# SÉRIE VPX

## AUGMENTEZ LES PERFORMANCES D'USINAGE AVEC UNE FRAISE À PLAQUETTES TANGENTIELLES ROBUSTES

DIAEDGE

MITSUBISHI MATERIALS

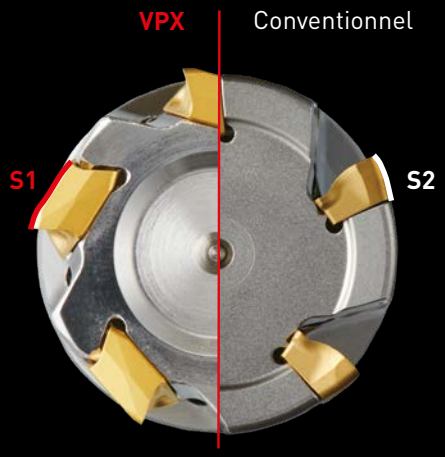
# ROBUSTESSE ET POLYVALENCE EXTRÊMES

**COMMENTAIRES DE DÉVELOPPEURS**

Afin d'améliorer la fiabilité, le développement a commencé en appliquant d'abord des charges de plus en plus importantes à la fraise, allant jusqu'à la rupture. Le processus de modification de la conception suite aux essais destructifs s'est poursuivi jusqu'à la production d'une fraise d'une fiabilité et robustesse exceptionnelles. Nous avons ainsi atteint notre objectif : un outil parfaitement fiable et très efficace, même lors d'un usinage sans surveillance.

# VPX

## CARACTÉRISTIQUES DE ROBUSTESSE DES PLAQUETTES TANGENTIELLES



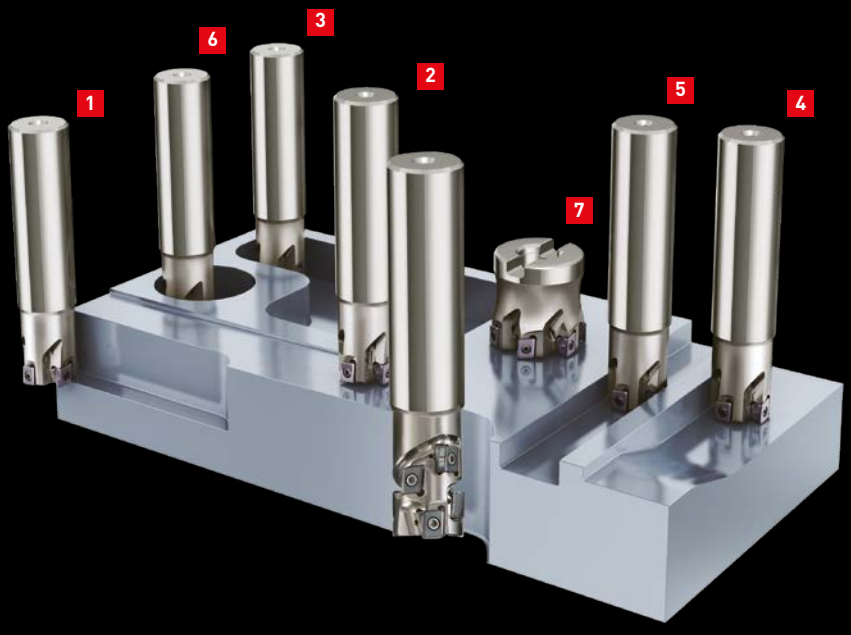

Disposer les plaquettes de manière tangentielle garantit une grande raideur de l'outil. L'épaisseur de carbure reprenant les efforts de coupe est plus grande (S1>S2). La plaquette présente ainsi une plus grande résistance à l'écaillage et peut être utilisée avec une avance à la dent plus importante.

Les grandes surfaces d'appui des plaquettes sécurisent davantage le serrage des plaquettes. Ceci élimin toute déflexion de la plaquette causée par des vibrations pendant l'usinage.

## RÉSOLUTION DES PROBLÈMES EN TANT QUE FRAISE MULTIFONCTIONNELLE

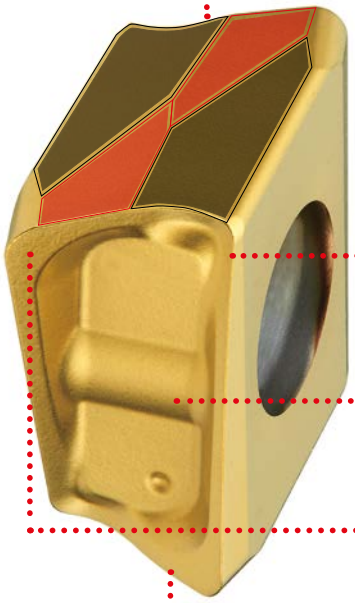
Différentes opérations d'usinage pour couvrir une grande gamme d'applications

1. Surfaçage-dressage
2. Ramping
3. Fraisage de poches
4. Copiage
5. Rainurage
6. Perçage hélicoïdal
7. Surfaçage



# PLAQUETTES VPX

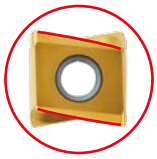
## SA PLAQUETTE TANGENTIELLE RÉVERSIBLE RÉVOLUTIONNE L'USINAGE MULTIFONCTIONNEL



La géométrie réversible améliore la performance de la plaquette :

Permet le ramping

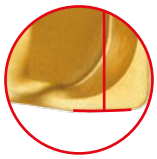
Offre un bon état de surface



Grande précision de dressage

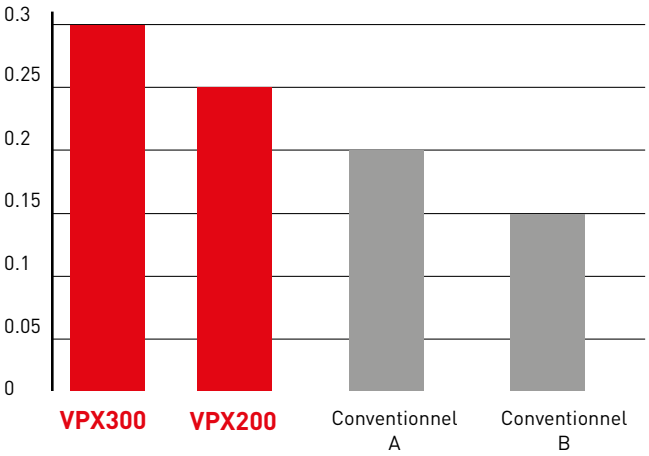

Épaisseur de carbure renforcée

La face de coupe plate améliore l'éjection des copeaux

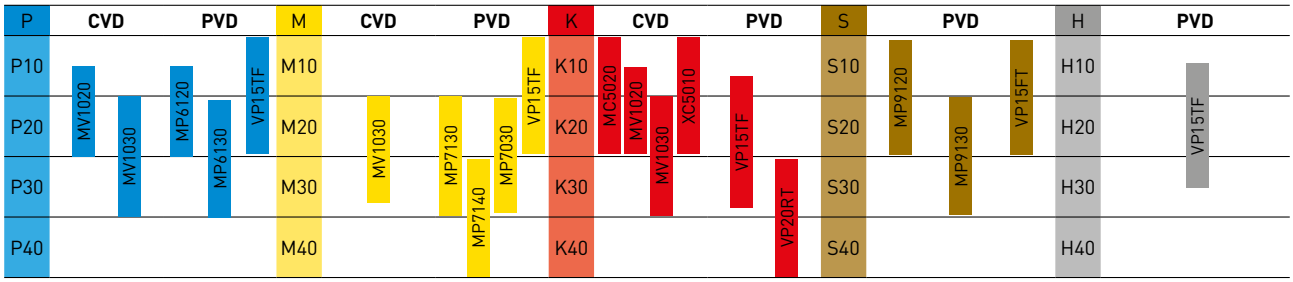


L'arête de planage avec un grand rayon permet d'obtenir de bons états de surface

## POSSIBILITÉ DE FORTES AVANCES PAR DENT (42CD4)



# NUANCES DE PLAQUETTES ADAPTÉES À UNE LARGE GAMME DE MATIÈRES




**MV1020**
L'excellente résistance à l'usure et aux chocs thermiques de cette nuance permet d'obtenir des durées de vies stables à vitesses de coupe inégalées, particulièrement dans l'acier et de la fonte ductile, ce qui permet une augmentation significative de la productivité.

**MV1030**
Le nouveau revêtement AlTiN à forte teneur d'aluminium assure une excellente résistance à l'usure. La nuance possède une grande résistance à l'écaillage, en particulier lors en coupe lubrifiée et lors de l'usinage d'aciers inoxydables.

**MP6120**
Pour l'usinage polyvalent de l'acier.

**MP6130**
Pour l'usinage interrompu de l'acier.

**MP7130**
Pour l'usinage polyvalent de l'acier inoxydable.

**MC5020**
Nuance CVD pour l'usinage à haute vitesse de la fonte.

**MP9120**
Pour l'usinage polyvalent des réfractaires et du titane.

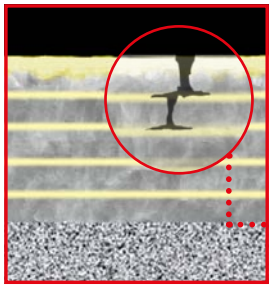
**MP9130**
Pour l'usinage polyvalent des réfractaires et du titane.

**TF15**
Pour les alliages d'aluminium.

**VP15TF**
Nuance polyvalente résistant à l'usure. Particulièrement adaptée à l'usinage des fontes et des aciers traités.

# SÉRIE MP6100/MP7100/MP9100

**Technologie TOUGH-∑**



(Représentation graphique)

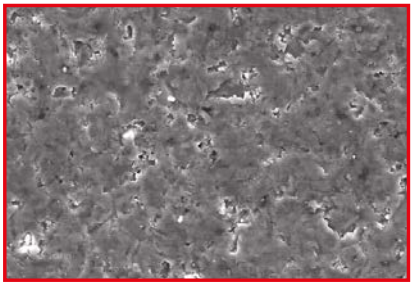
**Couche de base (AlTi)N à forte teneur en Al**

La nouvelle technologie de revêtement Al-(Al, Ti)N offre une dureté stable et permet d'améliorer fortement la résistance à l'usure et au collage.

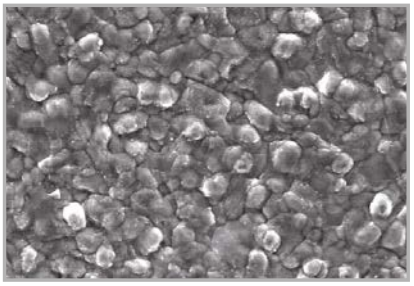
La revêtement multi-couches retarde la propagation de fissures jusqu'au substrat.

# MC5020
# REVÊTEMENT NOIR EXTRÊMEMENT LISSE

Le revêtement noir extrêmement lisse empêche tout dommage anormal tel que l'écaillage dû aux arêtes rapportées. Premier choix pour l'usinage de la fonte.

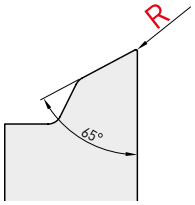


**MC5020**

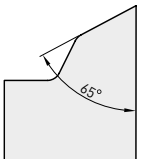


Revêtement conventionnel

# BRISE-COPEAUX



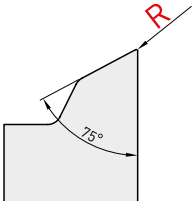

LOGU0904...PNER-L



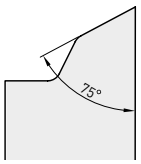

LOGU0904...PNFR-L

## Brise-copeaux **L**

Acuité d'arête




LOGU0904...PNER-M



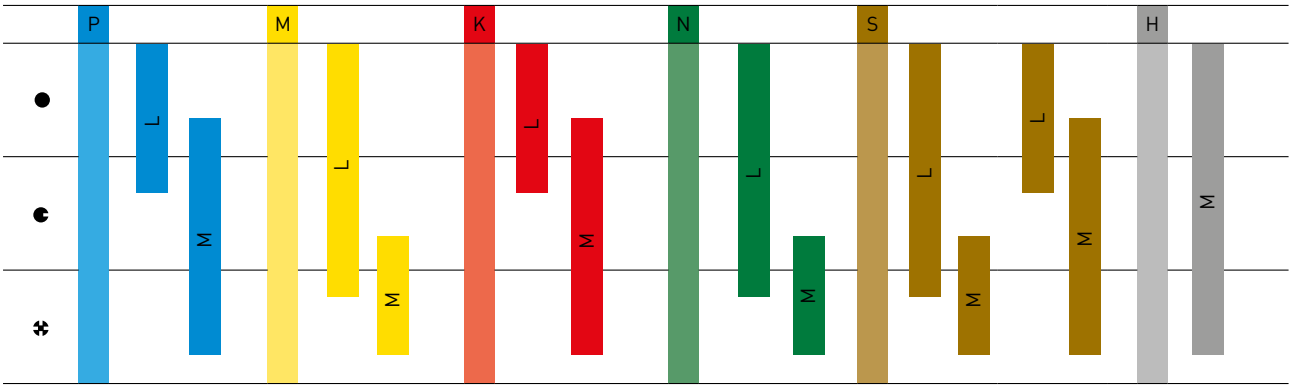

LOGU0904...PNFR-M

## Brise-copeaux **M**

Résistance d'arête

# PLAGE D'APPLICATION DES BRISE-COPEAUX

Conditions de stabilité :
● : Coupe stable ◔ : Coupe générale ✥ : Coupe instable

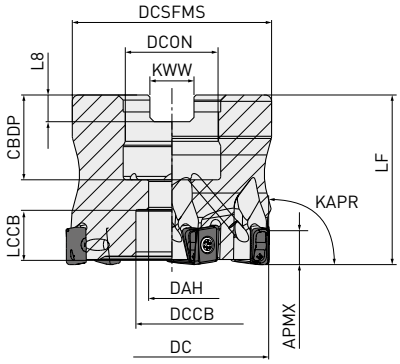



1. Cf. page 16 pour les préconisations de nuances et brise-copeaux.

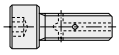
# VPX200

P M K N S H

GAMP : –6° T : +5°
GAMF : –25° I : +4°




*Outil à droite uniquement*

| DC | Vis d'attachement | Géométrie |
|---|---|---|
| Ø32, Ø40 | HSC08025H |  |
| Ø50, Ø63 | HSC10030H | |

## ATTACHEMENT PAR ALÉSAGE

| Référence | Stock | APMX | DC | DCON | LF | RMPX | WT | RPMX | ZNF |  |
|---|---|---|---|---|---|---|---|---|---|---|
| VPX200-032A03AR | ● | 8 | 32 | 16 | 35 | 0.71° | 0.11 | 25100 | 3 | LOGU09 |
| VPX200-032A05AR | ● | 8 | 32 | 16 | 35 | 0.71° | 0.11 | 25100 | 5 | |
| VPX200-040A04AR | ● | 8 | 40 | 16 | 40 | 0.54° | 0.23 | 22000 | 4 | |
| VPX200-040A06AR | ● | 8 | 40 | 16 | 40 | 0.54° | 0.22 | 22000 | 6 | |
| VPX200-050A05AR | ● | 8 | 50 | 22 | 40 | 0.42° | 0.36 | 19200 | 5 | |
| VPX200-050A07AR | ● | 8 | 50 | 22 | 40 | 0.42° | 0.36 | 19200 | 7 | |
| VPX200-063A06AR | ● | 8 | 63 | 22 | 40 | 0.32° | 0.66 | 16700 | 6 | |
| VPX200-063A09AR | ● | 8 | 63 | 22 | 40 | 0.32° | 0.66 | 16700 | 9 | |

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1. Les vitesses de rotation maximales autorisées assurent la stabilité de l'outil et des plaquettes.
2. Si vous utilisez l'outil à vitesse de rotation élevée, veillez à bien équilibrer l'ensemble outil-attachement.
3. Cf. page 16 pour les préconisations de nuances et brise-copeaux.

17 Vc



● : Article stocké. ★ : Article stocké au Japon.

## VPX200 – ATTACHEMENT PAR ALÉSAGE

### DIMENSIONS DE MONTAGE

| Référence | CBDP | DAH | DCCB | DCSFMS | KWW | LCCB | L8 |
|---|---|---|---|---|---|---|---|
| VPX200-032A03AR | 18 | 9 | 14 | 30 | 8.4 | 8 | 5.6 |
| VPX200-032A05AR | 18 | 9 | 14 | 30 | 8.4 | 8 | 5.6 |
| VPX200-040A04AR | 18 | 9 | 14 | 37 | 8.4 | 13 | 5.6 |
| VPX200-040A06AR | 18 | 9 | 14 | 37 | 8.4 | 13 | 5.6 |
| VPX200-050A05AR | 20 | 11 | 17 | 47 | 10.4 | 11 | 6.3 |
| VPX200-050A07AR | 20 | 11 | 17 | 47 | 10.4 | 11 | 6.3 |
| VPX200-063A06AR | 20 | 11 | 17 | 60 | 10.4 | 11 | 6.3 |
| VPX200-063A09AR | 20 | 11 | 17 | 60 | 10.4 | 11 | 6.3 |

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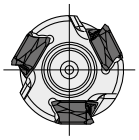
# PIÈCES DÉTACHÉES

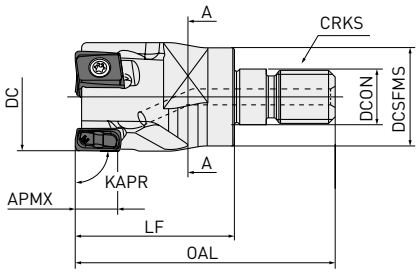
| Outil | DC |  * |  |  |
|---|---|---|---|---|
| | | Vis de plaquette | Clé | Lubrifiant antigrippant |
| VPX200 | ⩽63 | TPS27F2 | TIP07F | MK1KS |

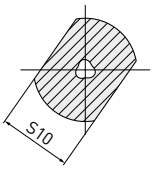
* Couple de serrage (Nm) : TPS27F2 = 1.0

# VPX200

P M K N S H






Section A-A

*Outil à droite uniquement*

## À EMBOUT FILETÉ

| Référence | Stock | APMX | DC | DCON | LF | RMPX | WT | ZNF | |
|---|---|---|---|---|---|---|---|---|---|
| VPX200R1602AM0830 | ● | 8 | 16 | 8.5 | 30 | 1.85° | 0.03 | 2 | LOGU09 |
| VPX200R1802AM0830 | ★ | 8 | 18 | 8.5 | 30 | 1.56° | 0.04 | 2 | |
| VPX200R2002AM1030 | ● | 8 | 20 | 10.5 | 30 | 1.35° | 0.06 | 2 | |
| VPX200R2003AM1030 | ● | 8 | 20 | 10.5 | 30 | 1.35° | 0.06 | 3 | |
| VPX200R2202AM1030 | ★ | 8 | 22 | 10.5 | 30 | 1.16° | 0.06 | 2 | |
| VPX200R2203AM1030 | ★ | 8 | 22 | 10.5 | 30 | 1.16° | 0.06 | 3 | |
| VPX200R2503AM1235 | ● | 8 | 25 | 12.5 | 35 | 0.97° | 0.11 | 3 | |
| VPX200R2504AM1235 | ● | 8 | 25 | 12.5 | 35 | 0.97° | 0.11 | 4 | |
| VPX200R3203AM1640 | ● | 8 | 32 | 17 | 40 | 0.71° | 0.21 | 3 | |
| VPX200R3204AM1640 | ● | 8 | 32 | 17 | 40 | 0.71° | 0.21 | 4 | |
| VPX200R3205AM1640 | ● | 8 | 32 | 17 | 40 | 0.71° | 0.21 | 5 | |
| VPX200R3503AM1640 | ★ | 8 | 35 | 17 | 40 | 0.63° | 0.24 | 3 | |
| VPX200R3505AM1640 | ★ | 8 | 35 | 17 | 40 | 0.63° | 0.23 | 5 | |
| VPX200R4004AM1640 | ● | 8 | 40 | 17 | 40 | 0.54° | 0.26 | 4 | |
| VPX200R4006AM1640 | ● | 8 | 40 | 17 | 40 | 0.54° | 0.26 | 6 | |

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1. Cf. page 16 pour les préconisations de nuances et brise-copeaux.

17 Vc



● : Article stocké. ★ : Article stocké au Japon.

## VPX200 – À EMBOUT FILETÉ

### DIMENSIONS DE MONTAGE

| Référence | CRKS | S10 | DCSFMS | OAL |
|---|---|---|---|---|
| VPX200R1602AM0830 | M08 | 10 | 14.5 | 48 |
| VPX200R1802AM0830 | M08 | 10 | 14.5 | 48 |
| VPX200R2002AM1030 | M10 | 14 | 18.5 | 49 |
| VPX200R2003AM1030 | M10 | 14 | 18.5 | 49 |
| VPX200R2202AM1030 | M10 | 14 | 18.5 | 49 |
| VPX200R2203AM1030 | M10 | 14 | 18.5 | 49 |
| VPX200R2503AM1235 | M12 | 19 | 23.5 | 57 |
| VPX200R2504AM1235 | M12 | 19 | 23.5 | 57 |
| VPX200R3203AM1640 | M16 | 24 | 28.5 | 63 |
| VPX200R3204AM1640 | M16 | 24 | 28.5 | 63 |
| VPX200R3205AM1640 | M16 | 24 | 28.5 | 63 |
| VPX200R3503AM1640 | M16 | 24 | 28.5 | 63 |
| VPX200R3505AM1640 | M16 | 24 | 28.5 | 63 |
| VPX200R4004AM1640 | M16 | 24 | 28.5 | 63 |
| VPX200R4006AM1640 | M16 | 24 | 28.5 | 63 |

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# PIÈCES DÉTACHÉES

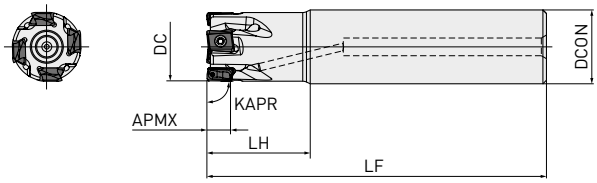
| Outil | DC |  * |  |  |
|---|---|---|---|---|
| | | Vis de plaquette | Clé | Lubrifiant antigrippant |
| VPX200R16 | ⩽20 | TPS27F1 | TIP07F | MK1KS |
| VPX200R22 | >20 | TPS27F2 | | |

* Couple de serrage (Nm) : TPS27F1 = 1.0, TPS27F2 = 1.0

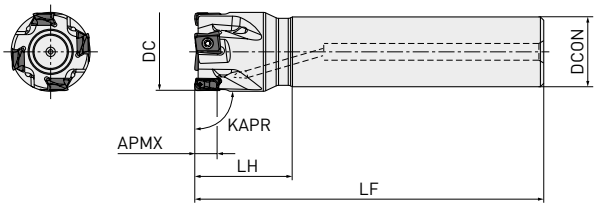
# VPX200

P M K N S H

1




2




*Outil à droite uniquement*

## QUEUE CYLINDRIQUE

| Référence | Stock | APMX | DC | DCON | LF | RMPX | RPMX | WT | LH | ZNF | Fig. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TYPE COURT** | | | | | | | | | | | | |
| VPX200R1602SA16S | ● | 8 | 16 | 16 | 85 | 1.85° | 37900 | 0.11 | 25 | 2 | 1 | |
| VPX200R1802SA16S | ★ | 8 | 18 | 16 | 85 | 1.56° | 35300 | 0.12 | 25 | 2 | 2 | |
| VPX200R2002SA16S | ★ | 8 | 20 | 16 | 100 | 1.35° | 33200 | 0.14 | 25 | 2 | 2 | |
| VPX200R2003SA16S | ● | 8 | 20 | 16 | 100 | 1.35° | 33200 | 0.14 | 25 | 3 | 2 | |
| VPX200R2002SA20S | ● | 8 | 20 | 20 | 100 | 1.35° | 33200 | 0.21 | 30 | 2 | 1 | |
| VPX200R2003SA20S | ● | 8 | 20 | 20 | 100 | 1.35° | 33200 | 0.21 | 30 | 3 | 1 | |
| VPX200R2202SA20S | ★ | 8 | 22 | 20 | 115 | 1.16° | 31400 | 0.26 | 30 | 2 | 2 | |
| VPX200R2203SA20S | ● | 8 | 22 | 20 | 115 | 1.16° | 31400 | 0.25 | 30 | 3 | 2 | |
| VPX200R2503SA20S | ● | 8 | 25 | 20 | 115 | 0.97° | 29000 | 0.26 | 30 | 3 | 2 | |
| VPX200R2504SA20S | ● | 8 | 25 | 20 | 115 | 0.97° | 29000 | 0.26 | 30 | 4 | 2 | |
| VPX200R2503SA25S | ● | 8 | 25 | 25 | 115 | 0.97° | 29000 | 0.39 | 35 | 3 | 1 | |
| VPX200R2504SA25S | ● | 8 | 25 | 25 | 115 | 0.97° | 29000 | 0.39 | 35 | 4 | 1 | LOGU09 |
| VPX200R2803SA25S | ★ | 8 | 28 | 25 | 115 | 0.84° | 27200 | 0.41 | 35 | 3 | 2 | |
| VPX200R2804SA25S | ★ | 8 | 28 | 25 | 115 | 0.84° | 27200 | 0.41 | 35 | 4 | 2 | |
| VPX200R3003SA25S | ★ | 8 | 30 | 25 | 125 | 0.77° | 26000 | 0.46 | 35 | 3 | 2 | |
| VPX200R3004SA25S | ★ | 8 | 30 | 25 | 125 | 0.77° | 26000 | 0.46 | 35 | 4 | 2 | |
| VPX200R3203SA32S | ★ | 8 | 32 | 32 | 125 | 0.71° | 25100 | 0.70 | 45 | 3 | 1 | |
| VPX200R3204SA32S | ● | 8 | 32 | 32 | 125 | 0.71° | 25100 | 0.70 | 45 | 4 | 1 | |
| VPX200R3205SA32S | ● | 8 | 32 | 32 | 125 | 0.71° | 25100 | 0.70 | 45 | 5 | 1 | |
| VPX200R4004SA32S | ★ | 8 | 40 | 32 | 125 | 0.54° | 22000 | 0.81 | 45 | 4 | 2 | |
| VPX200R4006SA32S | ★ | 8 | 40 | 32 | 125 | 0.54° | 22000 | 0.80 | 45 | 6 | 2 | |
| VPX200R5005SA32S | ★ | 8 | 50 | 32 | 125 | 0.42° | 19200 | 0.91 | 45 | 5 | 2 | |
| VPX200R5007SA32S | ★ | 8 | 50 | 32 | 125 | 0.42° | 19200 | 0.91 | 45 | 7 | 2 | |





● : Article stocké. ★ : Article stocké au Japon.

## VPX200 – QUEUE CYLINDRIQUE

| Référence | Stock | APMX | DC | DCON | LF | RMPX | RPMX | WT | LH | ZNF | Fig. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TYPE LONG** | | | | | | | | | | | | |
| VPX200R1802SA16L | ● | 8 | 18 | 16 | 120 | 1.56° | 35300 | 0.17 | 25 | 2 | 2 | |
| VPX200R2002SA20L | ● | 8 | 20 | 20 | 150 | 1.35° | 33200 | 0.32 | 60 | 2 | 1 | |
| VPX200R2202SA20L | ★ | 8 | 22 | 20 | 150 | 1.16° | 31400 | 0.34 | 30 | 2 | 2 | |
| VPX200R2503SA25L | ● | 8 | 25 | 25 | 170 | 0.97° | 29000 | 0.57 | 70 | 3 | 1 | LOGU09 |
| VPX200R2803SA25L | ★ | 8 | 28 | 25 | 170 | 0.84° | 27200 | 0.61 | 35 | 3 | 2 | |
| VPX200R3203SA32L | ● | 8 | 32 | 32 | 190 | 0.71° | 25100 | 1.06 | 90 | 3 | 1 | |
| VPX200R3503SA32L | ★ | 8 | 35 | 32 | 190 | 0.63° | 23800 | 1.14 | 45 | 3 | 2 | |

1/1

1. Les vitesses de rotation maximales autorisées assurent la stabilité de l'outil et des plaquettes.
2. Si vous utilisez l'outil à vitesse de rotation élevée, veillez à bien équilibrer l'ensemble outil-attachement.
3. Cf. page 16 pour les préconisations de nuances et brise-copeaux.

17 Vc

# PIÈCES DÉTACHÉES

| Outil | DC | Vis de plaquette * | Clé | Lubrifiant antigrippant |
|---|---|---|---|---|
| VPX200 | ⩽20 | TPS27F1 | TIP07F | MK1KS |
| VPX200 | >20 | TPS27F2 | | |

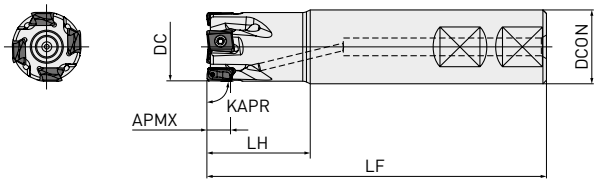
* Couple de serrage (Nm) : TPS27F1 = 1.0, TPS27F2 = 1.0

● : Article stocké. ★ : Article stocké au Japon.

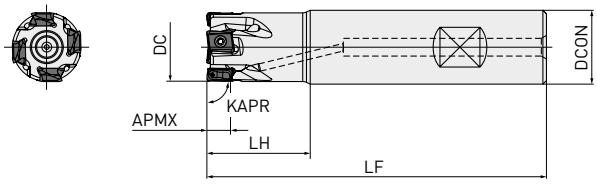
# VPX200

P M K N S H

1




2




*Outil à droite uniquement*

## ATTACHEMENT WELDON

| Référence | Stock | APMX | DC | DCON | LF | RMPX | RPMX | WT | LH | ZNF | Fig. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TYPE COURT** | | | | | | | | | | | | |
| VPX200R1602WA16S | ● | 8 | 16 | 16 | 73 | 1.85° | 37900 | 0.09 | 25 | 2 | 2 | |
| VPX200R2002WA20S | ● | 8 | 20 | 20 | 80 | 1.35° | 33200 | 0.17 | 30 | 2 | 2 | |
| VPX200R2003WA20S | ● | 8 | 20 | 20 | 80 | 1.35° | 33200 | 0.16 | 30 | 3 | 2 | |
| VPX200R2503WA25S | ● | 8 | 25 | 25 | 91 | 0.97° | 29000 | 0.29 | 35 | 3 | 1 | LOGU09 |
| VPX200R2504WA25S | ● | 8 | 25 | 25 | 91 | 0.97° | 29000 | 0.29 | 35 | 4 | 1 | |
| VPX200R3203WA32S | ● | 8 | 32 | 32 | 105 | 0.71° | 25100 | 0.58 | 45 | 3 | 1 | |
| VPX200R3204WA32S | ● | 8 | 32 | 32 | 105 | 0.71° | 25100 | 0.57 | 45 | 4 | 1 | |
| VPX200R3205WA32S | ● | 8 | 32 | 32 | 105 | 0.71° | 25100 | 0.57 | 45 | 5 | 1 | |
| **TYPE LONG** | | | | | | | | | | | | |
| VPX200R1602WA16M | ● | 8 | 16 | 16 | 85 | 1.85° | 37900 | 0.11 | 37 | 2 | 1 | |
| VPX200R2002WA20M | ● | 8 | 20 | 20 | 100 | 1.35° | 33200 | 0.20 | 50 | 2 | 1 | |
| VPX200R2003WA20M | ● | 8 | 20 | 20 | 100 | 1.35° | 33200 | 0.20 | 50 | 3 | 1 | |
| VPX200R2503WA25M | ● | 8 | 25 | 25 | 115 | 0.97° | 29000 | 0.37 | 59 | 3 | 1 | LOGU09 |
| VPX200R2504WA25M | ● | 8 | 25 | 25 | 115 | 0.97° | 29000 | 0.37 | 59 | 4 | 1 | |
| VPX200R3203WA32M | ● | 8 | 32 | 32 | 125 | 0.71° | 25100 | 0.68 | 65 | 3 | 1 | |
| VPX200R3204WA32M | ● | 8 | 32 | 32 | 125 | 0.71° | 25100 | 0.68 | 65 | 4 | 1 | |
| VPX200R3205WA32M | ● | 8 | 32 | 32 | 125 | 0.71° | 25100 | 0.68 | 65 | 5 | 1 | |



1. Les vitesses de rotation maximales autorisées assurent la stabilité de l'outil et des plaquettes.
2. Si vous utilisez l'outil à vitesse de rotation élevée, veillez à bien équilibrer l'ensemble outil-attachement.
3. Cf. page 16 pour les préconisations de nuances et brise-copeaux.

17 Vc

# PIÈCES DÉTACHÉES

| Outil | DC | Vis de plaquette * | Clé | Lubrifiant antigrippant |
|---|---|---|---|---|
| VPX200 | ⩽20 | TPS27F1 | TIP07F | MK1KS |
| VPX200 | >20 | TPS27F2 | | |

* Couple de serrage (Nm) : TPS27F1 = 1.0, TPS27F2 = 1.0

# VPX200

## PLAQUETTES

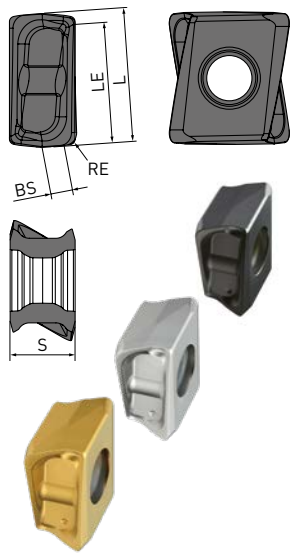
| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Acier | | ◐ | ✣ | | | | ◐ | ◐ | ◐ | | | | | | | | |
| M | Acier inoxydable | | | ◐ | | | | ◐ | ◐ | ◐ | | | | | | | | |
| K | Fonte | ◐ | | | | | | ◐ | ◐ | ✣ | | | | | | | | |
| N | Matériau non ferreux | | | | | | | | | | ◐ | | | | | | | |
| S | Alliage réfractaire, Alliage de titane | | | | ◐ | ✣ | | | | ◐ | | | | | | | | |
| H | Acier traité | | | | | | | | | ◐ | | | | | | | | |

Conditions de stabilité :
● : Coupe stable ◐ : Coupe générale ✣ : Coupe instable

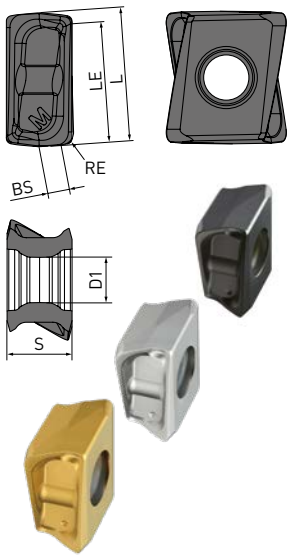
Honing :
E : Rond F : Affûtée

| Référence | Classe | Honing | MC5020 | MP6120 | MP6130 | MP7130 | MP9120 | MP9130 | NEW | MV1020 | NEW | MV1030 | VP15TF | TF15 | L | RE | LE | S | BS | D1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOGU0904020PNER-L | G | E | ★ | ★ | ★ | ★ | ★ | ★ | | ● | | ● | ★ | | 8.7 | 0.2 | 7.6 | 4.3 | 1.7 | 3 |
| LOGU0904040PNER-L | G | E | ● | ● | ● | ● | ● | ● | | ● | | ● | ★ | | 8.7 | 0.4 | 7.6 | 4.3 | 1.5 | 3 |
| LOGU0904080PNER-L | G | E | ● | ● | ● | ● | ● | ● | | ● | | ● | ★ | | 8.7 | 0.8 | 7.6 | 4.3 | 1.2 | 3 |
| LOGU0904100PNER-L | G | E | ★ | ★ | ★ | ★ | ★ | ★ | | ● | | ● | ★ | | 8.7 | 1.0 | 7.6 | 4.3 | 1.0 | 3 |
| LOGU0904120PNER-L | G | E | ★ | ★ | ★ | ★ | ★ | ★ | | ● | | ● | ★ | | 8.7 | 1.2 | 7.6 | 4.3 | 0.8 | 3 |
| LOGU0904160PNER-L | G | E | ● | ● | ● | ● | ● | ● | | ● | | ● | ★ | | 8.7 | 1.6 | 7.6 | 4.3 | 0.5 | 3 |
| LOGU0904020PNFR-L | G | F | | | | | | | | | | | | ● | 8.7 | 0.2 | 7.6 | 4.3 | 1.7 | 3 |
| LOGU0904040PNFR-L | G | F | | | | | | | | | | | | ● | 8.7 | 0.4 | 7.6 | 4.3 | 1.5 | 3 |
| LOGU0904080PNFR-L | G | F | | | | | | | | | | | | ● | 8.7 | 0.8 | 7.6 | 4.3 | 1.2 | 3 |
| LOGU0904100PNFR-L | G | F | | | | | | | | | | | | ★ | 8.7 | 1.0 | 7.6 | 4.3 | 1.0 | 3 |
| LOGU0904120PNFR-L | G | F | | | | | | | | | | | | ★ | 8.7 | 1.2 | 7.6 | 4.3 | 0.8 | 3 |
| LOGU0904160PNFR-L | G | F | | | | | | | | | | | | ★ | 8.7 | 1.6 | 7.6 | 4.3 | 0.5 | 3 |

**Géométrie**
*Plaquette à droite uniquement*




| Référence | Classe | Honing | MC5020 | MP6120 | MP6130 | MP7130 | MP9120 | MP9130 | NEW | MV1020 | NEW | MV1030 | VP15TF | TF15 | L | RE | LE | S | BS | D1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOGU0904020PNER-M | G | E | ★ | ★ | ★ | ★ | ★ | ★ | | ● | | ● | ★ | | 8.7 | 0.2 | 7.6 | 4.3 | 1.7 | 3 |
| LOGU0904040PNER-M | G | E | ● | ● | ● | ● | ● | ● | | ● | | ● | ★ | | 8.7 | 0.4 | 7.6 | 4.3 | 1.6 | 3 |
| LOGU0904080PNER-M | G | E | ● | ● | ● | ● | ● | ● | | ● | | ● | ★ | | 8.7 | 0.8 | 7.6 | 4.3 | 1.2 | 3 |
| LOGU0904100PNER-M | G | E | ★ | ★ | ★ | ★ | ★ | ★ | | ● | | ● | ★ | | 8.7 | 1 | 7.6 | 4.3 | 1 | 3 |
| LOGU0904120PNER-M | G | E | ★ | ★ | ★ | ★ | ★ | ★ | | ● | | ● | ★ | | 8.7 | 1.2 | 7.6 | 4.3 | 0.9 | 3 |
| LOGU0904160PNER-M | G | E | ● | ● | ● | ● | ● | ● | | ● | | ● | ★ | | 8.7 | 1.6 | 7.6 | 4.3 | 0.5 | 3 |
| LOGU0904020PNFR-M | G | F | | | | | | | | | | | | ● | 8.7 | 0.2 | 7.6 | 4.3 | 1.7 | 3 |
| LOGU0904040PNFR-M | G | F | | | | | | | | | | | | ● | 8.7 | 0.4 | 7.6 | 4.3 | 1.6 | 3 |
| LOGU0904080PNFR-M | G | F | | | | | | | | | | | | ● | 8.7 | 0.8 | 7.6 | 4.3 | 1.2 | 3 |
| LOGU0904100PNFR-M | G | F | | | | | | | | | | | | ★ | 8.7 | 1 | 7.6 | 4.3 | 1 | 3 |
| LOGU0904120PNFR-M | G | F | | | | | | | | | | | | ★ | 8.7 | 1.2 | 7.6 | 4.3 | 0.9 | 3 |
| LOGU0904160PNFR-M | G | F | | | | | | | | | | | | ★ | 8.7 | 1.6 | 7.6 | 4.3 | 0.5 | 3 |






● : Article stocké. ★ : Article stocké au Japon.

# VPX200

## BRISE-COPEAUX ET NUANCES

| | Matière | Propriétés | Conditions de stabilité | Recommandation no 1 | Recommandation no 2 |
|---|---|---|---|---|---|
| P | Acier doux | ≤180HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 350HB<br>≤350HB | ● | L | M |
| | | | ◐ | M | L |
| | | | ✣ | M | L |
| | Acier pré-traité | 35 – 45HRC | ● ◐ | M | L |
| | | | ✣ | M | L |
| M | Acier inoxydable austénitique | ≤280HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| | | >200HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Acier inoxydable duplex | ≤280HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Acier inoxydable ferritique ou martensitique | — | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Inox à durcissement structural (PH) | <450HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| K | Fonte grise | ≤350MPa | ● ◐ | M | L |
| | | | ✣ | M | L |
| | Fonte ductile | ≤800MPa | ● ◐ | M | L |
| | | | ✣ | M | L |
| N | Alliage d'aluminum | Si<5 % | ● ◐ | L | M |
| | | | ✣ | M | L |
| S | Alliage de titane<br>(Ti-6Al-4V) | — | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Alliage de titane<br>(Ti-5Al-5V-5Mo-3Cr) | — | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Alliage réfractaire | — | ● ◐ | M | L |
| | | | ✣ | M | L |
| H | Acier traité | 40 – 55HRC | ● ◐ ✣ | M | — |

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17 Vc

# VPX200

## CONDITIONS DE COUPE RECOMMANDÉES
## USINAGE À SEC

Ces conditions de coupe sont données pour des outils courts (dernière lettre S dans la référence) à queue cylindrique ou à attachement par alésage.
En cas de broutement, d'écaillage, etc. pendant l'usinage, veuillez modifier les conditions en conséquence.
Le broutement et les vibrations sont plus probables dans les conditions suivantes : lorsque le porte-à-faux de l'outil est long (en cas de queue longue, rallonge à visser, etc.) ou lorsque la raideur de la machine, de la pièce à usiner ou du bridage est faible, ou dans les angles lors de l'usinage de poches. Utilisez alors les conditions de coupe minmales voire inférieures.

### VITESSE DE COUPE

| | Matière | Propriétés | Conditions de stabilité | Nuance | Vc | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ae<0.25x DC | ae≥0.25–0.5 DC | ae≥0.5–0.75 DC | ae=1.0 DC |
| P | Acier doux | ≤180HB | ● ● | MV1020 | 280 (220 – 330) | 270 (210 – 320) | 220 (170 – 260) | 220 (170 – 260) |
| | | | | MV1030 | 230 (180 – 270) | 220 (170 – 260) | 180 (140 – 210) | 180 (140 – 210) |
| | | | ● ● | MP6120 | 230 (180 – 270) | 220 (170 – 260) | 180 (140 – 210) | 180 (140 – 210) |
| | | | ● ● | VP15TF | 230 (180 – 270) | 220 (170 – 260) | 180 (140 – 210) | 180 (140 – 210) |
| | | | ✣ | MP6130 | 200 (150 – 240) | 190 (140 – 230) | 150 (110 – 180) | 150 (110 – 180) |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 280HB | ● ● | MV1020 | 220 (170 – 260) | 210 (160 – 240) | 170 (130 – 200) | 170 (130 – 200) |
| | | | ● ● | MV1030 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 170 (130 – 200) |
| | | 280 – 350HB | ● ● | MV1020 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | | ● ● | MV1030 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | 180 – 350HB<br>≤350HB | ● ● | MP6120 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | | ● ● | VP15TF | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | | ✣ | MP6130 | 150 (110 – 180) | 140 (100 – 170) | 110 ( 80 – 130) | 110 ( 80 – 130) |
| | Acier pré-traité | 35 – 45HRC | ● ● | MP6120 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ✣ | MP6130 | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| M | Acier inoxydable austénitique | ≤200HB | ● ● | MV1020 | — | — | — | — |
| | | | ● ● | MV1030 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | | ● ● ✣ | MP7130 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | | ● ● | VP15TF | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | >200HB | ● ● | MV1020 | — | — | — | — |
| | | | ● ● | MV1030 | 150 (110 – 180) | 140 (100 – 160) | 110 (80 – 130) | 110 (80 – 130) |
| | | | ● ● ✣ | MP7130 | 150 (110 – 180) | 140 (100 – 160) | 110 ( 80 – 130) | 110 ( 80 – 130) |
| | | | ● ● | VP15TF | 150 (110 – 180) | 140 (100 – 160) | 110 ( 80 – 130) | 110 ( 80 – 130) |
| | Acier inoxydable duplex | ≤280HB | ● ● ✣ | MP7130 | 140 (110 – 170) | 130 ( 90 – 150) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | VP15TF | 140 (110 – 170) | 130 ( 90 – 150) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | Acier inoxydable ferritique ou martensitique | — | ● ● ✣ | MP7130 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | | ● ● | VP15TF | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | Inox à durcissement structural (PH) | <450HB | ● ● ✣ | MP7130 | 130 (100 – 160) | 120 ( 80 – 140) | 90 ( 60 – 110) | 90 ( 60 – 110) |
| | | | ● ● | VP15TF | 130 (100 – 160) | 120 ( 80 – 140) | 90 ( 60 – 110) | 90 ( 60 – 110) |
| K | Fonte grise | ≤350MPa | ● ● | MC5020 | 250 (200 – 300) | 240 (190 – 290) | 210 (160 – 260) | 210 (160 – 260) |
| | | | ● ● | VP15TF | 200 (150 – 250) | 190 (140 – 240) | 160 (110 – 210) | 160 (110 – 210) |
| | Fonte ductile | ≤450MPa | ● ● | MV1020 | 200 (150 – 280) | 190 (140 – 270) | 170 (130 – 240) | 170 (130 – 240) |
| | | | ● ● | MV1030 | 150 (100 – 200) | 140 (90 – 190) | 125 (80 – 170) | 100 (80 – 120) |
| | | ≤800MPa | ● ● | MV1020 | 180 (140 – 250) | 170 (130 – 240) | 150 (120 – 210) | 150 (120 – 210) |
| | | | ● ● | MV1030 | 150 (100 – 200) | 140 (90 – 190) | 125 (80 – 170) | 150 (120 – 210) |
| | | | ● ● | MC5020 | 180 (150 – 200) | 170 (140 – 190) | 150 (120 – 170) | 150 (120 – 170) |
| | | | ● ● ✣ | VP15TF | 130 (100 – 150) | 120 ( 90 – 140) | 100 ( 80 – 120) | 100 ( 80 – 120) |
| N | Alliage d'aluminum | Si<5 % | ● ● ✣ | TF15 | 600 (400 – 1000) | 600 (400 – 1000) | 600 (400 – 1000) | 600 (400 – 1000) |
| H | Acier traité | 40 – 55HRC | ● ● ✣ | VP15TF | 90 ( 70 – 100) | 85 ( 60 – 100) | 70 ( 50 – 80) | 70 ( 50 – 80) |

## VPX200 – PROFONDEUR DE PASSE / AVANCE PAR DENT

| | Matière | Propriétés | Conditions de stabilité | ae | DC=Ø16–Ø18 | | DC=Ø20–Ø25 | | DC=Ø28–Ø63 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | ap | fz | ap | fz | ap | fz |
| P | Acier doux | ≤180HB | ● ● ✲ | ≤0.25DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.25 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 | ≤6 | 0.1 – 0.15 |
| | | | ● ● ✲ | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.08 – 0.12 |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180–280HB | ● ● ✲ | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.25 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 | ≤6 | 0.1 – 0.15 |
| | | | ● ● ✲ | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.08 – 0.12 |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 280—350HB<br>≤350HB<br>(Recuit) | ● ● ✲ | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.06 – 0.1 | ≤6 | 0.08 – 0.12 |
| | | | ● ● ✲ | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.05 – 0.1 |
| | Acier pré-traité | 35–45HRC | ● ● ✲ | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.06 – 0.1 | ≤6 | 0.08 – 0.12 |
| | | | ● ● ✲ | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| M | Acier inoxydable austénitique | — | ● ● | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.2 |
| | | | ✲ | ≤0.25 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ● ● | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ✲ | 0.25 – 0.5 DC | ≤5 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.1 | ≤6 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 |
| | | | ✲ | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.08 | ≤6 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 |
| | | | ● ● | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 |
| | Acier inoxydable duplex | ≤280HB | ● ● | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.2 |
| | | | ✲ | ≤0.25 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ● ● | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ✲ | 0.25 – 0.5 DC | ≤5 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.1 | ≤6 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 |
| | | | ✲ | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.08 | ≤6 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 |
| | | | ● ● | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 |
| | Acier inoxydable<br>ferritique ou martensitique | — | ● ● | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.2 |
| | | | ✲ | ≤0.25 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ● ● | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ✲ | 0.25 – 0.5 DC | ≤5 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.1 | ≤6 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 |
| | | | ✲ | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.08 | ≤6 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 |
| | | | ● ● | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 |
| | Inox à durcissement structural<br>(PH) | ≤450HB | ● ● | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 |
| | | | ✲ | ≤0.25 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ✲ | 0.25 – 0.5 DC | ≤5 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 |
| | | | ✲ | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.08 | ≤6 | 0.06 – 0.08 | ≤6 | 0.06 – 0.08 |
| | | | ● ● | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 |

## VPX200 – PROFONDEUR DE PASSE / AVANCE PAR DENT

| | Matière | Propriétés | Conditions de stabilité | ae | DC=Ø16 – Ø18 | | DC=Ø20 – Ø25 | | DC=Ø28 – Ø63 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | ap | fz | ap | fz | ap | fz |
| K | Fonte grise | ≤350MPa | ● ● | ≤0.25DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.25 |
| | | | ✱ | 0.25 – 0.5 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.1 – 0.2 |
| | | | ● ● | 0.5 – 0.75 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.1 – 0.2 |
| | | | ✱ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 |
| | | | ● ● | ≤0.25 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 | ≤6 | 0.1 – 0.15 |
| | | | ✱ | 0.25 – 0.5 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.06 – 0.1 | ≤6 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.08 – 0.15 |
| | | | ✱ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 | ≤4 | 0.08 – 0.1 |
| | Fonte ductile | ≤800MPa | ● ● | ≤0.25DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.2 |
| | | | ✱ | 0.25 – 0.5 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 |
| | | | ● ● | 0.5 – 0.75 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 |
| | | | ✱ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | ≤0.25 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 |
| | | | ✱ | 0.25 – 0.5 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 |
| | | | ● ● | 0.5 – 0.75 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| | | | ✱ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 |
| N | Alliage d'aluminum | Si<5 % | ● ● | ≤0.25DC | ≤6 | 0.1 – 0.2 | ≤8 | 0.1 – 0.25 | ≤8 | 0.1 – 0.25 |
| | | | ✱ | 0.25 – 0.5 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.2 |
| | | | ● ● | 0.5 – 0.75 DC | ≤5 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.2 |
| | | | ✱ | 1.0 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 |
| | | | ● ● | ≤0.25 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.06 – 0.15 | ≤6 | 0.08 – 0.15 |
| | | | ✱ | 0.25 – 0.5 DC | ≤4 | 0.06 – 0.1 | ≤6 | 0.06 – 0.15 | ≤6 | 0.08 – 0.15 |
| | | | ● ● | 0.5 – 0.75 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.15 | ≤4 | 0.08 – 0.15 |
| | | | ✱ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.12 | ≤4 | 0.08 – 0.12 |
| H | Acier traité | 40 – 55HRC | ● ● | ≤0.25DC | ≤4 | 0.08 – 0.15 | ≤4 | 0.08 – 0.15 | ≤4 | 0.08 – 0.15 |
| | | | ✱ | 0.25 – 0.5 DC | ≤4 | 0.08 – 0.12 | ≤4 | 0.08 – 0.12 | ≤4 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤3 | 0.08 – 0.12 | ≤3 | 0.08 – 0.12 | ≤3 | 0.08 – 0.12 |
| | | | ✱ | 1.0 DC | ≤3 | 0.06 – 0.1 | ≤3 | 0.08 – 0.1 | ≤3 | 0.06 – 0.1 |
| | | | ● ● | ≤0.25 DC | ≤2 | 0.06 – 0.1 | ≤2 | 0.08 – 0.1 | ≤2 | 0.06 – 0.1 |
| | | | ✱ | 0.25 – 0.5 DC | ≤2 | 0.06 – 0.08 | ≤2 | 0.06 – 0.08 | ≤2 | 0.06 – 0.08 |
| | | | ● ● | 0.5 – 0.75 DC | ≤1 | 0.06 – 0.1 | ≤1 | 0.06 – 0.1 | ≤1 | 0.06 – 0.1 |
| | | | ✱ | 1.0 DC | ≤1 | 0.06 – 0.08 | ≤1 | 0.06 – 0.08 | ≤1 | 0.06 – 0.08 |

# VPX200

## CONDITIONS DE COUPE RECOMMANDÉES
## ARROSAGE

Ces conditions de coupe sont données pour des outils courts (dernière lettre S dans la référence) à queue cylindrique ou à attachement par alésage.
En cas de broutement, d'écaillage, etc. pendant l'usinage, veuillez modifier les conditions en conséquence.
Le broutement et les vibrations sont plus probables dans les conditions suivantes : lorsque le porte-à-faux de l'outil est long (en cas de queue longue, rallonge à visser, etc.) ou lorsque la raideur de la machine, de la pièce à usiner ou du bridage est faible, ou dans les angles lors de l'usinage de poches. Utilisez alors les conditions de coupe minmales voire inférieures.

### VITESSE DE COUPE

| | Matière | Propriétés | Conditions de stabilité | Nuance | Vc | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ae<0.25 DC | ae≥0.25 – 0.5 DC | ae≥0.5 – 0.75 DC | ae=1.0 DC |
| P | Acier doux | ≤180HB | ● ● | MV1020 | 210 (150 – 290) | 200 (140 – 270) | 150 (110 – 180) | 150 (110 – 180) |
| | | | ● ● | MV1030 | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | MP6120 | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | VP15TF | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ✤ | MP6130 | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 280HB | ● ● | MV1020 | 180 (140 – 210) | 170 (120 – 200) | 150 (110 – 180) | 150 (110 – 180) |
| | | | ● ● | MV1030 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | 280 – 350HB | ● ● | MV1020 | 140 (110 – 160) | 130 ( 90 – 150) | 120 ( 80 – 140) | 120 ( 80 – 140) |
| | | | ● ● | MV1030 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 120 ( 80 – 140) |
| | | 180 – 350HB<br>≤350HB | ● ● | MP6120 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ✤ | MP6130 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | Acier pré-traité | 35 – 45HRC | ● ● | MP6120 | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| | | | ● ● | VP15TF | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| | | | ✤ | MP6130 | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| M | Acier inoxydable austénitique | ≤200HB | ● ● ✤ | MP7130 | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | | >200HB | ● ● ✤ | MP7130 | 100 ( 80 – 130) | 90 ( 70 – 110) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | | | ● ● | VP15TF | 100 ( 80 – 130) | 90 ( 70 – 110) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | Acier inoxydable duplex | ≤280HB | ● ● ✤ | MP7130 | 100 ( 80 – 130) | 90 ( 70 – 120) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | | | ● ● | VP15TF | 100 ( 80 – 130) | 90 ( 70 – 120) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | Acier inoxydable ferritique ou martensitique | — | ● ● ✤ | MP7130 | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | Inox à durcissement structural | <450HB | ● ● ✤ | MP7130 | 90 ( 70 – 120) | 80 ( 60 – 110) | 60 ( 40 – 90) | 60 ( 40 – 90) |
| | | | ● ● | VP15TF | 90 ( 70 – 120) | 80 ( 60 – 110) | 60 ( 40 – 90) | 60 ( 40 – 90) |
| K | Fonte grise | ≤350MPa | ● ● | MC5020 | 180 (160 – 220) | 170 (150 – 210) | 150 (130 – 190) | 150 (130 – 190) |
| | | | ● ● ✤ | VP15TF | 130 (100 – 150) | 120 ( 90 – 140) | 100 ( 80 – 120) | 100 ( 80 – 120) |
| | Fonte ductile | ≤450MPa | ● ● | MV1020 | 180 (150 – 240) | 170 (140 – 230) | 150 (130 – 200) | 150 (130 – 200) |
| | | | ● ● | MV1030 | 130 ( 80 – 180) | 120 ( 70 – 170) | 105 ( 60 – 150) | 105 ( 60 – 150) |
| | | ≤800MPa | ● ● | MV1020 | 160 (130 – 210) | 150 (120 – 200) | 130 (110 – 170) | 130 (110 – 170) |
| | | | ● ● | MV1030 | 130 ( 80 – 180) | 120 ( 70 – 170) | 105 ( 60 – 150) | 105 ( 60 – 150) |
| | | | ● ● | MC5020 | 160 (140 – 180) | 150 (130 – 170) | 130 (110 – 150) | 130 (110 – 150) |
| | | | ● ● ✤ | VP15TF | 110 ( 80 – 140) | 100 ( 70 – 130) | 80 ( 60 – 120) | 80 ( 60 – 120) |
| N | Alliage d'aluminum | Si<5 % | ● ● ✤ | TF15 | 600 (400 – 1000) | 600 (400 – 1000) | 600 (400 – 1000) | 600 (400 – 1000) |

## VPX200 – ARROSAGE – VITESSE DE COUPE

| | Matière | Propriétés | Conditions de stabilité | Nuance | Vc | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ae<0.25 DC | ae≥0.25–0.5 DC | ae≥0.5–0.75 DC | ae=1.0 DC |
| S | Alliage de titane (TA6V) | — | ● ◐ | MP9120 | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) |
| | | | ● ◐ | VP15TF | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) |
| | | | ✣ | MP9130 | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) |
| | Alliage de titane (Ti5553) | — | ● ◐ | MP9120 | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| | | | ● ◐ | VP15TF | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| | | | ✣ | MP9130 | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| | Alliage réfractaire | — | ● ◐ | MP9120 | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) |
| | | | ● ◐ | VP15TF | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) |
| | | | ✣ | MP9130 | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| H | Acier traité | 40 – 55HRC | ● ◐ | VP15TF | 90 ( 70 – 100) | 85 ( 60 – 100) | 70 ( 50 – 80) | 70 ( 50 – 80) |



1. Un type avec moins de dents est recommandé lorsque l'engagement radial (ae) est de 0.5x DC ou plus.

## VPX200 – PROFONDEUR DE PASSE / AVANCE PAR DENT

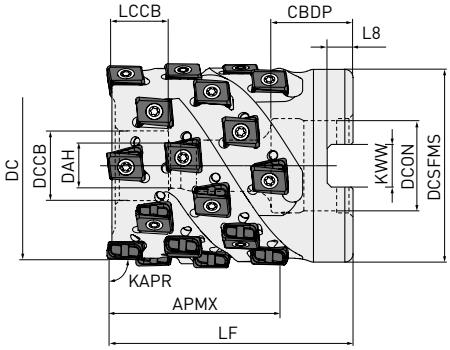
| | Matière | Propriétés | Conditions de stabilité | ae | DC=Ø16 – Ø18 | | DC=Ø20 – Ø25 | | DC=Ø28 – Ø63 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | ap | fz | ap | fz | ap | fz |
| P | Acier doux | ≤180HB | ● ● ✲ | ≤0.25DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.25 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤5 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 | ≤6 | 0.1 – 0.15 |
| | | | ● ● ✲ | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.08 – 0.12 |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 280HB | ● ● ✲ | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.25 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 | ≤6 | 0.1 – 0.15 |
| | | | ● ● ✲ | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.08 – 0.12 |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 280 – 350HB<br>≤350HB<br>(Recuit) | ● ● ✲ | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.06 – 0.1 | ≤6 | 0.08 – 0.12 |
| | | | ● ● ✲ | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| | Acier pré-traité | 35 – 45HRC | ● ● ✲ | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.06 – 0.1 | ≤6 | 0.08 – 0.12 |
| | | | ● ● ✲ | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| M | Acier inoxydable austénitique | — | ● ● | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.2 |
| | | | ✲ | ≤0.25 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ● ● | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ✲ | 0.25 – 0.5 DC | ≤5 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.1 | ≤6 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 |
| | | | ✲ | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.08 | ≤6 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 |
| | | | ● ● | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 |
| | Acier inoxydable duplex | ≤280HB | ● ● | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.2 |
| | | | ✲ | ≤0.25 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ● ● | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.08 – 0.12 |
| | | | ✲ | 0.25 – 0.5 DC | ≤5 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.1 | ≤6 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 |
| | | | ✲ | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.08 | ≤6 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 |
| | | | ● ● | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 |
| | Acier inoxydable ferritique ou martensitique | — | ● ● | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.2 |
| | | | ✲ | ≤0.25 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ● ● | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ✲ | 0.25 – 0.5 DC | ≤5 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.1 | ≤6 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 |
| | | | ✲ | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.08 | ≤6 | 0.06 – 0.1 | ≤6 | 0.05 – 0.1 |
| | | | ● ● | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.05 – 0.1 |
| | | | ✲ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 | ≤4 | 0.05 – 0.08 |
| | Inox à durcissement structural (PH) | ≤450HB | ● ● | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 |
| | | | ✲ | ≤0.25 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ✲ | 0.25 – 0.5 DC | ≤5 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 | ≤6 | 0.05 – 0.1 |
| | | | ✲ | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.08 | ≤6 | 0.06 – 0.08 | ≤6 | 0.05 – 0.08 |
| | | | ● ● | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.05 – 0.1 |
| | | | ✲ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 | ≤4 | 0.05 – 0.08 |

## VPX200 – PROFONDEUR DE PASSE / AVANCE PAR DENT

| | Matière | Propriétés | Conditions de stabilité | ae | DC=Ø16 – Ø18 | | DC=Ø20 – Ø25 | | DC=Ø28 – Ø63 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | ap | fz | ap | fz | ap | fz |
| K | Fonte grise | ≤350MPa | ● ● | ≤0.25DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.25 |
| | | | ✱ | 0.25 – 0.5 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.1 – 0.2 |
| | | | ● ● | 0.5 – 0.75 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.15 | ≤8 | 0.1 – 0.2 |
| | | | ✱ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 |
| | | | ● ● | ≤0.25 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.06 – 0.1 | ≤6 | 0.1 – 0.15 |
| | | | ✱ | 0.25 – 0.5 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.06 – 0.1 | ≤6 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.08 – 0.15 |
| | | | ✱ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 | ≤4 | 0.06 – 0.1 |
| | Fonte ductile | ≤800MPa | ● ● | ≤0.25 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.2 |
| | | | ✱ | 0.25 – 0.5 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 |
| | | | ● ● | 0.5 – 0.75 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 |
| | | | ✱ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | ≤0.25 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 |
| | | | ✱ | 0.25 – 0.5 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.08 – 0.12 | ≤6 | 0.06 – 0.1 |
| | | | ● ● | 0.5 – 0.75 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| | | | ✱ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 | ≤4 | 0.06 – 0.08 |
| N | Alliage d'aluminum | Si<5 % | ● ● | ≤0.25DC | ≤6 | 0.1 – 0.2 | ≤8 | 0.1 – 0.25 | ≤8 | 0.1 – 0.25 |
| | | | ✱ | 0.25 – 0.5 DC | ≤6 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.2 |
| | | | ● ● | 0.5 – 0.75 DC | ≤5 | 0.1 – 0.15 | ≤8 | 0.1 – 0.2 | ≤8 | 0.1 – 0.2 |
| | | | ✱ | 1.0 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 | ≤8 | 0.1 – 0.15 |
| | | | ● ● | ≤0.25 DC | ≤4 | 0.08 – 0.12 | ≤6 | 0.06 – 0.15 | ≤6 | 0.08 – 0.15 |
| | | | ✱ | 0.25 – 0.5 DC | ≤4 | 0.06 – 0.1 | ≤6 | 0.06 – 0.15 | ≤6 | 0.08 – 0.15 |
| | | | ● ● | 0.5 – 0.75 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.15 | ≤4 | 0.08 – 0.15 |
| | | | ✱ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤4 | 0.06 – 0.12 | ≤4 | 0.08 – 0.12 |
| S | Alliage de titane (TA6V) | — | ● ● ✱ | ≤0.25DC | ≤6 | 0.08 – 0.15 | ≤8 | 0.08 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ● ● ✱ | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● ✱ | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 |
| | | | ● ● ✱ | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| | Alliage de titane (Ti5553) | — | ● ● ✱ | ≤0.25 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● ✱ | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● ✱ | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 |
| | | | ● ● ✱ | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| | Alliage réfractaire | — | ● ● ✱ | ≤0.25 DC | ≤6 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● ✱ | 0.25 – 0.5 DC | ≤5 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● ✱ | 0.5 – 0.75 DC | ≤4 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 | ≤6 | 0.06 – 0.1 |
| | | | ● ● ✱ | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| H | Acier traité | 40 – 55HRC | ● ● | ≤0.25DC | ≤4 | 0.08 – 0.15 | ≤4 | 0.08 – 0.15 | ≤4 | 0.08 – 0.15 |
| | | | ✱ | 0.25 – 0.5 DC | ≤4 | 0.08 – 0.12 | ≤4 | 0.08 – 0.12 | ≤4 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤3 | 0.08 – 0.12 | ≤3 | 0.08 – 0.12 | ≤3 | 0.08 – 0.12 |
| | | | ✱ | 1.0 DC | ≤3 | 0.06 – 0.1 | ≤3 | 0.06 – 0.1 | ≤3 | 0.06 – 0.1 |
| | | | ● ● | ≤0.25 DC | ≤2 | 0.06 – 0.1 | ≤2 | 0.06 – 0.1 | ≤2 | 0.06 – 0.1 |
| | | | ✱ | 0.25 – 0.5 DC | ≤2 | 0.06 – 0.1 | ≤2 | 0.06 – 0.1 | ≤2 | 0.06 – 0.1 |
| | | | ● ● | 0.5 – 0.75 DC | ≤1 | 0.06 – 0.1 | ≤1 | 0.06 – 0.1 | ≤1 | 0.06 – 0.1 |
| | | | ✱ | 1.0 DC | ≤1 | 0.06 – 0.1 | ≤1 | 0.06 – 0.1 | ≤1 | 0.06 – 0.1 |

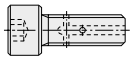
# VPX200

P M K N S




## FRAISE TYPE HÉRISSON

*Outil à droite uniquement*

| DC | Vis d'attachement | Géométrie |
|---|---|---|
| Ø32 | HSC08045 |  |
| Ø40 | HSC08050 | |
| Ø50 | HSC10045 | |

## FRAISE TYPE ALÉSAGE

| Référence | Stock | APMX | DC | DCON | LF | RMPX | WT | ZNF | ZNP |  |
|---|---|---|---|---|---|---|---|---|---|---|
| VPX200-032A02A035R10 | ★ | 35 | 32 | 16 | 55 | 0.71° | 0.22 | 2 | 10 | LOGU09 |
| VPX200-032A03A035R15 | ● | 35 | 32 | 16 | 55 | 0.71° | 0.20 | 3 | 15 | |
| VPX200-040A03A042R18 | ★ | 42 | 40 | 16 | 60 | 0.54° | 0.34 | 3 | 18 | |
| VPX200-040A04A042R24 | ● | 42 | 40 | 16 | 60 | 0.54° | 0.33 | 4 | 24 | |
| VPX200-050A04A042R24 | ★ | 42 | 50 | 22 | 60 | 0.42° | 0.55 | 4 | 24 | |
| VPX200-050A05A042R30 | ★ | 42 | 50 | 22 | 60 | 0.42° | 0.54 | 5 | 30 | |

1/1

1. Les vitesses de rotation maximales autorisées assurent la stabilité de l'outil et des plaquettes.
2. Si vous utilisez l'outil à vitesse de rotation élevée, veillez à bien équilibrer l'ensemble outil-attachement.
3. Cf. page 29 pour les préconisations de nuances et brise-copeaux.

30 Vc



● : Article stocké. ★ : Article stocké au Japon.

## VPX200 – FRAISE TYPE HÉRISSON – FRAISE TYPE ALÉSAGE

### DIMENSIONS DE MONTAGE

| Référence | CBDP | DAH | DCCB | DCSFMS | KWW | LCCB | L8 |
|---|---|---|---|---|---|---|---|
| VPX200-032A02A035R10 | 18 | 9 | 14 | 37 | 8.4 | 8 | 5.6 |
| VPX200-032A03A035R15 | 18 | 9 | 14 | 37 | 8.4 | 8 | 5.6 |
| VPX200-040A03A042R18 | 18 | 9 | 14 | 37 | 8.4 | 8 | 5.6 |
| VPX200-040A04A042R24 | 18 | 9 | 14 | 37 | 8.4 | 8 | 5.6 |
| VPX200-050A04A042R24 | 20 | 11 | 17 | 47 | 10.4 | 13 | 6.3 |
| VPX200-050A05A042R30 | 20 | 11 | 17 | 47 | 10.4 | 13 | 6.3 |

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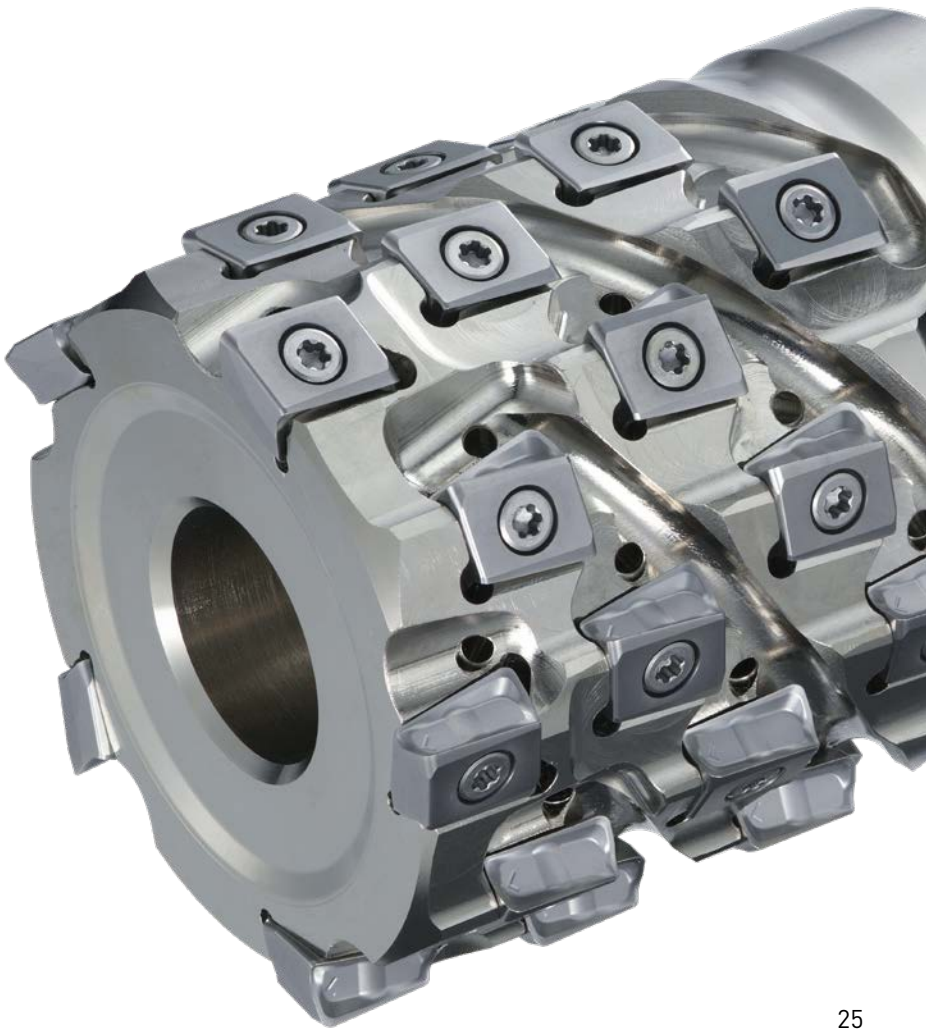
# PIÈCES DÉTACHÉES

| Outil | DC |  * |  |  |
|---|---|---|---|---|
| | | Vis de plaquette | Clé | Lubrifiant antigrippant |
| VPX200 | ⩽63 | TPS27F2 | TIP07F | MK1KS |

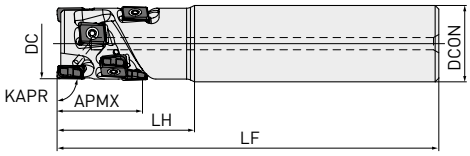
* Couple de serrage (Nm) : TPS27F2 = 1.0



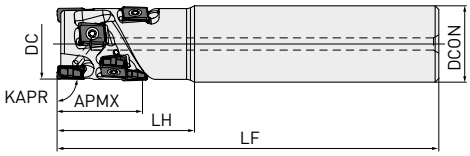
# VPX200

P M K N S

1




2




**FRAISE TYPE HÉRISSON**

*Outil à droite uniquement*

**QUEUE CYLINDRIQUE**

| Référence | Stock | APMX | DC | DCON | LF | RMPX | WT | LH | ZNF | ZNP | Fig. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TYPE COURT** | | | | | | | | | | | | |
| VPX200R202SA20S01404 | ● | 14 | 20 | 20 | 100 | 1.35° | 0.21 | 30 | 2 | 4 | 1 | |
| VPX200R222SA20S01404 | ● | 14 | 22 | 20 | 115 | 1.16° | 0.26 | 30 | 2 | 4 | 2 | |
| VPX200R252SA25S02106 | ● | 21 | 25 | 25 | 115 | 0.97° | 0.39 | 35 | 2 | 6 | 1 | |
| VPX200R252SA25S02808 | ● | 28 | 25 | 25 | 125 | 0.97° | 0.41 | 45 | 2 | 8 | 1 | |
| VPX200R282SA25S02106 | ★ | 21 | 28 | 25 | 115 | 0.84° | 0.40 | 35 | 2 | 6 | 2 | |
| VPX200R282SA25S02808 | ★ | 28 | 28 | 25 | 125 | 0.84° | 0.43 | 45 | 2 | 8 | 2 | |
| VPX200R322SA32S02808 | ★ | 28 | 32 | 32 | 125 | 0.71° | 0.68 | 45 | 2 | 8 | 1 | |
| VPX200R323SA32S02812 | ● | 28 | 32 | 32 | 125 | 0.71° | 0.67 | 45 | 3 | 12 | 1 | |
| VPX200R322SA32S03510 | ★ | 35 | 32 | 32 | 130 | 0.71° | 0.70 | 50 | 2 | 10 | 1 | LOGU09 |
| VPX200R323SA32S03515 | ● | 35 | 32 | 32 | 130 | 0.71° | 0.68 | 50 | 3 | 15 | 1 | |
| VPX200R352SA32S02808 | ★ | 28 | 35 | 32 | 125 | 0.63° | 0.72 | 45 | 2 | 8 | 2 | |
| VPX200R353SA32S02812 | ★ | 28 | 35 | 32 | 125 | 0.63° | 0.71 | 45 | 3 | 12 | 2 | |
| VPX200R352SA32S03510 | ★ | 35 | 35 | 32 | 130 | 0.63° | 0.74 | 50 | 2 | 10 | 2 | |
| VPX200R353SA32S03515 | ★ | 35 | 35 | 32 | 130 | 0.63° | 0.73 | 50 | 3 | 15 | 2 | |
| VPX200R403SA32S03515 | ★ | 35 | 40 | 32 | 130 | 0.54° | 0.81 | 50 | 3 | 15 | 2 | |
| VPX200R404SA32S03520 | ● | 35 | 40 | 32 | 130 | 0.54° | 0.80 | 50 | 4 | 20 | 2 | |
| VPX200R403SA32S04218 | ★ | 42 | 40 | 32 | 140 | 0.54° | 0.88 | 60 | 3 | 18 | 2 | |
| VPX200R404SA32S04224 | ★ | 42 | 40 | 32 | 140 | 0.54° | 0.86 | 60 | 4 | 24 | 2 | |

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1. Les vitesses de rotation maximales autorisées assurent la stabilité de l'outil et des plaquettes.
2. Si vous utilisez l'outil à vitesse de rotation élevée, veillez à bien équilibrer l'ensemble outil-attachement.
3. Cf. page 29 pour les préconisations de nuances et brise-copeaux.

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# PIÈCES DÉTACHÉES

| Outil | DC | Vis de plaquette * | Clé | Lubrifiant antigrippant |
|---|---|---|---|---|
| VPX200 | ⩽20 | TPS27F1 | TIP07F | MK1KS |
| VPX200 | >20 | TPS27F2 | | |

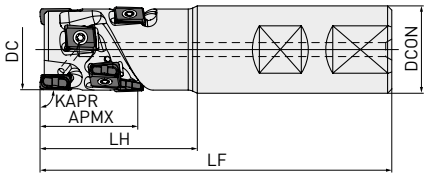
* Couple de serrage (Nm) : TPS27F1 = 1.0, TPS27F2 = 1.0



● : Article stocké. ★ : Article stocké au Japon.

# VPX200

P M K N S




*Outil à droite uniquement*

## FRAISE TYPE HÉRISSON

## ATTACHEMENT WELDON

| Référence | Stock | APMX | DC | DCON | LF | RMPX | WT | Lh | ZNF | ZNP | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TYPE COURT** | | | | | | | | | | | |
| VPX200R202WA20S01404 | ● | 14 | 20 | 20 | 80 | 1.35° | 0.16 | 30 | 2 | 4 | |
| VPX200R252WA25S02106 | ● | 21 | 25 | 25 | 91 | 0.97° | 0.29 | 35 | 2 | 6 | |
| VPX200R252WA25S02808 | ● | 28 | 25 | 25 | 101 | 0.97° | 0.32 | 45 | 2 | 8 | |
| VPX200R322WA32S02808 | ● | 28 | 32 | 32 | 105 | 0.71° | 0.55 | 45 | 2 | 8 | LOGU09 |
| VPX200R323WA32S02812 | ● | 28 | 32 | 32 | 105 | 0.71° | 0.54 | 45 | 3 | 12 | |
| VPX200R322WA32S03510 | ● | 35 | 32 | 32 | 110 | 0.71° | 0.57 | 50 | 2 | 10 | |
| VPX200R323WA32S03515 | ● | 35 | 32 | 32 | 110 | 0.71° | 0.55 | 50 | 3 | 15 | |

1/1

1. Les vitesses de rotation maximales autorisées assurent la stabilité de l'outil et des plaquettes.
2. Si vous utilisez l'outil à vitesse de rotation élevée, veillez à bien équilibrer l'ensemble outil-attachement.
3. Cf. page 29 pour les préconisations de nuances et brise-copeaux.

30 Vc

# PIÈCES DÉTACHÉES

| Outil | DC | Vis de plaquette * | Clé | Lubrifiant antigrippant |
|---|---|---|---|---|
| VPX200 | ≤20 | TPS27F1 | TIP07F | MK1KS |
| VPX200 | >20 | TPS27F2 | | |

* Couple de serrage (Nm) : TPS27F1 = 1.0, TPS27F2 = 1.0

# VPX200

## PLAQUETTES

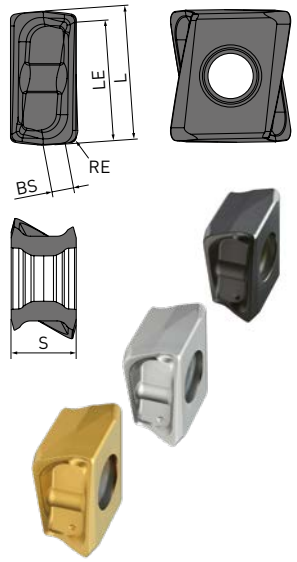
| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Acier | | ◐ | ✣ | | | | ◐ | ◐ | ◐ | | | | | | | | |
| M | Acier inoxydable | | | ◐ | | | | ◐ | ◐ | ◐ | | | | | | | | |
| K | Fonte | ◐ | | | | | | ◐ | ◐ | ✣ | | | | | | | | |
| N | Matériau non ferreux | | | | | | | | | | ◐ | | | | | | | |
| S | Alliage réfractaire, Alliage de titane | | | | ◐ | ✣ | | | | ◐ | | | | | | | | |
| H | Acier traité | | | | | | | | | ◐ | | | | | | | | |

Conditions de stabilité :
● : Coupe stable ◐ : Coupe générale ✣ : Coupe instable

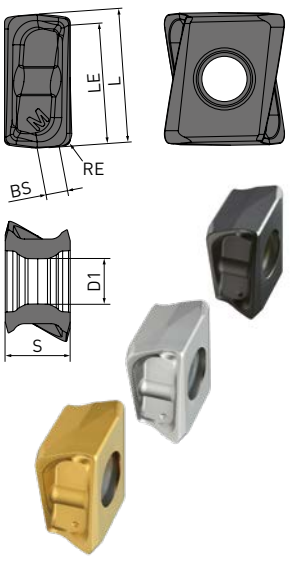
Honing :
E : Rond F : Affûtée

| Référence | Classe | Honing | MC5020 | MP6120 | MP6130 | MP7130 | MP9120 | MP9130 | NEW MV1020 | NEW MV1030 | VP15TF | TF15 | L | RE | LE | S | BS | D1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOGU0904020PNER-L | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | ● | ★ | | 8.7 | 0.2 | 7.6 | 4.3 | 1.7 | 3 |
| LOGU0904040PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 8.7 | 0.4 | 7.6 | 4.3 | 1.5 | 3 |
| LOGU0904080PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 8.7 | 0.8 | 7.6 | 4.3 | 1.2 | 3 |
| LOGU0904100PNER-L | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | ● | ★ | | 8.7 | 1.0 | 7.6 | 4.3 | 1.0 | 3 |
| LOGU0904120PNER-L | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | ● | ★ | | 8.7 | 1.2 | 7.6 | 4.3 | 0.8 | 3 |
| LOGU0904160PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 8.7 | 1.6 | 7.6 | 4.3 | 0.5 | 3 |
| LOGU0904020PNFR-L | G | F | | | | | | | | | | ● | 8.7 | 0.2 | 7.6 | 4.3 | 1.7 | 3 |
| LOGU0904040PNFR-L | G | F | | | | | | | | | | ● | 8.7 | 0.4 | 7.6 | 4.3 | 1.5 | 3 |
| LOGU0904080PNFR-L | G | F | | | | | | | | | | ● | 8.7 | 0.8 | 7.6 | 4.3 | 1.2 | 3 |
| LOGU0904100PNFR-L | G | F | | | | | | | | | | ★ | 8.7 | 1.0 | 7.6 | 4.3 | 1.0 | 3 |
| LOGU0904120PNFR-L | G | F | | | | | | | | | | ★ | 8.7 | 1.2 | 7.6 | 4.3 | 0.8 | 3 |
| LOGU0904160PNFR-L | G | F | | | | | | | | | | ★ | 8.7 | 1.6 | 7.6 | 4.3 | 0.5 | 3 |

**Géométrie**
*Plaquette à droite uniquement*




| Référence | Classe | Honing | MC5020 | MP6120 | MP6130 | MP7130 | MP9120 | MP9130 | NEW MV1020 | NEW MV1030 | VP15TF | TF15 | L | RE | LE | S | BS | D1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOGU0904020PNER-M | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | ● | ★ | | 8.7 | 0.2 | 7.6 | 4.3 | 1.7 | 3 |
| LOGU0904040PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 8.7 | 0.4 | 7.6 | 4.3 | 1.6 | 3 |
| LOGU0904080PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 8.7 | 0.8 | 7.6 | 4.3 | 1.2 | 3 |
| LOGU0904100PNER-M | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | ● | ★ | | 8.7 | 1 | 7.6 | 4.3 | 1 | 3 |
| LOGU0904120PNER-M | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | ● | ★ | | 8.7 | 1.2 | 7.6 | 4.3 | 0.9 | 3 |
| LOGU0904160PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 8.7 | 1.6 | 7.6 | 4.3 | 0.5 | 3 |
| LOGU0904020PNFR-M | G | F | | | | | | | | | | ● | 8.7 | 0.2 | 7.6 | 4.3 | 1.7 | 3 |
| LOGU0904040PNFR-M | G | F | | | | | | | | | | ● | 8.7 | 0.4 | 7.6 | 4.3 | 1.6 | 3 |
| LOGU0904080PNFR-M | G | F | | | | | | | | | | ● | 8.7 | 0.8 | 7.6 | 4.3 | 1.2 | 3 |
| LOGU0904100PNFR-M | G | F | | | | | | | | | | ★ | 8.7 | 1 | 7.6 | 4.3 | 1 | 3 |
| LOGU0904120PNFR-M | G | F | | | | | | | | | | ★ | 8.7 | 1.2 | 7.6 | 4.3 | 0.9 | 3 |
| LOGU0904160PNFR-M | G | F | | | | | | | | | | ★ | 8.7 | 1.6 | 7.6 | 4.3 | 0.5 | 3 |








● : Article stocké. ★ : Article stocké au Japon.

# VPX200

## BRISE-COPEAUX ET NUANCES

| | Matière | Propriétés | Conditions de stabilité | Recommandation no 1 | Recommandation no 2 |
|---|---|---|---|---|---|
| P | Acier doux | ≤180HB | | L | M |
| | | | | M | L |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 350HB<br>≤350HB | | L | M |
| | | | | M | L |
| | | | | M | L |
| | Acier pré-traité | 35 – 45HRC | | M | L |
| | | | | M | L |
| M | Acier inoxydable austénitique | ≤280HB | | L | M |
| | | | | M | L |
| | | >200HB | | L | M |
| | | | | M | L |
| | Acier inoxydable duplex | ≤280HB | | L | M |
| | | | | M | L |
| | Acier inoxydable ferritique ou martensitique | — | | L | M |
| | | | | M | L |
| | Inox à durcissement structural (PH) | <450HB | | L | M |
| | | | | M | L |
| K | Fonte grise | ≤350MPa | | M | L |
| | | | | M | L |
| | Fonte ductile | ≤800MPa | | M | L |
| | | | | M | L |
| N | Alliage d'aluminm | Si<5 % | | L | M |
| | | | | M | L |
| S | Alliage de titane<br>(Ti-6Al-4V) | — | | L | M |
| | | | | M | L |
| | Alliage de titane<br>(Ti-5Al-5V-5Mo-3Cr) | — | | L | M |
| | | | | M | L |
| | Alliage réfractaire | — | | M | L |
| | | | | M | L |
| H | Acier traité | 40 – 55HRC | | M | — |

1/1

30 Vc

# VPX200

## CONDITIONS DE COUPE RECOMMANDÉES
## ARROSAGE

Ces conditions de coupe sont données pour des outils courts (dernière lettre S dans la référence) à queue cylindrique ou à attachement par alésage.
En cas de broutement, d'écaillage, etc. pendant l'usinage, veuillez modifier les conditions en conséquence.
Le broutement et les vibrations sont plus probables dans les conditions suivantes : lorsque le porte-à-faux de l'outil est long (en cas de queue longue, rallonge à visser, etc.) ou lorsque la raideur de la machine, de la pièce à usiner ou du bridage est faible, ou dans les angles lors de l'usinage de poches. Utilisez alors les conditions de coupe minales voire inférieures.

### VITESSE DE COUPE

| | Matière | Propriétés | Conditions de stabilité | Nuance | Vc | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ae<0.25 DC | ae≥0.25 – 0.5 DC | ae≥0.5 – 0.75 DC | ae=1.0 DC |
| P | Acier doux | ≤180HB | ● ● | MV1020 | 210 (150 – 290) | 200 (140 – 270) | 150 (110 – 180) | 150 (110 – 180) |
| | | | ● ● | MV1030 | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | MP6120 | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | VP15TF | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ✤ | MP6130 | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 280HB | ● ● | MV1020 | 180 (140 – 210) | 170 (120 – 200) | 150 (110 – 180) | 150 (110 – 180) |
| | | | ● ● | MV1030 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | 280 – 350HB | ● ● | MV1020 | 140 (110 – 160) | 130 ( 90 – 150) | 120 ( 80 – 140) | 120 ( 80 – 140) |
| | | | ● ● | MV1030 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 120 ( 80 – 140) |
| | | 180 – 350HB<br>≤350HB | ● ● | MP6120 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ✤ | MP6130 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | Acier pré-traité | 35 – 45HRC | ● ● | MP6120 | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| | | | ● ● | VP15TF | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| | | | ✤ | MP6130 | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| M | Acier inoxydable austénitique | ≤200HB | ● ● ✤ | MP7130 | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | | >200HB | ● ● ✤ | MP7130 | 100 ( 80 – 130) | 90 ( 70 – 110) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | | | ● ● | VP15TF | 100 ( 80 – 130) | 90 ( 70 – 110) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | Acier inoxydable duplex | ≤280HB | ● ● ✤ | MP7130 | 100 ( 80 – 130) | 90 ( 70 – 120) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | | | ● ● | VP15TF | 100 ( 80 – 130) | 90 ( 70 – 120) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | Acier inoxydable ferritique ou martensitique | — | ● ● ✤ | MP7130 | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | Inox à durcissement structural | <450HB | ● ● ✤ | MP7130 | 90 ( 70 – 120) | 80 ( 60 – 110) | 60 ( 40 – 90) | 60 ( 40 – 90) |
| | | | ● ● | VP15TF | 90 ( 70 – 120) | 80 ( 60 – 110) | 60 ( 40 – 90) | 60 ( 40 – 90) |
| K | Fonte grise | ≤350MPa | ● ● | MC5020 | 180 (160 – 220) | 170 (150 – 210) | 150 (130 – 190) | 150 (130 – 190) |
| | | | ● ● ✤ | VP15TF | 130 (100 – 150) | 120 ( 90 – 140) | 100 ( 80 – 120) | 100 ( 80 – 120) |
| | Fonte ductile | ≤450MPa | ● ● | MV1020 | 180 (150 – 240) | 170 (140 – 230) | 150 (130 – 200) | 150 (130 – 200) |
| | | | ● ● | MV1030 | 130 ( 80 – 180) | 120 ( 70 – 170) | 105 ( 60 – 150) | 105 ( 60 – 150) |
| | | ≤800MPa | ● ● | MV1020 | 160 (130 – 210) | 150 (120 – 200) | 130 (110 – 170) | 130 (110 – 170) |
| | | | ● ● | MV1030 | 130 ( 80 – 180) | 120 ( 70 – 170) | 105 ( 60 – 150) | 105 ( 60 – 150) |
| | | | ● ● | MC5020 | 160 (140 – 180) | 150 (130 – 170) | 130 (110 – 150) | 130 (110 – 150) |
| | | | ● ● ✤ | VP15TF | 110 ( 80 – 140) | 100 ( 70 – 130) | 80 ( 60 – 120) | 80 ( 60 – 120) |
| N | Alliage d'aluminum | Si<5 % | ● ● ✤ | TF15 | 600 (400 – 1000) | 600 (400 – 1000) | 600 (400 – 1000) | 600 (400 – 1000) |

## VPX200 – ARROSAGE – VITESSE DE COUPE

| | Matière | Propriétés | Conditions de stabilité | Nuance | Vc | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ae<0.25 DC | ae≥0.25–0.5 DC | ae≥0.5–0.75 DC | ae=1.0 DC |
| S | Alliage de titane (TA6V) | — | ● ◐ | MP9120 | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) |
| | | | ● ◐ | VP15TF | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) |
| | | | ✣ | MP9130 | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) |
| | Alliage de titane (Ti5553) | — | ● ◐ | MP9120 | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| | | | ● ◐ | VP15TF | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| | | | ✣ | MP9130 | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| | Alliage réfractaire | — | ● ◐ | MP9120 | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) |
| | | | ● ◐ | VP15TF | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) |
| | | | ✣ | MP9130 | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| H | Acier traité | 40 – 55HRC | ● ◐ | VP15TF | 90 ( 70 – 100) | 85 ( 60 – 100) | 70 ( 50 – 80) | 70 ( 50 – 80) |

## VPX200 – PROFONDEUR DE PASSE / AVANCE PAR DENT

| | Matière | Propriétés | Conditions de stabilité | ae | DC=Ø20 – Ø28 | | DC=Ø32 – Ø50 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ap | fz | ap | fz |
| P | Acier doux | ⩽180HB | ● ● ✲ | ⩽0.25 DC | ⩽14 | 0.13 (0.10 – 0.15) | ⩽APMX | 0.15 (0.10 – 0.2) |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ⩽8 | 0.10 (0.08 – 0.12) | ⩽28 | 0.13 (0.10 – 0.15) |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ⩽6 | 0.10 (0.08 – 0.12) | ⩽14 | 0.10 (0.08 – 0.12) |
| | | | ● ● ✲ | 1.0 DC | ⩽4 | 0.08 (0.06 – 0.10) | ⩽4 | 0.08 (0.06 – 0.10) |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 280HB | ● ● ✲ | ⩽0.25 DC | ⩽14 | 0.13 (0.10 – 0.15) | ⩽APMX | 0.15 (0.10 – 0.2 ) |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ⩽8 | 0.10 (0.08 – 0.12) | ⩽28 | 0.13 (0.10 – 0.15) |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ⩽6 | 0.10 (0.08 – 0.12) | ⩽14 | 0.10 (0.08 – 0.12) |
| | | | ● ● ✲ | 1.0 DC | ⩽4 | 0.08 (0.06 – 0.10) | ⩽4 | 0.08 (0.06 – 0.10) |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 280 – 350HB<br>⩽350HB | ● ● ✲ | ⩽0.25 DC | ⩽14 | 0.13 (0.1 – 0.15) | ⩽APMX | 0.13 (0.10 – 0.15) |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ⩽8 | 0.10 (0.08 – 0.12) | ⩽28 | 0.10 (0.08 – 0.12) |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ⩽6 | 0.10 (0.08 – 0.12) | ⩽14 | 0.08 (0.06 – 0.10) |
| | | | ● ● ✲ | 1.0 DC | ⩽4 | 0.08 (0.06 – 0.10) | ⩽4 | 0.08 (0.06 – 0.10) |
| | Acier pré-traité | 35 – 45HRC | ● ● ✲ | ⩽0.25 DC | ⩽14 | 0.13 (0.10 – 0.15) | ⩽APMX | 0.13 (0.10 – 0.15) |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ⩽8 | 0.10 (0.08 – 0.12) | ⩽28 | 0.10 (0.08 – 0.12) |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ⩽6 | 0.10 (0.08 – 0.12) | ⩽14 | 0.08 (0.06 – 0.10) |
| | | | ● ● ✲ | 1.0 DC | ⩽4 | 0.08 (0.06 – 0.10) | ⩽4 | 0.08 (0.06 – 0.10) |
| M | Acier inoxydable austénitique | — | ● ● | ⩽0.25 DC | ⩽14 | 0.13 (0.10 – 0.15) | ⩽APMX | 0.15 (0.10 – 0.2 ) |
| | | | ✲ | 0.25 – 0.5 DC | ⩽14 | 0.10 (0.08 – 0.12) | ⩽APMX | 0.12 (0.08 – 0.15) |
| | | | ● ● | 0.5 – 0.75 DC | ⩽8 | 0.10 (0.08 – 0.12) | ⩽28 | 0.12 (0.08 – 0.15) |
| | | | ✲ | 1.0 DC | ⩽8 | 0.08 (0.06 – 0.10) | ⩽28 | 0.10 (0.08 – 0.12) |
| | | | ● ● | ⩽0.25 DC | ⩽6 | 0.08 (0.06 – 0.10) | ⩽14 | 0.10 (0.08 – 0.12) |
| | | | ✲ | 0.25 – 0.5 DC | ⩽6 | 0.07 (0.06 – 0.08) | ⩽14 | 0.08 (0.06 – 0.10) |
| | | | ● ● | 0.5 – 0.75 DC | ⩽4 | 0.08 (0.06 – 0.10) | ⩽4 | 0.08 (0.06 – 0.10) |
| | | | ✲ | 1.0 DC | ⩽4 | 0.07 (0.06 – 0.08) | ⩽4 | 0.07 (0.06 – 0.08) |
| | Acier inoxydable duplex | ⩽280HB | ● ● | ⩽0.25 DC | ⩽14 | 0.13 (0.10 – 0.15) | ⩽APMX | 0.15 (0.10 – 0.2 ) |
| | | | ✲ | 0.25 – 0.5 DC | ⩽14 | 0.10 (0.08 – 0.12) | ⩽APMX | 0.12 (0.08 – 0.15) |
| | | | ● ● | 0.5 – 0.75 DC | ⩽8 | 0.10 (0.08 – 0.12) | ⩽28 | 0.12 (0.08 – 0.15) |
| | | | ✲ | 1.0 DC | ⩽8 | 0.08 (0.06 – 0.10) | ⩽28 | 0.10 (0.08 – 0.12) |
| | | | ● ● | ⩽0.25 DC | ⩽6 | 0.08 (0.06 – 0.10) | ⩽14 | 0.10 (0.08 – 0.12) |
| | | | ✲ | 0.25 – 0.5 DC | ⩽6 | 0.07 (0.06 – 0.08) | ⩽14 | 0.08 (0.06 – 0.10) |
| | | | ● ● | 0.5 – 0.75 DC | ⩽4 | 0.08 (0.06 – 0.10) | ⩽4 | 0.08 (0.06 – 0.10) |
| | | | ✲ | 1.0 DC | ⩽4 | 0.07 (0.06 – 0.08) | ⩽4 | 0.07 (0.06 – 0.08) |
| | Acier inoxydable ferritique ou martensitique | — | ● ● | ⩽0.25 DC | ⩽14 | 0.13 (0.10 – 0.15) | ⩽APMX | 0.15 (0.10 – 0.20) |
| | | | ✲ | 0.25 – 0.5 DC | ⩽14 | 0.10 (0.08 – 0.12) | ⩽APMX | 0.12 (0.08 – 0.15) |
| | | | ● ● | 0.5 – 0.75 DC | ⩽8 | 0.10 (0.08 – 0.12) | ⩽28 | 0.12 (0.08 – 0.15) |
| | | | ✲ | 1.0 DC | ⩽8 | 0.08 (0.06 – 0.10) | ⩽28 | 0.10 (0.08 – 0.12) |
| | | | ● ● | ⩽0.25 DC | ⩽6 | 0.08 (0.06 – 0.10) | ⩽14 | 0.10 (0.08 – 0.12) |
| | | | ✲ | 0.25 – 0.5 DC | ⩽6 | 0.07 (0.06 – 0.08) | ⩽14 | 0.08 (0.06 – 0.10) |
| | | | ● ● | 0.5 – 0.75 DC | ⩽4 | 0.08 (0.06 – 0.10) | ⩽4 | 0.08 (0.06 – 0.10) |
| | | | ✲ | 1.0 DC | ⩽4 | 0.07 (0.06 – 0.08) | ⩽4 | 0.07 (0.06 – 0.08) |
| | Inox à durcissement structural (PH) | ⩽450HB | ● ● | ⩽0.25 DC | ⩽14 | 0.13 (0.10 – 0.15) | ⩽APMX | 0.13 (0.10 – 0.15) |
| | | | ✲ | 0.25 – 0.5 DC | ⩽14 | 0.10 (0.08 – 0.12) | ⩽APMX | 0.10 (0.08 – 0.12) |
| | | | ● ● | 0.5 – 0.75 DC | ⩽8 | 0.10 (0.08 – 0.12) | ⩽28 | 0.10 (0.08 – 0.12) |
| | | | ✲ | 1.0 DC | ⩽8 | 0.08 (0.06 – 0.10) | ⩽28 | 0.10 (0.08 – 0.12) |
| | | | ● ● | ⩽0.25 DC | ⩽6 | 0.08 (0.06 – 0.10) | ⩽14 | 0.08 (0.06 – 0.10) |
| | | | ✲ | 0.25 – 0.5 DC | ⩽6 | 0.07 (0.06 – 0.08) | ⩽14 | 0.07 (0.06 – 0.08) |
| | | | ● ● | 0.5 – 0.75 DC | ⩽4 | 0.08 (0.06 – 0.10) | ⩽4 | 0.08 (0.06 – 0.10) |
| | | | ✲ | 1.0 DC | ⩽4 | 0.07 (0.06 – 0.08) | ⩽4 | 0.07 (0.06 – 0.08) |

## VPX200 – PROFONDEUR DE PASSE / AVANCE PAR DENT

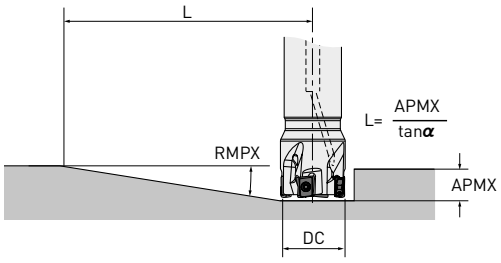
| | Matière | Propriétés | Conditions de stabilité | ae | DC=Ø20 – Ø28 | | DC=Ø32 – Ø50 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ap | fz | ap | fz |
| K | Fonte grise | ≤350MPa | ● ● | ≤0.25 DC | ≤14 | 0.13 (0.10 – 0.15) | ≤APMX | 0.15 (0.1 – 0.2 ) |
| | | | ✻ | 0.25 – 0.5 DC | ≤14 | 0.10 (0.08 – 0.12) | ≤APMX | 0.12 (0.08 – 0.15) |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.10 (0.08 – 0.12) | ≤28 | 0.12 (0.08 – 0.15) |
| | | | ✻ | 1.0 DC | ≤8 | 0.08 (0.06 – 0.10) | ≤28 | 0.10 (0.08 – 0.12) |
| | | | ● ● | ≤0.25 DC | ≤6 | 0.10 (0.08 – 0.12) | ≤14 | 0.10 (0.08 – 0.12) |
| | | | ✻ | 0.25 – 0.5 DC | ≤6 | 0.08 (0.06 – 0.10) | ≤14 | 0.08 (0.06 – 0.10) |
| | | | ● ● | 0.5 – 0.75 DC | ≤4 | 0.08 (0.06 – 0.10) | ≤4 | 0.08 (0.06 – 0.10) |
| | | | ✻ | 1.0 DC | ≤4 | 0.07 (0.06 – 0.08) | ≤4 | 0.07 (0.06 – 0.08) |
| | Fonte ductile | ≤800MPa | ● ● | ≤0.25 DC | ≤14 | 0.13 (0.10 – 0.15) | ≤APMX | 0.15 (0.10 – 0.20) |
| | | | ✻ | 0.25 – 0.5 DC | ≤14 | 0.10 (0.08 – 0.12) | ≤APMX | 0.13 (0.10 – 0.15) |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.10 (0.08 – 0.12) | ≤28 | 0.13 (0.10 – 0.15) |
| | | | ✻ | 1.0 DC | ≤8 | 0.08 (0.06 – 0.10) | ≤28 | 0.10 (0.08 – 0.12) |
| | | | ● ● | ≤0.25 DC | ≤6 | 0.10 (0.08 – 0.12) | ≤14 | 0.10 (0.08 – 0.12) |
| | | | ✻ | 0.25 – 0.5 DC | ≤6 | 0.08 (0.06 – 0.10) | ≤14 | 0.08 (0.06 – 0.10) |
| | | | ● ● | 0.5 – 0.75 DC | ≤4 | 0.08 (0.06 – 0.10) | ≤4 | 0.08 (0.06 – 0.10) |
| | | | ✻ | 1.0 DC | ≤4 | 0.07 (0.06 – 0.08) | ≤4 | 0.07 (0.06 – 0.08) |
| N | Alliage d'aluminum | Si<5 % | ● ● | ≤0.25 DC | ≤14 | 0.15 (0.10 – 0.20) | ≤APMX | 0.18 (0.10 – 0.25) |
| | | | ✻ | 0.25 – 0.5 DC | ≤14 | 0.13 (0.10 – 0.15) | ≤APMX | 0.15 (0.10 – 0.20) |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.13 (0.10 – 0.15) | ≤28 | 0.15 (0.10 – 0.20) |
| | | | ✻ | 1.0 DC | ≤8 | 0.10 (0.08 – 0.12) | ≤28 | 0.13 (0.10 – 0.15) |
| | | | ● ● | ≤0.25 DC | ≤6 | 0.10 (0.08 – 0.12) | ≤14 | 0.11 (0.06 – 0.15) |
| | | | ✻ | 0.25 – 0.5 DC | ≤6 | 0.08 (0.06 – 0.10) | ≤14 | 0.11 (0.06 – 0.15) |
| | | | ● ● | 0.5 – 0.75 DC | ≤4 | 0.08 (0.06 – 0.10) | ≤4 | 0.11 (0.06 – 0.15) |
| | | | ✻ | 1.0 DC | ≤4 | 0.07 (0.06 – 0.08) | ≤4 | 0.09 (0.06 – 0.12) |
| S | Alliage de titane (TA6V) | — | ● ● ✻ | ≤0.25 DC | ≤14 | 0.12 (0.08 – 0.15) | ≤APMX | 0.12 (0.08 – 0.15) |
| | | | ● ● ✻ | 0.25 – 0.5 DC | ≤8 | 0.10 (0.08 – 0.12) | ≤28 | 0.10 (0.08 – 0.12) |
| | | | ● ● ✻ | 0.5 – 0.75 DC | ≤6 | 0.08 (0.06 – 0.10) | ≤14 | 0.08 (0.06 – 0.10) |
| | | | ● ● ✻ | 1.0 DC | ≤4 | 0.08 (0.06 – 0.10) | ≤4 | 0.08 (0.06 – 0.10) |
| | Alliage de titane (Ti5553) | — | ● ● ✻ | ≤0.25 DC | ≤14 | 0.10 (0.08 – 0.12) | ≤APMX | 0.10 (0.08 – 0.12) |
| | | | ● ● ✻ | 0.25 – 0.5 DC | ≤8 | 0.10 (0.08 – 0.12) | ≤28 | 0.10 (0.08 – 0.12) |
| | | | ● ● ✻ | 0.5 – 0.75 DC | ≤6 | 0.08 (0.06 – 0.10) | ≤14 | 0.08 (0.06 – 0.10) |
| | | | ● ● ✻ | 1.0 DC | ≤4 | 0.08 (0.06 – 0.10) | ≤4 | 0.08 (0.06 – 0.10) |
| | Alliage réfractaire | — | ● ● ✻ | ≤0.25 DC | ≤14 | 0.10 (0.08 – 0.12) | ≤APMX | 0.10 (0.08 – 0.12) |
| | | | ● ● ✻ | 0.25 – 0.5 DC | ≤8 | 0.10 (0.08 – 0.12) | ≤28 | 0.10 (0.08 – 0.12) |
| | | | ● ● ✻ | 0.5 – 0.75 DC | ≤6 | 0.08 (0.06 – 0.10) | ≤14 | 0.08 (0.06 – 0.10) |
| | | | ● ● ✻ | 1.0 DC | ≤4 | 0.08 (0.06 – 0.10) | ≤4 | 0.08 (0.06 – 0.10) |

# VPX200

## RAMPING / PERÇAGE HÉLICOÏDAL

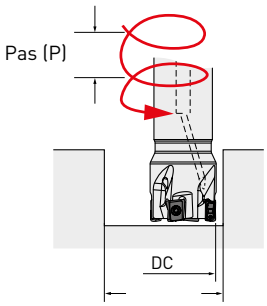
**1 Ramping**

Voir le tableau ci-dessous pour les conditions de coupe. Pour l'avance par dent et la vitesse de coupe, observez les conditions de coupe recommandées pour le rainurage.



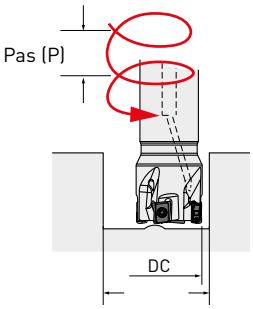

**2 Perçage hélicoïdal**

2.1 Trous borgnes, fond plat




Diamètre de trou (DH)

2.2 Trous débouchants




Diamètre de trou (DH)

| DC | RE | 1 | | 2.1 | | | | 2.2 | |
|---|---|---|---|---|---|---|---|---|---|
| | | RMPX | L* | DH max. | P max. | DH min | P max. | DH min | P max. |
| 16 | 0.2 | 1.85° | 248 | 31 | 1.5 | 27.5 | 1.2 | 24.2 | 0.8 |
| | 0.4 | 1.85° | 248 | 30.6 | 1.5 | 27.5 | 1.2 | 24.2 | 0.8 |
| | 0.8 | 1.85° | 248 | 29.8 | 1.4 | 27.5 | 1.2 | 24.2 | 0.8 |
| | 1 | 1.85° | 248 | 29.4 | 1.4 | 27.5 | 1.2 | 24.2 | 0.8 |
| | 1.2 | 1.85° | 248 | 29 | 1.3 | 27.5 | 1.2 | 24.2 | 0.8 |
| | 1.6 | 1.85° | 248 | 28.2 | 1.2 | 27.5 | 1.2 | 24.2 | 0.8 |
| 18 | 0.2 | 1.56° | 294 | 35 | 1.5 | 31.5 | 1.2 | 28.1 | 0.9 |
| | 0.4 | 1.56° | 294 | 34.6 | 1.4 | 31.5 | 1.2 | 28.1 | 0.9 |
| | 0.8 | 1.56° | 294 | 33.8 | 1.4 | 31.5 | 1.2 | 28.1 | 0.9 |
| | 1 | 1.56° | 294 | 33.4 | 1.3 | 31.5 | 1.2 | 28.1 | 0.9 |
| | 1.2 | 1.56° | 294 | 33 | 1.3 | 31.5 | 1.2 | 28.1 | 0.9 |
| | 1.6 | 1.56° | 294 | 32.2 | 1.2 | 31.5 | 1.2 | 28.1 | 0.9 |
| 20 | 0.2 | 1.35° | 340 | 39 | 1.4 | 35.5 | 1.1 | 32 | 0.9 |
| | 0.4 | 1.35° | 340 | 38.6 | 1.4 | 35.5 | 1.1 | 32 | 0.9 |
| | 0.8 | 1.35° | 340 | 37.8 | 1.3 | 35.5 | 1.1 | 32 | 0.9 |
| | 1 | 1.35° | 340 | 37.4 | 1.3 | 35.5 | 1.1 | 32 | 0.9 |
| | 1.2 | 1.35° | 340 | 37 | 1.3 | 35.5 | 1.1 | 32 | 0.9 |
| | 1.6 | 1.35° | 340 | 36.2 | 1.2 | 35.5 | 1.1 | 32 | 0.9 |
| 22 | 0.2 | 1.16° | 396 | 43 | 1.3 | 39.5 | 1.1 | 36 | 0.9 |
| | 0.4 | 1.16° | 396 | 42.6 | 1.3 | 39.5 | 1.1 | 36 | 0.9 |
| | 0.8 | 1.16° | 396 | 41.8 | 1.3 | 39.5 | 1.1 | 36 | 0.9 |
| | 1 | 1.16° | 396 | 41.4 | 1.2 | 39.5 | 1.1 | 36 | 0.9 |
| | 1.2 | 1.16° | 396 | 41 | 1.2 | 39.5 | 1.1 | 36 | 0.9 |
| | 1.6 | 1.16° | 396 | 40.2 | 1.2 | 39.5 | 1.1 | 36 | 0.9 |
| 25 | 0.2 | 0.97° | 473 | 49 | 1.3 | 45.5 | 1.1 | 42 | 0.9 |
| | 0.4 | 0.97° | 473 | 48.6 | 1.3 | 45.5 | 1.1 | 42 | 0.9 |
| | 0.8 | 0.97° | 473 | 47.8 | 1.2 | 45.5 | 1.1 | 42 | 0.9 |
| | 1 | 0.97° | 473 | 47.4 | 1.2 | 45.5 | 1.1 | 42 | 0.9 |
| | 1.2 | 0.97° | 473 | 47 | 1.2 | 45.5 | 1.1 | 42 | 0.9 |
| | 1.6 | 0.97° | 473 | 46.2 | 1.1 | 45.5 | 1.1 | 42 | 0.9 |

## VPX200 – RAMPING / PERÇAGE HÉLICOÏDAL

| DC | RE | 1 | | 2.1 | | | | 2.2 | |
|---|---|---|---|---|---|---|---|---|---|
| | | RMPX | L* | DH max. | P max. | DH min | P max. | DH min | P max. |
| 28 | 0.2 | 0.84° | 546 | 55 | 1.2 | 51.5 | 1.1 | 48 | 0.9 |
| | 0.4 | 0.84° | 546 | 54.6 | 1.2 | 51.5 | 1.1 | 48 | 0.9 |
| | 0.8 | 0.84° | 546 | 53.8 | 1.2 | 51.5 | 1.1 | 48 | 0.9 |
| | 1 | 0.84° | 546 | 53.4 | 1.2 | 51.5 | 1.1 | 48 | 0.9 |
| | 1.2 | 0.84° | 546 | 53 | 1.2 | 51.5 | 1.1 | 48 | 0.9 |
| | 1.6 | 0.84° | 546 | 52.2 | 1.1 | 51.5 | 1.1 | 48 | 0.9 |
| 30 | 0.2 | 0.77° | 596 | 59 | 1.2 | 55.5 | 1.1 | 52 | 0.9 |
| | 0.4 | 0.77° | 596 | 58.6 | 1.2 | 55.5 | 1.1 | 52 | 0.9 |
| | 0.8 | 0.77° | 596 | 57.8 | 1.2 | 55.5 | 1.1 | 52 | 0.9 |
| | 1 | 0.77° | 596 | 57.4 | 1.2 | 55.5 | 1.1 | 52 | 0.9 |
| | 1.2 | 0.77° | 596 | 57 | 1.1 | 55.5 | 1.1 | 52 | 0.9 |
| | 1.6 | 0.77° | 596 | 56.2 | 1.1 | 55.5 | 1.1 | 52 | 0.9 |
| 32 | 0.2 | 0.71° | 646 | 62.8 | 1.2 | 59.4 | 1.1 | 56 | 0.9 |
| | 0.4 | 0.71° | 646 | 62.4 | 1.2 | 59.4 | 1.1 | 56 | 0.9 |
| | 0.8 | 0.71° | 646 | 61.6 | 1.2 | 59.4 | 1.1 | 56 | 0.9 |
| | 1 | 0.71° | 646 | 61.2 | 1.1 | 59.4 | 1.1 | 56 | 0.9 |
| | 1.2 | 0.71° | 646 | 60.8 | 1.1 | 59.4 | 1.1 | 56 | 0.9 |
| | 1.6 | 0.71° | 646 | 60 | 1.1 | 59.4 | 1.1 | 56 | 0.9 |
| 35 | 0.2 | 0.63° | 728 | 69 | 1.2 | 65.5 | 1.1 | 62 | 0.9 |
| | 0.4 | 0.63° | 728 | 68.6 | 1.2 | 65.5 | 1.1 | 62 | 0.9 |
| | 0.8 | 0.63° | 728 | 67.8 | 1.1 | 65.5 | 1.1 | 62 | 0.9 |
| | 1 | 0.63° | 728 | 67.4 | 1.1 | 65.5 | 1.1 | 62 | 0.9 |
| | 1.2 | 0.63° | 728 | 67 | 1.1 | 65.5 | 1.1 | 62 | 0.9 |
| | 1.6 | 0.63° | 728 | 66.2 | 1.1 | 65.5 | 1.1 | 62 | 0.9 |
| 40 | 0.2 | 0.54° | 849 | 78.8 | 1.2 | 75.4 | 1 | 72 | 0.9 |
| | 0.4 | 0.54° | 849 | 78.4 | 1.1 | 75.4 | 1 | 72 | 0.9 |
| | 0.8 | 0.54° | 849 | 77.6 | 1.1 | 75.4 | 1 | 72 | 0.9 |
| | 1 | 0.54° | 849 | 77.2 | 1.1 | 75.4 | 1 | 72 | 0.9 |
| | 1.2 | 0.54° | 849 | 76.8 | 1.1 | 75.4 | 1 | 72 | 0.9 |
| | 1.6 | 0.54° | 849 | 76 | 1.1 | 75.4 | 1 | 72 | 0.9 |
| 50 | 0.2 | 0.42° | 1092 | 98.8 | 1.1 | 95.4 | 1 | 92 | 1 |
| | 0.4 | 0.42° | 1092 | 98.4 | 1.1 | 95.4 | 1 | 92 | 1 |
| | 0.8 | 0.42° | 1092 | 97.6 | 1.1 | 95.4 | 1 | 92 | 1 |
| | 1 | 0.42° | 1092 | 97.2 | 1.1 | 95.4 | 1 | 92 | 1 |
| | 1.2 | 0.42° | 1092 | 96.8 | 1.1 | 95.4 | 1 | 92 | 1 |
| | 1.6 | 0.42° | 1092 | 96 | 1.1 | 95.4 | 1 | 92 | 1 |
| 63 | 0.2 | 0.32° | 1433 | 124.8 | 1.1 | 121.4 | 1 | 118 | 1 |
| | 0.4 | 0.32° | 1433 | 124.4 | 1.1 | 121.4 | 1 | 118 | 1 |
| | 0.8 | 0.32° | 1433 | 123.6 | 1.1 | 121.4 | 1 | 118 | 1 |
| | 1 | 0.32° | 1433 | 123.2 | 1.1 | 121.4 | 1 | 118 | 1 |
| | 1.2 | 0.32° | 1433 | 122.8 | 1.1 | 121.4 | 1 | 118 | 1 |
| | 1.6 | 0.32° | 1433 | 122 | 1 | 121.4 | 1 | 118 | 1 |

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* Distance jusqu'à ce qu'une profondeur de coupe maximale de 8 mm soit atteinte à l'angle de ramping maximal L (= 8/tan α).

1. L'usinage de matières ductiles aux angles de plongée dans le tableau ci-dessus peut donner lieu à la formation de copeaux longs.

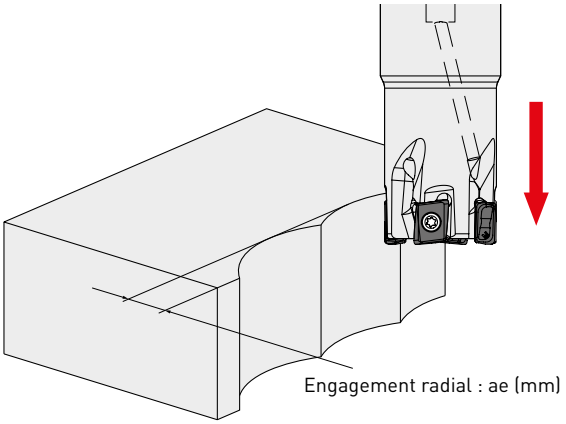
# VPX200

## CONDITIONS DE COUPE RECOMMANDÉES POUR LE TRÉFLAGE ET LE PERÇAGE

Suivez les conditions de coupe pour le rainurage pour l'avance par dent et la vitesse de coupe.

### TRÉFLAGE

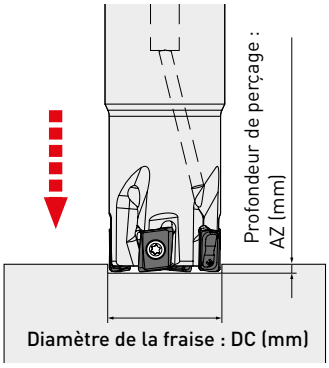
| DC | ae max. |
|---|---|
| 16 | 3.9 |
| 18 | 3.9 |
| 20 | 3.9 |
| 22 | 4 |
| 25 | 4 |
| 28 | 4 |
| 30 | 4 |
| 32 | 4 |
| 35 | 4 |
| 40 | 4 |
| 50 | 4 |
| 63 | 4 |




1. Un cycle de débourrage n'est pas nécessaire.

### PERÇAGE

| DC | AZ max. |
|---|---|
| 16 | 0.3 |
| 18 | 0.3 |
| 20 | 0.3 |
| 22 | 0.3 |
| 25 | 0.3 |
| 28 | 0.3 |
| 30 | 0.3 |
| 32 | 0.3 |
| 35 | 0.3 |
| 40 | 0.3 |
| 50 | 0.3 |
| 63 | 0.3 |

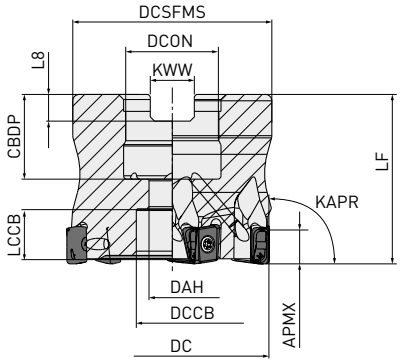



1. Attention aux projections de copeaux.
2. Évacuez les copeaux à l'aide d'air comprimé (ou de liquide d'arrosage lors de l'usinage d'un alliage d'aluminum).

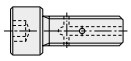
# VPX300

P M K N S H

GAMP : –6° T : +5°
GAMF : –22.5° I : +5°




*Outil à droite uniquement*

| DC | Vis d'attachement | Géométrie |
|---|---|---|
| Ø40 | HSC08025H |  |
| Ø50, Ø63 | HSC10030H | |
| Ø80 | HSC12035H | |

## ATTACHEMENT PAR ALÉSAGE

| Référence | Stock | APMX | DC | DCON | LF | RMPX | WT | RPMX | ZNF | |
|---|---|---|---|---|---|---|---|---|---|---|
| VPX300-040A03AR | ● | 11 | 40 | 16 | 40 | 1.06° | 0.21 | 17900 | 3 | LOGU12 |
| VPX300-040A04AR | ● | 11 | 40 | 16 | 40 | 1.06° | 0.21 | 17900 | 4 | |
| VPX300-050A04AR | ● | 11 | 50 | 22 | 40 | 0.79° | 0.34 | 15500 | 4 | |
| VPX300-050A06AR | ● | 11 | 50 | 22 | 40 | 0.79° | 0.33 | 15500 | 6 | |
| VPX300-063A06AR | ● | 11 | 63 | 22 | 40 | 0.60° | 0.61 | 13400 | 6 | |
| VPX300-063A08AR | ● | 11 | 63 | 22 | 40 | 0.60° | 0.62 | 13400 | 8 | |
| VPX300-080A07AR | ● | 11 | 80 | 27 | 50 | 0.45° | 0.99 | 11500 | 7 | |
| VPX300-080A10AR | ● | 11 | 80 | 27 | 50 | 0.45° | 0.99 | 11500 | 10 | |

1/1

1. Les vitesses de rotation maximales autorisées assurent la stabilité de l'outil et des plaquettes.
2. Si vous utilisez l'outil à vitesse de rotation élevée, veillez à bien équilibrer l'ensemble outil-attachement.

44 Vc

## VPX 300 – ATTACHEMENT PAR ALÉSAGE

### DIMENSIONS DE MONTAGE

| Référence | CBDP | DAH | DCCB | DCSFMS | KWW | LCCB | L8 |
|---|---|---|---|---|---|---|---|
| VPX300-040A03AR | 18 | 9 | 14 | 37 | 8.4 | 12.4 | 5.6 |
| VPX300-040A04AR | 18 | 9 | 14 | 37 | 8.4 | 12.4 | 5.6 |
| VPX300-050A04AR | 20 | 11 | 17 | 47 | 10.4 | 10.4 | 6.3 |
| VPX300-050A06AR | 20 | 11 | 17 | 47 | 10.4 | 10.4 | 6.3 |
| VPX300-063A06AR | 20 | 11 | 17 | 60 | 10.4 | 10.4 | 6.3 |
| VPX300-063A08AR | 20 | 11 | 17 | 60 | 10.4 | 10.4 | 6.3 |
| VPX300-080A07AR | 23 | 13 | 20 | 56 | 12.4 | 13.4 | 7 |
| VPX300-080A10AR | 23 | 13 | 20 | 56 | 12.4 | 13.4 | 7 |

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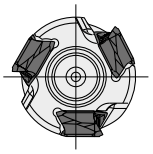
# PIÈCES DÉTACHÉES

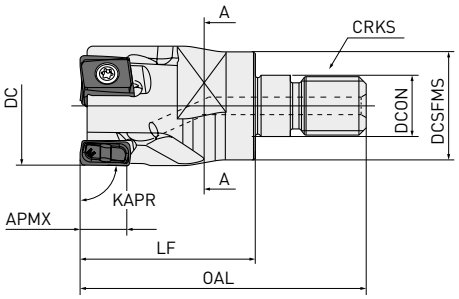
| Outil | DC |  * |  |  |
|---|---|---|---|---|
| | | Vis de plaquette | Clé | Lubrifiant antigrippant |
| VPX300 | ⩽80 | TPS40F1 | TIP15W | MK1KS |

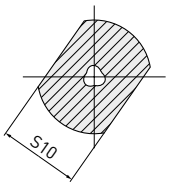
* Couple de serrage (Nm) : TPS40F1 = 3.0

# VPX300

P M K N S H






Section A-A

*Outil à droite uniquement*

## À EMBOUT FILETÉ

| Référence | Stock | APMX | DC | DCON | LF | RMPX | WT | ZNF | |
|---|---|---|---|---|---|---|---|---|---|
| VPX300R2502AM1235 | ● | 11 | 25 | 12.5 | 35 | 2.13° | 0.10 | 2 | LOGU12 |
| VPX300R2802AM1235 | ★ | 11 | 28 | 12.5 | 35 | 1.77° | 0.12 | 2 | |
| VPX300R3202AM1640 | ● | 11 | 32 | 17 | 40 | 1.47° | 0.20 | 2 | |
| VPX300R3203AM1640 | ● | 11 | 32 | 17 | 40 | 1.47° | 0.19 | 3 | |
| VPX300R3502AM1640 | ★ | 11 | 35 | 17 | 40 | 1.28° | 0.22 | 2 | |
| VPX300R3503AM1640 | ★ | 11 | 35 | 17 | 40 | 1.28° | 0.22 | 3 | |
| VPX300R4003AM1640 | ● | 11 | 40 | 17 | 40 | 1.06° | 0.26 | 3 | |
| VPX300R4004AM1640 | ● | 11 | 40 | 17 | 40 | 1.06° | 0.26 | 4 | |

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44 Vc

## DIMENSIONS DE MONTAGE

| Référence | CRKS | S10 | DCSFMS | OAL |
|---|---|---|---|---|
| VPX300R2502AM1235 | M12 | 19 | 23.5 | 57 |
| VPX300R2802AM1235 | M12 | 19 | 23.5 | 57 |
| VPX300R3202AM1640 | M16 | 24 | 28.5 | 63 |
| VPX300R3203AM1640 | M16 | 24 | 28.5 | 63 |
| VPX300R3502AM1640 | M16 | 24 | 28.5 | 63 |
| VPX300R3503AM1640 | M16 | 24 | 28.5 | 63 |
| VPX300R4003AM1640 | M16 | 24 | 28.5 | 63 |
| VPX300R4004AM1640 | M16 | 24 | 28.5 | 63 |

1/1

# PIÈCES DÉTACHÉES

| Outil | DC |  * |  |  |
|---|---|---|---|---|
| | | Vis de plaquette | Clé | Lubrifiant antigrippant |
| VPX300R25 | ≤50 | TPS40F1 | TIP15W | MK1KS |

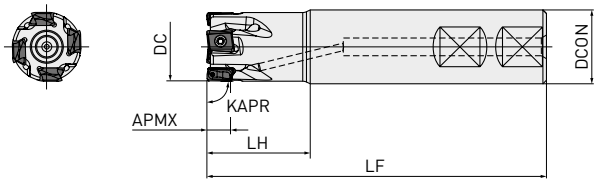
* Couple de serrage (Nm) : TPS40F1 = 3.0

● : Article stocké. ★ : Article stocké au Japon.

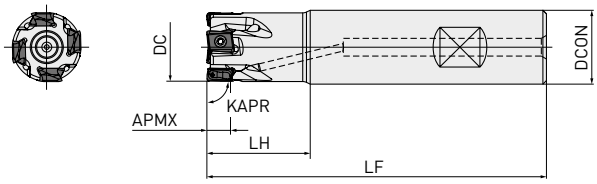
# VPX300

P M K N S H

1




2




*Outil à droite uniquement*

## QUEUE CYLINDRIQUE

| Référence | Stock | APMX | DC | DCON | LF | RMPX | RPMX | WT | LH | ZNF | Fig. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TYPE COURT** | | | | | | | | | | | | |
| VPX300R2502SA25S | ● | 11 | 25 | 25 | 115 | 2.13° | 24100 | 0.38 | 35 | 2 | 1 | |
| VPX300R2802SA25S | ★ | 11 | 28 | 25 | 115 | 1.77° | 22500 | 0.40 | 35 | 2 | 2 | |
| VPX300R3002SA25S | ★ | 11 | 30 | 25 | 125 | 1.61° | 21500 | 0.45 | 35 | 2 | 2 | |
| VPX300R3003SA25S | ★ | 11 | 30 | 25 | 125 | 1.61° | 21500 | 0.44 | 35 | 3 | 2 | |
| VPX300R3202SA32S | ● | 11 | 32 | 32 | 125 | 1.47° | 20600 | 0.69 | 45 | 2 | 1 | LOGU12 |
| VPX300R3203SA32S | ● | 11 | 32 | 32 | 125 | 1.47° | 20600 | 0.68 | 45 | 3 | 1 | |
| VPX300R4003SA32S | ● | 11 | 40 | 32 | 125 | 1.06° | 17900 | 0.76 | 45 | 3 | 2 | |
| VPX300R4004SA32S | ● | 11 | 40 | 32 | 125 | 1.06° | 17900 | 0.76 | 45 | 4 | 2 | |
| VPX300R5004SA32S | ★ | 11 | 50 | 32 | 125 | 0.79° | 15500 | 0.89 | 45 | 4 | 2 | |
| VPX300R5006SA32S | ★ | 11 | 50 | 32 | 125 | 0.79° | 15500 | 0.88 | 45 | 6 | 2 | |
| **TYPE LONG** | | | | | | | | | | | | |
| VPX300R2502SA25L | ● | 11 | 25 | 25 | 170 | 2.13° | 24100 | 0.56 | 70 | 2 | 1 | |
| VPX300R2802SA25L | ★ | 11 | 28 | 25 | 170 | 1.77° | 22500 | 0.60 | 35 | 2 | 2 | |
| VPX300R3203SA32L | ● | 11 | 32 | 32 | 190 | 1.47° | 20600 | 1.04 | 90 | 3 | 1 | LOGU12 |
| VPX300R3503SA32L | ★ | 11 | 35 | 32 | 190 | 1.28° | 19500 | 1.10 | 45 | 3 | 2 | |



1. Les vitesses de rotation maximales autorisées assurent la stabilité de l'outil et des plaquettes.
2. Si vous utilisez l'outil à vitesse de rotation élevée, veillez à bien équilibrer l'ensemble outil-attachement.

44 Vc

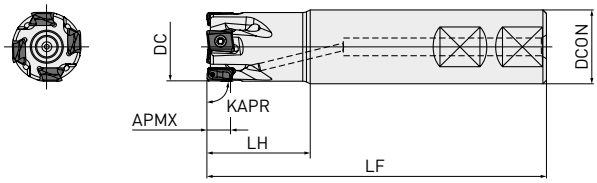
# PIÈCES DÉTACHÉES

| Outil | DC | Vis de plaquette | Clé | Lubrifiant antigrippant |
|---|---|---|---|---|
| VPX300R25 | ≤50 | TPS40F1 | TIP15W | MK1KS |

* Couple de serrage (Nm) : TPS40F1 = 3.0

# VPX300

P M K N S H




*Outil à droite uniquement*

## ATTACHEMENT WELDON

| Référence | Stock | APMX | DC | DCON | LF | LH | RMPX | RPMX | WT | ZNF | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TYPE COURT** | | | | | | | | | | | |
| VPX300R2502WA25S | ● | 11 | 25 | 25 | 91 | 35 | 2.13° | 24100 | 0.29 | 2 | |
| VPX300R3202WA32S | ● | 11 | 32 | 32 | 105 | 45 | 1.47° | 20600 | 0.56 | 2 | LOGU12 |
| VPX300R3203WA32S | ● | 11 | 32 | 32 | 105 | 45 | 1.47° | 20600 | 0.55 | 3 | |

1/1

1. Les vitesses de rotation maximales autorisées assurent la stabilité de l'outil et des plaquettes.
2. Si vous utilisez l'outil à vitesse de rotation élevée, veillez à bien équilibrer l'ensemble outil-attachement.

44 Vc

# PIÈCES DÉTACHÉES

| Outil | DC | Vis de plaquette | Clé | Lubrifiant antigrippant |
|---|---|---|---|---|
| VPX300R25 | ≤50 | TPS40F1 | TIP15W | MK1KS |

* Couple de serrage (Nm) : TPS40F1 = 3.0

● : Article stocké. ★ : Article stocké au Japon.

# VPX300

## PLAQUETTES

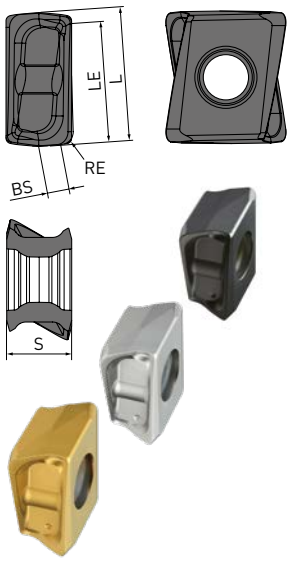
| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Acier | | ◕ | ✣ | | | | ◕ | | ◕ | ◕ | | | | | | | |
| M | Acier inoxydable | | | | ◕ | | | ◕ | | ◕ | ◕ | | | | | | | |
| K | Fonte | ◕ | | | | | | ◕ | | ◕ | ✣ | | | | | | | |
| N | Matériel non ferreux | | | | | | | | | | | ◕ | | | | | | |
| S | Alliage réfractaire, Alliage de titane | | | | | ◕ | ✣ | | | | ◕ | | | | | | | |
| H | Acier traité | | | | | | | | | | ◕ | | | | | | | |

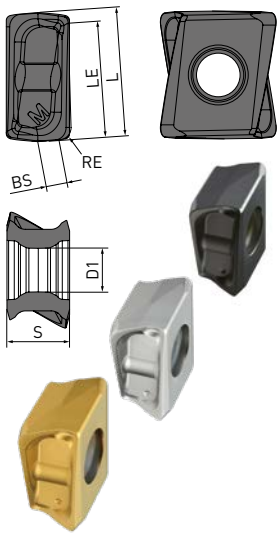
Conditions de stabilité :
● : Coupe stable ◕ : Coupe générale ✣ : Coupe instable

Honing :
E : Rond F : Affûtée

| Référence | Classe | Honing | MC5020 | MP6120 | MP6130 | MP7130 | MP9120 | MP9130 | NEW MV1020 | NEW MV1030 | VP15TF | TF15 | L | RE | LE | S | BS | D1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOGU1207020PNER-L | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | ● | ★ | | 12.4 | 0.2 | 11.3 | 7.0 | 3.0 | 4.4 |
| LOGU1207040PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 0.4 | 11.3 | 7.0 | 2.8 | 4.4 |
| LOGU1207080PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 0.8 | 11.3 | 7.0 | 2.6 | 4.4 |
| LOGU1207100PNER-L | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | ● | ★ | | 12.4 | 1 | 11.3 | 7.0 | 2.5 | 4.4 |
| LOGU1207120PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 1.2 | 11.3 | 7.0 | 2.4 | 4.4 |
| LOGU1207160PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 1.6 | 11.3 | 7.0 | 1.8 | 4.4 |
| LOGU1207200PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 2 | 11.3 | 7.0 | 1.4 | 4.4 |
| LOGU1207240PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 2.4 | 11.3 | 7.0 | 1.2 | 4.4 |
| LOGU1207300PNER-L | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | ● | ★ | | 12.4 | 3 | 11.3 | 7.0 | 0.6 | 4.4 |
| LOGU1207320PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 3.2 | 11.3 | 7.0 | 0.4 | 4.4 |
| LOGU1207020PNFR-L | G | F | | | | | | | | | | ★ | 12.4 | 0.2 | 11.3 | 7.0 | 3.0 | 4.4 |
| LOGU1207040PNFR-L | G | F | | | | | | | | | | ● | 12.4 | 0.4 | 11.3 | 7.0 | 2.8 | 4.4 |
| LOGU1207080PNFR-L | G | F | | | | | | | | | | ● | 12.4 | 0.8 | 11.3 | 7.0 | 2.6 | 4.4 |
| LOGU1207100PNFR-L | G | F | | | | | | | | | | ★ | 12.4 | 1 | 11.3 | 7.0 | 2.5 | 4.4 |
| LOGU1207120PNFR-L | G | F | | | | | | | | | | ● | 12.4 | 1.2 | 11.3 | 7.0 | 2.4 | 4.4 |
| LOGU1207160PNFR-L | G | F | | | | | | | | | | ● | 12.4 | 1.6 | 11.3 | 7.0 | 1.8 | 4.4 |
| LOGU1207200PNFR-L | G | F | | | | | | | | | | ● | 12.4 | 2 | 11.3 | 7.0 | 1.4 | 4.4 |
| LOGU1207240PNFR-L | G | F | | | | | | | | | | ● | 12.4 | 2.4 | 11.3 | 7.0 | 1.2 | 4.4 |
| LOGU1207300PNFR-L | G | F | | | | | | | | | | ★ | 12.4 | 3 | 11.3 | 7.0 | 0.6 | 4.4 |
| LOGU1207320PNFR-L | G | F | | | | | | | | | | ● | 12.4 | 3.2 | 11.3 | 7.0 | 0.4 | 4.4 |
| LOGU1207020PNER-M | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | ● | ★ | | 12.4 | 0.2 | 11.3 | 7.0 | 3.0 | 4.4 |
| LOGU1207040PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 0.4 | 11.3 | 7.0 | 2.8 | 4.4 |
| LOGU1207080PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 0.8 | 11.3 | 7.0 | 2.4 | 4.4 |
| LOGU1207100PNER-M | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | ● | ★ | | 12.4 | 1.0 | 11.3 | 7.0 | 2.3 | 4.4 |
| LOGU1207120PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 1.2 | 11.3 | 7.0 | 2.1 | 4.4 |
| LOGU1207160PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 1.6 | 11.3 | 7.0 | 1.7 | 4.4 |
| LOGU1207200PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 2.0 | 11.3 | 7.0 | 1.4 | 4.4 |
| LOGU1207240PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 2.4 | 11.3 | 7.0 | 1.0 | 4.4 |
| LOGU1207300PNER-M | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | ● | ★ | | 12.4 | 3.0 | 11.3 | 7.0 | 0.5 | 4.4 |
| LOGU1207320PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | ● | ★ | | 12.4 | 3.2 | 11.3 | 7.0 | 0.3 | 4.4 |
| LOGU1207020PNFR-M | G | F | | | | | | | | | | ★ | 12.4 | 0.2 | 11.3 | 7.0 | 3.0 | 4.4 |
| LOGU1207040PNFR-M | G | F | | | | | | | | | | ● | 12.4 | 0.4 | 11.3 | 7.0 | 2.8 | 4.4 |
| LOGU1207080PNFR-M | G | F | | | | | | | | | | ● | 12.4 | 0.8 | 11.3 | 7.0 | 2.4 | 4.4 |
| LOGU1207100PNFR-M | G | F | | | | | | | | | | ★ | 12.4 | 1.0 | 11.3 | 7.0 | 2.3 | 4.4 |
| LOGU1207120PNFR-M | G | F | | | | | | | | | | ● | 12.4 | 1.2 | 11.3 | 7.0 | 2.1 | 4.4 |
| LOGU1207160PNFR-M | G | F | | | | | | | | | | ● | 12.4 | 1.6 | 11.3 | 7.0 | 1.7 | 4.4 |
| LOGU1207200PNFR-M | G | F | | | | | | | | | | ● | 12.4 | 2.0 | 11.3 | 7.0 | 1.4 | 4.4 |
| LOGU1207240PNFR-M | G | F | | | | | | | | | | ● | 12.4 | 2.4 | 11.3 | 7.0 | 1.0 | 4.4 |
| LOGU1207300PNFR-M | G | F | | | | | | | | | | ★ | 12.4 | 3.0 | 11.3 | 7.0 | 0.5 | 4.4 |
| LOGU1207320PNFR-M | G | F | | | | | | | | | | ● | 12.4 | 3.2 | 11.3 | 7.0 | 0.3 | 4.4 |

**Géométrie**
*Plaquette à droite uniquement*



# VPX300

## BRISE-COPEAUX ET NUANCES

| | Matière | Propriétés | Conditions de stabilité | Recommandation no 1 | Recommandation no 2 |
|---|---|---|---|---|---|
| P | Acier doux | ≤180HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 350HB<br>≤350HB | ● | L | M |
| | | | ◐ | M | L |
| | | | ✣ | M | L |
| | Acier pré-traité | 35 – 45HRC | ● ◐ | M | L |
| | | | ✣ | M | L |
| M | Acier inoxydable austénitique | ≤280HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| | | >200HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Acier inoxydable duplex | ≤280HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Acier inoxydable ferritique ou martensitique | — | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Inox à durcissement structural (PH) | <450HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| K | Fonte grise | ≤350MPa | ● ◐ | M | L |
| | | | ✣ | M | L |
| | Fonte ductile | ≤800MPa | ● ◐ | M | L |
| | | | ✣ | M | L |
| N | Alliage d'aluminum | Si<5 % | ● ◐ | L | M |
| | | | ✣ | M | L |
| S | Alliage de titane<br>(Ti-6Al-4V) | — | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Alliage de titane<br>(Ti-5Al-5V-5Mo-3Cr) | — | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Alliage réfractaire | — | ● ◐ | M | L |
| | | | ✣ | M | L |
| H | Acier traité | 40 – 55HRC | ● ◐ ✣ | M | — |

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44 Vc

# VPX300

## CONDITIONS DE COUPE RECOMMANDÉES USINAGE À SEC

Ces conditions de coupe sont données pour des outils courts (dernière lettre S dans la référence) à queue cylindrique ou à attachement par alésage.
En cas de broutement, d'écaillage, etc. pendant l'usinage, veuillez modifier les conditions en conséquence.
Le broutement et les vibrations sont plus probables dans les conditions suivantes : lorsque le porte-à-faux de l'outil est long (en cas de queue longue, rallonge à visser, etc.) ou lorsque la raideur de la machine, de la pièce à usiner ou du bridage est faible, ou dans les angles lors de l'usinage de poches. Utilisez alors les conditions de coupe minmales voire inférieures.

### VITESSE DE COUPE

| | Matière | Propriétés | Conditions de stabilité | Nuance | Vc | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ae<0.25x DC | ae≥0.25–0.5 DC | ae≥0.5–0.75 DC | ae=1.0 DC |
| P | Acier doux | ≤180HB | ● ● | MV1020 | 280 (220 – 330) | 270 (210 – 320) | 220 (170 – 260) | 220 (170 – 260) |
| | | | ● ● | MV1030 | 230 (180 – 270) | 220 (170 – 260) | 180 (140 – 210) | 180 (140 – 210) |
| | | | ● ● | MP6120 | 230 (180 – 270) | 220 (170 – 260) | 180 (140 – 210) | 180 (140 – 210) |
| | | | ● ● | VP15TF | 230 (180 – 270) | 220 (170 – 260) | 180 (140 – 210) | 180 (140 – 210) |
| | | | ✣ | MP6130 | 200 (150 – 240) | 190 (170 – 260) | 150 (110 – 180) | 150 (110 – 180) |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 280HB | ● ● | MV1020 | 220 (170 – 260) | 210 (160 – 240) | 170 (130 – 200) | 170 (130 – 200) |
| | | | ● ● | MV1030 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 170 (130 – 200) |
| | | 280 – 350HB | ● ● | MV1020 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | | ● ● | MV1030 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | 180 – 350HB<br><350HB | ● ● | MP6120 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 180) |
| | | | ● ● | VP15TF | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 180) |
| | | | ✣ | MP6130 | 150 (110 – 180) | 140 (100 – 170) | 110 ( 80 – 130) | 110 ( 80 – 130) |
| | Acier pré-traité | 35 – 45HRC | ● | MP6120 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ✣ | MP6130 | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| M | Acier inoxydable austénitique | ≤200HB | ● ● | MV1020 | — | — | — | — |
| | | | ● ● | MV1030 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | | ● ● ✣ | MP7130 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | | ● ● | VP15TF | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | >200HB | ● ● | MV1020 | — | — | — | — |
| | | | ● ● | MV1030 | 150 (110 – 180) | 140 (100 – 160) | 110 ( 80 – 130) | 110 ( 80 – 130) |
| | | | ● ● ✣ | MP7130 | 150 (110 – 180) | 140 (100 – 160) | 110 ( 80 – 130) | 110 ( 80 – 130) |
| | | | ● ● | VP15TF | 150 (110 – 180) | 140 (100 – 160) | 110 ( 80 – 130) | 110 ( 80 – 130) |
| | Acier inoxydable duplex | ≤280HB | ● ● ✣ | MP7130 | 140 (110 – 170) | 130 ( 90 – 150) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | VP15TF | 140 (110 – 170) | 130 ( 90 – 150) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | Acier inoxydable ferritique ou martensitique | — | ● ● ✣ | MP7130 | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | | | ● ● | VP15TF | 180 (140 – 210) | 170 (130 – 200) | 140 (110 – 160) | 140 (110 – 160) |
| | Inox à durcissement structural (PH) | <450HB | ● ● ✣ | MP7130 | 130 (100 – 160) | 120 ( 80 – 140) | 90 ( 60 – 110) | 90 ( 60 – 110) |
| | | | ● ● | VP15TF | 130 (100 – 160) | 120 ( 80 – 140) | 90 ( 60 – 110) | 90 ( 60 – 110) |
| K | Fonte grise | <350MPa | ● ● | MC5020 | 250 (200 – 300) | 240 (190 – 290) | 210 (160 – 260) | 140 (110 – 160) |
| | | | ● ● ✣ | VP15TF | 200 (150 – 250) | 190 (140 – 240) | 160 (110 – 210) | 160 (110 – 210) |
| | Fonte ductile | <450MPa | ● ● | MV1020 | 200 (150 – 280) | 190 (140 – 270) | 170 (130 – 240) | 170 (130 – 240) |
| | | | ● ● | MV1030 | 150 (100 – 200) | 140 ( 90 – 190) | 125 ( 80 – 170) | 100 ( 80 – 120) |
| | | <800MPa | ● ● | MV1020 | 180 (140 – 250) | 170 (130 – 240) | 150 (120 – 210) | 150 (120 – 210) |
| | | | ● ● | MV1030 | 150 (100 – 200) | 140 ( 90 – 190) | 125 ( 80 – 170) | 150 (120 – 210) |
| | | | ● ● | MC5020 | 180 (150 – 200) | 170 (140 – 190) | 150 (120 – 170) | 150 (120 – 170) |
| | | | ● ● ✣ | VP15TF | 130 (100 – 150) | 120 ( 90 – 140) | 100 ( 80 – 120) | 100 ( 80 – 120) |
| N | Alliage d'aluminum | Si<5 % | ● ● ✣ | TF15 | 600 (400 – 1000) | 600 (400 – 1000) | 600 (400 – 1000) | 600 (400 – 1000) |
| H | Acier traité | 40 – 55HRC | ● ● ✣ | VP15TF | 90 ( 70 – 100) | 85 ( 60 – 100) | 70 ( 50 – 80) | 70 ( 50 – 80) |

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## VPX300 – PROFONDEUR DE PASSE / AVANCE PAR DENT

| | Matière | Propriétés | Conditions de stabilité | ae | DC=Ø25 | | DC=Ø28–Ø80 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ap | fz | ap | fz |
| P | Acier doux | ≤180HB | ● ● ✲ | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.3 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.25 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.2 |
| | | | ● ● ✲ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.08 – 0.15 |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180–280HB | ● ● ✲ | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.3 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.25 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.2 |
| | | | ● ● ✲ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.08 – 0.15 |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 280–350HB<br>≤350HB | ● ● ✲ | ≤0.25 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.25 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.1 – 0.2 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.1 – 0.15 |
| | | | ● ● ✲ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.08 – 0.12 |
| | Acier pré-traité | 35–45HRC | ● ● ✲ | ≤0.25 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.25 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.1 – 0.2 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.1 – 0.15 |
| | | | ● ● ✲ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.08 – 0.12 |
| M | Acier inoxydable austénitique | — | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.2 |
| | | | ✲ | ≤0.25 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.08 – 0.15 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.08 – 0.15 |
| | | | ✲ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ✲ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.06 – 0.1 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤5 | 0.06 – 0.08 | ≤5 | 0.06 – 0.08 |
| | Acier inoxydable duplex | ≤280HB | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.2 |
| | | | ✲ | ≤0.25 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.08 – 0.15 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.08 – 0.15 |
| | | | ✲ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ✲ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.06 – 0.1 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤5 | 0.06 – 0.08 | ≤5 | 0.06 – 0.08 |
| | Acier inoxydable ferritique ou martensitique | — | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.2 |
| | | | ✲ | ≤0.25 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.08 – 0.15 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.08 – 0.15 |
| | | | ✲ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ✲ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.06 – 0.1 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤5 | 0.06 – 0.08 | ≤5 | 0.06 – 0.08 |
| | Inox à durcissement structural (PH) | <450HB | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.15 |
| | | | ✲ | ≤0.25 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ✲ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.06 – 0.1 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.06 – 0.1 |
| | | | ✲ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.08 | ≤8 | 0.06 – 0.08 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤5 | 0.06 – 0.08 | ≤5 | 0.06 – 0.08 |

## VPX300 – PROFONDEUR DE PASSE / AVANCE PAR DENT

| | Matière | Propriétés | Conditions de stabilité | ae | DC=Ø25 | | DC=Ø28–Ø80 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ap | fz | ap | fz |
| K | Fonte grise | ≤350MPa | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.3 |
| | | | ✱ | ≤0.25 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.1 – 0.25 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.1 – 0.25 |
| | | | ✱ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.1 – 0.2 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.2 |
| | | | ✱ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.08 – 0.15 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.08 – 0.15 |
| | | | ✱ | 1.0 DC | ≤5 | 0.06 – 0.08 | ≤5 | 0.08 – 0.12 |
| | Fonte ductile | ≤800MPa | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.25 |
| | | | ✱ | ≤0.25 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.2 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.2 |
| | | | ✱ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.1 – 0.15 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 |
| | | | ✱ | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.08 – 0.12 |
| | | | ✱ | 1.0 DC | ≤5 | 0.06 – 0.08 | ≤5 | 0.06 – 0.1 |
| N | Alliage d'aluminum | Si<5 % | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.25 | ≤11 | 0.1 – 0.25 |
| | | | ✱ | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.2 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.2 |
| | | | ✱ | 0.25 – 0.5 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.15 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ✱ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.15 | ≤5 | 0.08 – 0.15 |
| | | | ✱ | 1.0 DC | ≤5 | 0.06 – 0.15 | ≤5 | 0.08 – 0.12 |
| H | Acier traité | 40–55HRC | ● ● | ≤0.25 DC | ≤5 | 0.08 – 0.15 | ≤5 | 0.08 – 0.15 |
| | | | ✱ | ≤0.25 DC | ≤5 | 0.08 – 0.12 | ≤5 | 0.08 – 0.12 |
| | | | ● ● | 0.25 – 0.5 DC | ≤4 | 0.08 – 0.12 | ≤4 | 0.08 – 0.12 |
| | | | ✱ | 0.25 – 0.5 DC | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| | | | ● ● | 0.5 – 0.75 DC | ≤3 | 0.06 – 0.1 | ≤3 | 0.06 – 0.1 |
| | | | ✱ | 0.5 – 0.75 DC | ≤3 | 0.06 – 0.08 | ≤3 | 0.06 – 0.08 |
| | | | ● ● | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤2 | 0.06 – 0.1 |
| | | | ✱ | 1.0 DC | ≤2 | 0.06 – 0.08 | ≤2 | 0.06 – 0.08 |

# VPX300

## CONDITIONS DE COUPE RECOMMANDÉES ARROSAGE

Ces conditions de coupe sont données pour des outils courts (dernière lettre S dans la référence) à queue cylindrique ou à attachement par alésage.
En cas de broutement, d'écaillage, etc. pendant l'usinage, veuillez modifier les conditions en conséquence.
Le broutement et les vibrations sont plus probables dans les conditions suivantes : lorsque le porte-à-faux de l'outil est long (en cas de queue longue, rallonge à visser, etc.) ou lorsque la raideur de la machine, de la pièce à usiner ou du bridage est faible, ou dans les angles lors de l'usinage de poches. Utilisez alors les conditions de coupe minmales voire inférieures.

### VITESSE DE COUPE

| | Matière | Propriétés | Conditions de stabilité | Nuance | Vc | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ae<0.25 DC | ae≥0.25–0.5 DC | ae≥0.5–0.75 DC | ae=1.0 DC |
| P | Acier doux | ≤180HB | ● ● | MV1020 | 210 (150 – 290) | 200 (140 – 270) | 150 (110 – 180) | 150 (110 – 180) |
| | | | ● ● | MV1030 | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | MP6120 | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | VP15TF | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ✣ | MP6130 | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 280HB | ● ● | MV1020 | 180 (140 – 210) | 170 (120 – 200) | 150 (110 – 180) | 150 (110 – 180) |
| | | | ● ● | MV1030 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | 280 – 350HB | ● ● | MV1020 | 140 (110 – 160) | 130 ( 90 – 150) | 120 ( 80 – 140) | 120 ( 80 – 140) |
| | | | ● ● | MV1030 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 120 ( 80 – 140) |
| | | 180 – 350HB<br>≤350HB | ● ● | MP6120 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ✣ | MP6130 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | Acier pré-traité | 35 – 45HRC | ● ● | MP6120 | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| | | | ● ● | VP15TF | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| | | | ✣ | MP6130 | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| M | Acier inoxydable austénitique | ≤200HB | ● ● ✣ | MP7130 | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | | >200HB | ● ● ✣ | MP7130 | 100 ( 80 – 130) | 90 ( 70 – 120) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | | | ● ● | VP15TF | 100 ( 80 – 130) | 90 ( 70 – 120) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | Acier inoxydable duplex | ≤280HB | ● ● ✣ | MP7130 | 100 ( 80 – 130) | 90 ( 70 – 120) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | | | ● ● | VP15TF | 100 ( 80 – 130) | 90 ( 70 – 120) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | Acier inoxydable ferritique ou martensitique | – | ● ● ✣ | MP7130 | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | Inox à durcissement structural | <450HB | ● ● ✣ | MP7130 | 90 ( 70 – 120) | 80 ( 60 – 110) | 60 ( 40 – 90) | 60 ( 40 – 90) |
| | | | ● ● | VP15TF | 90 ( 70 – 120) | 80 ( 60 – 110) | 60 ( 40 – 90) | 60 ( 40 – 90) |
| K | Fonte grise | ≤350MPa | ● ● | MC5020 | 180 (160 – 220) | 170 (150 – 210) | 150 (130 – 190) | 150 (130 – 190) |
| | | | ● ● ✣ | VP15TF | 130 (100 – 150) | 120 ( 90 – 140) | 100 ( 80 – 120) | 100 ( 80 – 120) |
| | Fonte ductile | ≤450MPa | ● ● | MV1020 | 180 (150 – 240) | 170 (140 – 230) | 150 (130 – 200) | 150 (130 – 200) |
| | | | ● ● | MV1030 | 130 ( 80 – 180) | 120 ( 70 – 170) | 105 ( 60 – 150) | 105 ( 60 – 150) |
| | | ≤800MPa | ● ● | MV1020 | 160 (130 – 210) | 150 (120 – 200) | 130 (110 – 170) | 130 (110 – 170) |
| | | | ● ● | MV1030 | 130 ( 80 – 180) | 120 ( 70 – 170) | 105 ( 60 – 150) | 105 ( 60 – 150) |
| | | | ● ● | MC5020 | 160 (140 – 180) | 150 (130 – 170) | 130 (110 – 150) | 130 (110 – 150) |
| | | | ● ● ✣ | VP15TF | 110 ( 80 – 140) | 100 ( 70 – 130) | 80 ( 60 – 120) | 80 ( 60 – 120) |
| N | Alliage d'aluminum | Si<5 % | ● ● ✣ | TF15 | 600 (400 – 1000) | 600 (400 – 1000) | 600 (400 – 1000) | 600 (400 – 1000) |

## VPX300 – ARROSAGE – VITESSE DE COUPE

| | Matière | Propriétés | Conditions de stabilité | Nuance | Vc | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ae<0.25 DC | ae≥0.25–0.5 DC | ae≥0.5–0.75 DC | ae=1.0 DC |
| S | Alliage de titane (TA6V) | — | ● ● ✣ | MP9120 | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) |
| | | | ● ● | VP15TF | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) |
| | | | ✣ | MP9130 | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) |
| | Alliage de titane (Ti5553) | — | ● ● | MP9120 | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| | | | ● ● | VP15TF | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| | | | ✣ | MP9130 | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| | Alliage réfractaire | — | ● ● | MP9120 | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) |
| | | | ● ● | VP15TF | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) |
| | | | ✣ | MP9130 | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| H | Acier traité | 40 – 55HRC | ● ● ✣ | VP15TF | 90 ( 70 – 100) | 85 ( 60 – 100) | 70 ( 50 – 80) | 70 ( 50 – 80) |

## VPX300 – PROFONDEUR DE PASSE / AVANCE PAR DENT

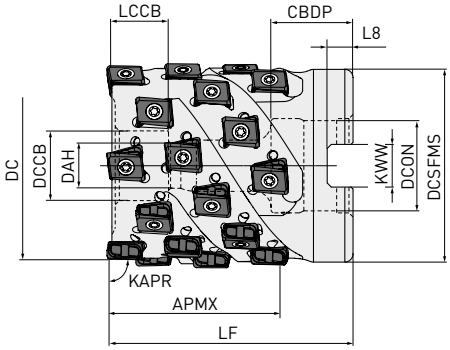
| | Matière | Propriétés | Conditions de stabilité | ae | DC=Ø25 | | DC=Ø28 – Ø80 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ap | fz | ap | fz |
| P | Acier doux | ≤180HB | ● ● ✲ | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.3 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.25 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.2 |
| | | | ● ● ✲ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.08 – 0.15 |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 280HB | ● ● ✲ | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.3 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.25 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.2 |
| | | | ● ● ✲ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.08 – 0.15 |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 280 – 350HB<br>≤350HB | ● ● ✲ | ≤0.25 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.25 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.1 – 0.2 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.1 – 0.15 |
| | | | ● ● ✲ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.08 – 0.12 |
| | Acier pré-traité | 35 – 45HRC | ● ● ✲ | ≤0.25 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.25 |
| | | | ● ● ✲ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.1 – 0.2 |
| | | | ● ● ✲ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.1 – 0.15 |
| | | | ● ● ✲ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.08 – 0.12 |
| M | Acier inoxydable austénitique | — | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.2 |
| | | | ✲ | ≤0.25 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.08 – 0.15 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.15 |
| | | | ✲ | 0.25 – 0.5 DC | ≤11 | 0.06 – 0.1 | ≤11 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 |
| | | | ✲ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.06 – 0.1 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤5 | 0.06 – 0.08 | ≤5 | 0.06 – 0.08 |
| | Acier inoxydable duplex | ≤280HB | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.2 |
| | | | ✲ | ≤0.25 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.08 – 0.15 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.08 – 0.15 |
| | | | ✲ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ✲ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.06 – 0.1 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤5 | 0.06 – 0.08 | ≤5 | 0.06 – 0.08 |
| | Acier inoxydable ferritique ou martensitique | — | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.2 |
| | | | ✲ | ≤0.25 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.08 – 0.15 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.08 – 0.15 |
| | | | ✲ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.08 – 0.12 |
| | | | ✲ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.06 – 0.1 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤5 | 0.06 – 0.08 | ≤5 | 0.06 – 0.08 |
| | Inox à durcissement structural (PH) | <450HB | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.15 |
| | | | ✲ | ≤0.25 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ✲ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.06 – 0.1 |
| | | | ✲ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.08 | ≤8 | 0.06 – 0.08 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.06 – 0.1 |
| | | | ✲ | 1.0 DC | ≤5 | 0.06 – 0.08 | ≤5 | 0.06 – 0.08 |

## VPX300 – PROFONDEUR DE PASSE / AVANCE PAR DENT

| | Matière | Propriétés | Conditions de stabilité | ae | DC=Ø25 | | DC=Ø28 – Ø80 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ap | fz | ap | fz |
| K | Fonte grise | ≤350MPa | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.3 |
| | | | ✱ | ≤0.25 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.1 – 0.25 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.1 – 0.25 |
| | | | ✱ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.1 – 0.2 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.2 |
| | | | ✱ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.08 – 0.15 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.08 – 0.15 |
| | | | ✱ | 1.0 DC | ≤5 | 0.06 – 0.08 | ≤5 | 0.08 – 0.12 |
| | Fonte ductile | ≤800MPa | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.25 |
| | | | ✱ | ≤0.25 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.2 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.2 |
| | | | ✱ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.1 – 0.15 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.08 – 0.12 | ≤8 | 0.1 – 0.15 |
| | | | ✱ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.08 – 0.12 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.08 – 0.12 |
| | | | ✱ | 1.0 DC | ≤5 | 0.06 – 0.08 | ≤5 | 0.06 – 0.1 |
| N | Alliage d'aluminum | Si<5 % | ● ● | ≤0.25 DC | ≤11 | 0.1 – 0.25 | ≤11 | 0.1 – 0.25 |
| | | | ✱ | ≤0.25 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.2 |
| | | | ● ● | 0.25 – 0.5 DC | ≤11 | 0.1 – 0.2 | ≤11 | 0.1 – 0.2 |
| | | | ✱ | 0.25 – 0.5 DC | ≤11 | 0.1 – 0.15 | ≤11 | 0.1 – 0.15 |
| | | | ● ● | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ✱ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.15 | ≤8 | 0.08 – 0.15 |
| | | | ● ● | 1.0 DC | ≤5 | 0.06 – 0.15 | ≤5 | 0.08 – 0.15 |
| | | | ✱ | 1.0 DC | ≤5 | 0.06 – 0.15 | ≤5 | 0.08 – 0.12 |
| S | Alliage de titane (TA6V) | — | ● ● ✱ | ≤0.25 DC | ≤11 | 0.08 – 0.15 | ≤11 | 0.08 – 0.15 |
| | | | ● ● ✱ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ● ● ✱ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.06 – 0.1 |
| | | | ● ● ✱ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.06 – 0.1 |
| | Alliage de titane (Ti5553) | — | ● ● ✱ | ≤0.25 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ● ● ✱ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ● ● ✱ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.06 – 0.1 |
| | | | ● ● ✱ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.06 – 0.1 |
| | Alliage réfractaire | — | ● ● ✱ | ≤0.25 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ● ● ✱ | 0.25 – 0.5 DC | ≤11 | 0.08 – 0.12 | ≤11 | 0.08 – 0.12 |
| | | | ● ● ✱ | 0.5 – 0.75 DC | ≤8 | 0.06 – 0.1 | ≤8 | 0.06 – 0.1 |
| | | | ● ● ✱ | 1.0 DC | ≤5 | 0.06 – 0.1 | ≤5 | 0.06 – 0.1 |
| H | Acier traité | 40 – 55HRC | ● ● | ≤0.25 DC | ≤5 | 0.08 – 0.15 | ≤5 | 0.08 – 0.15 |
| | | | ✱ | ≤0.25 DC | ≤5 | 0.08 – 0.12 | ≤5 | 0.08 – 0.12 |
| | | | ● ● | 0.25 – 0.5 DC | ≤4 | 0.08 – 0.12 | ≤4 | 0.08 – 0.12 |
| | | | ✱ | 0.25 – 0.5 DC | ≤4 | 0.06 – 0.1 | ≤4 | 0.06 – 0.1 |
| | | | ● ● | 0.5 – 0.75 DC | ≤3 | 0.06 – 0.1 | ≤3 | 0.06 – 0.1 |
| | | | ✱ | 0.5 – 0.75 DC | ≤3 | 0.06 – 0.1 | ≤3 | 0.06 – 0.08 |
| | | | ● ● | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤2 | 0.06 – 0.1 |
| | | | ✱ | 1.0 DC | ≤2 | 0.06 – 0.1 | ≤2 | 0.06 – 0.08 |

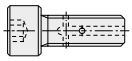
# VPX300

P M K N S




## FRAISE TYPE HÉRISSON

| Référence | Vis d'attachement | Géométrie |
|---|---|---|
| VPX300-040A02A031R06 | HSC08040 | |
| VPX300-040A02A042R08 | HSC08050 | |
| VPX300-050A03A031R09 | HSC10040 | |
| VPX300-050A03A042R12 | HSC10050 | |
| VPX300-050A03A052R15 | HSC10060 | |
| VPX300-063A04A042R16 | HSC12050 | |
| VPX300-063A04A052R20 | HSC12060 | |
| VPX300-080A05A052R25 | HSC12060 | |
| VPX300-080A05A063R30 | HSC12070 | |
| VPX300R08005CA05225 | HSC16055 | |
| VPX300R08005CA06330 | HSC16065 | |



## FRAISE TYPE ALÉSAGE

| Référence | Stock | APMX | DC | DCON | LF | RMPX | WT | ZNF | ZNP | |
|---|---|---|---|---|---|---|---|---|---|---|
| VPX300-040A02A031R06 | ● | 31 | 40 | 16 | 50 | 1.06° | 0.26 | 2 | 6 | |
| VPX300-040A02A042R08 | ● | 42 | 40 | 16 | 60 | 1.06° | 0.31 | 2 | 8 | |
| VPX300-050A03A031R09 | ● | 31 | 50 | 22 | 55 | 0.79° | 0.47 | 3 | 9 | |
| VPX300-050A03A042R12 | ● | 42 | 50 | 22 | 65 | 0.79° | 0.55 | 3 | 12 | |
| VPX300-050A03A052R15 | ● | 52 | 50 | 22 | 75 | 0.79° | 0.63 | 3 | 15 | |
| VPX300-063A04A042R16 | ★ | 42 | 63 | 27 | 65 | 0.6° | 0.92 | 4 | 16 | LOGU12 |
| VPX300-063A04A052R20 | ★ | 52 | 63 | 27 | 75 | 0.6° | 1.06 | 4 | 20 | |
| VPX300-080A05A052R25 | ★ | 52 | 80 | 27 | 75 | 0.45° | 1.94 | 5 | 25 | |
| VPX300-080A05A063R30 | ★ | 63 | 80 | 27 | 85 | 0.45° | 2.20 | 5 | 30 | |
| VPX300R08005CA05225 | ★ | 52 | 80 | 31.75 | 75 | 0.45° | 1.81 | 5 | 25 | |
| VPX300R08005CA06330 | ★ | 63 | 80 | 31.75 | 85 | 0.45° | 2.06 | 5 | 30 | |

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56 Vc

● : Article stocké. ★ : Article stocké au Japon.

## VPX300 – FRAISE TYPE HÉRISSON – FRAISE TYPE ALÉSAGE

### DIMENSIONS DE MONTAGE

| Référence | CBDP | DAH | DCCB | DCSFMS | KWW | LCCB | L8 |
|---|---|---|---|---|---|---|---|
| VPX300-040A02A031R06 | 18 | 9 | 14 | 37 | 8.4 | 8.4 | 5.6 |
| VPX300-040A02A042R08 | 18 | 9 | 14 | 37 | 8.4 | 8.4 | 5.6 |
| VPX300-050A03A031R09 | 20 | 11 | 17 | 47 | 10.4 | 12.4 | 6.3 |
| VPX300-050A03A042R12 | 20 | 11 | 17 | 47 | 10.4 | 12.4 | 6.3 |
| VPX300-050A03A052R15 | 20 | 11 | 17 | 47 | 10.4 | 12.4 | 6.3 |
| VPX300-063A04A042R16 | 23 | 13 | 20 | 60 | 12.4 | 12.4 | 7 |
| VPX300-063A04A052R20 | 23 | 13 | 20 | 60 | 12.4 | 12.4 | 7 |
| VPX300-080A05A052R25 | 23 | 13 | 20 | 76 | 12.4 | 12.4 | 7 |
| VPX300-080A05A063R30 | 23 | 13 | 20 | 76 | 12.4 | 12.4 | 7 |
| VPX300R08005CA05225 | 32 | 17 | 26 | 76 | 12.7 | 17.4 | 8 |
| VPX300R08005CA06330 | 32 | 17 | 26 | 76 | 12.7 | 17.4 | 8 |



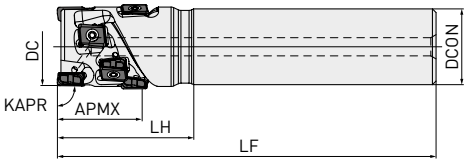
# PIÈCES DÉTACHÉES

| Outil | DC |  * |  |  |
|---|---|---|---|---|
| | | Vis de plaquette | Clé | Lubrifiant antigrippant |
| VPX300 | ⩽80 | TPS40F1 | TIP15W | MK1KS |

* Couple de serrage (Nm) : TPS40F1 = 3.0

# VPX300

P M K N S




*Outil à droite uniquement*

## FRAISE TYPE HÉRISSON

## QUEUE CYLINDRIQUE

| Référence | Stock | APMX | DC | DCON | LF | RMPX | WT | LH | ZNF | ZNP | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TYPE COURT** | | | | | | | | | | | |
| VPX300R402SA32S02104 | ● | 21 | 40 | 32 | 125 | 1.06° | 0.78 | 45 | 2 | 4 | |
| VPX300R402SA32S03106 | ● | 31 | 40 | 32 | 130 | 1.06° | 0.79 | 50 | 2 | 6 | LOGU12 |
| VPX300R402SA32S04208 | ● | 42 | 40 | 32 | 140 | 1.06° | 0.84 | 60 | 2 | 8 | |

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56 Vc

# PIÈCES DÉTACHÉES

| Outil | DC | Vis de plaquette | Clé | Lubrifiant antigrippant |
|---|---|---|---|---|
| VPX300R25 | ⩽50 | TPS40F1 | TIP15W | MK1KS |

* Couple de serrage (Nm) : TPS40F1 = 3.0

● : Article stocké. ★ : Article stocké au Japon.

# VPX300

## PLAQUETTES

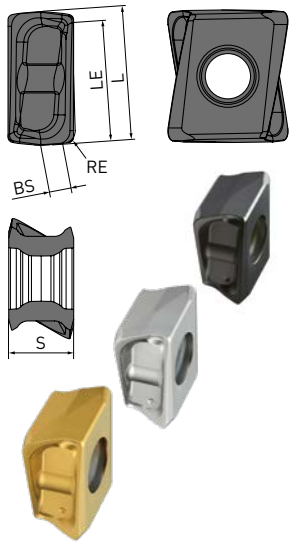
| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P | Acier | | | ◕ | ✣ | | | | ◕ | | ◕ | ◕ | | | | | | |
| M | Acier inoxydable | | | | ◕ | | | | ◕ | | ◕ | ◕ | | | | | | |
| K | Fonte | | ◕ | | | | | | ◕ | | ◕ | ✣ | | | | | | |
| N | Matériel non ferreux | | | | | | | | | | | ◕ | | | | | | |
| S | Alliage réfractaire, Alliage de titane | | | | | ◕ | ✣ | | | | | ◕ | | | | | | |
| H | Acier traité | | | | | | | | | | | ◕ | | | | | | |

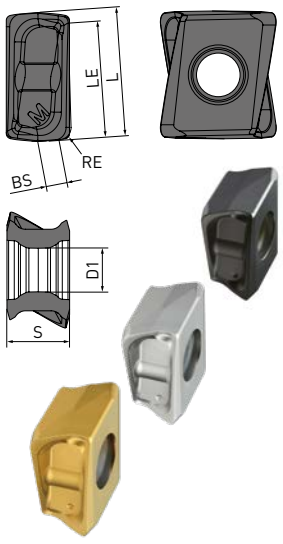
Conditions de stabilité :
● : Coupe stable ◕ : Coupe générale ✣ : Coupe instable

Honing :
E : Rond F : Affûtée

| Référence | Classe | Honing | MC5020 | MP6120 | MP6130 | MP7130 | MP9120 | MP9130 | NEW | MV1020 | NEW | MV1030 | VP15TF | TF15 | L | RE | LE | S | BS | D1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LOGU1207020PNER-L | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | | ● | ★ | | | 12.4 | 0.2 | 11.3 | 7.0 | 3.0 | 4.4 |
| LOGU1207040PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 0.4 | 11.3 | 7.0 | 2.8 | 4.4 |
| LOGU1207080PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 0.8 | 11.3 | 7.0 | 2.6 | 4.4 |
| LOGU1207100PNER-L | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | | ● | ★ | | | 12.4 | 1 | 11.3 | 7.0 | 2.5 | 4.4 |
| LOGU1207120PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 1.2 | 11.3 | 7.0 | 2.4 | 4.4 |
| LOGU1207160PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 1.6 | 11.3 | 7.0 | 1.8 | 4.4 |
| LOGU1207200PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 2 | 11.3 | 7.0 | 1.4 | 4.4 |
| LOGU1207240PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 2.4 | 11.3 | 7.0 | 1.2 | 4.4 |
| LOGU1207300PNER-L | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | | ● | ★ | | | 12.4 | 3 | 11.3 | 7.0 | 0.6 | 4.4 |
| LOGU1207320PNER-L | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 3.2 | 11.3 | 7.0 | 0.4 | 4.4 |
| LOGU1207020PNFR-L | G | F | | | | | | | | | | | | ★ | 12.4 | 0.2 | 11.3 | 7.0 | 3.0 | 4.4 |
| LOGU1207040PNFR-L | G | F | | | | | | | | | | | | ● | 12.4 | 0.4 | 11.3 | 7.0 | 2.8 | 4.4 |
| LOGU1207080PNFR-L | G | F | | | | | | | | | | | | ● | 12.4 | 0.8 | 11.3 | 7.0 | 2.6 | 4.4 |
| LOGU1207100PNFR-L | G | F | | | | | | | | | | | | ★ | 12.4 | 1 | 11.3 | 7.0 | 2.5 | 4.4 |
| LOGU1207120PNFR-L | G | F | | | | | | | | | | | | ● | 12.4 | 1.2 | 11.3 | 7.0 | 2.4 | 4.4 |
| LOGU1207160PNFR-L | G | F | | | | | | | | | | | | ● | 12.4 | 1.6 | 11.3 | 7.0 | 1.8 | 4.4 |
| LOGU1207200PNFR-L | G | F | | | | | | | | | | | | ● | 12.4 | 2 | 11.3 | 7.0 | 1.4 | 4.4 |
| LOGU1207240PNFR-L | G | F | | | | | | | | | | | | ● | 12.4 | 2.4 | 11.3 | 7.0 | 1.2 | 4.4 |
| LOGU1207300PNFR-L | G | F | | | | | | | | | | | | ★ | 12.4 | 3 | 11.3 | 7.0 | 0.6 | 4.4 |
| LOGU1207320PNFR-L | G | F | | | | | | | | | | | | ● | 12.4 | 3.2 | 11.3 | 7.0 | 0.4 | 4.4 |
| LOGU1207020PNER-M | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | | ● | ★ | | | 12.4 | 0.2 | 11.3 | 7.0 | 3.0 | 4.4 |
| LOGU1207040PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 0.4 | 11.3 | 7.0 | 2.8 | 4.4 |
| LOGU1207080PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 0.8 | 11.3 | 7.0 | 2.4 | 4.4 |
| LOGU1207100PNER-M | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | | ● | ★ | | | 12.4 | 1.0 | 11.3 | 7.0 | 2.3 | 4.4 |
| LOGU1207120PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 1.2 | 11.3 | 7.0 | 2.1 | 4.4 |
| LOGU1207160PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 1.6 | 11.3 | 7.0 | 1.7 | 4.4 |
| LOGU1207200PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 2.0 | 11.3 | 7.0 | 1.4 | 4.4 |
| LOGU1207240PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 2.4 | 11.3 | 7.0 | 1.0 | 4.4 |
| LOGU1207300PNER-M | G | E | ★ | ★ | ★ | ★ | ★ | ★ | ● | | ● | ★ | | | 12.4 | 3.0 | 11.3 | 7.0 | 0.5 | 4.4 |
| LOGU1207320PNER-M | G | E | ● | ● | ● | ● | ● | ● | ● | | ● | ★ | | | 12.4 | 3.2 | 11.3 | 7.0 | 0.3 | 4.4 |
| LOGU1207020PNFR-M | G | F | | | | | | | | | | | | ★ | 12.4 | 0.2 | 11.3 | 7.0 | 3.0 | 4.4 |
| LOGU1207040PNFR-M | G | F | | | | | | | | | | | | ● | 12.4 | 0.4 | 11.3 | 7.0 | 2.8 | 4.4 |
| LOGU1207080PNFR-M | G | F | | | | | | | | | | | | ● | 12.4 | 0.8 | 11.3 | 7.0 | 2.4 | 4.4 |
| LOGU1207100PNFR-M | G | F | | | | | | | | | | | | ★ | 12.4 | 1.0 | 11.3 | 7.0 | 2.3 | 4.4 |
| LOGU1207120PNFR-M | G | F | | | | | | | | | | | | ● | 12.4 | 1.2 | 11.3 | 7.0 | 2.1 | 4.4 |
| LOGU1207160PNFR-M | G | F | | | | | | | | | | | | ● | 12.4 | 1.6 | 11.3 | 7.0 | 1.7 | 4.4 |
| LOGU1207200PNFR-M | G | F | | | | | | | | | | | | ● | 12.4 | 2.0 | 11.3 | 7.0 | 1.4 | 4.4 |
| LOGU1207240PNFR-M | G | F | | | | | | | | | | | | ● | 12.4 | 2.4 | 11.3 | 7.0 | 1.0 | 4.4 |
| LOGU1207300PNFR-M | G | F | | | | | | | | | | | | ★ | 12.4 | 3.0 | 11.3 | 7.0 | 0.5 | 4.4 |
| LOGU1207320PNFR-M | G | F | | | | | | | | | | | | ● | 12.4 | 3.2 | 11.3 | 7.0 | 0.3 | 4.4 |

**Géométrie**
*Plaquette à droite uniquement*








● : Article stocké. ★ : Article stocké au Japon.

# VPX300

## BRISE-COPEAUX ET NUANCES

| | Matière | Propriétés | Conditions de stabilité | Recommandation no 1 | Recommandation no 2 |
|---|---|---|---|---|---|
| P | Acier doux | ≤180HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 350HB<br>≤350HB | ● | L | M |
| | | | ◐ | M | L |
| | | | ✣ | M | L |
| | Acier pré-traité | 35 – 45HRC | ● ◐ | M | L |
| | | | ✣ | M | L |
| M | Acier inoxydable austénitique | ≤280HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| | | >200HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Acier inoxydable duplex | ≤280HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Acier inoxydable ferritique ou martensitique | — | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Inox à durcissement structural (PH) | <450HB | ● ◐ | L | M |
| | | | ✣ | M | L |
| K | Fonte grise | ≤350MPa | ● ◐ | M | L |
| | | | ✣ | M | L |
| | Fonte ductile | ≤800MPa | ● ◐ | M | L |
| | | | ✣ | M | L |
| N | Alliage d'aluminum | Si<5 % | ● ◐ | L | M |
| | | | ✣ | M | L |
| S | Alliage de titane<br>(Ti-6Al-4V) | — | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Alliage de titane<br>(Ti-5Al-5V-5Mo-3Cr) | — | ● ◐ | L | M |
| | | | ✣ | M | L |
| | Alliage réfractaire | — | ● ◐ | M | L |
| | | | ✣ | M | L |
| H | Acier traité | 40 – 55HRC | ● ◐ ✣ | M | — |

1/1

56 Vc

# VPX300

## CONDITIONS DE COUPE RECOMMANDÉES
## ARROSAGE

Ces conditions de coupe sont données pour des outils courts (dernière lettre S dans la référence) à queue cylindrique ou à attachement par alésage.
En cas de broutement, d'écaillage, etc. pendant l'usinage, veuillez modifier les conditions en conséquence.
Le broutement et les vibrations sont plus probables dans les conditions suivantes : lorsque le porte-à-faux de l'outil est long (en cas de queue longue, rallonge à visser, etc.) ou lorsque la raideur de la machine, de la pièce à usiner ou du bridage est faible, ou dans les angles lors de l'usinage de poches. Utilisez alors les conditions de coupe minmales voire inférieures.

### VITESSE DE COUPE

| | Matière | Propriétés | Conditions de stabilité | Nuance | Vc | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ae<0.25 DC | ae≥0.25–0.5 DC | ae≥0.5–0.75 DC | ae=1.0 DC |
| P | Acier doux | ≤180HB | ● ● | MV1020 | 210 (150 – 290) | 200 (140 – 270) | 150 (110 – 180) | 150 (110 – 180) |
| | | | ● ● | MV1030 | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | MP6120 | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | VP15TF | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ✣ | MP6130 | 140 (100 – 190) | 130 ( 90 – 180) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 280HB | ● ● | MV1020 | 180 (140 – 210) | 170 (120 – 200) | 150 (110 – 180) | 150 (110 – 180) |
| | | | ● ● | MV1030 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | 280 – 350HB | ● ● | MV1020 | 140 (110 – 160) | 130 ( 90 – 150) | 120 ( 80 – 140) | 120 ( 80 – 140) |
| | | | ● ● | MV1030 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 120 ( 80 – 140) |
| | | 180 – 350HB<br>≤350HB | ● ● | MP6120 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | | | ✣ | MP6130 | 120 ( 90 – 140) | 110 ( 80 – 130) | 100 ( 70 – 120) | 100 ( 70 – 120) |
| | Acier pré-traité | 35 – 45HRC | ● ● | MP6120 | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| | | | ● ● | VP15TF | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| | | | ✣ | MP6130 | 100 ( 80 – 120) | 90 ( 70 – 110) | 80 ( 60 – 100) | 80 ( 60 – 100) |
| M | Acier inoxydable austénitique | ≤200HB | ● ● ✣ | MP7130 | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | | >200HB | ● ● ✣ | MP7130 | 100 ( 80 – 130) | 90 ( 70 – 120) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | | | ● ● | VP15TF | 100 ( 80 – 130) | 90 ( 70 – 120) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | Acier inoxydable duplex | ≤280HB | ● ● ✣ | MP7130 | 100 ( 80 – 130) | 90 ( 70 – 120) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | | | ● ● | VP15TF | 100 ( 80 – 130) | 90 ( 70 – 120) | 70 ( 50 – 100) | 70 ( 50 – 100) |
| | Acier inoxydable ferritique ou martensitique | – | ● ● ✣ | MP7130 | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | | | ● ● | VP15TF | 120 (100 – 150) | 110 ( 90 – 140) | 90 ( 70 – 120) | 90 ( 70 – 120) |
| | Inox à durcissement structural | <450HB | ● ● ✣ | MP7130 | 90 ( 70 – 120) | 80 ( 60 – 110) | 60 ( 40 – 90) | 60 ( 40 – 90) |
| | | | ● ● | VP15TF | 90 ( 70 – 120) | 80 ( 60 – 110) | 60 ( 40 – 90) | 60 ( 40 – 90) |
| K | Fonte grise | ≤350MPa | ● ● | MC5020 | 180 (160 – 220) | 170 (150 – 210) | 150 (130 – 190) | 150 (130 – 190) |
| | | | ● ● ✣ | VP15TF | 130 (100 – 150) | 120 ( 90 – 140) | 100 ( 80 – 120) | 100 ( 80 – 120) |
| | Fonte ductile | ≤450MPa | ● ● | MV1020 | 180 (150 – 240) | 170 (140 – 230) | 150 (130 – 200) | 150 (130 – 200) |
| | | | ● ● | MV1030 | 130 ( 80 – 180) | 120 ( 70 – 170) | 105 ( 60 – 150) | 105 ( 60 – 150) |
| | | ≤800MPa | ● ● | MV1020 | 160 (130 – 210) | 150 (120 – 200) | 130 (110 – 170) | 130 (110 – 170) |
| | | | ● ● | MV1030 | 130 ( 80 – 180) | 120 ( 70 – 170) | 105 ( 60 – 150) | 105 ( 60 – 150) |
| | | | ● ● | MC5020 | 160 (140 – 180) | 150 (130 – 170) | 130 (110 – 150) | 130 (110 – 150) |
| | | | ● ● ✣ | VP15TF | 110 ( 80 – 140) | 100 ( 70 – 130) | 80 ( 60 – 120) | 80 ( 60 – 120) |
| N | Alliage d'aluminum | Si<5 % | ● ● ✣ | TF15 | 600 (400 – 1000) | 600 (400 – 1000) | 600 (400 – 1000) | 600 (400 – 1000) |

## VPX300 – ARROSAGE – VITESSE DE COUPE

| | Matière | Propriétés | Conditions de stabilité | Nuance | Vc | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ae<0.25 DC | ae≥0.25–0.5 DC | ae≥0.5–0.75 DC | ae=1.0 DC |
| S | Alliage de titane (TA6V) | — | ● ● ✣ | MP9120 | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) |
| | | | ● ● | VP15TF | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) | 50 ( 40 – 70) |
| | | | ✣ | MP9130 | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) |
| | Alliage de titane (Ti5553) | — | ● ● | MP9120 | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| | | | ● ● | VP15TF | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| | | | ✣ | MP9130 | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| | Alliage réfractaire | — | ● ● | MP9120 | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) |
| | | | ● ● | VP15TF | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) | 40 ( 30 – 60) |
| | | | ✣ | MP9130 | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) | 30 ( 20 – 40) |
| H | Acier traité | 40 – 55HRC | ● ● ✣ | VP15TF | 90 ( 70 – 100) | 85 ( 60 – 100) | 70 ( 50 – 80) | 70 ( 50 – 80) |

## VPX300 – PROFONDEUR DE PASSE / AVANCE PAR DENT

| | Matière | Propriétés | Conditions de stabilité | ae | DC=Ø40 | | DC=Ø50 – 80 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ap | fz | ap | fz |
| P | Acier doux | ≤180HB | ● ● ✱ | ≤0.25 DC | ≤APMX | 0.15 (0.10 – 0.20) | ≤APMX | 0.18 (0.10 – 0.25) |
| | | | ● ● ✱ | 0.25 – 0.5 DC | ≤APMX | 0.13 (0.10 – 0.15) | ≤31 | 0.15 (0.10 – 0.20) |
| | | | ● ● ✱ | 0.5 – 0.75 DC | ≤21 | 0.10 (0.08 – 0.12) | ≤21 | 0.13 (0.10 – 0.15) |
| | | | ● ● ✱ | 1.0 DC | ≤5 | 0.08 (0.06 – 0.10) | ≤5 | 0.10 (0.08 – 0.12) |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 180 – 280HB | ● ● ✱ | ≤0.25 DC | ≤APMX | 0.15 (0.10 – 0.20) | ≤APMX | 0.18 (0.10 – 0.25) |
| | | | ● ● ✱ | 0.25 – 0.5 DC | ≤APMX | 0.13 (0.10 – 0.15) | ≤31 | 0.15 (0.10 – 0.20) |
| | | | ● ● ✱ | 0.5 – 0.75 DC | ≤21 | 0.10 (0.08 – 0.12) | ≤21 | 0.13 (0.10 – 0.15) |
| | | | ● ● ✱ | 1.0 DC | ≤5 | 0.08 (0.06 – 0.10) | ≤5 | 0.10 (0.08 – 0.12) |
| | Acier carbone<br>Acier allié<br>Acier outil allié | 280 – 350HB<br>≤350HB | ● ● ✱ | ≤0.25 DC | ≤APMX | 0.13 (0.10 – 0.15) | ≤APMX | 0.15 (0.10 – 0.20) |
| | | | ● ● ✱ | 0.25 – 0.5 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤31 | 0.13 (0.10 – 0.15) |
| | | | ● ● ✱ | 0.5 – 0.75 DC | ≤21 | 0.08 (0.06 – 0.10) | ≤21 | 0.10 (0.08 – 0.12) |
| | | | ● ● ✱ | 1.0 DC | ≤5 | 0.08 (0.06 – 0.10) | ≤5 | 0.08 (0.06 – 0.10) |
| | Acier pré-traité | 35 – 45HRC | ● ● ✱ | ≤0.25 DC | ≤APMX | 0.13 (0.10 – 0.15) | ≤APMX | 0.15 (0.10 – 0.20) |
| | | | ● ● ✱ | 0.25 – 0.5 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤31 | 0.13 (0.10 – 0.15) |
| | | | ● ● ✱ | 0.5 – 0.75 DC | ≤21 | 0.08 (0.06 – 0.10) | ≤21 | 0.10 (0.08 – 0.12) |
| | | | ● ● ✱ | 1.0 DC | ≤5 | 0.08 (0.06 – 0.10) | ≤5 | 0.08 (0.06 – 0.10) |
| M | Acier inoxydable austénitique | — | ● ● | ≤0.25 DC | ≤APMX | 0.15 (0.10 – 0.20) | ≤APMX | 0.15 (0.10 – 0.20) |
| | | | ✱ | ≤0.25 DC | ≤APMX | 0.12 (0.08 – 0.15) | ≤APMX | 0.12 (0.08 – 0.15) |
| | | | ● ● | 0.25 – 0.5 DC | ≤APMX | 0.12 (0.08 – 0.15) | ≤31 | 0.12 (0.08 – 0.15) |
| | | | ✱ | 0.25 – 0.5 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤31 | 0.10 (0.08 – 0.12) |
| | | | ● ● | 0.5 – 0.75 DC | ≤21 | 0.10 (0.08 – 0.12) | ≤21 | 0.10 (0.08 – 0.12) |
| | | | ✱ | 0.5 – 0.75 DC | ≤21 | 0.08 (0.06 – 0.10) | ≤21 | 0.08 (0.06 – 0.10) |
| | | | ● ● | 1.0 DC | ≤5 | 0.08 (0.06 – 0.10) | ≤5 | 0.08 (0.06 – 0.10) |
| | | | ✱ | 1.0 DC | ≤5 | 0.07 (0.06 – 0.08) | ≤5 | 0.07 (0.06 – 0.08) |
| | Acier inoxydable duplex | ≤280HB | ● ● | ≤0.25 DC | ≤APMX | 0.15 (0.10 – 0.20) | ≤APMX | 0.15 (0.10 – 0.20) |
| | | | ✱ | ≤0.25 DC | ≤APMX | 0.12 (0.08 – 0.15) | ≤APMX | 0.12 (0.08 – 0.15) |
| | | | ● ● | 0.25 – 0.5 DC | ≤APMX | 0.12 (0.08 – 0.15) | ≤31 | 0.12 (0.08 – 0.15) |
| | | | ✱ | 0.25 – 0.5 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤31 | 0.10 (0.08 – 0.12) |
| | | | ● ● | 0.5 – 0.75 DC | ≤21 | 0.10 (0.08 – 0.12) | ≤21 | 0.10 (0.08 – 0.12) |
| | | | ✱ | 0.5 – 0.75 DC | ≤21 | 0.08 (0.06 – 0.10) | ≤21 | 0.08 (0.06 – 0.10) |
| | | | ● ● | 1.0 DC | ≤5 | 0.08 (0.06 – 0.10) | ≤5 | 0.08 (0.06 – 0.10) |
| | | | ✱ | 1.0 DC | ≤5 | 0.07 (0.06 – 0.08) | ≤5 | 0.07 (0.06 – 0.08) |
| | Acier inoxydable ferritique ou martensitique | — | ● ● | ≤0.25 DC | ≤APMX | 0.15 (0.10 – 0.20) | ≤APMX | 0.15 (0.10 – 0.20) |
| | | | ✱ | ≤0.25 DC | ≤APMX | 0.12 (0.08 – 0.15) | ≤APMX | 0.12 (0.08 – 0.15) |
| | | | ● ● | 0.25 – 0.5 DC | ≤APMX | 0.12 (0.08 – 0.15) | ≤31 | 0.12 (0.08 – 0.15) |
| | | | ✱ | 0.25 – 0.5 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤31 | 0.10 (0.08 – 0.12) |
| | | | ● ● | 0.5 – 0.75 DC | ≤21 | 0.10 (0.08 – 0.12) | ≤21 | 0.10 (0.08 – 0.12) |
| | | | ✱ | 0.5 – 0.75 DC | ≤21 | 0.08 (0.06 – 0.10) | ≤21 | 0.08 (0.06 – 0.10) |
| | | | ● ● | 1.0 DC | ≤5 | 0.08 (0.06 – 0.10) | ≤5 | 0.08 (0.06 – 0.10) |
| | | | ✱ | 1.0 DC | ≤5 | 0.07 (0.06 – 0.08) | ≤5 | 0.07 (0.06 – 0.08) |
| | Inox à durcissement structural (PH) | <450HB | ● ● | ≤0.25 DC | ≤APMX | 0.13 (0.10 – 0.15) | ≤APMX | 0.13 (0.10 – 0.15) |
| | | | ✱ | ≤0.25 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤APMX | 0.10 (0.08 – 0.12) |
| | | | ● ● | 0.25 – 0.5 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤31 | 0.10 (0.08 – 0.12) |
| | | | ✱ | 0.25 – 0.5 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤31 | 0.10 (0.08 – 0.12) |
| | | | ● ● | 0.5 – 0.75 DC | ≤21 | 0.08 (0.06 – 0.10) | ≤21 | 0.08 (0.06 – 0.10) |
| | | | ✱ | 0.5 – 0.75 DC | ≤21 | 0.07 (0.06 – 0.08) | ≤21 | 0.07 (0.06 – 0.08) |
| | | | ● ● | 1.0 DC | ≤5 | 0.08 (0.06 – 0.10) | ≤5 | 0.08 (0.06 – 0.10) |
| | | | ✱ | 1.0 DC | ≤5 | 0.07 (0.06 – 0.08) | ≤5 | 0.07 (0.06 – 0.08) |

## VPX300 – PROFONDEUR DE PASSE / AVANCE PAR DENT

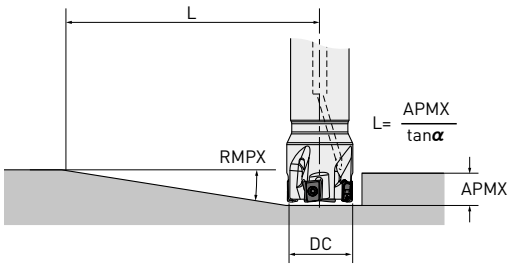
| | Matière | Propriétés | Conditions de stabilité | ae | DC=Ø40 | | DC=Ø50 – 80 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | ap | fz | ap | fz |
| K | Fonte grise | ≤350MPa | ● ● | ≤0.25 DC | ≤APMX | 0.15 (0.10 – 0.20) | ≤APMX | 0.18 (0.10 – 0.25) |
| | | | ✱ | ≤0.25 DC | ≤APMX | 0.12 (0.08 – 0.15) | ≤APMX | 0.15 (0.10 – 0.20) |
| | | | ● ● | 0.25 – 0.5 DC | ≤APMX | 0.12 (0.08 – 015) | ≤31 | 0.15 (0.10 – 0.20) |
| | | | ✱ | 0.25 – 0.5 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤31 | 0.13 (0.10 – 0.15) |
| | | | ● ● | 0.5 – 0.75 DC | ≤21 | 0.10 (0.08 – 0.12) | ≤21 | 0.13 (0.10 – 0.15) |
| | | | ✱ | 0.5 – 0.75 DC | ≤21 | 0.08 (0.06 – 0.10) | ≤21 | 0.10 (0.08 – 0.12) |
| | | | ● ● | 1.0 DC | ≤5 | 0.08 (0.06 – 0.10) | ≤5 | 0.12 (0.08 – 0.15) |
| | | | ✱ | 1.0 DC | ≤5 | 0.07 (0.06 – 0.08) | ≤5 | 0.08 (0.06 – 0.10) |
| | Fonte ductile | ≤800MPa | ● ● | ≤0.25 DC | ≤APMX | 0.15 (0.10 – 0.20) | ≤APMX | 0.15 (0.10 – 0.20) |
| | | | ✱ | ≤0.25 DC | ≤APMX | 0.13 (0.10 – 0.15) | ≤APMX | 0.13 (0.10 – 0.15) |
| | | | ● ● | 0.25 – 0.5 DC | ≤APMX | 0.13 (0.10 – 0.15) | ≤31 | 0.13 (0.10 – 0.15) |
| | | | ✱ | 0.25 – 0.5 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤31 | 0.10 (0.08 – 0.12) |
| | | | ● ● | 0.5 – 0.75 DC | ≤21 | 0.10 (0.08 – 0.12) | ≤21 | 0.10 (0.08 – 0.12) |
| | | | ✱ | 0.5 – 0.75 DC | ≤21 | 0.08 (0.06 – 0.10) | ≤21 | 0.08 (0.06 – 0.10) |
| | | | ● ● | 1.0 DC | ≤5 | 0.08 (0.06 – 0.10) | ≤5 | 0.08 (0.06 – 0.10) |
| | | | ✱ | 1.0 DC | ≤5 | 0.07 (0.06 – 0.08) | ≤5 | 0.07 (0.06 – 0.08) |
| N | Alliage d'aluminum | Si<5 % | ● ● | ≤0.25 DC | ≤APMX | 0.18 (0.10 – 0.25) | ≤APMX | 0.18 (0.10 – 0.25) |
| | | | ✱ | ≤0.25 DC | ≤APMX | 0.15 (0.10 – 0.20) | ≤APMX | 0.15 (0.10 – 0.20) |
| | | | ● ● | 0.25 – 0.5 DC | ≤APMX | 0.15 (0.10 – 0.20) | ≤31 | 0.15 (0.10 – 0.20) |
| | | | ✱ | 0.25 – 0.5 DC | ≤APMX | 0.13 (0.10 – 0.15) | ≤31 | 0.13 (0.10 – 0.15) |
| | | | ● ● | 0.5 – 0.75 DC | ≤21 | 0.11 (0.06 – 0.15) | ≤21 | 0.12 (0.08 – 0.15) |
| | | | ✱ | 0.5 – 0.75 DC | ≤21 | 0.11 (0.06 – 0.15) | ≤21 | 0.12 (0.08 – 0.15) |
| | | | ● ● | 1.0 DC | ≤5 | 0.11 (0.06 – 0.15) | ≤5 | 0.12 (0.08 – 0.15) |
| | | | ✱ | 1.0 DC | ≤5 | 0.09 (0.06 – 0.12) | ≤5 | 0.10 (0.08 – 0.12) |
| S | Alliage de titane (TA6V) | — | ● ● ✱ | ≤0.25 DC | ≤APMX | 0.12 (0.08 – 0.15) | ≤APMX | 0.12 (0.08 – 0.15) |
| | | | ● ● ✱ | 0.25 – 0.5 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤31 | 0.10 (0.08 – 0.12) |
| | | | ● ● ✱ | 0.5 – 0.75 DC | ≤21 | 0.08 (0.06 – 0.10) | ≤21 | 0.08 (0.06 – 0.10) |
| | | | ● ● ✱ | 1.0 DC | ≤5 | 0.08 (0.06 – 0.10) | ≤5 | 0.08 (0.06 – 0.10) |
| | Alliage de titane (Ti5553) | — | ● ● ✱ | ≤0.25 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤APMX | 0.10 (0.08 – 0.12) |
| | | | ● ● ✱ | 0.25 – 0.5 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤31 | 0.10 (0.08 – 0.12) |
| | | | ● ● ✱ | 0.5 – 0.75 DC | ≤21 | 0.08 (0.06 – 0.10) | ≤21 | 0.08 (0.06 – 0.10) |
| | | | ● ● ✱ | 1.0 DC | ≤5 | 0.08 (0.06 – 0.10) | ≤5 | 0.08 (0.06 – 0.10) |
| | Alliage réfractaire | — | ● ● ✱ | ≤0.25 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤APMX | 0.10 (0.08 – 0.12) |
| | | | ● ● ✱ | 0.25 – 0.5 DC | ≤APMX | 0.10 (0.08 – 0.12) | ≤31 | 0.10 (0.08 – 0.12) |
| | | | ● ● ✱ | 0.5 – 0.75 DC | ≤21 | 0.08 (0.06 – 0.10) | ≤21 | 0.08 (0.06 – 0.10) |
| | | | ● ● ✱ | 1.0 DC | ≤5 | 0.08 (0.06 – 0.10) | ≤5 | 0.08 (0.06 – 0.10) |

# VPX300

## RAMPING / PERÇAGE HÉLICOÏDAL

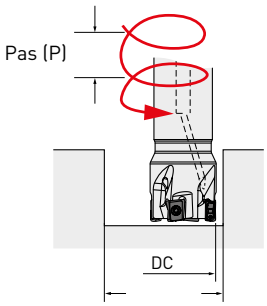
**1 Ramping**

Voir le tableau ci-dessous pour les conditions de coupe. Pour l'avance par dent et la vitesse de coupe, observez les conditions de coupe recommandées pour le rainurage.



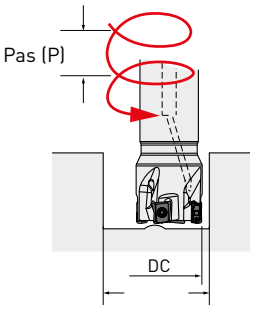

**2 Perçage hélicoïdal**

2.1 Trous borgnes, fond plat




Diamètre de trou (DH)

2.2 Trous débouchants




Diamètre de trou (DH)

| DC | RE | 1 | | 2.1 | | | | 2.2 | |
|---|---|---|---|---|---|---|---|---|---|
| | | RMPX | L* | DH max. | P max. | DH min | P max. | DH min | P max. |
| 25 | 0.2 | 2.13° | 296 | 49 | 2.8 | 42.7 | 2.1 | 36.9 | 1.4 |
| | 0.4 | 2.13° | 296 | 48.6 | 2.8 | 42.7 | 2.1 | 36.9 | 1.4 |
| | 0.8 | 2.13° | 296 | 47.8 | 2.7 | 42.7 | 2.1 | 36.9 | 1.4 |
| | 1 | 2.13° | 296 | 47.4 | 2.6 | 42.7 | 2.1 | 36.9 | 1.4 |
| | 1.2 | 2.13° | 296 | 47 | 2.6 | 42.7 | 2.1 | 36.9 | 1.4 |
| | 1.6 | 2.13° | 296 | 46.2 | 2.5 | 42.7 | 2.1 | 36.9 | 1.4 |
| | 2 | 2.13° | 296 | 45.4 | 2.4 | 42.7 | 2.1 | 36.9 | 1.4 |
| | 2.4 | 2.13° | 296 | 44.6 | 2.3 | 42.7 | 2.1 | 36.9 | 1.4 |
| | 3 | 2.13° | 296 | 43.4 | 2.2 | 42.7 | 2.1 | 36.9 | 1.4 |
| | 3.2 | 2.13° | 296 | 43 | 2.1 | 42.7 | 2.1 | 36.9 | 1.4 |
| 28 | 0.2 | 1.77° | 356 | 55 | 2.6 | 48.7 | 2 | 42.7 | 1.4 |
| | 0.4 | 1.77° | 356 | 54.6 | 2.6 | 48.7 | 2 | 42.7 | 1.4 |
| | 0.8 | 1.77° | 356 | 53.8 | 2.5 | 48.7 | 2 | 42.7 | 1.4 |
| | 1 | 1.77° | 356 | 53.4 | 2.5 | 48.7 | 2 | 42.7 | 1.4 |
| | 1.2 | 1.77° | 356 | 53 | 2.4 | 48.7 | 2 | 42.7 | 1.4 |
| | 1.6 | 1.77° | 356 | 52.2 | 2.4 | 48.7 | 2 | 42.7 | 1.4 |
| | 2 | 1.77° | 356 | 51.4 | 2.3 | 48.7 | 2 | 42.7 | 1.4 |
| | 2.4 | 1.77° | 356 | 50.6 | 2.2 | 48.7 | 2 | 42.7 | 1.4 |
| | 3 | 1.77° | 356 | 49.4 | 2.1 | 48.7 | 2 | 42.7 | 1.4 |
| | 3.2 | 1.77° | 356 | 49 | 2 | 48.7 | 2 | 42.7 | 1.4 |
| 30 | 0.2 | 1.61° | 392 | 59 | 2.6 | 52.7 | 2 | 46.6 | 1.5 |
| | 0.4 | 1.61° | 392 | 58.6 | 2.5 | 52.7 | 2 | 46.6 | 1.5 |
| | 0.8 | 1.61° | 392 | 57.8 | 2.5 | 52.7 | 2 | 46.6 | 1.5 |
| | 1 | 1.61° | 392 | 57.4 | 2.4 | 52.7 | 2 | 46.6 | 1.5 |
| | 1.2 | 1.61° | 392 | 57 | 2.4 | 52.7 | 2 | 46.6 | 1.5 |
| | 1.6 | 1.61° | 392 | 56.2 | 2.3 | 52.7 | 2 | 46.6 | 1.5 |
| | 2 | 1.61° | 392 | 55.4 | 2.2 | 52.7 | 2 | 46.6 | 1.5 |
| | 2.4 | 1.61° | 392 | 54.6 | 2.2 | 52.7 | 2 | 46.6 | 1.5 |
| | 3 | 1.61° | 392 | 53.4 | 2.1 | 52.7 | 2 | 46.6 | 1.5 |
| | 3.2 | 1.61° | 392 | 53 | 2 | 52.7 | 2 | 46.6 | 1.5 |

## VPX300 – RAMPING / PERÇAGE HÉLICOÏDAL

| DC | RE | 1 | | 2.1 | | | | 2.2 | |
|---|---|---|---|---|---|---|---|---|---|
| | | RMPX | L* | DH max. | P max. | DH min | P max. | DH min | P max. |
| 32 | 0.2 | 1.47° | 429 | 63 | 2.5 | 56.7 | 2 | 50.6 | 1.5 |
| | 0.4 | 1.47° | 429 | 62.6 | 2.5 | 56.7 | 2 | 50.6 | 1.5 |
| | 0.8 | 1.47° | 429 | 61.8 | 2.4 | 56.7 | 2 | 50.6 | 1.5 |
| | 1 | 1.47° | 429 | 61.4 | 2.4 | 56.7 | 2 | 50.6 | 1.5 |
| | 1.2 | 1.47° | 429 | 61 | 2.3 | 56.7 | 2 | 50.6 | 1.5 |
| | 1.6 | 1.47° | 429 | 60.2 | 2.3 | 56.7 | 2 | 50.6 | 1.5 |
| | 2 | 1.47° | 429 | 59.4 | 2.2 | 56.7 | 2 | 50.6 | 1.5 |
| | 2.4 | 1.47° | 429 | 58.6 | 2.1 | 56.7 | 2 | 50.6 | 1.5 |
| | 3 | 1.47° | 429 | 57.4 | 2.1 | 56.7 | 2 | 50.6 | 1.5 |
| | 3.2 | 1.47° | 429 | 57 | 2 | 56.7 | 2 | 50.6 | 1.5 |
| 35 | 0.2 | 1.28° | 493 | 69 | 2.4 | 62.8 | 1.9 | 56.6 | 1.5 |
| | 0.4 | 1.28° | 493 | 68.6 | 2.4 | 62.8 | 1.9 | 56.6 | 1.5 |
| | 0.8 | 1.28° | 493 | 67.8 | 2.3 | 62.8 | 1.9 | 56.6 | 1.5 |
| | 1 | 1.28° | 493 | 67.4 | 2.3 | 62.8 | 1.9 | 56.6 | 1.5 |
| | 1.2 | 1.28° | 493 | 67 | 2.2 | 62.8 | 1.9 | 56.6 | 1.5 |
| | 1.6 | 1.28° | 493 | 66.2 | 2.2 | 62.8 | 1.9 | 56.6 | 1.5 |
| | 2 | 1.28° | 493 | 65.4 | 2.1 | 62.8 | 1.9 | 56.6 | 1.5 |
| | 2.4 | 1.28° | 493 | 64.6 | 2.1 | 62.8 | 1.9 | 56.6 | 1.5 |
| | 3 | 1.28° | 493 | 63.4 | 2 | 62.8 | 1.9 | 56.6 | 1.5 |
| | 3.2 | 1.28° | 493 | 63 | 2 | 62.8 | 1.9 | 56.6 | 1.5 |
| 40 | 0.2 | 1.06° | 595 | 78.8 | 2.3 | 72.7 | 1.9 | 66.5 | 1.5 |
| | 0.4 | 1.06° | 595 | 78.4 | 2.2 | 72.7 | 1.9 | 66.5 | 1.5 |
| | 0.8 | 1.06° | 595 | 77.6 | 2.2 | 72.7 | 1.9 | 66.5 | 1.5 |
| | 1 | 1.06° | 595 | 77.2 | 2.2 | 72.7 | 1.9 | 66.5 | 1.5 |
| | 1.2 | 1.06° | 595 | 76.8 | 2.1 | 72.7 | 1.9 | 66.5 | 1.5 |
| | 1.6 | 1.06° | 595 | 76 | 2.1 | 72.7 | 1.9 | 66.5 | 1.5 |
| | 2 | 1.06° | 595 | 75.2 | 2 | 72.7 | 1.9 | 66.5 | 1.5 |
| | 2.4 | 1.06° | 595 | 74.4 | 2 | 72.7 | 1.9 | 66.5 | 1.5 |
| | 3 | 1.06° | 595 | 73.2 | 1.9 | 72.7 | 1.9 | 66.5 | 1.5 |
| | 3.2 | 1.06° | 595 | 72.8 | 1.9 | 72.7 | 1.9 | 66.5 | 1.5 |
| 50 | 0.2 | 0.79° | 798 | 98.8 | 2.1 | 92.7 | 1.8 | 86.5 | 1.6 |
| | 0.4 | 0.79° | 798 | 98.4 | 2.1 | 92.7 | 1.8 | 86.5 | 1.6 |
| | 0.8 | 0.79° | 798 | 97.6 | 2.1 | 92.7 | 1.8 | 86.5 | 1.6 |
| | 1 | 0.79° | 798 | 97.2 | 2 | 92.7 | 1.8 | 86.5 | 1.6 |
| | 1.2 | 0.79° | 798 | 96.8 | 2 | 92.7 | 1.8 | 86.5 | 1.6 |
| | 1.6 | 0.79° | 798 | 96 | 2 | 92.7 | 1.8 | 86.5 | 1.6 |
| | 2 | 0.79° | 798 | 95.2 | 2 | 92.7 | 1.8 | 86.5 | 1.6 |
| | 2.4 | 0.79° | 798 | 94.4 | 1.9 | 92.7 | 1.8 | 86.5 | 1.6 |
| | 3 | 0.79° | 798 | 93.2 | 1.9 | 92.7 | 1.8 | 86.5 | 1.6 |
| | 3.2 | 0.79° | 798 | 92.8 | 1.9 | 92.7 | 1.8 | 86.5 | 1.6 |
| 63 | 0.2 | 0.6° | 1051 | 124.8 | 2 | 118.7 | 1.8 | 112.5 | 1.6 |
| | 0.4 | 0.6° | 1051 | 124.4 | 2 | 118.7 | 1.8 | 112.5 | 1.6 |
| | 0.8 | 0.6° | 1051 | 123.6 | 2 | 118.7 | 1.8 | 112.5 | 1.6 |
| | 1 | 0.6° | 1051 | 123.2 | 2 | 118.7 | 1.8 | 112.5 | 1.6 |
| | 1.2 | 0.6° | 1051 | 122.8 | 2 | 118.7 | 1.8 | 112.5 | 1.6 |
| | 1.6 | 0.6° | 1051 | 122 | 1.9 | 118.7 | 1.8 | 112.5 | 1.6 |
| | 2 | 0.6° | 1051 | 121.2 | 1.9 | 118.7 | 1.8 | 112.5 | 1.6 |
| | 2.4 | 0.6° | 1051 | 120.4 | 1.9 | 118.7 | 1.8 | 112.5 | 1.6 |
| | 3 | 0.6° | 1051 | 119.2 | 1.9 | 118.7 | 1.8 | 112.5 | 1.6 |
| | 3.2 | 0.6° | 1051 | 118.8 | 1.8 | 118.7 | 1.8 | 112.5 | 1.6 |

### VPX300 – RAMPING / PERÇAGE HÉLICOÏDAL

| DC | RE | 1 | | 2.1 | | | | 2.2 | |
|---|---|---|---|---|---|---|---|---|---|
| | | RMPX | L* | DH max. | P max. | DH min | P max. | DH min | P max. |
| 80 | 0.2 | 0.45° | 1401 | 158.8 | 1.9 | 152.6 | 1.8 | 146.5 | 1.6 |
| | 0.4 | 0.45° | 1401 | 158.4 | 1.9 | 152.7 | 1.8 | 146.5 | 1.6 |
| | 0.8 | 0.45° | 1401 | 157.6 | 1.9 | 152.7 | 1.8 | 146.5 | 1.6 |
| | 1 | 0.45° | 1401 | 157.2 | 1.9 | 152.7 | 1.8 | 146.5 | 1.6 |
| | 1.2 | 0.45° | 1401 | 156.8 | 1.9 | 152.7 | 1.8 | 146.5 | 1.6 |
| | 1.6 | 0.45° | 1401 | 156 | 1.9 | 152.7 | 1.8 | 146.5 | 1.6 |
| | 2 | 0.45° | 1401 | 155.2 | 1.9 | 152.7 | 1.8 | 146.5 | 1.6 |
| | 2.4 | 0.45 | 1401 | 154.4 | 1.8 | 152.7 | 1.8 | 146.5 | 1.6 |
| | 3 | 0.45 | 1401 | 153.2 | 1.8 | 152.7 | 1.8 | 146.5 | 1.6 |
| | 3.2 | 0.45 | 1401 | 152.8 | 1.8 | 152.7 | 1.8 | 146.5 | 1.6 |



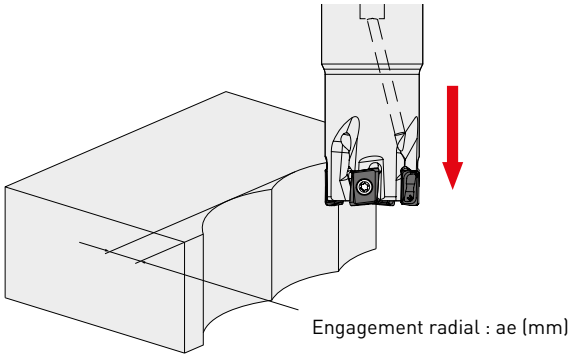
* Distance jusqu'à ce qu'une profondeur de coupe maximale de 11 mm soit atteinte à l'angle de ramping maximal L (= 11 / tan α).
1. L'usinage de matières ductiles aux angles de plongée dans le tableau ci-dessus peut donner lieu à la formation de copeaux longs.

# CONDITIONS DE COUPE RECOMMANDÉES POUR LE TRÉFLAGE ET LE PERÇAGE

Suivez les conditions de coupe pour le rainurage pour l'avance par dent et la vitesse de coupe.

### TRÉFLAGE

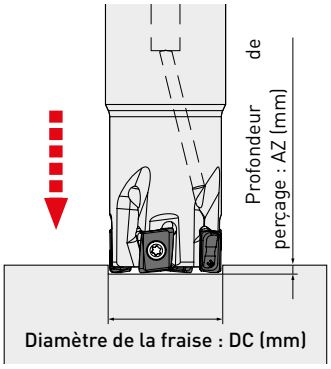
| DC | ae max. |
|---|---|
| 25 | 6.5 |
| 28 | 6.6 |
| 30 | 6.6 |
| 32 | 6.6 |
| 35 | 6.7 |
| 40 | 6.7 |
| 50 | 6.7 |
| 63 | 6.7 |
| 80 | 6.7 |




1. Un cycle de débourrage n'est pas nécessaire.

### PERÇAGE

| DC | AZ max. |
|---|---|
| 25 | 0.55 |
| 28 | 0.55 |
| 30 | 0.55 |
| 32 | 0.55 |
| 35 | 0.55 |
| 40 | 0.55 |
| 50 | 0.55 |
| 63 | 0.55 |
| 80 | 0.55 |




1. Attention aux projections de copeaux.
2. Évacuez les copeaux avec de l'air comprimé (ou du liquide d'arrosage lors de l'usinage d'un alliage d'aluminum).

# ATTACHEMENTS

## ATTACHEMENTS POUR FRAISES VISSÉES

### RALLONGES CYLINDRIQUES

| Référence | Stock | DCB | DCONMS | DCONWS | LF | LB | H | CRKS |
|---|---|---|---|---|---|---|---|---|
| **RALLONGE ACIER** | | | | | | | | |
| SC16M08S100S | ★ | 8.5 | 16 | 14.5 | 100 | 10 | 10 | M8 |
| SC16M08S200L | ★ | 8.5 | 16 | 14.5 | 200 | 10 | 10 | M8 |
| SC20M10S120S | ★ | 10.5 | 20 | 18.5 | 120 | 10 | 14 | M10 |
| SC20M10S220L | ★ | 10.5 | 20 | 18.5 | 220 | 10 | 14 | M10 |
| SC25M12S125S | ★ | 12.5 | 25 | 23.5 | 125 | 10 | 19 | M12 |
| SC25M12S245L | ★ | 12.5 | 25 | 23.5 | 245 | 10 | 19 | M12 |
| SC32M16S140S | ★ | 17 | 32 | 28.5 | 140 | 15 | 24 | M16 |
| SC32M16S280L | ★ | 17 | 32 | 28.5 | 280 | 15 | 24 | M16 |
| **RALLONGE CARBURE** | | | | | | | | |
| SC16M08S100SW | ★ | 8.5 | 16 | 14.5 | 100 | 10 | 10 | M8 |
| SC16M08S200LW | ★ | 8.5 | 16 | 14.5 | 200 | 10 | 10 | M8 |
| SC20M10S120SW | ★ | 10.5 | 20 | 18.5 | 120 | 10 | 14 | M10 |
| SC20M10S220LW | ★ | 10.5 | 20 | 18.5 | 220 | 10 | 14 | M10 |
| SC25M12S125SW | ★ | 12.5 | 25 | 23.5 | 125 | 10 | 19 | M12 |
| SC25M12S245LW | ★ | 12.5 | 25 | 23.5 | 245 | 10 | 19 | M12 |
| SC32M16S140SW | ★ | 17 | 32 | 28.5 | 140 | 15 | 24 | M16 |
| SC32M16S280LW | ★ | 17 | 32 | 28.5 | 280 | 15 | 24 | M16 |



### INSTALLATION DE LA FRAISE VISSÉE

1. Avant d'installer et de serrer la fraise sur la rallonge, nettoyez les deux éléments avec une soufflette ou une brosse.
2. Serrez la fraise au couple recommandé et vérifiez qu'il n'y ait aucun jeu entre la fraise et la rallonge.

| Filetage | Couple de serrage (Nm) | Taille de la clé (mm) |
|---|---|---|
| M8 | 23 | 10 |
| M10 | 46 | 14 |
| M12 | 80 | 19 |
| M16 | 90 | 24 |

Les outils peuvent devenir très chauds pendant l'usinage. Ne les touchez en aucun cas à mains nues, car il y a risque de brûlure ou de blessure. Ne manipulez pas les outils de coupe à mains nues, car vous risqueriez de vous blesser.

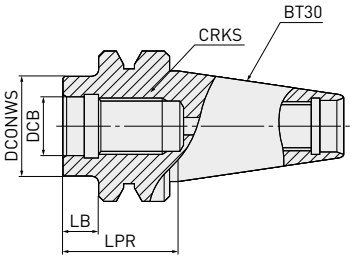
● : Article stocké. ★ : Article stocké au Japon.

# VPX300

## RALLONGE CYLINDRIQUE

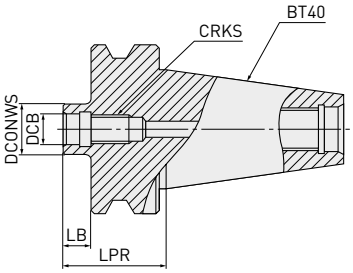
### BT30 POUR FRAISES VISSÉES

| Référence | Stock | DCB | DCONWS | LPR | LB | CRKS |
|---|---|---|---|---|---|---|
| SC16M08S10-BT30 | ★ | 8.5 | 14.5 | 32 | 10 | M8 |
| SC20M10S10-BT30 | ★ | 10.5 | 18.5 | 32 | 10 | M10 |
| SC25M12S10-BT30 | ★ | 12.5 | 23.5 | 32 | 10 | M12 |
| SC32M16S10-BT30 | ★ | 17.0 | 28.5 | 32 | 10 | M16 |



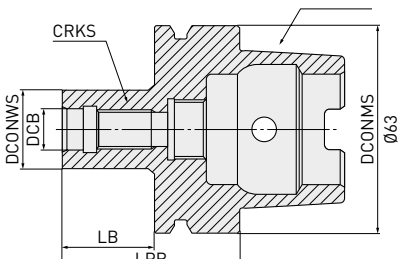

### BT40 POUR FRAISES VISSÉES

| Référence | Stock | DCB | DCONWS | LPR | LB | CRKS |
|---|---|---|---|---|---|---|
| SC16M08S10-BT40 | ★ | 8.5 | 14.5 | 37 | 10 | M8 |
| SC20M10S10-BT40 | ★ | 10.5 | 18.5 | 37 | 10 | M10 |
| SC25M12S10-BT40 | ★ | 12.5 | 23.5 | 37 | 10 | M12 |
| SC32M16S10-BT40 | ★ | 17.0 | 28.5 | 37 | 10 | M16 |




### HSK-A 63 POUR FRAISES VISSÉES

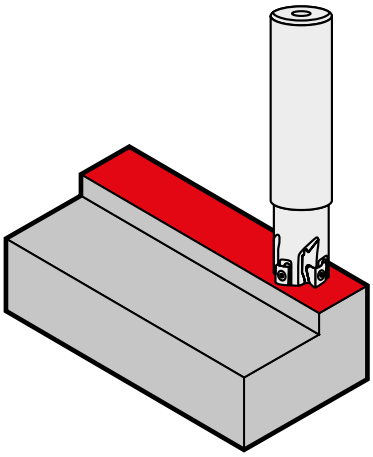
| Référence | Stock | DCB | DCONWS | LPR | LB | CRKS |
|---|---|---|---|---|---|---|
| SC16M08S22-HSK63A | ★ | 8.5 | 14.5 | 48 | 22 | M8 |
| SC20M10S24-HSK63A | ★ | 10.5 | 18.5 | 50 | 24 | M10 |
| SC25M12S27-HSK63A | ★ | 12.5 | 23.5 | 53 | 27 | M12 |
| SC32M16S28-HSK63A | ★ | 17.0 | 28.5 | 54 | 28 | M16 |



# EXEMPLES D'APPLICATIONS

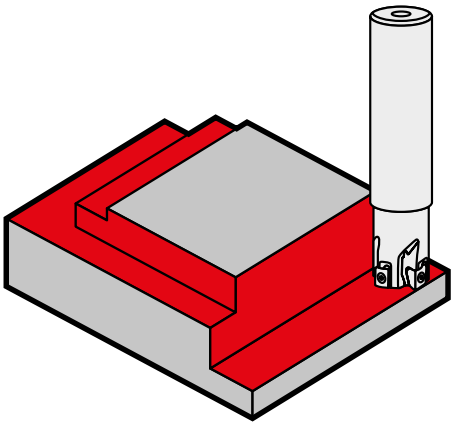
| | |
|---|---|
| Outil | VPX200R3004SA25S |
| Plaquette (nuance) | LOGU0904080PNER-M(MP9130) |
| Matière | Inox 17-4 PH (38-43HRC) |
| Pièce | Bloc |
| Vc (m/min | 40 |
| fz (mm) | 0.06 |
| ap (mm) | 1.8 |
| Lubrification | Usinage à sec |
| Résultats | Une bonne acuité par rapport aux produits conventionnels permet à VPX de doubler sa durée de vie. |

Ces exemples sont issus d'applications réelles et peuvent ne pas respecter les conditions de coupe recommandées.

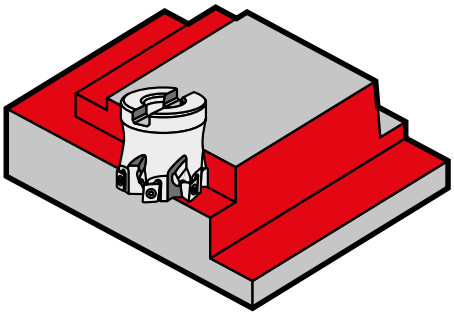


| | |
|---|---|
| Outil | VPX200R2503SA25S |
| Plaquette (nuance) | LOGU0904040PNER-M(MP7130) |
| Matière | X5CrNi18-10 |
| Pièce | Bloc de posage |
| Vc (m/min | 180 |
| fz (mm) | 0.6 |
| ap (mm) | 2.7 |
| Lubrification | – |
| Résultats | Moins de bruit de coupe que les produits conventionnels, ce qui permet d'augmenter les conditions de coupe. |

Ces exemples sont issus d'applications réelles et peuvent ne pas respecter les conditions de coupe recommandées.



| | |
|---|---|
| Outil | VPX300-080A10AR |
| Plaquette (nuance) | LOGU1207080PNER-M(MP6120) |
| Matière | Acier outil allié |
| Composant | Localisateur |
| Vc (m/min | 226 |
| fz (mm) | 0.13 |
| ap (mm) | 5 |
| ae (mm) | 70 |
| Lubrification | – |
| Résultats | Réalise 2.7 fois la longueur d'usinage des produits conventionnels tout en conservant de bons états de surface. |



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# MÉMO

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