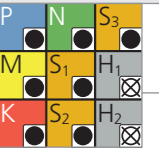


**NEW**

# Type C - Z4 - Contournage - Finition

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

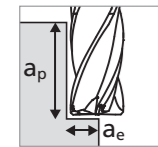
RECOMMANDATION D'UTILISATION  
● Parfaitement recommandé | ● Recommandé | ○ Peu recommandé | ☒ Non recommandé



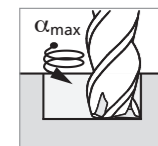
## FRAISAGE AVEC REFROIDISSEMENT INTÉGRÉ | VUE D'ENSEMBLE DES DONNÉES DE COUPE

**Contournage**

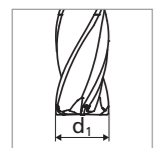
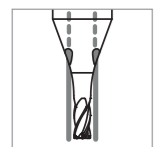
**Finition**



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



**Remarque :**  
En cas de fraisage par interpolation hélicoïdale voir  $\alpha_{max}$  à la page 35



| Groupe matériaux                                      | Matériau                                   | Mat. no.          | DIN                     | AISI/ASTM/UNS           | Design de l'arête de coupe | $\varnothing d_1$ |         |        |         |        |          |        |          |                 |          |              |           |       |
|---|--|-------------------|-------------------------|-------------------------|----------------------------|-------------------|---------|--------|---------|--------|----------|--------|----------|-----------------|----------|--------------|-----------|-------|
|   |  |                   |                         |                         |                            | 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   | Aciers non alliés<br>Rm < 800 N/mm²        | 1.0301            | C10                     | AISI 1010               | GÉOMÉTRIE S                |                   | 45 - 75 | 0.007  | 55 - 95 | 0.008  | 65 - 115 | 0.010  | 75 - 130 | 0.012           | 90 - 150 | 0.014        | 100 - 170 | 0.016 |
|   |  | 1.0401            | C15                     | AISI 1015               |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 1.1191            | C45E/CK45               | AISI 1045               |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 1.0044            | S275JR                  | AISI 1020               |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 1.0715            | 11Mn30                  | AISI 1215               |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   | Aciers faiblement alliés<br>Rm > 900 N/mm² | 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                 |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
| Aciers à outil<br>fortement alliés<br>Rm < 1200 N/mm² | 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   | Aciers inoxydables<br>ferritiques          | 1.4016            | X6Cr17                  | AISI 430 / UNS S43000   | GÉOMÉTRIE S                |                   | 45 - 75 | 0.006  | 55 - 95 | 0.008  | 65 - 115 | 0.010  | 75 - 130 | 0.012           | 90 - 150 | 0.014        | 100 - 170 | 0.016 |
|   |  | 1.4105            | X6CrMoS17               | AISI 430F               |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   | Aciers inoxydables<br>martensitiques       | 1.4034            | X46Cr13                 | AISI 420C               |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 1.4112            | X90CrMoV18              | AISI 440B               |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   | Aciers inoxydables<br>martensitiques - PH  | 1.4542            | X5CrNiCuNb16-4          | AISI 630 / ASTM 17-4 PH |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 1.4545            | X5CrNiCuNb15-5          | ASTM 15-5 PH            |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   | Aciers inoxydables<br>austénitiques        | 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   | Fonte grise                                | 0.6020            | GG20                    | ASTM 30                 | GÉOMÉTRIE S                |                   | 45 - 75 | 0.007  | 55 - 95 | 0.008  | 65 - 115 | 0.010  | 75 - 130 | 0.012           | 90 - 150 | 0.014        | 100 - 170 | 0.016 |
|   |  | 0.6030            | GG30                    | ASTM 40B                |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 0.7040            | GGG40                   | ASTM 60-40-18           |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 0.7060            | GGG60                   | ASTM 80-60-03           |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
| N   | Alliages d'aluminium<br>corroyés           | 3.2315            | AlMgSi1                 | ASTM 6351               | GÉOMÉTRIE S                |                   | 45 - 75 | 0.008  | 55 - 95 | 0.008  | 65 - 115 | 0.010  | 75 - 130 | 0.011           | 90 - 150 | 0.012        | 100 - 170 | 0.012 |
|   |  | 3.4365            | AlZnMgCu1.5             | ASTM 7075               |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   | Fonte d'aluminium                          | 3.2163            | GD-AlSi9Cu3             | ASTM A380               |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 3.2381            | GD-AlSi10Mg             | UNS A03590              |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   | Cuivre                                     | 2.0040            | Cu-OF / CW008A          | UNS C10100              |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 2.0065            | Cu-ETP / CW004A         | UNS C11000              |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   | Laiton sans plomb                          | 2.0321            | CuZn37 CW508L           | UNS C27400              |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 2.0360            | CuZn40 CW509L           | UNS C28000              |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   | Laiton, Bronze<br>Rm < 400 N/mm²           | 2.0401            | CuZn39Pb3 / CW614N      | UNS C38500              |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 2.1020            | CuSn6                   | UNS C51900              |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
| Bronze<br>Rm < 600 N/mm²                              | 2.0966                                     | CuAl10Ni5Fe4      | UNS C63000              |                         |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   | 2.0960                                     | CuAl9Mn2          | UNS C63200              |                         |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
| S1  | Superaliages                               | 2.4856            |                         | Inconel 625             | GÉOMÉTRIE SX               |                   | 45 - 75 | 0.002  | 55 - 95 | 0.004  | 65 - 115 | 0.004  | 75 - 130 | 0.005           | 90 - 150 | 0.006        | 100 - 170 | 0.007 |
|   |  | 2.4668            |                         | Inconel 718             |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 2.4617            | NiMo28                  | Hastelloy B-2           |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 2.4665            | NiCr22Fe18Mo            | Hastelloy X             |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
| S2  | Titane pur                                 | 3.7035            | Gr.2                    | ASTM B348 / F67         | GÉOMÉTRIE S                |                   | 45 - 75 | 0.004  | 55 - 95 | 0.006  | 65 - 115 | 0.008  | 75 - 130 | 0.009           | 90 - 150 | 0.011        | 100 - 170 | 0.012 |
|   |  | 3.7065            | Gr.4                    | ASTM B348 / F68         |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   | Alliages de titane                         | 3.7165            | TiAl6V4                 | ASTM B348 / F136        |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
| 9.9367  |  | TiAl6Nb7          | ASTM F1295              |                         |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
| S3  | Alliages CoCr                              | 2.4964            | CoCr20W15Ni<br>CrCoMo28 | Haynes 25<br>ASTM F1537 | GÉOMÉTRIE SX               |                   | 45 - 75 | 0.002  | 55 - 95 | 0.004  | 65 - 115 | 0.004  | 75 - 130 | 0.005           | 90 - 150 | 0.006        | 100 - 170 | 0.007 |
| H1<br>H2  | Aciers trempés<br>< 55 HRC                 | 1.2510            | 100MnCrMoW4             | AISI O1                 |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |
|   |  | 1.2379            | X153CrMoV12             | AISI D2                 |                            |                   |         |        |         |        |          |        |          |                 |          |              |           |       |