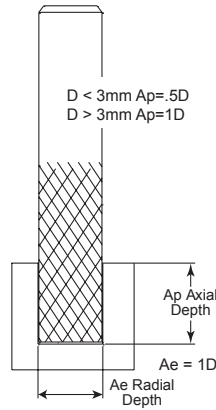
| Tool No. | D1 | D2 | L2 | L1 | # Flutes (RHC) | End cut |
|-----------|------|------|------|-----|----------------|----------|
| 239M0300B | 3.0 | 3.0 | 12.0 | 38 | 6 | Burr |
| 239M0300E | 3.0 | 3.0 | 12.0 | 38 | 6 | End Mill |
| 239M0300F | 3.0 | 3.0 | 12.0 | 38 | 6 | Fishtail |
| 239M0400B | 4.0 | 4.0 | 15.0 | 50 | 6 | Burr |
| 239M0400E | 4.0 | 4.0 | 15.0 | 50 | 6 | End Mill |
| 239M0400F | 4.0 | 4.0 | 15.0 | 50 | 6 | Fishtail |
| 239M0500B | 5.0 | 5.0 | 20.0 | 50 | 6 | Burr |
| 239M0500E | 5.0 | 5.0 | 20.0 | 50 | 6 | End Mill |
| 239M0500F | 5.0 | 5.0 | 20.0 | 50 | 6 | Fishtail |
| 239M0600B | 6.0 | 6.0 | 20.0 | 63 | 10 | Burr |
| 239M0600E | 6.0 | 6.0 | 20.0 | 63 | 10 | End Mill |
| 239M0600F | 6.0 | 6.0 | 20.0 | 63 | 10 | Fishtail |
| 239M0601B | 6.0 | 6.0 | 25.0 | 75 | 10 | Burr |
| 239M0601E | 6.0 | 6.0 | 25.0 | 75 | 10 | End Mill |
| 239M0601F | 6.0 | 6.0 | 25.0 | 75 | 10 | Fishtail |
| 239M0800B | 8.0 | 8.0 | 25.0 | 75 | 10 | Burr |
| 239M0800E | 8.0 | 8.0 | 25.0 | 75 | 10 | End Mill |
| 239M0800F | 8.0 | 8.0 | 25.0 | 75 | 10 | Fishtail |
| 239M1000B | 10.0 | 10.0 | 30.0 | 90 | 12 | Burr |
| 239M1000E | 10.0 | 10.0 | 30.0 | 90 | 12 | End Mill |
| 239M1000F | 10.0 | 10.0 | 30.0 | 90 | 12 | Fishtail |
| 239M1200B | 12.0 | 12.0 | 40.0 | 100 | 14 | Burr |
| 239M1200E | 12.0 | 12.0 | 40.0 | 100 | 14 | End Mill |
| 239M1200F | 12.0 | 12.0 | 40.0 | 100 | 14 | Fishtail |

| Tool No. | D1 | D2 | L2 | L1 | # Flutes (RHC) | End cut |
|-------------|------|------|------|-----|----------------|----------|
| 239M0300BGX | 3.0 | 3.0 | 12.0 | 38 | 6 | Burr |
| 239M0300EGX | 3.0 | 3.0 | 12.0 | 38 | 6 | End Mill |
| 239M0300FGX | 3.0 | 3.0 | 12.0 | 38 | 6 | Fishtail |
| 239M0400BGX | 4.0 | 4.0 | 15.0 | 50 | 6 | Burr |
| 239M0400EGX | 4.0 | 4.0 | 15.0 | 50 | 6 | End Mill |
| 239M0400FGX | 4.0 | 4.0 | 15.0 | 50 | 6 | Fishtail |
| 239M0500BGX | 5.0 | 5.0 | 20.0 | 50 | 6 | Burr |
| 239M0500EGX | 5.0 | 5.0 | 20.0 | 50 | 6 | End Mill |
| 239M0500FGX | 5.0 | 5.0 | 20.0 | 50 | 6 | Fishtail |
| 239M0600BGX | 6.0 | 6.0 | 20.0 | 63 | 10 | Burr |
| 239M0600EGX | 6.0 | 6.0 | 20.0 | 63 | 10 | End Mill |
| 239M0600FGX | 6.0 | 6.0 | 20.0 | 63 | 10 | Fishtail |
| 239M0601BGX | 6.0 | 6.0 | 25.0 | 75 | 10 | Burr |
| 239M0601EGX | 6.0 | 6.0 | 25.0 | 75 | 10 | End Mill |
| 239M0601FGX | 6.0 | 6.0 | 25.0 | 75 | 10 | Fishtail |
| 239M0800BGX | 8.0 | 8.0 | 25.0 | 75 | 10 | Burr |
| 239M0800EGX | 8.0 | 8.0 | 25.0 | 75 | 10 | End Mill |
| 239M0800FGX | 8.0 | 8.0 | 25.0 | 75 | 10 | Fishtail |
| 239M1000BGX | 10.0 | 10.0 | 30.0 | 90 | 12 | Burr |
| 239M1000EGX | 10.0 | 10.0 | 30.0 | 90 | 12 | End Mill |
| 239M1000FGX | 10.0 | 10.0 | 30.0 | 90 | 12 | Fishtail |
| 239M1200BGX | 12.0 | 12.0 | 40.0 | 100 | 14 | Burr |
| 239M1200EGX | 12.0 | 12.0 | 40.0 | 100 | 14 | End Mill |
| 239M1200FGX | 12.0 | 12.0 | 40.0 | 100 | 14 | Fishtail |

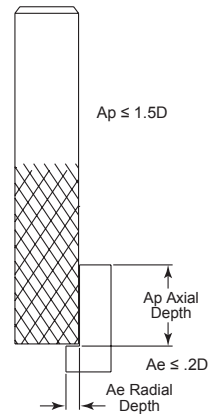


Diamond Grind Routers Series 230, 231 Recommended Cutting Data

| Slotting 90 (m/min) | | | Slotting 182 (m/min) | | |
|---------------------|-------|--------|----------------------|-------|--------|
| Tool Diameter | RPM | mm/min | Tool Diameter | RPM | mm/min |
| 0.8 | 35000 | 141 | 0.8 | 72000 | 289 |
| 1 | 28000 | 226 | 1 | 57000 | 463 |
| 1.2 | 23000 | 306 | 1.2 | 48000 | 627 |
| 1.5 | 18000 | 376 | 1.5 | 38000 | 771 |
| 1.6 | 17000 | 388 | 1.6 | 36000 | 795 |
| 2 | 14000 | 423 | 2 | 28000 | 868 |
| 2.4 | 11000 | 447 | 2.4 | 24000 | 916 |
| 3 | 9400 | 480 | 3 | 19000 | 984 |
| 5 | 5600 | 395 | 5 | 11000 | 810 |
| 6 | 4700 | 423 | 6 | 9600 | 868 |
| 8 | 3500 | 353 | 8 | 7200 | 723 |



| Side Milling 120(m/min) | | | Side Milling 240 (m/min) | | |
|-------------------------|-------|--------|--------------------------|-------|--------|
| Tool Diameter | RPM | mm/min | Tool Diameter | RPM | mm/min |
| 0.8 | 47000 | 190 | 0.8 | 95000 | 381 |
| 1 | 38000 | 305 | 1 | 76000 | 610 |
| 1.2 | 31000 | 413 | 1.2 | 63000 | 826 |
| 1.5 | 25000 | 508 | 1.5 | 50000 | 1017 |
| 1.6 | 23000 | 524 | 1.6 | 47000 | 1049 |
| 2 | 19000 | 572 | 2 | 38000 | 1145 |
| 2.4 | 15000 | 604 | 2.4 | 31000 | 1208 |
| 3 | 12000 | 648 | 3 | 25000 | 1297 |
| 5 | 7600 | 534 | 5 | 15000 | 1068 |
| 6 | 6300 | 572 | 6 | 12000 | 1145 |
| 8 | 4700 | 477 | 8 | 9500 | 954 |

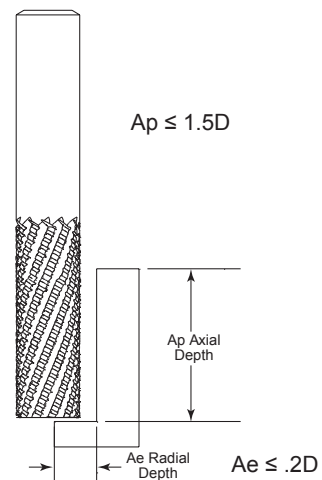
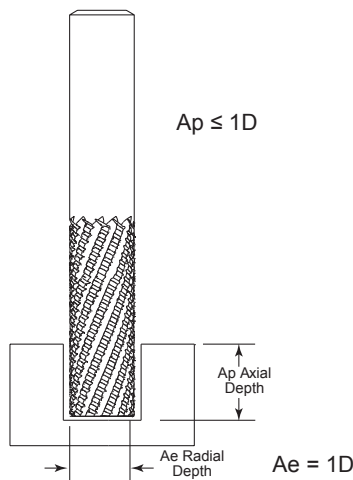


** Tool must have end grind in order to slot.

Note: The parameters in this table are for common material thickness of 6mm. You must use the Radial Depth (Ae) of 20% or less for Side Milling. For best surface finish conventional mill is recommended. Higher feed rates are possible but surface finish may change.



Diamond Grind Routers Series 239 'The "Black" Diamond' Recommended Cutting Data



| Slotting 90 (m/min) | | | Slotting 182 (m/min) | | |
|---------------------|------|--------|----------------------|-------|--------|
| Tool Diameter | RPM | mm/min | Tool Diameter | RPM | mm/min |
| 3 | 9000 | 254 | 3 | 18000 | 508 |
| 5 | 6000 | 304 | 5 | 12000 | 635 |
| 6 | 5000 | 381 | 6 | 9000 | 762 |
| 8 | 4000 | 457 | 8 | 7000 | 889 |
| 10 | 3000 | 508 | 10 | 6000 | 1016 |
| 12 | 2000 | 635 | 12 | 5000 | 1270 |

| Feed adjustment to part thickness | |
|-----------------------------------|--------|
| ≤ 0.5D | x 150% |
| 0.5D - 1D | x 120% |
| 1D - 2D | x 80% |
| 3D-4D | x 50% |

| Side Milling 120(m/min) | | | Side Milling 240 (m/min) | | |
|-------------------------|-------|--------|--------------------------|-------|--------|
| Tool Diameter | RPM | mm/min | Tool Diameter | RPM | mm/min |
| 3 | 12000 | 508 | 3 | 24000 | 1016 |
| 5 | 8000 | 635 | 5 | 16000 | 1270 |
| 6 | 6000 | 762 | 6 | 12000 | 1524 |
| 8 | 5000 | 889 | 8 | 10000 | 1778 |
| 10 | 4000 | 1016 | 10 | 8000 | 2032 |
| 12 | 3000 | 1270 | 12 | 6000 | 2540 |

** Tool must have end grind to slot.

Note: The parameters in this table are for common material thickness of 6mm. You must use the Radial Depth (Ae) of 20% or less for Side Milling. For best surface finish conventional mill is recommended. Higher feed rates are possible but surface finish may change.

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

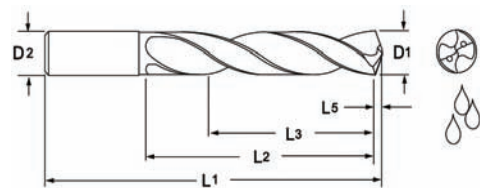
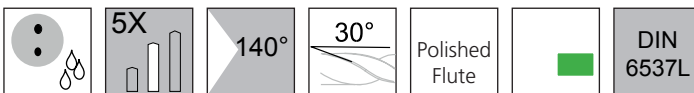


CDACR Aluminium Drill

This year's MACH sees the introduction of our advanced range of high performance drills for Aluminium alloys. The Cyclone CDACR follows our highly successful CXD drill range and share similar design features.

A new low thrust point design, enhanced double margin and polished flutes enables CDACR to drill at elevated speeds and feeds whilst giving improved hole quality and surface finish.

- Lower thrust point geometry.
- Enhanced double margin.
- Deeper flute depth improving chip evacuation.
- Coolant fed.
- Improved performance in non-ferrous materials.
- Back margin location allows for quicker engagement in hole.
- Improved hole finishes and location when drilling through cross holes.
- Higher heat resistance = higher speed and feed capabilities.



| Tool Number | D1 (m7) | D2 (h6) | L1 | L2 (max) | L3 (Ref) |
|-------------|---------|---------|----|----------|----------|
| CDACRM0300 | 3.0 | 6 | 66 | 28 | 23 |
| CDACRM0310 | 3.1 | 6 | 66 | 28 | 23 |
| CDACRM0320 | 3.2 | 6 | 66 | 28 | 23 |
| CDACRM0330 | 3.3 | 6 | 66 | 28 | 23 |
| CDACRM0340 | 3.4 | 6 | 66 | 28 | 23 |
| CDACRM0350 | 3.5 | 6 | 66 | 28 | 23 |
| CDACRM0360 | 3.6 | 6 | 66 | 28 | 23 |
| CDACRM0370 | 3.7 | 6 | 66 | 28 | 23 |
| CDACRM0380 | 3.8 | 6 | 74 | 36 | 29 |
| CDACRM0390 | 3.9 | 6 | 74 | 36 | 29 |
| CDACRM0400 | 4.0 | 6 | 74 | 36 | 29 |
| CDACRM0410 | 4.1 | 6 | 74 | 36 | 29 |
| CDACRM0420 | 4.2 | 6 | 74 | 36 | 29 |
| CDACRM0430 | 4.3 | 6 | 74 | 36 | 29 |
| CDACRM0440 | 4.4 | 6 | 74 | 36 | 29 |
| CDACRM0450 | 4.5 | 6 | 74 | 36 | 29 |
| CDACRM0460 | 4.6 | 6 | 74 | 36 | 29 |
| CDACRM0470 | 4.7 | 6 | 74 | 36 | 29 |
| CDACRM0480 | 4.8 | 6 | 82 | 44 | 35 |
| CDACRM0490 | 4.9 | 6 | 82 | 44 | 35 |
| CDACRM0500 | 5.0 | 6 | 82 | 44 | 35 |
| CDACRM0510 | 5.1 | 6 | 82 | 44 | 35 |
| CDACRM0520 | 5.2 | 6 | 82 | 44 | 35 |
| CDACRM0530 | 5.3 | 6 | 82 | 44 | 35 |
| CDACRM0540 | 5.4 | 6 | 82 | 44 | 35 |
| CDACRM0550 | 5.5 | 6 | 82 | 44 | 35 |
| CDACRM0560 | 5.6 | 6 | 82 | 44 | 35 |
| CDACRM0570 | 5.7 | 6 | 82 | 44 | 35 |
| CDACRM0580 | 5.8 | 6 | 82 | 44 | 35 |



CYCLONE™ CDACR Aluminium Drill

| Tool Number | D1 (m7) | D2 (h6) | L1 | L2 (max) | L3 (Ref) |
|-------------|---------|---------|-----|----------|----------|
| CDACRM0590 | 5.9 | 6 | 82 | 44 | 35 |
| CDACRM0600 | 6.0 | 6 | 82 | 44 | 35 |
| CDACRM0610 | 6.1 | 8 | 91 | 53 | 43 |
| CDACRM0620 | 6.2 | 8 | 91 | 53 | 43 |
| CDACRM0630 | 6.3 | 8 | 91 | 53 | 43 |
| CDACRM0640 | 6.4 | 8 | 91 | 53 | 43 |
| CDACRM0650 | 6.5 | 8 | 91 | 53 | 43 |
| CDACRM0660 | 6.6 | 8 | 91 | 53 | 43 |
| CDACRM0670 | 6.7 | 8 | 91 | 53 | 43 |
| CDACRM0680 | 6.8 | 8 | 91 | 53 | 43 |
| CDACRM0690 | 6.9 | 8 | 91 | 53 | 43 |
| CDACRM0700 | 7.0 | 8 | 91 | 53 | 43 |
| CDACRM0710 | 7.1 | 8 | 91 | 53 | 43 |
| CDACRM0720 | 7.2 | 8 | 91 | 53 | 43 |
| CDACRM0730 | 7.3 | 8 | 91 | 53 | 43 |
| CDACRM0740 | 7.4 | 8 | 91 | 53 | 43 |
| CDACRM0750 | 7.5 | 8 | 91 | 53 | 43 |
| CDACRM0760 | 7.6 | 8 | 91 | 53 | 43 |
| CDACRM0770 | 7.7 | 8 | 91 | 53 | 43 |
| CDACRM0780 | 7.8 | 8 | 91 | 53 | 43 |
| CDACRM0790 | 7.9 | 8 | 91 | 53 | 43 |
| CDACRM0800 | 8.0 | 8 | 91 | 53 | 43 |
| CDACRM0810 | 8.1 | 10 | 103 | 61 | 49 |
| CDACRM0820 | 8.2 | 10 | 103 | 61 | 49 |
| CDACRM0830 | 8.3 | 10 | 103 | 61 | 49 |
| CDACRM0840 | 8.4 | 10 | 103 | 61 | 49 |
| CDACRM0850 | 8.5 | 10 | 103 | 61 | 49 |
| CDACRM0860 | 8.6 | 10 | 103 | 61 | 49 |
| CDACRM0870 | 8.7 | 10 | 103 | 61 | 49 |
| CDACRM0880 | 8.8 | 10 | 103 | 61 | 49 |
| CDACRM0890 | 8.9 | 10 | 103 | 61 | 49 |
| CDACRM0900 | 9.0 | 10 | 103 | 61 | 49 |
| CDACRM0910 | 9.1 | 10 | 103 | 61 | 49 |
| CDACRM0920 | 9.2 | 10 | 103 | 61 | 49 |
| CDACRM0930 | 9.3 | 10 | 103 | 61 | 49 |
| CDACRM0940 | 9.4 | 10 | 103 | 61 | 49 |
| CDACRM0950 | 9.5 | 10 | 103 | 61 | 49 |
| CDACRM0960 | 9.6 | 10 | 103 | 61 | 49 |
| CDACRM0970 | 9.7 | 10 | 103 | 61 | 49 |
| CDACRM0980 | 9.8 | 10 | 103 | 61 | 49 |
| CDACRM0990 | 9.9 | 10 | 103 | 61 | 49 |
| CDACRM1000 | 10.0 | 10 | 103 | 61 | 49 |
| CDACRM1010 | 10.1 | 10 | 103 | 61 | 49 |
| CDACRM1020 | 10.2 | 12 | 118 | 71 | 56 |
| CDACRM1030 | 10.3 | 12 | 118 | 71 | 56 |
| CDACRM1040 | 10.4 | 12 | 118 | 71 | 56 |
| CDACRM1050 | 10.5 | 12 | 118 | 71 | 56 |
| CDACRM1060 | 10.6 | 12 | 118 | 71 | 56 |
| CDACRM1070 | 10.7 | 12 | 118 | 71 | 56 |
| CDACRM1080 | 10.8 | 12 | 118 | 71 | 56 |
| CDACRM1090 | 10.9 | 12 | 118 | 71 | 56 |
| CDACRM1100 | 11.0 | 12 | 118 | 71 | 56 |
| CDACRM1110 | 11.1 | 12 | 118 | 71 | 56 |
| CDACRM1120 | 11.2 | 12 | 118 | 71 | 56 |
| CDACRM1130 | 11.3 | 12 | 118 | 71 | 56 |
| CDACRM1140 | 11.4 | 12 | 118 | 71 | 56 |
| CDACRM1150 | 11.5 | 12 | 118 | 71 | 56 |
| CDACRM1160 | 11.6 | 12 | 118 | 71 | 56 |
| CDACRM1170 | 11.7 | 12 | 118 | 71 | 56 |
| CDACRM1180 | 11.8 | 12 | 118 | 71 | 56 |
| CDACRM1190 | 11.9 | 12 | 118 | 71 | 56 |
| CDACRM1200 | 12.0 | 12 | 118 | 71 | 56 |
| CDACRM1250 | 12.5 | 14 | 124 | 77 | 60 |

| Work piece Material Group | ISO | Hardness | vc - m/min | | | Drill Diameter (mm) | | | | | | |
|--|-----|----------|-------------------|----------------|-----|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | | Min | Starting Value | Max | 3.0 | 4.0 | 6.0 | 8.0 | 10.0 | 12.0 | |
| | | | | | | f - mm/Rev | | | | | | |
| Aluminium & Aluminium Wrought Alloys | N | 10 | 60-100 Brinell HB | 120 | 230 | 450 | 0.13-0.25 | 0.14-0.29 | 0.17-0.35 | 0.21-0.42 | 0.27-0.50 | 0.33-0.57 |
| Cast Aluminium Alloys | | 20 | 75-90 Brinell HB | 120 | 220 | 350 | 0.14-0.23 | 0.15-0.28 | 0.17-0.34 | 0.22-0.39 | 0.29-0.46 | 0.34-0.54 |
| Aluminium Alloys Cast 13-22% Si | | 30 | | 100 | 180 | 400 | 0.13-0.18 | 0.14-0.19 | 0.16-0.25 | 0.20-0.30 | 0.28-0.37 | 0.33-0.24 |
| Copper and Copper Alloys Brass, Bronze, Copper | | 40 | 90-110 Brinell HB | 100 | 130 | 300 | 0.10-0.16 | 0.12-0.18 | 0.14-0.24 | 0.16-0.28 | 0.18-0.32 | 0.20-0.36 |

Definition

- This group contains non-ferrous, soft metals with hardnesses under 130 HB, except for high strength bronzes.
- (>225HB)Aluminum (Al) alloys comprising less than 12-13% silicon (Si) represent the largest part.
- MMC: Metal Matrix Composite: Al + SiC (20-30%).
- Magnesium based alloys.
- Copper, electrolytic copper with 99.95% Cu.
- Bronze: Copper with Tin (Sn) (10-14%) and/or aluminum (3-10%).
- Brass: Copper (60-85%) with Zinc (Zn) (40-15%).

Machinability of Aluminum

- Long-chipping material.
- Relatively easy chip control, if alloyed.
- Pure Al is sticky and requires sharp cutting edges and high cutting speeds Vc, consider "Fordlube" coating.
- Specific cutting force: 350–700 N/mm².
- Cutting forces, and thus the power required to machine them, are low.
- For Cast Aluminum with Si-content above 13%, consider Ceraedge® coating.
- Al with higher Si-content > 12% is very abrasive, consider an engineered custom tool solution with GemX coating or PCD diamond tipped.

Common components

- Engine block, cylinder head, transmission housings, casings, aerospace frame components.



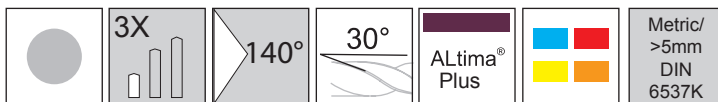
CXD High Performance Drills

Our reputation for manufacturing high performance drilling tools is the same today as it was back in the 1960s when we were a pioneer in the development of printed circuit board drills. This heritage sees the introduction of our Cyclone CXD range of advanced drills which operate in virtually any material. From Mild Steel to Titanium and High Temperature Alloys, CXD delivers exceptional performance.

- New lower thrust point geometry.
- Enhanced double margin design.
- ALtima® Plus AlTiN multi-layer coating.
- Enhanced surface finish technology pre and post coating.



CYCLONE™ CXDSS Drill



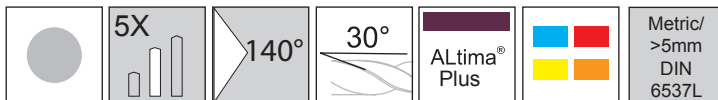
Designed for high performance drilling in a broad range of materials.



Available in 3 - 12mm in 0.1 increments.
12.1 - 20mm in 0.5 and selected further diameters.



CYCLONE™ CXDSR Drill



Designed for high performance drilling in a broad range of materials.

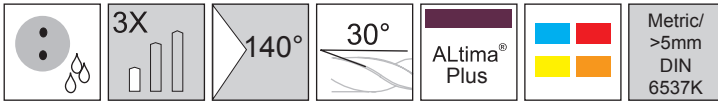


Available in 3 - 12mm in 0.1 increments.
12.1 - 16mm in 0.5 and selected further diameters.





CYCLONE™ CXDCS Drill



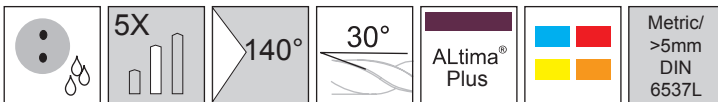
Designed for high performance drilling in a broad range of materials.



Available in 3 - 12mm in 0.1 increments.
12.1 - 16mm in 0.5 and selected further diameters.



CYCLONE™ CXDCR Drill



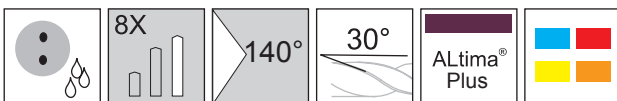
Designed for high performance drilling in a broad range of materials.



Available in 3 - 12mm in 0.1 increments.
12.1 - 16mm in 0.5 and selected further diameters.



CYCLONE™ CXDCL Drill



Designed for high performance drilling in a broad range of materials.



Available in 3 - 12mm in 0.1 increments.
12.1 - 16mm in 0.5 and selected further diameters.

| Metric (mm) | |
|--------------|----------------|
| D1 | Tolerance (m7) |
| 0 - 3.0 | +0.002/+0.012 |
| 3.01 - 6.0 | +0.004/+0.016 |
| 6.01 - 10.0 | +0.006/+0.021 |
| 10.01 - 12.7 | +0.007/+0.025 |

| Metric (mm) | |
|--------------|----------------|
| D2 | Tolerance (h6) |
| 0 - 3.0 | +0/-0.006 |
| 3.01 - 6.0 | +0/-0.008 |
| 6.01 - 10.0 | +0/-0.009 |
| 10.01 - 12.7 | +0/-0.011 |



HSSCo Platinum Drills

Series PRM-KSN, PRXS-KST & PRXS-KMT

To bring even more choice to our customers, MACH 2016 sees the introduction of our new HSSCo range of Platinum series drills.

A special point and flute design delivers excellent performance when drilling Steels, Stainless Steels, Copper and Aluminium.

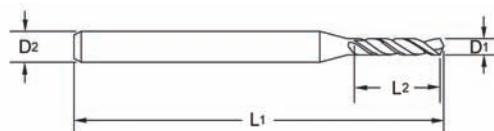
- Specially designed for drilling Stainless Steel, and AL Alloys up to HB200.
- Reinforced shank design.
- High precision drilling.



HSSCo Platinum Drills Series PRM-KSN



PrecisionCut short length



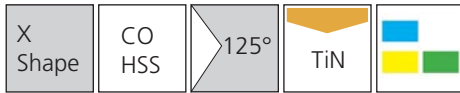
| Series PRM-KSN | Tool Dimensions (mm) | | |
|----------------|----------------------|----|-----|
| | Tool No | D1 | L1 |
| PRM-KS00030N | 0.3 | 40 | 3.5 |
| PRM-KS00040N | 0.4 | 40 | 4.5 |
| PRM-KS00050N | 0.5 | 40 | 5 |
| PRM-KS00060N | 0.6 | 40 | 6 |
| PRM-KS00070N | 0.7 | 40 | 6 |
| PRM-KS00080N | 0.8 | 40 | 7 |
| PRM-KS00090N | 0.9 | 40 | 8 |

Stock Standard items

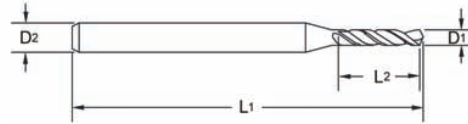




HSSCo Platinum Drills Series PRXS-KST



PrecisionCut X-Shape, for stainless steel drilling, short length



| Series PRXS-KST | Tool Dimensions (mm) | | | |
|-----------------|----------------------|----|----|----|
| Tool No | D1 | D2 | L1 | L2 |
| PRXS-KS00100T | 1.0 | 3 | 40 | 8 |
| PRXS-KS00110T | 1.1 | 3 | 40 | 10 |
| PRXS-KS00120T | 1.2 | 3 | 40 | 10 |
| PRXS-KS00130T | 1.3 | 3 | 40 | 11 |
| PRXS-KS00140T | 1.4 | 3 | 40 | 11 |
| PRXS-KS00150T | 1.5 | 3 | 40 | 12 |
| PRXS-KS00160T | 1.6 | 3 | 40 | 12 |
| PRXS-KS00170T | 1.7 | 3 | 40 | 12 |
| PRXS-KS00180T | 1.8 | 3 | 40 | 12 |
| PRXS-KS00190T | 1.9 | 3 | 40 | 12 |
| PRXS-KS00200T | 2.0 | 3 | 40 | 13 |
| PRXS-KS00210T | 2.1 | 3 | 40 | 13 |
| PRXS-KS00220T | 2.2 | 3 | 40 | 13 |
| PRXS-KS00230T | 2.3 | 3 | 40 | 13 |
| PRXS-KS00240T | 2.4 | 3 | 40 | 13 |
| PRXS-KS00250T | 2.5 | 3 | 40 | 13 |
| PRXS-KS00260T | 2.6 | 3 | 40 | 13 |
| PRXS-KS00270T | 2.7 | 3 | 40 | 16 |
| PRXS-KS00280T | 2.8 | 3 | 40 | 16 |
| PRXS-KS00290T | 2.9 | 3 | 40 | 16 |
| PRXS-KS00300T | 3.0 | 4 | 40 | 16 |
| PRXS-KS00310T | 3.1 | 4 | 50 | 18 |
| PRXS-KS00320T | 3.2 | 4 | 50 | 18 |
| PRXS-KS00330T | 3.3 | 4 | 50 | 18 |
| PRXS-KS00340T | 3.4 | 4 | 50 | 20 |
| PRXS-KS00350T | 3.5 | 4 | 50 | 20 |
| PRXS-KS00360T | 3.6 | 4 | 50 | 20 |
| PRXS-KS00370T | 3.7 | 4 | 50 | 20 |
| PRXS-KS00380T | 3.8 | 4 | 50 | 22 |
| PRXS-KS00390T | 3.9 | 4 | 50 | 22 |
| PRXS-KS00400T | 4.0 | 6 | 70 | 22 |
| PRXS-KS00410T | 4.1 | 6 | 70 | 22 |
| PRXS-KS00420T | 4.2 | 6 | 70 | 22 |
| PRXS-KS00430T | 4.3 | 6 | 70 | 22 |
| PRXS-KS00440T | 4.4 | 6 | 70 | 26 |
| PRXS-KS00450T | 4.5 | 6 | 70 | 26 |
| PRXS-KS00460T | 4.6 | 6 | 70 | 26 |
| PRXS-KS00470T | 4.7 | 6 | 70 | 26 |
| PRXS-KS00480T | 4.8 | 6 | 70 | 26 |
| PRXS-KS00490T | 4.9 | 6 | 70 | 26 |
| PRXS-KS00500T | 5.0 | 6 | 70 | 26 |
| PRXS-KS00510T | 5.1 | 6 | 70 | 26 |
| PRXS-KS00520T | 5.2 | 6 | 70 | 26 |
| PRXS-KS00530T | 5.3 | 6 | 70 | 26 |
| PRXS-KS00540T | 5.4 | 6 | 70 | 28 |
| PRXS-KS00550T | 5.5 | 6 | 70 | 28 |
| PRXS-KS00560T | 5.6 | 6 | 70 | 28 |

| Series PRXS-KST | Tool Dimensions (mm) | | | |
|-----------------|----------------------|----|-----|----|
| Tool No | D1 | D2 | L1 | L2 |
| PRXS-KS00570T | 5.7 | 6 | 70 | 28 |
| PRXS-KS00580T | 5.8 | 6 | 70 | 28 |
| PRXS-KS00590T | 5.9 | 6 | 70 | 28 |
| PRXS-KS00600T | 6.0 | 8 | 80 | 31 |
| PRXS-KS00610T | 6.1 | 8 | 80 | 31 |
| PRXS-KS00620T | 6.2 | 8 | 80 | 31 |
| PRXS-KS00630T | 6.3 | 8 | 80 | 31 |
| PRXS-KS00640T | 6.4 | 8 | 80 | 31 |
| PRXS-KS00650T | 6.5 | 8 | 80 | 31 |
| PRXS-KS00660T | 6.6 | 8 | 80 | 31 |
| PRXS-KS00670T | 6.7 | 8 | 80 | 31 |
| PRXS-KS00680T | 6.8 | 8 | 80 | 34 |
| PRXS-KS00690T | 6.9 | 8 | 80 | 34 |
| PRXS-KS00700T | 7.0 | 8 | 80 | 34 |
| PRXS-KS00710T | 7.1 | 8 | 80 | 34 |
| PRXS-KS00720T | 7.2 | 8 | 80 | 34 |
| PRXS-KS00730T | 7.3 | 8 | 80 | 34 |
| PRXS-KS00740T | 7.4 | 8 | 80 | 34 |
| PRXS-KS00750T | 7.5 | 8 | 80 | 34 |
| PRXS-KS00760T | 7.6 | 8 | 80 | 37 |
| PRXS-KS00770T | 7.7 | 8 | 80 | 37 |
| PRXS-KS00780T | 7.8 | 8 | 80 | 37 |
| PRXS-KS00790T | 7.9 | 8 | 80 | 37 |
| PRXS-KS00800T | 8.0 | 10 | 90 | 37 |
| PRXS-KS00810T | 8.1 | 10 | 90 | 37 |
| PRXS-KS00820T | 8.2 | 10 | 90 | 37 |
| PRXS-KS00830T | 8.3 | 10 | 90 | 37 |
| PRXS-KS00840T | 8.4 | 10 | 90 | 37 |
| PRXS-KS00850T | 8.5 | 10 | 90 | 37 |
| PRXS-KS00860T | 8.6 | 10 | 90 | 40 |
| PRXS-KS00870T | 8.7 | 10 | 90 | 40 |
| PRXS-KS00880T | 8.8 | 10 | 90 | 40 |
| PRXS-KS00890T | 8.9 | 10 | 90 | 40 |
| PRXS-KS00900T | 9.0 | 10 | 90 | 40 |
| PRXS-KS00910T | 9.1 | 10 | 90 | 40 |
| PRXS-KS00920T | 9.2 | 10 | 90 | 40 |
| PRXS-KS00930T | 9.3 | 10 | 90 | 40 |
| PRXS-KS00940T | 9.4 | 10 | 90 | 40 |
| PRXS-KS00950T | 9.5 | 10 | 90 | 40 |
| PRXS-KS00960T | 9.6 | 10 | 90 | 43 |
| PRXS-KS00970T | 9.7 | 10 | 90 | 43 |
| PRXS-KS00980T | 9.8 | 10 | 90 | 43 |
| PRXS-KS00990T | 9.9 | 10 | 90 | 43 |
| PRXS-KS01000T | 10.0 | 12 | 100 | 43 |
| PRXS-KS01010T | 10.1 | 12 | 100 | 43 |
| PRXS-KS01020T | 10.2 | 12 | 100 | 43 |
| PRXS-KS01030T | 10.3 | 12 | 100 | 43 |

Stock Standard items



www.mafordeurope.com



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HSSCo Platinum Drills Series PRXS-KST

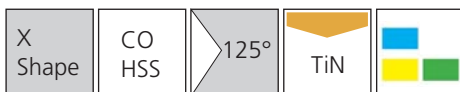
| Series PRXS-KST | Tool Dimensions (mm) | | | |
|-----------------|----------------------|----|-----|----|
| Tool No | D1 | D2 | L1 | L2 |
| PRXS-KS01040T | 10.4 | 12 | 100 | 43 |
| PRXS-KS01050T | 10.5 | 12 | 100 | 43 |
| PRXS-KS01060T | 10.6 | 12 | 100 | 43 |
| PRXS-KS01070T | 10.7 | 12 | 100 | 47 |
| PRXS-KS01080T | 10.8 | 12 | 100 | 47 |
| PRXS-KS01090T | 10.9 | 12 | 100 | 47 |
| PRXS-KS01100T | 11.0 | 12 | 100 | 47 |
| PRXS-KS01110T | 11.1 | 12 | 100 | 47 |
| PRXS-KS01120T | 11.2 | 12 | 100 | 47 |
| PRXS-KS01130T | 11.3 | 12 | 100 | 47 |
| PRXS-KS01140T | 11.4 | 12 | 100 | 47 |
| PRXS-KS01150T | 11.5 | 12 | 100 | 47 |
| PRXS-KS01160T | 11.6 | 12 | 100 | 47 |
| PRXS-KS01170T | 11.7 | 12 | 100 | 47 |

| Series PRXS-KST | Tool Dimensions (mm) | | | |
|-----------------|----------------------|----|-----|-----|
| Tool No | D1 | D2 | L1 | L2 |
| PRXS-KS01180T | 11.8 | 12 | 100 | 47 |
| PRXS-KS01190T | 11.9 | 12 | 100 | 51 |
| PRXS-KS01200T | 12.0 | 12 | 100 | 51 |
| PRXS-KS01210T | 12.1 | 12 | 100 | 51 |
| PRXS-KS01220T | 12.2 | 12 | 100 | 51 |
| PRXS-KS01230T | 12.3 | 12 | 100 | 51 |
| PRXS-KS01240T | 12.4 | 12 | 100 | 51 |
| PRXS-KS01250T | 12.5 | 12 | 100 | 51 |
| PRXS-KS01260T | 12.6 | 12 | 100 | 51 |
| PRXS-KS01270T | 12.7 | 12 | 100 | 51 |
| PRXS-KM01280T | 12.8 | 12 | 150 | 100 |
| PRXS-KM01290T | 12.9 | 12 | 150 | 100 |
| PRXS-KM01300T | 13.0 | 12 | 150 | 100 |

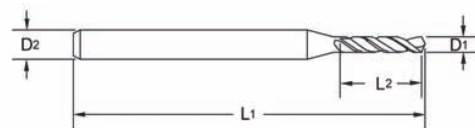
Stock Standard items



HSSCo Platinum Drills Series PRXS-KMT



PrecisionCut X-Shape, for stainless steel drilling, medium length

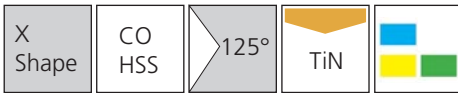


| Series PRXS-MST | Tool Dimensions (mm) | | | |
|-----------------|----------------------|----|----|----|
| Tool No | D1 | D2 | L1 | L2 |
| PRXS-KM00100T | 1.0 | 3 | 55 | 16 |
| PRXS-KM00110T | 1.1 | 3 | 55 | 18 |
| PRXS-KM00120T | 1.2 | 3 | 55 | 18 |
| PRXS-KM00130T | 1.3 | 3 | 55 | 20 |
| PRXS-KM00140T | 1.4 | 3 | 55 | 21 |
| PRXS-KM00150T | 1.5 | 3 | 55 | 21 |
| PRXS-KM00160T | 1.6 | 3 | 55 | 22 |
| PRXS-KM00170T | 1.7 | 3 | 55 | 22 |
| PRXS-KM00180T | 1.8 | 3 | 55 | 23 |
| PRXS-KM00190T | 1.9 | 3 | 55 | 23 |
| PRXS-KM00200T | 2.0 | 3 | 55 | 24 |
| PRXS-KM00210T | 2.1 | 3 | 55 | 24 |
| PRXS-KM00220T | 2.2 | 3 | 55 | 27 |
| PRXS-KM00230T | 2.3 | 3 | 55 | 27 |
| PRXS-KM00240T | 2.4 | 3 | 55 | 30 |
| PRXS-KM00250T | 2.5 | 3 | 55 | 30 |
| PRXS-KM00260T | 2.6 | 3 | 55 | 30 |
| PRXS-KM00270T | 2.7 | 3 | 55 | 33 |
| PRXS-KM00280T | 2.8 | 3 | 55 | 33 |
| PRXS-KM00290T | 2.9 | 3 | 55 | 33 |
| PRXS-KM00300T | 3.0 | 4 | 70 | 33 |
| PRXS-KM00310T | 3.1 | 4 | 70 | 36 |
| PRXS-KM00320T | 3.2 | 4 | 70 | 36 |

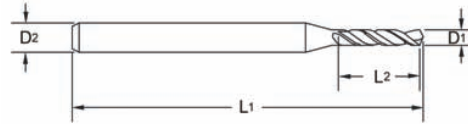
| Series PRXS-MST | Tool Dimensions (mm) | | | |
|-----------------|----------------------|----|----|----|
| Tool No | D1 | D2 | L1 | L2 |
| PRXS-KM00330T | 3.3 | 4 | 70 | 36 |
| PRXS-KM00340T | 3.4 | 4 | 70 | 39 |
| PRXS-KM00350T | 3.5 | 4 | 70 | 39 |
| PRXS-KM00360T | 3.6 | 4 | 70 | 39 |
| PRXS-KM00370T | 3.7 | 4 | 70 | 39 |
| PRXS-KM00380T | 3.8 | 4 | 70 | 43 |
| PRXS-KM00390T | 3.9 | 4 | 70 | 43 |
| PRXS-KM00400T | 4.0 | 6 | 90 | 43 |
| PRXS-KM00410T | 4.1 | 6 | 90 | 43 |
| PRXS-KM00420T | 4.2 | 6 | 90 | 43 |
| PRXS-KM00430T | 4.3 | 6 | 90 | 47 |
| PRXS-KM00440T | 4.4 | 6 | 90 | 47 |
| PRXS-KM00450T | 4.5 | 6 | 90 | 47 |
| PRXS-KM00460T | 4.6 | 6 | 90 | 47 |
| PRXS-KM00470T | 4.7 | 6 | 90 | 47 |
| PRXS-KM00480T | 4.8 | 6 | 90 | 52 |
| PRXS-KM00490T | 4.9 | 6 | 90 | 52 |
| PRXS-KM00500T | 5.0 | 6 | 90 | 52 |
| PRXS-KM00510T | 5.1 | 6 | 90 | 52 |
| PRXS-KM00520T | 5.2 | 6 | 90 | 52 |
| PRXS-KM00530T | 5.3 | 6 | 90 | 52 |
| PRXS-KM00540T | 5.4 | 6 | 90 | 57 |
| PRXS-KM00550T | 5.5 | 6 | 90 | 57 |



HSSCo Platinum Drills Series PRXS-KMT



PrecisionCut X-Shape, for stainless steel drilling, medium length



| Series PRXS-MST | Tool Dimensions (mm) | | | |
|-----------------|----------------------|----|-----|----|
| Tool No | D1 | D2 | L1 | L2 |
| PRXS-KM00560T | 5.6 | 6 | 90 | 57 |
| PRXS-KM00570T | 5.7 | 6 | 90 | 57 |
| PRXS-KM00580T | 5.8 | 6 | 90 | 57 |
| PRXS-KM00590T | 5.9 | 6 | 90 | 57 |
| PRXS-KM00600T | 6.0 | 8 | 110 | 63 |
| PRXS-KM00601T | 6.1 | 8 | 110 | 63 |
| PRXS-KM00602T | 6.2 | 8 | 110 | 63 |
| PRXS-KM00603T | 6.3 | 8 | 110 | 63 |
| PRXS-KM00604T | 6.4 | 8 | 110 | 63 |
| PRXS-KM00650T | 6.5 | 8 | 110 | 63 |
| PRXS-KM00660T | 6.6 | 8 | 110 | 63 |
| PRXS-KM00670T | 6.7 | 8 | 110 | 69 |
| PRXS-KM00680T | 6.8 | 8 | 110 | 69 |
| PRXS-KM00690T | 6.9 | 8 | 110 | 69 |
| PRXS-KM00700T | 7.0 | 8 | 110 | 69 |
| PRXS-KM00710T | 7.1 | 8 | 110 | 69 |
| PRXS-KM00720T | 7.2 | 8 | 110 | 69 |
| PRXS-KM00730T | 7.3 | 8 | 110 | 69 |
| PRXS-KM00740T | 7.4 | 8 | 110 | 69 |
| PRXS-KM00750T | 7.5 | 8 | 110 | 69 |
| PRXS-KM00760T | 7.6 | 8 | 110 | 75 |
| PRXS-KM00770T | 7.7 | 8 | 110 | 75 |
| PRXS-KM00780T | 7.8 | 8 | 110 | 75 |
| PRXS-KM00790T | 7.9 | 8 | 110 | 75 |
| PRXS-KM00800T | 8.0 | 10 | 130 | 75 |
| PRXS-KM00810T | 8.1 | 10 | 130 | 75 |
| PRXS-KM00820T | 8.2 | 10 | 130 | 75 |
| PRXS-KM00830T | 8.3 | 10 | 130 | 75 |
| PRXS-KM00840T | 8.4 | 10 | 130 | 75 |
| PRXS-KM00850T | 8.5 | 10 | 130 | 75 |
| PRXS-KM00860T | 8.6 | 10 | 130 | 81 |
| PRXS-KM00870T | 8.7 | 10 | 130 | 81 |
| PRXS-KM00880T | 8.8 | 10 | 130 | 81 |
| PRXS-KM00890T | 8.9 | 10 | 130 | 81 |
| PRXS-KM00900T | 9.0 | 10 | 130 | 81 |
| PRXS-KM00910T | 9.1 | 10 | 130 | 81 |
| PRXS-KM00920T | 9.2 | 10 | 130 | 81 |
| PRXS-KM00930T | 9.3 | 10 | 130 | 81 |
| PRXS-KM00940T | 9.4 | 10 | 130 | 81 |
| PRXS-KM00950T | 9.5 | 10 | 130 | 81 |
| PRXS-KM00960T | 9.6 | 10 | 130 | 81 |
| PRXS-KM00970T | 9.7 | 10 | 130 | 81 |
| PRXS-KM00980T | 9.8 | 10 | 130 | 81 |
| PRXS-KM00990T | 9.9 | 10 | 130 | 81 |
| PRXS-KM01000T | 10.0 | 12 | 150 | 87 |
| PRXS-KM01010T | 10.1 | 12 | 150 | 87 |
| PRXS-KM01020T | 10.2 | 12 | 150 | 87 |

| Series PRXS-MST | Tool Dimensions (mm) | | | |
|-----------------|----------------------|----|-----|-----|
| Tool No | D1 | D2 | L1 | L2 |
| PRXS-KM01030T | 10.3 | 12 | 150 | 87 |
| PRXS-KM01040T | 10.4 | 12 | 150 | 87 |
| PRXS-KM01050T | 10.5 | 12 | 150 | 87 |
| PRXS-KM01060T | 10.6 | 12 | 150 | 87 |
| PRXS-KM01070T | 10.7 | 12 | 150 | 94 |
| PRXS-KM01080T | 10.8 | 12 | 150 | 94 |
| PRXS-KM01090T | 10.9 | 12 | 150 | 94 |
| PRXS-KM01100T | 11.0 | 12 | 150 | 94 |
| PRXS-KM01110T | 11.1 | 12 | 150 | 94 |
| PRXS-KM01120T | 11.2 | 12 | 150 | 94 |
| PRXS-KM01130T | 11.3 | 12 | 150 | 94 |
| PRXS-KM01140T | 11.4 | 12 | 150 | 94 |
| PRXS-KM01150T | 11.5 | 12 | 150 | 94 |
| PRXS-KM01160T | 11.6 | 12 | 150 | 94 |
| PRXS-KM01170T | 11.7 | 12 | 150 | 94 |
| PRXS-KM01180T | 11.8 | 12 | 150 | 94 |
| PRXS-KM01190T | 11.9 | 12 | 150 | 100 |
| PRXS-KM01200T | 12.0 | 12 | 150 | 100 |
| PRXS-KM01210T | 12.1 | 12 | 150 | 100 |
| PRXS-KM01220T | 12.2 | 12 | 150 | 100 |
| PRXS-KM01230T | 12.3 | 12 | 150 | 100 |
| PRXS-KM01240T | 12.4 | 12 | 150 | 100 |
| PRXS-KM01250T | 12.5 | 12 | 150 | 100 |
| PRXS-KM01260T | 12.6 | 12 | 150 | 100 |
| PRXS-KM01270T | 12.7 | 12 | 150 | 100 |
| PRXS-KM01280T | 12.8 | 12 | 150 | 100 |
| PRXS-KM01290T | 12.9 | 12 | 150 | 100 |
| PRXS-KM01300T | 13.0 | 12 | 150 | 100 |

Stock Standard items



HSSCo Platinum Drills Recommended Cutting Data



Precision Cut PRM-KSN Multi-Purpose, short length

| Workpiece | Stainless Steel | | Carbon Steel | | Alloy Steel Tools Steel | | Alloy Steel Die Steel | | Copper Alloy | | Aluminum alloy | |
|---------------|-------------------------------|--------|--------------------------------|--------|-------------------------|--------|-----------------------|--------|--------------|--------|----------------|--------|
| | SUS 420, 440, 316 (30-40 HRC) | | SS400, S45C, FC (Up to 25 HRC) | | SCM, SK (25-35 HRC) | | SCM, SK (35-40 HRC) | | | | | |
| Diameter (mm) | rpm | mm/rev | rpm | mm/rev | rpm | mm/rev | rpm | mm/rev | rpm | mm/rev | rpm | mm/rev |
| 0.3 | 12,000 | 0.01 | 20,000 | 0.01 | 19,000 | 0.01 | 15,000 | 0.01 | 20,000 | 0.01 | 20,000 | 0.01 |
| 0.4 | 9,500 | 0.01 | 16,000 | 0.01 | 14,000 | 0.01 | 11,000 | 0.01 | 16,000 | 0.02 | 20,000 | 0.02 |
| 0.5 | 7,700 | 0.02 | 13,000 | 0.02 | 12,000 | 0.02 | 9,000 | 0.01 | 12,500 | 0.03 | 20,000 | 0.03 |
| 0.6 | 6,400 | 0.02 | 11,000 | 0.02 | 10,000 | 0.02 | 7,400 | 0.02 | 10,500 | 0.03 | 20,000 | 0.04 |
| 0.7 | 5,500 | 0.03 | 9,000 | 0.03 | 8,800 | 0.03 | 6,400 | 0.02 | 9,000 | 0.04 | 18,000 | 0.05 |
| 0.8 | 4,400 | 0.03 | 8,000 | 0.04 | 7,700 | 0.03 | 5,600 | 0.03 | 8,000 | 0.04 | 16,000 | 0.05 |
| 0.9 | 4,200 | 0.04 | 7,600 | 0.04 | 6,800 | 0.03 | 5,000 | 0.03 | 7,500 | 0.04 | 15,500 | 0.06 |
| 1.0 | 4,000 | 0.04 | 7,200 | 0.05 | 6,200 | 0.04 | 4,500 | 0.03 | 7,000 | 0.05 | 15,500 | 0.06 |



Precision Cut PRXS-KST X Shape, for stainless steel drilling, short length



Precision Cut PRXS-KMT X Shape, for stainless steel drilling, medium length

| Workpiece | Stainless Steel | | | | | | | | Steel | | Brass & Copper Alloy | | Aluminum Alloy | |
|---------------|----------------------|--------|----------------------|--------|----------------------|--------|----------------------|--------|-----------|--------|----------------------|--------|----------------|--------|
| | AISI SUS 304 SUS 316 | | AISI SUS 420 SUS 440 | | AISI SUS 430 SUS 330 | | AISI SUS 630 SUS 631 | | S45C S540 | | C1020 2600 | | A5052 ADC 12 | |
| Diameter (mm) | rpm | mm/rev | rpm | mm/rev | rpm | mm/rev | rpm | mm/rev | rpm | mm/rev | rpm | mm/rev | rpm | mm/rev |
| 2.0 | 2,700 | 0.06 | 2,800 | 0.09 | 3,000 | 0.09 | 1,600 | 0.04 | 5,500 | 0.09 | 4,500 | 0.09 | 9,000 | 0.09 |
| 3.0 | 1,800 | 0.08 | 1,900 | 0.13 | 2,000 | 0.13 | 1,100 | 0.05 | 3,700 | 0.13 | 2,800 | 0.13 | 2,800 | 0.13 |
| 4.0 | 1,350 | 0.10 | 1,400 | 0.15 | 1,500 | 0.15 | 800 | 0.07 | 2,800 | 0.15 | 2,200 | 0.15 | 2,200 | 0.15 |
| 5.0 | 1,080 | 0.12 | 1,200 | 0.18 | 1,300 | 0.18 | 650 | 0.09 | 2,200 | 0.18 | 1,800 | 0.18 | 1,800 | 0.18 |
| 6.0 | 900 | 0.15 | 950 | 0.19 | 1,000 | 0.19 | 550 | 0.10 | 1,800 | 0.19 | 1,400 | 0.19 | 1,400 | 0.19 |
| 8.0 | 680 | 0.19 | 720 | 0.20 | 800 | 0.20 | 400 | 0.14 | 1,400 | 0.20 | 1,100 | 0.20 | 1,100 | 0.20 |
| 10.0 | 540 | 0.21 | 570 | 0.22 | 600 | 0.22 | 320 | 0.18 | 1,100 | 0.22 | 900 | 0.22 | 900 | 0.22 |
| 12.0 | 450 | 0.23 | 480 | 0.25 | 500 | 0.25 | 280 | 0.19 | 930 | 0.25 | 710 | 0.25 | 710 | 0.25 |
| 13.0 | 420 | 0.25 | 440 | 0.26 | 450 | 0.26 | 250 | 0.20 | 880 | 0.26 | 660 | 0.26 | 660 | 0.26 |

* The rpm & mm/rev shall be 10% off for PRXS-KMT





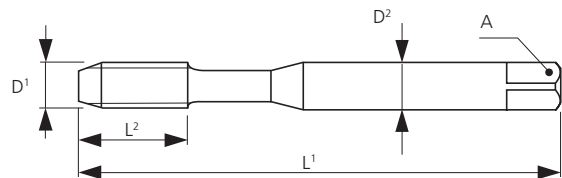
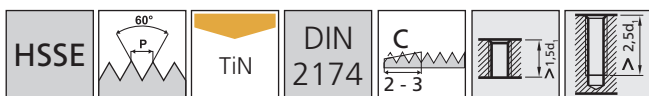
HSS-E Roll Taps



Another addition to our HSS-E range of products sees the introduction of roll taps for the cold forming of internal threads.

Roll taps have no flutes. Lobes periodically spaced around the diameter perform the actual forming of the thread. Roll taps are suitable for ductile materials such as structural steels, free cutting steels, Aluminium and copper.

- No chips produced during threading process
- Higher surface quality on thread flanks.
- Uniform calibration of thread.
- Higher strength of screw connection.
- Higher mechanical resistance of forming taps-longer tool life.



| Tool No. | D1 | D2 | L1 | L2 | Pitch | A |
|--------------|-----|-----|-----|----|-------|-----|
| RTG M3-0.5 | M3 | 3.5 | 56 | 11 | 0.5 | 2.7 |
| RTG M4-0.7 | M4 | 4.5 | 63 | 13 | 0.7 | 3.4 |
| RTG M5-0.8 | M5 | 6 | 70 | 16 | 0.8 | 4.9 |
| RTG M6-1.0 | M6 | 6 | 80 | 19 | 1.00 | 4.9 |
| RTG M8-1.25 | M8 | 8 | 90 | 22 | 1.25 | 6.2 |
| RTG M10-1.5 | M10 | 10 | 100 | 24 | 1.50 | 8 |
| RTG M12-1.75 | M12 | 9 | 110 | 28 | 1.75 | 7 |

- Forming Taps with oil grooves, metric, DIN 2174, TiN coated, for structural steel, plain cast steel, free cutting steels, unalloyed aluminium and aluminium alloys with Si<10%
- Recommended hole diameters for forming of the threads

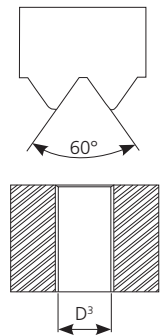
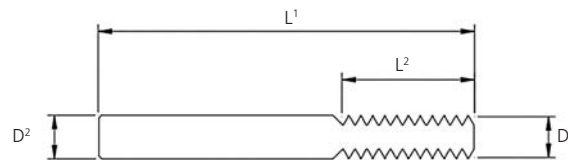
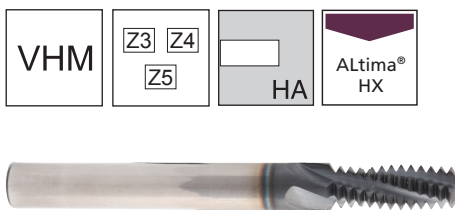
| Thread Size | Tool Band | Min / Max Drill Diameter |
|-------------|-----------|--------------------------|
| M3 | ISO2 6HX | 2.77-2.82 |
| M4 | ISO2 6HX | 3.68-3.73 |
| M5 | ISO2 6HX | 4.63-4.68 |
| M6 | ISO2 6HX | 5.51-5.59 |
| M8 | ISO2 6HX | 7.39-7.48 |
| M10 | ISO2 6HX | 9.25-9.35 |
| M12 | ISO2 6HX | 11.12-11.25 |

| Material | Vc |
|--|---------|
| Aluminium alloys si content<10% | 15-30Vc |
| Structural steels and heat treated steels up to 800N/mm2 | 20-25Vc |
| Unalloyed aluminium | 15-35Vc |
| Unalloyed copper | 15-30Vc |



Carbide Thread Mills

Introducing our new range of solid carbide thread mills. The combination of a helical flute design and an advanced surface coating provide excellent performance in a wide range of materials.



| Tool No. | Metric Size x Pitch | Pre-drilling Size (mm) | D1 | D2 | L1 | L2 | No. of flutes (Z) |
|----------------|---------------------|------------------------|------|----|-----|----|-------------------|
| HTM 02006-0.5 | M3 x 0.5 | 2.5 | 2 | 6 | 64 | 7 | 3 |
| HTM 02706-0.7 | M4 x 0.7 | 3.3 | 2.7 | 6 | 64 | 9 | 3 |
| HTM 03406-0.8 | M5 x 0.8 | 4.2 | 3.4 | 6 | 64 | 11 | 3 |
| HTM 04006-1.0 | M6 x 1.0 | 5 | 4 | 6 | 64 | 14 | 3 |
| HTM 05408-1.25 | M8 x 1.25 | 6.8 | 5.4 | 6 | 70 | 18 | 3 |
| HTM 06710-1.5 | M10 x 1.5 | 8.5 | 6.7 | 8 | 80 | 23 | 4 |
| HTM 08012-1.75 | M12 x 1.75 | 10.2 | 8 | 8 | 80 | 27 | 4 |
| HTM 10716-2.0 | M14 - M16 x 2.0 | 12 | 10.7 | 12 | 90 | 36 | 4 |
| HTM 13420-2.5 | M18 - M20 x 2.5 | 17.5 | 13.4 | 16 | 100 | 45 | 5 |

Carbide Thread Mills Recommended Cutting Data

| Material Groups | Cutting Speed Vc |
|--|------------------|
| Low Carbon Steels | 120 |
| Structural & Heat Treated Steels Up To 800 N/mm ² | 100 |
| Alloy Steels | 60 |
| Austenitic Stainless Steels | 70 |
| Titanium Alloys | 40 |
| Cast Iron | 75 |
| Aluminium Alloys (Si < 10%) | 100 |
| Aluminium (Unalloyed) | 100 |
| Copper (Unalloyed) | 100 |

NEW

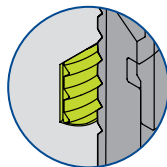
TuffCut® XT

277NR 277NRW

Guaranteed Non Pull-Out

With modern high performance machining and demanding production specifications, the risk of cutting tool 'pull-out' has become a very real concern for many companies. There are various tool holding solutions available, each provide varying degrees of success.

NOW, with the TuffCut® XT 277 NR and NRW range of tooling, M.A.FORD has arguably the highest performing and most cost effective system, incorporating a unique 'Non-pull out' feature - secuRgrip® that is ideal for use with our recommended tool holding solution from REGO-FIX®.



277 NR/NRW

- 'Non-pull out' shank form
- Innovative ALtima® Blaze coating
- Full radius range from stock
- Ideal for stainless steel and titanium
- M.A. Ford's unique Heli-Pitch geometry
- Necked, 3 x Diameter as standard to increase range of use

REGO-FIX® powRgrip® Clamping System

- More than 50% increase in transmitted torque over shrink-fit as standard (without Weldon feature)
- Holders capable of 20,000 insertion / extraction of collet without deterioration in clamping force
- Concentricity $\leq 3\mu\text{m}$
- Designed for roughing and finishing operations
- Eliminates the requirement to have expensive grooves ground in the shank of tool
- Anti vibration effect over standard shrink-fit allowing increased tool life and cutting parameters



Where **high performance** is the standard

For further information please contact:
Tel: +44 (0)1332 267 960



Where **high performance** is the **standard**

Special Offer

The Ultimate Package for the Ultimate Tool Holding System

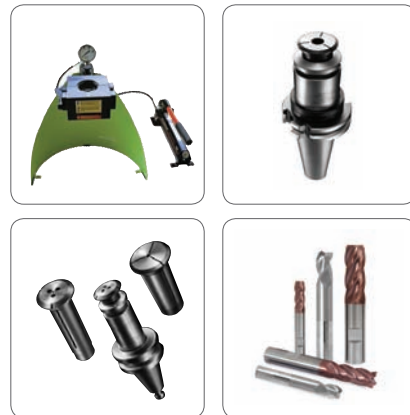
With the appointment of M.A.Ford Europe as a distributor of Rego-Fix® powRgrip® in the UK, you can now take advantage of this incredible system for just

£6995



What you get:

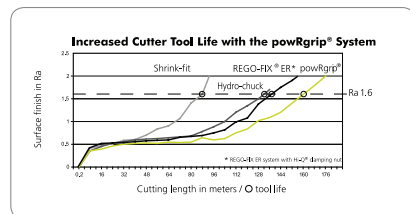
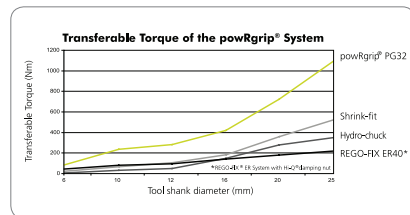
- A Rego-Fix® powRgrip® manual hydraulic press including collet clamp holder assembly
- 10 x BT40 or DIN40 PG25 holders and 10 x collets of your choice (3 - 20 mm)
- A **Free** VMH End Mill Kit 6 - 12mm for steel and stainless steel machining
- A **Free** TuffCut® X-AL 137V End Mill Kit 6 - 12mm for Aluminium machining



The figures speak for themselves

Rego-Fix® powRgrip® tool holding system with secuRgrip® option for 100% security against tool pull-out

- Holders guaranteed for life under normal usage of 20,000 insertion/extraction cycles of collet without deterioration in clamping force
- ≤ 3µm run-out
- Designed for roughing and finishing operations
- Anti vibration effect over standard shrink-fit allowing increased tool life and cutting parameters



Why trust your manufacturing to anyone else!

Rego-Fix® and M.A.Ford Europe – A powRgrip® partnership

For further information please contact:
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Special designs with a special service

Sometimes, even our extraordinarily advanced tooling range can't meet every need 'off-the-shelf', which is where M.A. FORD Europe Custom Tools Division, our specialist custom tool design, production, regrind and remanufacture facility can provide the perfect solution for your needs.

Whether you have a specialised requirement for a custom tool form, length or material, our team can help you design, develop and create dedicated, application specific tooling that not only does the job, but is also manufactured to the excellent quality and precision standards expected from M.A.FORD.

From precision drills, taps, milling tools and cutters for high performance composites, through to special punches, press tool dies and rotary broaches, we have the expertise, facilities and experience to produce advanced special purpose tools, which are used in a diverse range of manufacturing environments. From agriculture to aerospace and motorsport to medical, we've got it covered.

In addition, for more than 30 years, we have provided a precision tool regrind, remanufacture and modification service to businesses in the UK and Europe, which allows worn tools to be revitalised and ensure that their productive working life can be increased at a fraction of the cost of making a new tool.

Like all our precision solutions, our regrinding service is managed and carried out by highly skilled manufacturing professionals to ensure that every customer receives the same high quality support and service that has been a key factor in why M.A. FORD Europe Custom Tools Division's customers keep returning.

For further information please contact:

Tel: +44 (0)1332 267 960





Where **high performance** is the **standard**

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