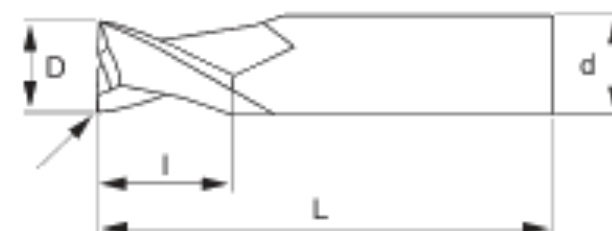


# WIDIA HANITA. END MILLS FOR SLOTTING Z2 CENTER CUTTING



ITEM: A4005

**Material** Micro-grain Integral hard metal  
**Standard** Factory standard  
**Tolerance** e8  
**Shank** Cylindrical  
**Helix** Right-hand 30°  
**Surface treatment** TiAlN  
**Application** Slotting on materials up to 50 HRC



|       |       |        |       |       |        |       |       |          |          |                 |         |     |      |      |      |
|-------|-------|--------|-------|-------|--------|-------|-------|----------|----------|-----------------|---------|-----|------|------|------|
| < 500 | < 850 | < 1200 | < 600 | < 850 | Duplex | < 240 | < 300 | < 10% Si | > 10% Si | Brass<br>Copper | Ti6Al4V | HTA | < 45 | < 60 | < 65 |
| ●     | ●     | ●      | ●     | ●     | ○      | ●     | ●     |          |          |                 |         |     |      |      |      |

## FACTORY STANDARD

| A4005    | Tech. Code |  | D<br>mm | L<br>mm | l<br>mm | d<br>mm | ch 45°<br>mm |  |
|----------|------------|--|---------|---------|---------|---------|--------------|-------------------------------------------------------------------------------------|
| 2T - 30° | A400501    |  | 1       | 38      | 4       | 3       | -            | 1                                                                                   |
|          | A400501,5  |  | 1,5     |         | 6,3     |         |              |                                                                                     |
|          | A400502    |  | 2       |         |         |         |              |                                                                                     |
|          | A400502,5  |  | 2,5     |         |         |         |              |                                                                                     |
|          | A400503    |  | 3       | 50      | 9,5     | 4       | 0,10         |                                                                                     |
|          | A400504    |  | 4       |         | 12      |         |              |                                                                                     |
|          | A400505    |  | 5       |         | 14      | 5       |              |                                                                                     |
|          | A400506    |  | 6       |         | 16      | 6       |              |                                                                                     |
|          | A400507    |  | 7       | 63      | 20      | 7       | 0,20         |                                                                                     |
|          | A400508    |  | 8       |         |         | 8       |              |                                                                                     |
|          | A400509    |  | 9       |         |         | 9       |              |                                                                                     |
|          | A400510    |  | 10      | 72      | 22      | 10      | 0,30         |                                                                                     |
|          | A400511    |  | 11      | 76      | 25      | 11      |              |                                                                                     |
|          | A400512    |  | 12      |         |         | 12      |              |                                                                                     |
|          | A400514    |  | 14      | 83      | 32      | 14      |              |                                                                                     |
|          | A400516    |  | 16      | 89      |         | 16      |              |                                                                                     |
|          | A400518    |  | 18      | 100     | 38      | 18      |              |                                                                                     |
|          | A400520    |  | 20      | 104     |         | 20      |              |                                                                                     |

|                 |              | Side Milling |         | Slotting | RANGE                |                      |       |           |           |           |           |           |            |            |            |            |            |
|-----------------|--------------|--------------|---------|----------|----------------------|----------------------|-------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|------------|------------|
|                 |              |              |         |          | A4005                |                      |       |           |           |           |           |           |            |            |            |            |            |
| Material        | Feature      | Ap           | Ae      | Ap       | Vc<br>m/min.<br>min. | Vc<br>m/min.<br>max. | mm    | D/mm<br>2 | D/mm<br>3 | D/mm<br>4 | D/mm<br>6 | D/mm<br>8 | D/mm<br>10 | D/mm<br>12 | D/mm<br>14 | D/mm<br>16 | D/mm<br>20 |
| CARBON STEEL    | < 500 N/mm²  | 1 x D        | 0,1 x D | 0,5 x D  | 150                  | 200                  | fz/mm | 0,014     | 0,021     | 0,028     | 0,044     | 0,060     | 0,072      | 0,083      | 0,092      | 0,101      | 0,114      |
|                 | < 850 N/mm²  | 1 x D        | 0,1 x D | 0,5 x D  | 120                  | 160                  | fz/mm | 0,014     | 0,021     | 0,028     | 0,044     | 0,060     | 0,072      | 0,083      | 0,092      | 0,101      | 0,114      |
|                 | < 1200 N/mm² | 1 x D        | 0,1 x D | 0,5 x D  | 90                   | 150                  | fz/mm | 0,014     | 0,021     | 0,028     | 0,044     | 0,060     | 0,072      | 0,083      | 0,092      | 0,101      | 0,114      |
| STAINLESS STEEL | < 600 N/mm²  | 1 x D        | 0,1 x D | 0,5 x D  | 90                   | 115                  | fz/mm | 0,011     | 0,017     | 0,023     | 0,036     | 0,050     | 0,061      | 0,070      | 0,079      | 0,098      | 0,101      |
|                 | < 800 N/mm²  | 1 x D        | 0,1 x D | 0,5 x D  | 60                   | 80                   | fz/mm | 0,010     | 0,016     | 0,021     | 0,033     | 0,045     | 0,054      | 0,062      | 0,070      | 0,077      | 0,088      |
| CAST IRON       | < 240 HB     | 1 x D        | 0,1 x D | 0,5 x D  | 120                  | 150                  | fz/mm | 0,011     | 0,017     | 0,023     | 0,036     | 0,050     | 0,061      | 0,070      | 0,079      | 0,087      | 0,101      |
|                 | < 300 HB     | 1 x D        | 0,1 x D | 0,5 x D  | 110                  | 140                  | fz/mm | 0,009     | 0,014     | 0,019     | 0,029     | 0,040     | 0,048      | 0,056      | 0,063      | 0,070      | 0,081      |

Recommended "fz" values for side milling.  
 For slotting, adjust the cutting parameters. (ex: fz x 0.8)