

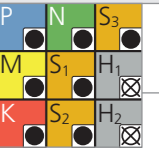
**NEW**

# Tipo B - Z4 - Contornatura - Finitura

$v_c$  [m/min]  
 $f_z$  [mm]

RACCOMANDAZIONI PER L'USO

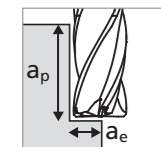
● Perfettamente consigliato | ● Consigliato | ○ Parzialmente consigliato | ⊗ Non consigliato



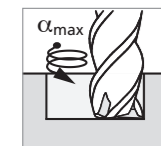
## FRESARE CON RAFFREDDAMENTO INTEGRATO | VISTA D'INSIEME DEI DATI DI TAGLIO

**Contornatura**

**Finitura**

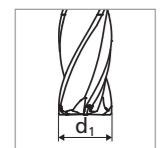
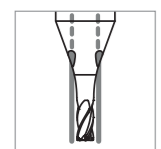


■  $a_p = 1.5 \times d_1$   
■  $a_e = 0.02 \times d_1$



**Nota:**

In caso di fresatura con interpolazione elicoidale vedere  $\alpha_{max}$  alla pagina 35



| Gruppo materiali  | Materiale  | Mat. no.          | DIN                     | AISI/ASTM/UNS           | Geometria di taglio | $\varnothing d_1$ |       |         |       |          |       |          |       |                 |       |              |       |
|---|--|-------------------|-------------------------|-------------------------|---------------------|-------------------|-------|---------|-------|----------|-------|----------|-------|-----------------|-------|--------------|-------|
|   |  |                   |                         |                         |                     | 0.4 mm<br>1/64"   |       | 0.5 mm  |       | 0.6 mm   |       | 0.7 mm   |       | 0.8 mm<br>1/32" |       | 0.9 - 1.0 mm |       |
|   |  |                   |                         |                         |                     | $v_c$             | $f_z$ | $v_c$   | $f_z$ | $v_c$    | $f_z$ | $v_c$    | $f_z$ | $v_c$           | $f_z$ | $v_c$        | $f_z$ |
| P   | Acciai non legati<br>Rm < 800 N/mm <sup>2</sup>        | 1.0301            | C10                     | AISI 1010               | GEOMETRIA S         | 45 - 75           | 0.009 | 55 - 95 | 0.010 | 65 - 115 | 0.012 | 75 - 130 | 0.014 | 90 - 150        | 0.016 | 100 - 170    | 0.018 |
|   |  | 1.0401            | C15                     | AISI 1015               |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 1.1191            | C45E/CK45               | AISI 1045               |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 1.0044            | S275JR                  | AISI 1020               |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 1.0715            | 11Mn30                  | AISI 1215               |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | Acciai debolmente legati<br>Rm > 900 N/mm <sup>2</sup> | 1.5752            | 15NiCr13                | ASTM 3415 / AISI 3310   |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 1.7131            | 16MnCr5                 | AISI 5115               |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 1.3505            | 100Cr6                  | AISI 52100              |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 1.7225            | 42CrMo4                 | AISI 4140               |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 1.2842            | 90MnCrV8                | AISI O2                 |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
| Acciai da utensili fortemente legati<br>Rm < 1200 N/mm <sup>2</sup> | 1.2379   | X153CrMoV12       | AISI D2                 |                         |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | 1.2436   | X210CrW12         | AISI D4/D6              |                         |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | 1.3343   | HS6-5-2C          | AISI M2 / UNS T11302    |                         |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | 1.3355   | HS18-0-1          | AISI T1 / UNS T12001    |                         |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  |                   |                         |                         |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
| M   | Acciai inossidabili ferritici                          | 1.4016            | X6Cr17                  | AISI 430 / UNS S43000   | GEOMETRIA S         | 45 - 75           | 0.008 | 55 - 95 | 0.010 | 65 - 115 | 0.012 | 75 - 130 | 0.014 | 90 - 150        | 0.016 | 100 - 170    | 0.018 |
|   |  | 1.4105            | X6CrMoS17               | AISI 430F               |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | Acciai inossidabili martensitici                       | 1.4034            | X46Cr13                 | AISI 420C               |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 1.4112            | X90CrMoV18              | AISI 440B               |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | Acciai inossidabili martensitici - PH                  | 1.4542            | X5CrNiCuNb16-4          | AISI 630 / ASTM 17-4 PH |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 1.4545            | X5CrNiCuNb15-5          | ASTM 15-5 PH            |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | Acciai inossidabili austenitici                        | 1.4301            | X5CrNi18-10             | AISI 304                |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 1.4435            | X2CrNiMo18-14-3         | AISI 316L               |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
| 1.4441  |  | X2CrNiMo18-15-3   | AISI 316LM              |                         |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | 1.4539   | X1NiCrMoCu25-20-5 | AISI 904L               |                         |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
| K   | Ghise  | 0.6020            | GG20                    | ASTM 30                 | GEOMETRIA S         | 45 - 75           | 0.009 | 55 - 95 | 0.010 | 65 - 115 | 0.012 | 75 - 130 | 0.014 | 90 - 150        | 0.016 | 100 - 170    | 0.018 |
|   |  | 0.6030            | GG30                    | ASTM 40B                |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 0.7040            | GGG40                   | ASTM 60-40-18           |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 0.7060            | GGG60                   | ASTM 80-60-03           |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  |                   |                         |                         |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
| N   | Leghe d'alluminio battute                              | 3.2315            | AlMgSi1                 | ASTM 6351               | GEOMETRIA S         | 45 - 75           | 0.010 | 55 - 95 | 0.010 | 65 - 115 | 0.012 | 75 - 130 | 0.013 | 90 - 150        | 0.014 | 100 - 170    | 0.014 |
|   |  | 3.4365            | AlZnMgCu1.5             | ASTM 7075               |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | Leghe d'alluminio pressofuse                           | 3.2163            | GD-AlSi9Cu3             | ASTM A380               |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 3.2381            | GD-AlSi10Mg             | UNS A03590              |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | Rame   | 2.0040            | Cu-OF / CW008A          | UNS C10100              |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 2.0065            | Cu-ETP / CW004A         | UNS C11000              |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | Ottoni senza piombo                                    | 2.0321            | CuZn37 CW508L           | UNS C27400              |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 2.0360            | CuZn40 CW509L           | UNS C28000              |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | Ottoni, Bronzi<br>Rm < 400 N/mm <sup>2</sup>           | 2.0401            | CuZn39Pb3 / CW614N      | UNS C38500              |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 2.1020            | CuSn6                   | UNS C51900              |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
| Bronzi<br>Rm < 600 N/mm <sup>2</sup>                                | 2.0966   | CuAl10Ni5Fe4      | UNS C63000              |                         |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | 2.0960   | CuAl9Mn2          | UNS C63200              |                         |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
| S <sub>1</sub>  | Superleghe   | 2.4856            |                         | Inconel 625             | GEOMETRIA SX        | 45 - 75           | 0.004 | 55 - 95 | 0.006 | 65 - 115 | 0.006 | 75 - 130 | 0.007 | 90 - 150        | 0.008 | 100 - 170    | 0.009 |
|   |  | 2.4668            |                         | Inconel 718             |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 2.4617            | NiMo28                  | Hastelloy B-2           |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 2.4665            | NiCr22Fe18Mo            | Hastelloy X             |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
| S <sub>2</sub>  | Titanio puro   | 3.7035            | Gr.2                    | ASTM B348 / F67         | GEOMETRIA S         | 45 - 75           | 0.006 | 55 - 95 | 0.008 | 65 - 115 | 0.010 | 75 - 130 | 0.011 | 90 - 150        | 0.013 | 100 - 170    | 0.014 |
|   |  | 3.7065            | Gr.4                    | ASTM B348 / F68         |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   | Leghe di titanio                                       | 3.7165            | TiAl6V4                 | ASTM B348 / F136        |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
| 9.9367  |  | TiAl6Nb7          | ASTM F1295              |                         |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
| S <sub>3</sub>  | Leghe CoCr   | 2.4964            | CoCr20W15Ni<br>CrCoMo28 | Haynes 25<br>ASTM F1537 | GEOMETRIA SX        | 45 - 75           | 0.004 | 55 - 95 | 0.006 | 65 - 115 | 0.006 | 75 - 130 | 0.007 | 90 - 150        | 0.008 | 100 - 170    | 0.009 |
| H <sub>1</sub><br>H <sub>2</sub>                                    | Acciai temprati<br>≥ 55 HRC                            | 1.2510            | 100MnCrMoW4             | AISI O1                 |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |
|   |  | 1.2379            | X153CrMoV12             | AISI D2                 |                     |                   |       |         |       |          |       |          |       |                 |       |              |       |