

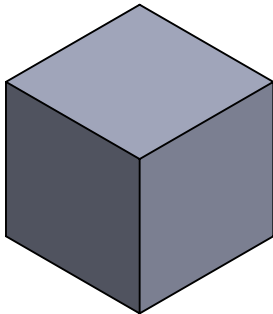
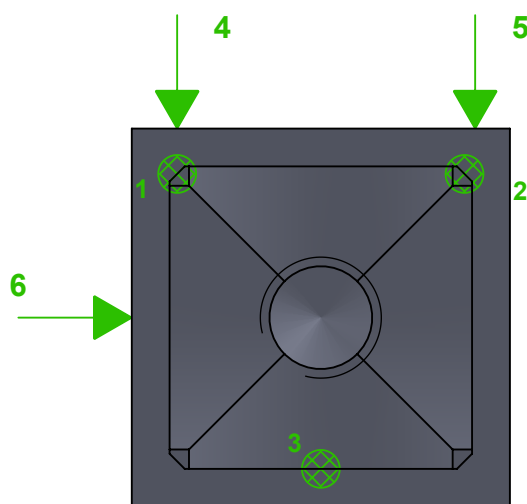
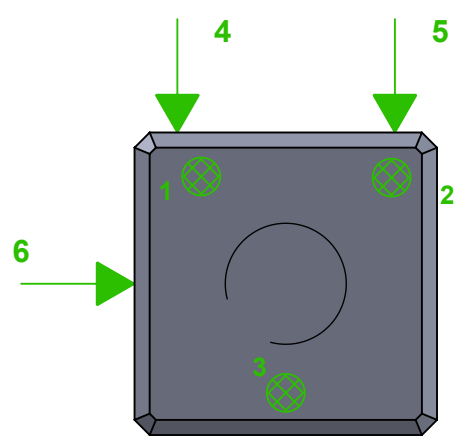

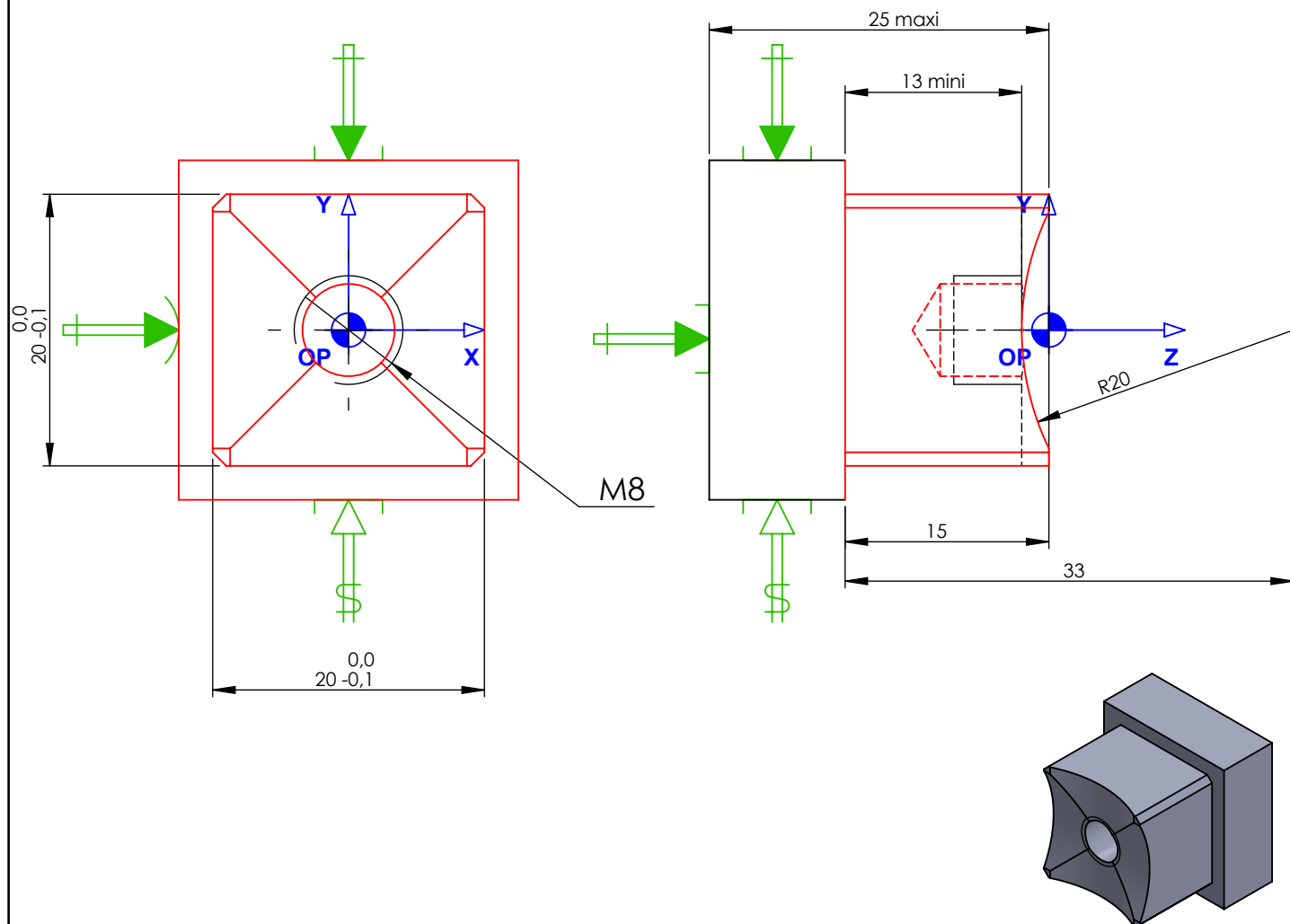


| NOMENCLATURE DES PHASES | | Ensemble FAO Rubik-1 | |  | <div>1</div> <div>1</div> |
|----------------------------|---|-----------------------------|----------------|--|---------------------------|
| | | Pièce | | | |
| | | Matière | | | |
| Nom | | Date 15/03/2021 | Série 1 | | |
| Phase | DESIGNATION | MACHINE | | OBSERVATIONS | |
| 010 | SCIAGE 25x25x25 | | | | |
| 020 | FRAISAGE Surfacier SURFACAGE Pointer TROU Contourner PROFIL Contourner PROFIL Percer TROU Tarauder TROU Finir SURFACE | RCV300 | | FAO Rubik-120.PIM | |
| 030 | FRAISAGE Surfacier SURFACAGE Contourner Extérieur SURFACAGE | RCV300 | | FAO Rubik-1-RCV30030.PIM | |
| | | | | | |


| AVANT-PROJET D'ETUDE DE FABRICATION | | Ensemble FAO Rubik-1 | |  | 1 1 |
|--|--|-----------------------------|--|--|--------|
| | | Pièce | | | |
| | | Matière | | | |
| Nom | | Date 15/03/2021 | Série 1 | | |
| Phase | DESIGNATION | MACHINE | SCHEMA DE PHASE | | |
| 010 | SCIAGE 25x25x25 | |  | | |
| 020 | FRAISAGE Surfacer SURFACAGE Pointer TROU Contourner PROFIL Contourner PROFIL Percer TROU Tarauder TROU Finir SURFACE | RCV300 |  | | |
| 030 | FRAISAGE Surfacer SURFACAGE Contourner Extérieur SURFACAGE | RCV300 |  | | |

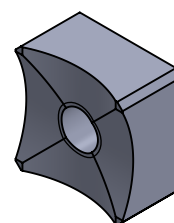
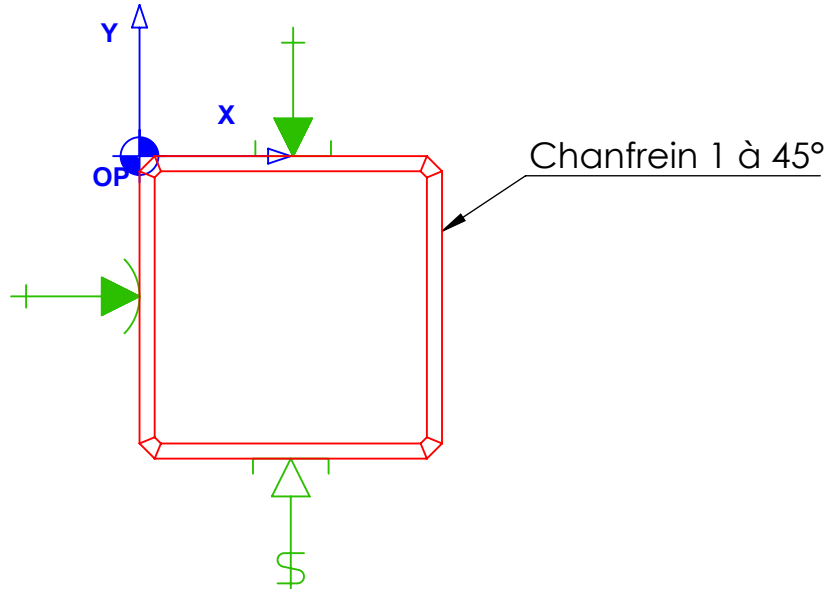
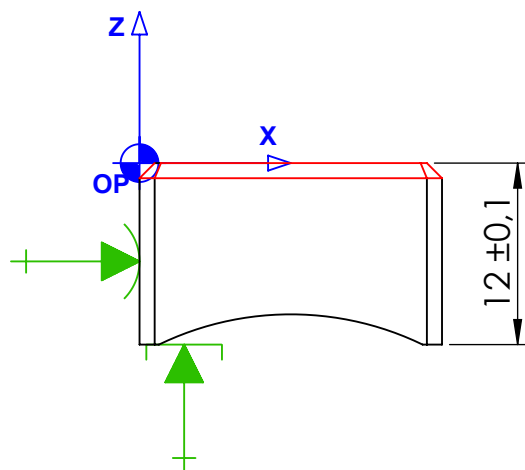
| | | | | |
|----------------------------------|----------------------------------|--|--------|------------------------|
| CONTRAT DE PHASE Phase 20 | Ensemble FAO Rubik-1 |  | 2 3 | |
| | Pièce | | | |
| | Matière | | | |
| FRAISAGE RCV300 | Série 1 | EFICNSW | | |
| | Programme % 1001 | | | Nom |
| | Fichier FAO Rubik-120.PIM | | | Date 15/03/2021 |



| | |
|-------------------------------------|---|
| Porte-Pièce Etau + Butée + Cales | Temps Total de Coupe 2.54 min Temps Total Improductif 1.8 min Temps de Montage 0 min Temps Total de Phase 4.34 min |
|-------------------------------------|---|


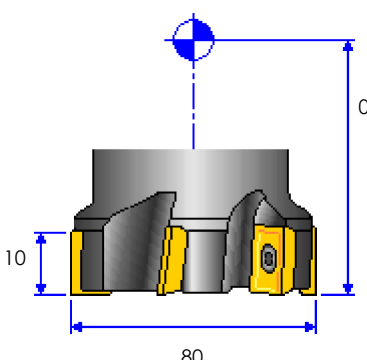
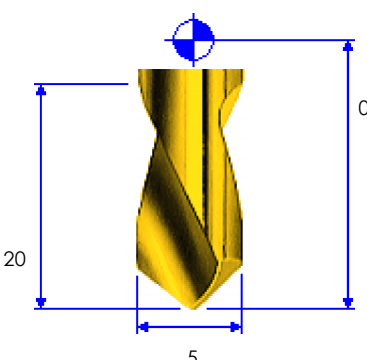
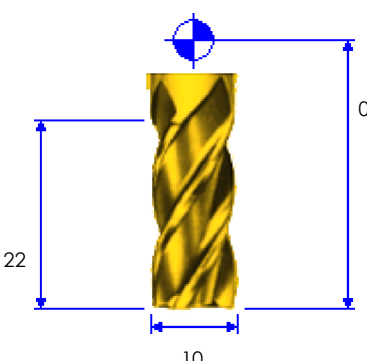
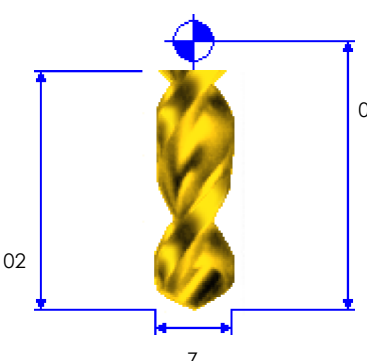
| OPERATIONS | OUTILS | Vc m/min | n tr/min | f / fz mm/tr mm/dent | Vf mm/min | T | D |
|------------------------|--|-------------|-------------|----------------------------|--------------|----|----|
| a) Surfacier SURFACAGE | Fraise à surfacer D = 80 | 400 | 1592 | 00.07 | 668 | 1 | 1 |
| b) Pointer TROU | Foret centreur en carbure 90° d = 5 | 28 | 1800 | 00.1 | 180 | 2 | 2 |
| c) Contourner PROFIL | Fraise 2 tailles HSS DIN 844K D = 10 | 300 | 9549 | 00.05 | 1432 | 5 | 5 |
| d) Contourner PROFIL | | 300 | 9549 | 00.05 | 1432 | 5 | 5 |
| e) Percer TROU | Foret long HSS DIN 340 118° d = 6,8 TITEX A 1513*6,8 | 100 | 4681 | 00.07 | 328 | 9 | 9 |
| f) Tarauder TROU | 11-Taraud M8 | 18 | 700 | 1.25 | 875 | 10 | 10 |
| g) Finir SURFACE | Fraise 2 tailles bout hémisphérique série normale DIN 1889/1 D = 12 TITEX D 3252*12 | 200 | 5305 | 00.05 | 1061 | 3 | 23 |


| | | | | | |
|------------------------------|-----------|--------------------------|--|--------|------|
| CONTRAT DE PHASE Phase 30 | Ensemble | FAO Rubik-1 |  | 3 3 | |
| | Pièce | | | | |
| | Matière | | | | |
| FRAISAGE RCV300 | Série | 1 | EFICNSW | | |
| | Programme | % 000101 | | | Nom |
| | Fichier | FAO Rubik-1-RCV30030.PIM | | | Date |

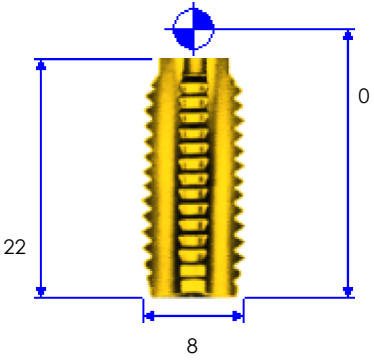


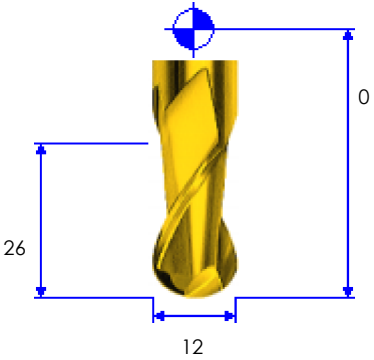
| | | | | |
|--|-------------------------------------|-------------------------|-------|-----|
| | Porte-Pièce Etau + Butée + Cales | Temps Total de Coupe | 2.03 | min |
| | | Temps Total Improductif | 00.64 | min |
| | | Temps de Montage | 0 | min |
| | | Temps Total de Phase | 2.67 | min |

| OPERATIONS | OUTILS | Vc m/min | n tr/min | f / fz mm/tr mm/dent | Vf mm/min | T | D |
|------------------------------------|-------------------------------------|-------------|-------------|----------------------------|--------------|---|---|
| a) Surfacier SURFACAGE | Fraise à surfacer D = 80 | 400 | 1592 | 00.07 | 668 | 1 | 1 |
| b) Contourner Extérieur SURFACAGE | Foret centreur en carbure 90° d = 5 | 28 | 1800 | 00.1 | 180 | 2 | 2 |

| <h1>FICHE OUTIL</h1> <h2>Phase 20</h2> | | Ensemble FAO Rubik-1 | |  | <div>1</div> <div>3</div> | | | | | | | | | | | | | | | | |
|---|----------------------------------|--|--|--|---------------------------|----------|------|----------|-------|-----------|------|----------|---------|---------------|---|--------|-------|--------|------|---|--|
| | | Pièce | | | | | | | | | | | | | | | | | | | |
| | | Matière | | | | | | | | | | | | | | | | | | | |
| FRAISAGE RCV300 | Série 1 | | | Nom | | | | | | | | | | | | | | | | | |
| | Programme % 1001 | | | Date 15/03/2021 | | | | | | | | | | | | | | | | | |
| | Fichier FAO Rubik-120.PIM | | | | | | | | | | | | | | | | | | | | |
| Outil Fraise à surfacer D = 80 | | T1 D1 Jauge X Jauge Z | <table border="1"> <tr><td>Vc m/min</td><td>400</td></tr> <tr><td>N tr/min</td><td>1592</td></tr> <tr><td>fz mm/dt</td><td>00.07</td></tr> <tr><td>Vf mm/min</td><td>668</td></tr> <tr><td>Rotation</td><td>Horaire</td></tr> <tr><td>Lubrification</td><td>1</td></tr> <tr><td>Tc min</td><td>00.2</td></tr> <tr><td>Ti min</td><td>00.3</td></tr> </table> | Vc m/min | 400 | N tr/min | 1592 | fz mm/dt | 00.07 | Vf mm/min | 668 | Rotation | Horaire | Lubrification | 1 | Tc min | 00.2 | Ti min | 00.3 |  | |
| Vc m/min | 400 | | | | | | | | | | | | | | | | | | | | |
| N tr/min | 1592 | | | | | | | | | | | | | | | | | | | | |
| fz mm/dt | 00.07 | | | | | | | | | | | | | | | | | | | | |
| Vf mm/min | 668 | | | | | | | | | | | | | | | | | | | | |
| Rotation | Horaire | | | | | | | | | | | | | | | | | | | | |
| Lubrification | 1 | | | | | | | | | | | | | | | | | | | | |
| Tc min | 00.2 | | | | | | | | | | | | | | | | | | | | |
| Ti min | 00.3 | | | | | | | | | | | | | | | | | | | | |
| Adaptateur Attachement | | | | | | | | | | | | | | | | | | | | | |
| Outil Foret centreur en carbure 90° d = 5 | | T2 D2 Jauge X Jauge Z | <table border="1"> <tr><td>Vc m/min</td><td>28</td></tr> <tr><td>N tr/min</td><td>1800</td></tr> <tr><td>f mm/tr</td><td>00.1</td></tr> <tr><td>Vf mm/min</td><td>180</td></tr> <tr><td>Rotation</td><td>Horaire</td></tr> <tr><td>Lubrification</td><td>1</td></tr> <tr><td>Tc min</td><td>00.12</td></tr> <tr><td>Ti min</td><td>00.3</td></tr> </table> | Vc m/min | 28 | N tr/min | 1800 | f mm/tr | 00.1 | Vf mm/min | 180 | Rotation | Horaire | Lubrification | 1 | Tc min | 00.12 | Ti min | 00.3 |  | |
| Vc m/min | 28 | | | | | | | | | | | | | | | | | | | | |
| N tr/min | 1800 | | | | | | | | | | | | | | | | | | | | |
| f mm/tr | 00.1 | | | | | | | | | | | | | | | | | | | | |
| Vf mm/min | 180 | | | | | | | | | | | | | | | | | | | | |
| Rotation | Horaire | | | | | | | | | | | | | | | | | | | | |
| Lubrification | 1 | | | | | | | | | | | | | | | | | | | | |
| Tc min | 00.12 | | | | | | | | | | | | | | | | | | | | |
| Ti min | 00.3 | | | | | | | | | | | | | | | | | | | | |
| Adaptateur Attachement | | | | | | | | | | | | | | | | | | | | | |
| Outil Fraise 2 tailles HSS DIN 844K D = 10 | | T5 D5 Jauge X Jauge Z | <table border="1"> <tr><td>Vc m/min</td><td>300</td></tr> <tr><td>N tr/min</td><td>9549</td></tr> <tr><td>fz mm/dt</td><td>00.05</td></tr> <tr><td>Vf mm/min</td><td>1432</td></tr> <tr><td>Rotation</td><td>Horaire</td></tr> <tr><td>Lubrification</td><td>1</td></tr> <tr><td>Tc min</td><td>00.66</td></tr> <tr><td>Ti min</td><td>00.3</td></tr> </table> | Vc m/min | 300 | N tr/min | 9549 | fz mm/dt | 00.05 | Vf mm/min | 1432 | Rotation | Horaire | Lubrification | 1 | Tc min | 00.66 | Ti min | 00.3 |  | |
| Vc m/min | 300 | | | | | | | | | | | | | | | | | | | | |
| N tr/min | 9549 | | | | | | | | | | | | | | | | | | | | |
| fz mm/dt | 00.05 | | | | | | | | | | | | | | | | | | | | |
| Vf mm/min | 1432 | | | | | | | | | | | | | | | | | | | | |
| Rotation | Horaire | | | | | | | | | | | | | | | | | | | | |
| Lubrification | 1 | | | | | | | | | | | | | | | | | | | | |
| Tc min | 00.66 | | | | | | | | | | | | | | | | | | | | |
| Ti min | 00.3 | | | | | | | | | | | | | | | | | | | | |
| Adaptateur Attachement | | | | | | | | | | | | | | | | | | | | | |
| Outil Foret long HSS DIN 340 118° d = 6,8 TITEX A 1513*6,8 | | T9 D9 Jauge X Jauge Z | <table border="1"> <tr><td>Vc m/min</td><td>100</td></tr> <tr><td>N tr/min</td><td>4681</td></tr> <tr><td>f mm/tr</td><td>00.07</td></tr> <tr><td>Vf mm/min</td><td>328</td></tr> <tr><td>Rotation</td><td>Horaire</td></tr> <tr><td>Lubrification</td><td>1</td></tr> <tr><td>Tc min</td><td>00.05</td></tr> <tr><td>Ti min</td><td>00.3</td></tr> </table> | Vc m/min | 100 | N tr/min | 4681 | f mm/tr | 00.07 | Vf mm/min | 328 | Rotation | Horaire | Lubrification | 1 | Tc min | 00.05 | Ti min | 00.3 |  | |
| Vc m/min | 100 | | | | | | | | | | | | | | | | | | | | |
| N tr/min | 4681 | | | | | | | | | | | | | | | | | | | | |
| f mm/tr | 00.07 | | | | | | | | | | | | | | | | | | | | |
| Vf mm/min | 328 | | | | | | | | | | | | | | | | | | | | |
| Rotation | Horaire | | | | | | | | | | | | | | | | | | | | |
| Lubrification | 1 | | | | | | | | | | | | | | | | | | | | |
| Tc min | 00.05 | | | | | | | | | | | | | | | | | | | | |
| Ti min | 00.3 | | | | | | | | | | | | | | | | | | | | |
| Adaptateur Attachement | | | | | | | | | | | | | | | | | | | | | |

| | | | |
|--|----------------------------------|--|---------------------------|
| <h1>FICHE OUTIL</h1> <h2>Phase 20</h2> | Ensemble FAO Rubik-1 |  | <div>2</div> <div>3</div> |
| | Pièce | | |
| | Matière | | |
| FRAISAGE RCV300 | Série 1 | Nom | |
| | Programme % 1001 | | |
| | Fichier FAO Rubik-120.PIM | | Date 15/03/2021 |

| | | | |
|----------------------------------|----------------------------------|--|---|
| Outil 11-Taraud M8 | T10 | Vc m/min 18 N tr/min 700 f mm/tr 1.25 Vf mm/min 875 |  |
| | D10 Jauge X Jauge Z | Rotation Lubrif. 1 Tc min 00.02 Ti min 00.3 | |
| Adaptateur | | | |
| Attachement | | | |

| | | | |
|--|---------------------------------|---|--|
| Outil Fraise 2 tailles bout hémisphérique série normale DIN 1889/1 D = 12 TITEX D 3252*12 | T3 | Vc m/min 200 N tr/min 5305 fz mm/dt 00.05 Vf mm/min 1061 |  |
| | D3 Jauge X Jauge Z | Rotation Horaire Lubrif. 1 Tc min 1.5 Ti min 00.3 | |
| Adaptateur | | | |
| Attachement | | | |

FICHE OUTIL

Phase 30

Ensemble **FAO Rubik-1**

Pièce

Matière



3

3

FRAISAGE

RCV300

Série **1**

Programme **% 000101**

Fichier **FAO Rubik-1-RCV30030.PIM**

Nom

Date **15/03/2021**

Outil

Fraise à surfacer D = 80

T1

Vc m/min 400

D1

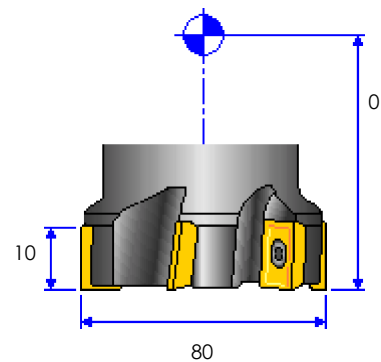
Jauge X

Jauge Z

Adaptateur

Attachement

| | |
|---------------|---------|
| N tr/min | 1592 |
| fz mm/ot | 00.07 |
| Vf mm/min | 668 |
| Rotation | Horaire |
| Lubrification | 1 |
| Tc min | 1.51 |
| Ti min | 00.34 |



Outil

T2

Vc m/min 28

D2

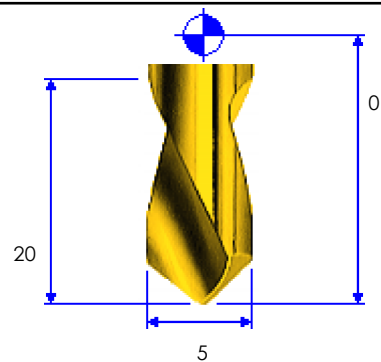
Jauge X

Jauge Z

Adaptateur

Attachement

| | |
|---------------|---------|
| N tr/min | 1800 |
| f mm/tr | 00.1 |
| Vf mm/min | 180 |
| Rotation | Horaire |
| Lubrification | 1 |
| Tc min | 00.51 |
| Ti min | 00.3 |



Foret centreur en carbure 90° d = 5