

**NEW
PRODUCT**



Where high performance is the standard



VMH



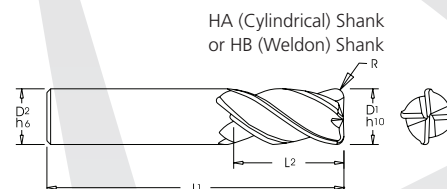
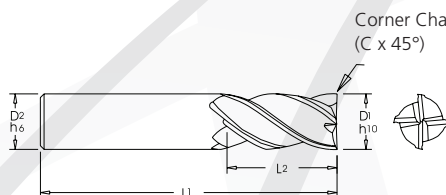
Solid Carbide End Mills for Steel/Stainless Steel



- M.A.Ford Heli-Pitch geometry
- 2.5xD flute length for roughing and finishing operations
- Available with HA and HB (Weldon Shanks) from stock
- Corner protection with chamfer or radius
- 3-20mm diameter
- Altima® 52 high temperature resistant-coating which excels in applications involving high temperature alloys, stainless steel and dry machining of steels

4 Flute Endmill with 45° Corner Clip & Corner Radius

- 2.5 x D Flute Length
- Coating - Hardcut
- Available as HA (Cylindrical) Shank or HB (Weldon) Shank



| Current Tool No. | Ø D ¹ | Ø D ² | L ¹ | L ² | C x 45° | R | Shank Type |
|------------------|------------------|------------------|----------------|----------------|---------|-----|------------|
| VMH 0300 | 3 | 6 | 64 | 7.5 | 0.15 | - | HA |
| VMH 0300-0.3R | 3 | 6 | 64 | 7.5 | 0.15 | 0.3 | HA |
| VMH 0400 | 4 | 6 | 64 | 10 | 0.15 | - | HA |
| VMH 0400-0.3R | 4 | 6 | 64 | 10 | 0.15 | 0.3 | HA |
| VMH 0500 | 5 | 6 | 64 | 12.5 | 0.15 | - | HA |
| VMH 0500-0.3R | 5 | 6 | 64 | 12.5 | 0.15 | 0.3 | HA |
| VMH 0600 | 6 | 6 | 64 | 15 | 0.15 | - | HA |
| VMH 0600-0.3R | 6 | 6 | 64 | 15 | 0.15 | 0.3 | HA |
| VMH 0800 | 8 | 8 | 64 | 20 | 0.25 | - | HA |
| VMH 0800-0.5R | 8 | 8 | 64 | 20 | 0.25 | 0.5 | HA |
| VMH 1000 | 10 | 10 | 73 | 25 | 0.25 | - | HA |
| VMH 1000-0.5R | 10 | 10 | 73 | 25 | 0.25 | 0.5 | HA |
| VMH 1200 | 12 | 12 | 84 | 30 | 0.35 | - | HA |
| VMH 1200-1.0R | 12 | 12 | 84 | 30 | 0.35 | 1 | HA |
| VMH 1600 | 16 | 16 | 93 | 40 | 0.35 | - | HA |
| VMH 1600-1.0R | 16 | 16 | 93 | 40 | 0.35 | 1 | HA |
| VMH 2000 | 20 | 20 | 105 | 50 | 0.35 | - | HA |
| VMH 2000-1.0R | 20 | 20 | 105 | 50 | 0.35 | 1 | HA |

| Current Tool No. | Ø D ¹ | Ø D ² | L ¹ | L ² | C x 45° | R | Shank Type |
|------------------|------------------|------------------|----------------|----------------|---------|---|------------|
| VMH 1200W | 12 | 12 | 84 | 30 | 0.35 | - | HB |
| VMH 1200-1.0RW | 12 | 12 | 84 | 30 | 0.35 | 1 | HB |
| VMH 1600W | 16 | 16 | 93 | 40 | 0.35 | - | HB |
| VMH 1600-1.0RW | 16 | 16 | 93 | 40 | 0.35 | 1 | HB |
| VMH 2000W | 20 | 20 | 105 | 50 | 0.35 | - | HB |
| VMH 2000-1.0RW | 20 | 20 | 105 | 50 | 0.35 | 1 | HB |



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NEW PRODUCT



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VMH



Solid Carbide End Mills for Steel/Stainless Steel

| Workpiece Material Group | Material Type | Coolant | | | Vc-M/Min | | | | | | |
|--------------------------|------------------------------|---------|-----|-----|------------------|----------------|-------------------|------------------|------------------|--------------------|--------------------|
| | | Max | Air | MMS | 1 x D 0.5 x D | 1 x D 1 x D | 0.05 x D 2 x D | 0.1 x D 2 x D | 0.2 x D 2 x D | 0.3 x D 1.5 x D | 0.5 x D 1.5 x D |
| 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 |
| | Titanium Alloys | ● | X | X | 75 | 66 | 160 | 130 | 100 | 85 | 65 |
| | Cast Irons | ● | 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 | Material Type | Tool Diameter | | | | | | | | |
|--------------------------|------------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 3mm | 5mm | 6mm | 8mm | 10mm | 12mm | 16mm | 20mm | 25mm |
| 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 |
| | 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 |

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