

SOLID CARBIDE END MILLS



LAMINA
TECHNOLOGIES

MAGIA



- 
- Next generation Multi-Mat™ Solid End Mills
 - Increased toughness for extended application range
 - Longer tool life through new and unique coating composition.
 - New and exclusive ultra fine grained coating
 - Exclusive edge preparation and precoating surface treatment
 - Unique substrate
-

SOLID CARBIDE END MILLS

LT 4000 is the new generation of our Multi-Mat™ grade for solid carbide end mills, made with our proprietary and patented Magia Technology.

With a new and unique PVD coating material developed by Lamina, Magia Solid Carbide represents increased toughness for the most extreme applications, higher reliability in lower cutting speeds with emulsion, resulting in an extended application range that makes it easier for machinists all over the world to get the job done.

Tool life is also increased, due to reduced friction between the coating and the chips, and a harder coating composite that resists better to abrasion. We have achieved unprecedented tool life.

Proprietary and unique technology developed by Lamina Technologies in our research and development center in Switzerland.

Lamina's R&D team works ceaselessly to push the boundaries of cutting tool performance.

Lamina develops its own unique technologies and materials in order to preserve toughness and hardness with no compromises.

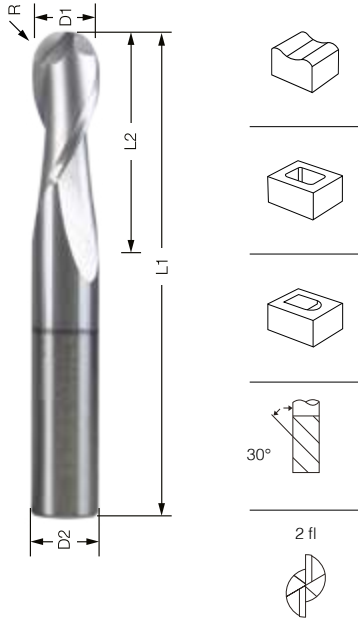
Magia LT 4000 is the latest, state-of-the-art PVD grade using high density plasma to create nanostructured PVD coatings with incredible properties.

MAGIA



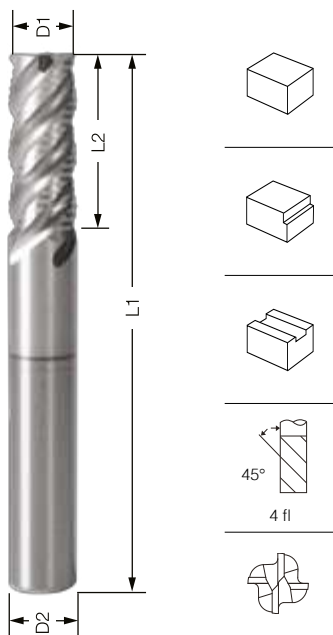
PRODUCT RANGE

Ball Nose, 2 Flute



| DESIGNATION | D1 | D2 | L1 | L2 | R | CATALOG # |
|----------------------------------|------|----|----|----|------|-----------|
| EBN Z2 D01.0(03) L03.0(38) R0.50 | 1.0 | 3 | 38 | 3 | 0.50 | M5003587 |
| EBN Z2 D01.5(03) L05.0(38) R0.75 | 1.5 | 3 | 38 | 5 | 0.75 | M5003588 |
| EBN Z2 D02.0(03) L06.0(38) R1.00 | 2.0 | 3 | 38 | 6 | 1.00 | M5003589 |
| EBN Z2 D02.5(03) L07.0(38) R1.25 | 2.5 | 3 | 38 | 7 | 1.25 | M5003590 |
| EBN Z2 D03.0(03) L09.0(38) R1.50 | 3.0 | 3 | 38 | 9 | 1.50 | M5003591 |
| EBN Z2 D04.0(04) L14.0(50) R2.00 | 4.0 | 4 | 50 | 14 | 2.00 | M5003592 |
| EBN Z2 D05.0(05) L16.0(50) R2.50 | 5.0 | 5 | 50 | 16 | 2.50 | M5003593 |
| EBN Z2 D06.0(06) L20.0(63) R3.00 | 6.0 | 6 | 63 | 20 | 3.00 | M5003594 |
| EBN Z2 D08.0(08) L20.0(63) R4.00 | 8.0 | 8 | 63 | 20 | 4.00 | M5003595 |
| EBN Z2 D10.0(10) L22.0(72) R5.00 | 10.0 | 10 | 72 | 22 | 5.00 | M5003596 |
| EBN Z2 D12.0(12) L26.0(75) R6.00 | 12.0 | 12 | 75 | 26 | 6.00 | M5003597 |

Rougher



3 Flute

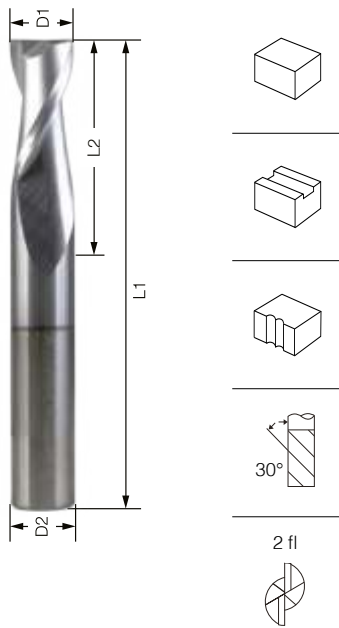
| DESIGNATION | D1 | D2 | L1 | L2 | CATALOG # |
|----------------------------|-----|----|----|------|-----------|
| ERO Z3 D04.0(06) L11.0(57) | 4.0 | 6 | 57 | 11.0 | M5003607 |

4 Flute

| DESIGNATION | D | D1 | L1 | L2 | CATALOG # |
|----------------------------|------|----|----|------|-----------|
| ERO Z4 D05.0(06) L13.0(57) | 5.0 | 6 | 57 | 13.0 | M5003608 |
| ERO Z4 D06.0(06) L13.0(57) | 6.0 | 6 | 57 | 13.0 | M5003609 |
| ERO Z4 D08.0(08) L19.0(63) | 8.0 | 8 | 63 | 19.0 | M5003610 |
| ERO Z4 D10.0(10) L22.0(72) | 10.0 | 10 | 72 | 22.0 | M5003611 |
| ERO Z4 D12.0(12) L26.0(83) | 12.0 | 12 | 83 | 26.0 | M5003612 |

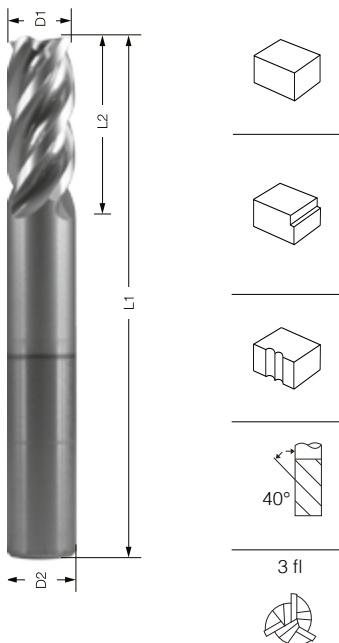


90° 2 Flute



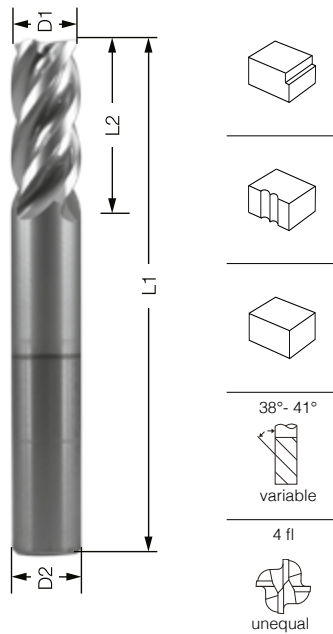
| DESIGNATION | D1 | D2 | L1 | L2 | CATALOG # |
|----------------------------|------|----|----|----|-----------|
| E90 Z2 D01.0(03) L03.0(38) | 1.0 | 3 | 38 | 3 | M5003520 |
| E90 Z2 D01.5(03) L05.0(38) | 1.5 | 3 | 38 | 5 | M5003537 |
| E90 Z2 D02.0(03) L06.0(38) | 2.0 | 3 | 38 | 6 | M5003538 |
| E90 Z2 D02.5(03) L07.0(38) | 2.5 | 3 | 38 | 7 | M5003539 |
| E90 Z2 D03.0(03) L09.0(38) | 3.0 | 3 | 38 | 9 | M5003540 |
| E90 Z2 D04.0(04) L14.0(50) | 4.0 | 4 | 50 | 14 | M5003541 |
| E90 Z2 D05.0(05) L16.0(50) | 5.0 | 5 | 50 | 16 | M5003542 |
| E90 Z2 D06.0(06) L20.0(63) | 6.0 | 6 | 63 | 20 | M5003543 |
| E90 Z2 D08.0(08) L20.0(63) | 8.0 | 8 | 63 | 20 | M5003544 |
| E90 Z2 D10.0(10) L22.0(72) | 10.0 | 10 | 72 | 22 | M5003545 |
| E90 Z2 D12.0(12) L26.0(75) | 12.0 | 12 | 75 | 26 | M5003546 |

90° 3 Flute



| DESIGNATION | D1 | D2 | L1 | L2 | CATALOG # |
|----------------------------|------|----|----|----|-----------|
| E90 Z3 D03.0(06) L08.0(50) | 3.0 | 6 | 50 | 8 | M5003548 |
| E90 Z3 D04.0(06) L11.0(50) | 4.0 | 6 | 50 | 11 | M5003549 |
| E90 Z3 D05.0(06) L13.0(50) | 5.0 | 6 | 50 | 13 | M5003550 |
| E90 Z3 D06.0(06) L16.0(50) | 6.0 | 6 | 50 | 16 | M5003551 |
| E90 Z3 D08.0(08) L20.0(60) | 8.0 | 8 | 60 | 20 | M5003552 |
| E90 Z3 D10.0(10) L25.0(72) | 10.0 | 10 | 72 | 25 | M5003553 |
| E90 Z3 D12.0(12) L30.0(75) | 12.0 | 12 | 75 | 30 | M5003554 |

90° 4 Flute

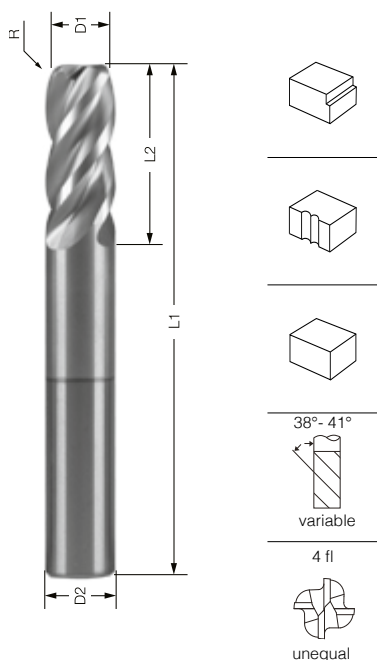


| DESIGNATION | D1 | D2 | L1 | L2 | CATALOG # |
|-----------------------------|------|----|-----|----|-----------|
| E90 Z4 D01.0(04) L03.0(050) | 1.0 | 4 | 50 | 3 | M5003568 |
| E90 Z4 D01.5(04) L05.0(050) | 1.5 | 4 | 50 | 5 | M5003569 |
| E90 Z4 D02.0(04) L06.0(050) | 2.0 | 4 | 50 | 6 | M5003570 |
| E90 Z4 D02.5(04) L08.0(050) | 2.5 | 4 | 50 | 8 | M5003571 |
| E90 Z4 D03.0(06) L08.0(050) | 3.0 | 6 | 50 | 8 | M5003572 |
| E90 Z4 D04.0(06) L11.0(050) | 4.0 | 6 | 50 | 11 | M5003573 |
| E90 Z4 D05.0(06) L13.0(050) | 5.0 | 6 | 50 | 13 | M5003574 |
| E90 Z4 D06.0(06) L16.0(050) | 6.0 | 6 | 50 | 16 | M5003575 |
| E90 Z4 D08.0(08) L20.0(060) | 8.0 | 8 | 60 | 20 | M5003576 |
| E90 Z4 D10.0(10) L22.0(072) | 10.0 | 10 | 72 | 22 | M5003577 |
| E90 Z4 D12.0(12) L26.0(075) | 12.0 | 12 | 75 | 26 | M5003578 |
| E90 Z4 D16.0(16) L38.0(100) | 16.0 | 16 | 100 | 38 | M5003579 |

Long

| DESIGNATION | D1 | D2 | L1 | L2 | CATALOG # |
|-----------------------------|------|----|-----|----|-----------|
| E90 Z4 D03.0(06) L12.0(50) | 3.0 | 6 | 50 | 12 | M5003559 |
| E90 Z4 D04.0(06) L16.0(55) | 4.0 | 6 | 55 | 16 | M5003560 |
| E90 Z4 D05.0(06) L20.0(60) | 5.0 | 6 | 60 | 20 | M5003561 |
| E90 Z4 D06.0(06) L24.0(65) | 6.0 | 6 | 65 | 24 | M5003562 |
| E90 Z4 D08.0(08) L32.0(90) | 8.0 | 8 | 90 | 32 | M5003563 |
| E90 Z4 D10.0(10) L40.0(100) | 10.0 | 10 | 100 | 40 | M5003564 |
| E90 Z4 D12.0(12) L48.0(110) | 12.0 | 12 | 110 | 48 | M5003565 |
| E90 Z4 D16.0(16) L64.0(160) | 16.0 | 16 | 160 | 64 | M5003566 |

90° 4 Flute with Radius



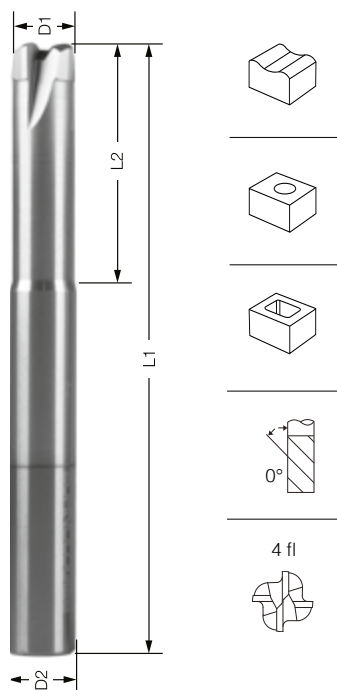
| DESIGNATION | D1 | D2 | L1 | L2 | R | CATALOG # |
|--------------------------------|------|----|----|----|-----|-----------|
| E90 Z4 D03.0(06) L08.0(50)R0.5 | 3.0 | 6 | 50 | 8 | 0.5 | M5003614 |
| E90 Z4 D04.0(06) L11.0(50)R0.5 | 4.0 | 6 | 50 | 11 | 0.5 | M5003615 |
| E90 Z4 D05.0(06) L13.0(50)R0.5 | 5.0 | 6 | 50 | 13 | 0.5 | M5003616 |
| E90 Z4 D06.0(06) L16.0(50)R0.5 | 6.0 | 6 | 50 | 16 | 0.5 | M5003617 |
| E90 Z4 D08.0(08) L20.0(60)R0.5 | 8.0 | 8 | 60 | 20 | 0.5 | M5003618 |
| E90 Z4 D10.0(10) L22.0(72)R0.5 | 10.0 | 10 | 72 | 22 | 0.5 | M5003619 |
| E90 Z4 D12.0(12) L26.0(75)R0.5 | 12.0 | 12 | 75 | 26 | 0.5 | M5003620 |
| E90 Z4 D03.0(06) L08.0(50)R1.0 | 3.0 | 6 | 50 | 8 | 1.0 | M5003623 |
| E90 Z4 D04.0(06) L11.0(50)R1.0 | 4.0 | 6 | 50 | 11 | 1.0 | M5003624 |
| E90 Z4 D05.0(06) L13.0(50)R1.0 | 5.0 | 6 | 50 | 13 | 1.0 | M5003625 |
| E90 Z4 D06.0(06) L16.0(50)R1.0 | 6.0 | 6 | 50 | 16 | 1.0 | M5003626 |
| E90 Z4 D08.0(08) L20.0(60)R1.0 | 8.0 | 8 | 60 | 20 | 1.0 | M5003627 |
| E90 Z4 D10.0(10) L22.0(72)R1.0 | 10.0 | 10 | 72 | 22 | 1.0 | M5003628 |
| E90 Z4 D12.0(12) L26.0(75)R1.0 | 12.0 | 12 | 75 | 26 | 1.0 | M5003629 |
| E90 Z4 D06.0(06) L16.0(50)R2.0 | 6.0 | 6 | 50 | 16 | 2.0 | M5003632 |
| E90 Z4 D08.0(08) L20.0(60)R2.0 | 8.0 | 8 | 60 | 20 | 2.0 | M5003633 |
| E90 Z4 D10.0(10) L22.0(72)R2.0 | 10.0 | 10 | 72 | 22 | 2.0 | M5003634 |
| E90 Z4 D12.0(12) L26.0(75)R2.0 | 12.0 | 12 | 75 | 26 | 2.0 | M5003635 |

Long

| DESIGNATION | D1 | D2 | L1 | L2 | R | CATALOG # |
|-----------------------------|------|----|-----|----|-----|-----------|
| E90 Z4 D08(08) L32(90)R0.5 | 8.0 | 8 | 90 | 32 | 0.5 | M5003638 |
| E90 Z4 D10(10) L40(100)R0.5 | 10.0 | 10 | 100 | 40 | 0.5 | M5003639 |
| E90 Z4 D12(12) L48(110)R0.5 | 12.0 | 12 | 110 | 48 | 0.5 | M5003640 |



High Feed, 4 Flute



| DESIGNATION | D1 | D2 | L1 | L2 | R prog | CATALOG # |
|-----------------------------------|------|----|-----|----|--------|-----------|
| EHF Z4 D03.0(06) L02.0(70) R0.37 | 3.0 | 6 | 70 | 12 | 0.37 | M5003600 |
| EHF Z4 D04.0(06) L02.0(70) R0.47 | 4.0 | 6 | 70 | 16 | 0.47 | M5003601 |
| EHF Z4 D05.0(06) L02.5(70) R0.60 | 5.0 | 6 | 70 | 20 | 0.60 | M5003602 |
| EHF Z4 D06.0(06) L03.0(70) R0.73 | 6.0 | 6 | 70 | 25 | 0.73 | M5003603 |
| EHF Z4 D08.0(08) L04.0(80) R0.98 | 8.0 | 8 | 80 | 30 | 0.98 | M5003604 |
| EHF Z4 D10.0(10) L05.0(90) R1.23 | 10.0 | 10 | 90 | 35 | 1.23 | M5003605 |
| EHF Z4 D12.0(12) L06.0(100) R1.65 | 12.0 | 12 | 100 | 40 | 1.65 | M5003606 |



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