

# ISO-Line

Codification des porte-outils ISO-Line

ISO-Line Bezeichnungssystem für Halter

ISO-Line designation system for holders

Méthode de serrage Klemmsystem Clamping system	Forme de la plaquette Plattenform Insert shape	Géométrie du porte-outil Halterform Holder geometry	Angle de dépointe de la plaquette WSP-Freiwinkel Insert clearance angle	Direction de coupe Schneidrichtung Cut direction		Hauteur du porte-outil Halter Höhe Holder height	Largeur du porte-outil Halter Breite Holder width	Longueur du porte-outil Halter Länge Holder length		Dimension de la plaquette (L) WSP Grösse (L) Insert size (L)
<b>S</b>	<b>D</b>	<b>J</b>	<b>C</b>	<b>R</b>	<b>-</b>	<b>12</b>	<b>12</b>	<b>G</b>	<b>-</b>	<b>11</b>

**R**   **L**   **N**

**L**

[mm]

**C = 7°**

**A x B (or Ø) [mm]**

- 08 x 08
- 10 x 10
- 12 x 12
- 12.7 x 12.7 (1/2 in)
- 16 x 16
- 20 x 20
- Ø: D10 / D20 / D25.4 (Ø1 in)

**Length: [mm]**

- F = 75
- G = 90
- J = 110
- X = Special

**α:**

- A = 0°
- J = 3°
- L = 5°
- H = 17.5°
- X = 27.5°

**U = 3°**

**C = 80°**

**D = 55°**

**V = 35°**

**S =** vis  
Schraube  
screw

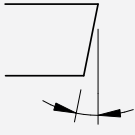


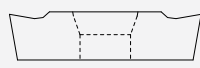
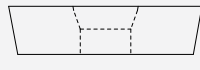
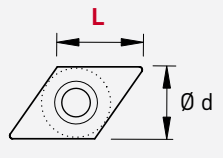
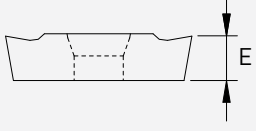






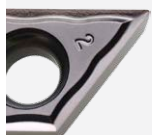


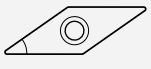
**Compatibilité porte-outil - plaquette**  
**Kompatibilität Halter - WSP**  
**Holder - insert compatibility**

<b>S</b>	<b>D</b>	<b>J</b>	<b>C</b>	<b>R</b>	<b>-</b>	<b>12</b>	<b>12</b>	<b>G</b>	<b>-</b>	<b>11</b>
<b>D</b>	<b>C</b>	<b>G</b>	<b>T</b>	<b>-</b>	<b>11</b>	<b>T3</b>	<b>04</b>	<b>-</b>	<b>FN</b>	<b>-</b>

## Codification des plaquettes ISO-Line

## ISO-Line Bezeichnungssystem für WSP

## ISO-Line designation system for inserts

Forme de la plaquette Plattenform Insert shape	Angle de dépose de la plaquette WSP-Freiwinkel Insert clearance angle	Classe de tolérance Toleranz Klasse Tolerance class	Brise-copeau Spanbrecher Chip breaker	Dimension de la plaquette (L) WSP Größe (L) Insert size (L)	Épaisseur de la plaquette (E) WSP Dicke (E) Insert thickness (E)	Rayon de pointe de la plaquette WSP Eckenradius Insert corner radius	Exécution d'arête et direction de coupe Schneidkante Ausführung und Schneidrichtung Edge type and cutting direction	Géométrie de coupe Spanformgeometrie Cutting geometry												
<b>D</b>	<b>C</b>	<b>G</b>	<b>T</b>	<b>11</b>	<b>T3</b>	<b>04</b>	<b>FN</b>	<b>X8</b>												
<p><b>C = 7°</b></p> 		<p><b>G = ±0.025 mm</b></p>  <p><b>M = ±0.05 mm</b></p> 	<p><b>T</b></p>  <p><b>W</b></p> 	<p><b>L</b></p>  <p>[mm]</p>	<p><b>02 = 2.38 mm</b></p> <p><b>03 = 3.18 mm</b></p> <p><b>T3 = 3.97 mm</b></p> <p><b>04 = 4.76 mm</b></p> 	<p><b>R:</b></p> <p>003 = 0.03 mm</p> <p>005 = 0.05 mm</p> <p>008 = 0.08 mm</p> <p>01 = 0.1 mm</p> <p>02 = 0.2 mm</p> <p>04 = 0.4 mm</p> <p>08 = 0.8 mm</p> 	<p><b>FN</b></p>  <p><b>EN</b></p>  <p><b>ENP</b></p>  <p><b>FL / FR</b></p>  <p><b>ELP / ERP</b></p> 	<p>cf.: Géométrie de coupe Spanformgeometrie Cutting geometry</p> 												
<p><b>C = 80°</b></p> 				<table border="1"> <thead> <tr> <th>L</th> <th>Ø d [mm]</th> </tr> </thead> <tbody> <tr> <td>CC...<b>06</b></td> <td rowspan="3">6,350</td> </tr> <tr> <td>DC...<b>07</b></td> </tr> <tr> <td>VC...<b>11</b></td> </tr> <tr> <td>VC...<b>13</b></td> <td>7,940</td> </tr> <tr> <td>CC...<b>09</b></td> <td rowspan="3">9,525</td> </tr> <tr> <td>DC...<b>11</b></td> </tr> <tr> <td>VC...<b>16</b></td> </tr> </tbody> </table>	L	Ø d [mm]	CC... <b>06</b>	6,350	DC... <b>07</b>	VC... <b>11</b>	VC... <b>13</b>	7,940	CC... <b>09</b>	9,525	DC... <b>11</b>	VC... <b>16</b>				
L	Ø d [mm]																			
CC... <b>06</b>	6,350																			
DC... <b>07</b>																				
VC... <b>11</b>																				
VC... <b>13</b>	7,940																			
CC... <b>09</b>	9,525																			
DC... <b>11</b>																				
VC... <b>16</b>																				
<p><b>D = 55°</b></p> 																				
<p><b>V = 35°</b></p> 																				

# ISO-Line


Géométries de coupe  
Spanformgeometrien  
Cutting geometries

**G**  
tolerance class

Plaquettes en métal dur rectifiées  
VHM geschliffene WSP  
Carbide ground inserts

**FN-X8**

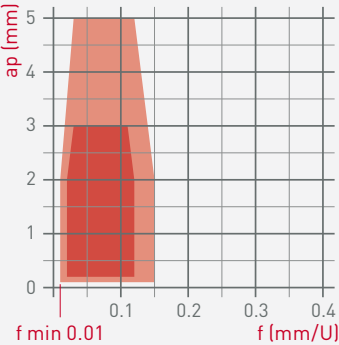
Finishing



8°

Arête de coupe vive  
Scharfe Schneidkante  
Sharp edge

Poli  
Poliert  
Polished




ap (mm)

f (mm/U)

f min 0.01

P	★★★★★
M	★★★★
N	★★★★
S	★★★

CCGT DCGT VCGT




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**ENP-X8**

Semi-finishing

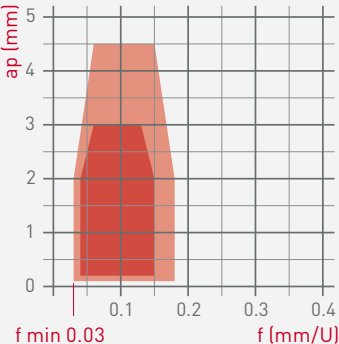
Finishing



8°

Arête de coupe honée  
Schneidkantenverrundung  
Honed edge

Poli  
Poliert  
Polished




ap (mm)

f (mm/U)

f min 0.03

P	★★★★★
M	★★★
N	★★★★
S	★★★


CCGT DCGT VCGT



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**FN-X17**

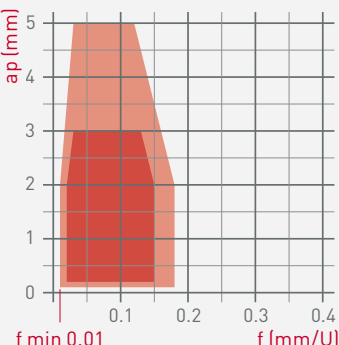
Finishing



17°

Arête de coupe vive  
Scharfe Schneidkante  
Sharp edge

Poli  
Poliert  
Polished




ap (mm)

f (mm/U)

f min 0.01

P	★★★
M	★★★★★
N	★★★★★
S	★★★★★

CCGT DCGT VCGT




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**ENP-X17**

Semi-finishing

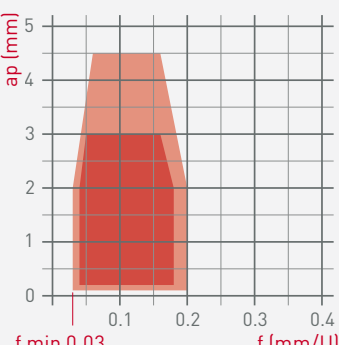
Finishing



17°

Arête de coupe honée  
Schneidkantenverrundung  
Honed edge

Poli  
Poliert  
Polished




ap (mm)

f (mm/U)

f min 0.03

P	★★★
M	★★★★★
N	★★★★
S	★★★★★

CCGT DCGT VCGT



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**Géométries de coupe**  
**Spanformgeometrien**  
**Cutting geometries**

**G**  
 tolerance class

Plaquettes en métal dur rectifiées  
 VHM geschliffene WSP  
 Carbide ground inserts

**FN-X25**

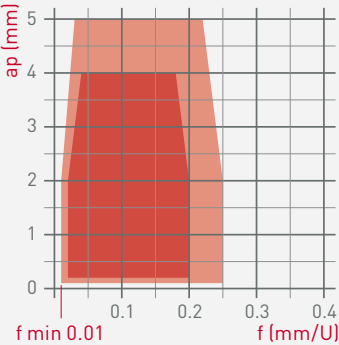
**Finishing**



**25°**

Arête de coupe vive  
 Scharfe Schneidkante  
 Sharp edge

Poli  
 Poliert  
 Polished




ap (mm)

f (mm/U)

f min 0.01

P	
M	★★★★
N	★★★★★
S	★★★★★


CCGT DCGT VCGT



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**ENP-X25**

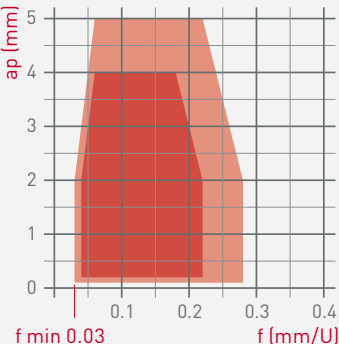
**Semi-finishing**



**25°**

Arête de coupe honée  
 Schneidkantenverrundung  
 Honed edge

Poli  
 Poliert  
 Polished




ap (mm)

f (mm/U)

f min 0.03

P	
M	★★★★
N	★★★★★
S	★★★★★


CCGT DCGT VCGT



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**ENP-X20**

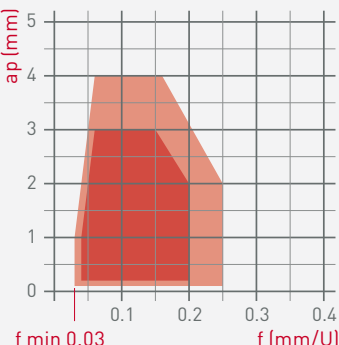
**Semi-finishing**



**20°**

Arête de coupe honée  
 Schneidkantenverrundung  
 Honed edge

Poli  
 Poliert  
 Polished




ap (mm)

f (mm/U)

f min 0.03

P	
M	★★★★★
N	★★★★
S	★★★★★

CCGT DCGT VCGT



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# ISO-Line

Géométries de coupe  
Spanformgeometrien  
Cutting geometries

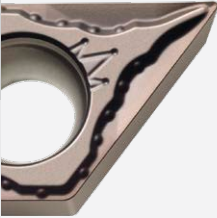

**M**  
tolerance class

Plaquettes en métal dur  
VHM-Wendeleplatten  
Carbide inserts

**EN-XF3**

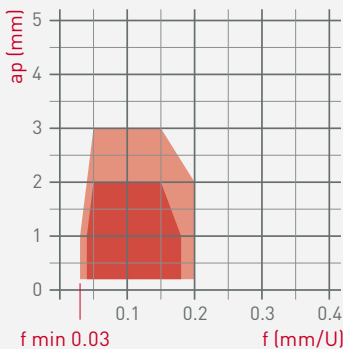
Semi-finishing

Finishing

12°

Arête de coupe honée  
Schneidkantenverrundung  
Honed edge




ap (mm)

f (mm/U)

f min 0.03

P	★★★★★
M	★★★★★
N	★★★
S	★★★

CCMT DCMT VCMT

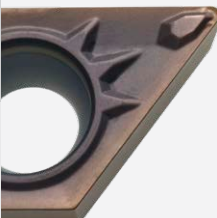



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**EN-XF2**

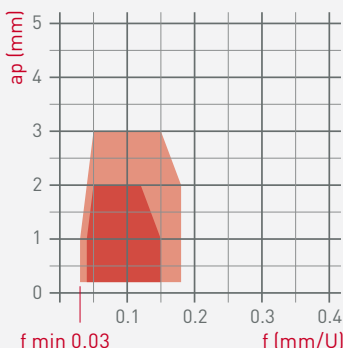
Semi-finishing

Finishing

6°

Arête de coupe honée  
Schneidkantenverrundung  
Honed edge




ap (mm)

f (mm/U)

f min 0.03

P	★★★★★
M	★★★
N	
S	★★★



CCMT DCMT VCMT



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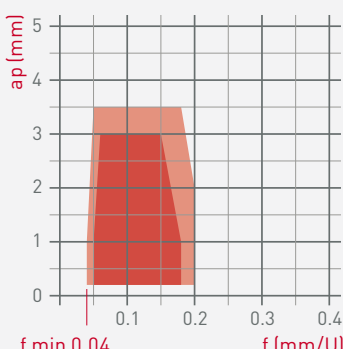
**EN-MF2**

Semi-finishing

8°

Arête de coupe honée  
Schneidkantenverrundung  
Honed edge




ap (mm)

f (mm/U)

f min 0.04

P	★★★★★
M	★★★★★
N	★★★
S	★★★

CCMT DCMT



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**Géométries de coupe**  
**Spanformgeometrien**  
**Cutting geometries**

**M**  
 tolerance class

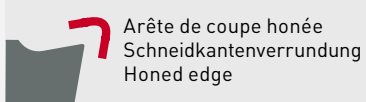
Plaquettes en métal dur  
 VHM-Wendeplatten  
 Carbide inserts

**EN-MF**

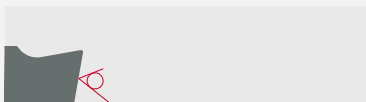
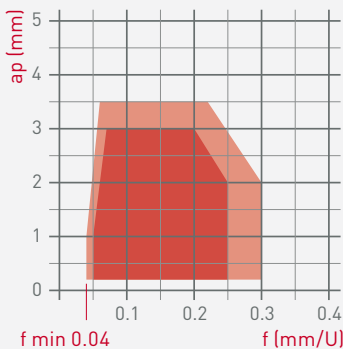
Semi-finishing

5°



Arête de coupe honée  
 Schneidkantenverrundung  
 Honed edge




ap (mm)

f (mm/U)

f min 0.04

P	★★★★★
M	★★★
N	
S	



CCMT DCMT VCMT

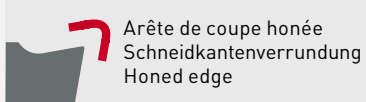
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**EN-HF3**

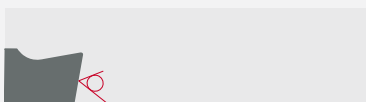
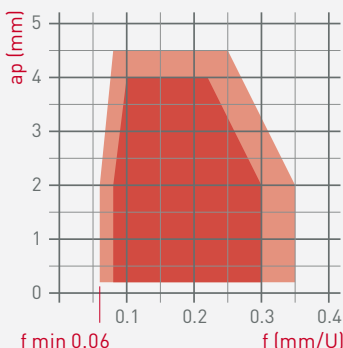
Roughing

10°



Arête de coupe honée  
 Schneidkantenverrundung  
 Honed edge



ap (mm)

f (mm/U)

f min 0.06

P	★★★★★
M	★★★★★
N	
S	★★★



CCMT DCMT

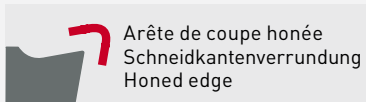
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**EN-HF**

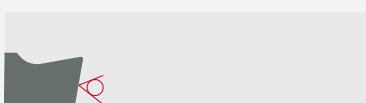
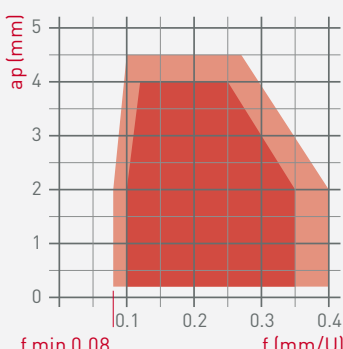
Roughing

12°



Arête de coupe honée  
 Schneidkantenverrundung  
 Honed edge




ap (mm)

f (mm/U)

f min 0.08

P	★★★★★
M	★★★★★
N	
S	

CCMT DCMT VCMT

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# ISO-Line


- Géométries de coupe
- Spanformgeometrien
- Cutting geometries

**G**  
tolerance class

Plaquettes en métal dur rectifiées  
VHM geschliffene WSP  
Carbide ground inserts

**FL/FR-X10**

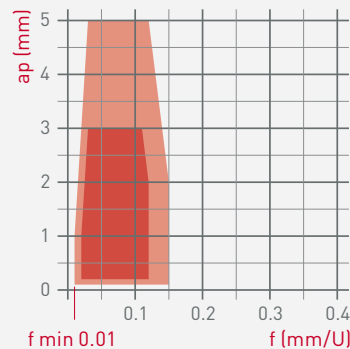
Super-finishing



10°

Arête de coupe vive  
Scharfe Schneidkante  
Sharp edge

Poli  
Poliert  
Polished




ap (mm)

f min 0.01 f (mm/U)

P	★★★★★
M	★★★★★
N	★★★★★
S	★★★★★


VCGT



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**ELP/ERP-X10**

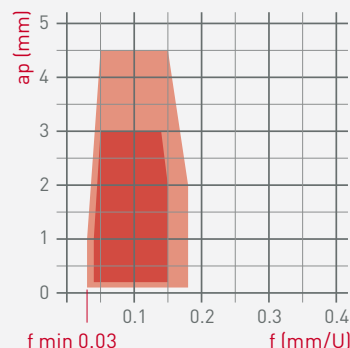
Semi-finishing



10°

Arête de coupe honée  
Schneidkantenverrundung  
Honed edge

Poli  
Poliert  
Polished




ap (mm)

f min 0.03 f (mm/U)

P	★★★★★
M	★★★★★
N	★★★★★
S	★★★★★


VCGT



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**FN-K18**

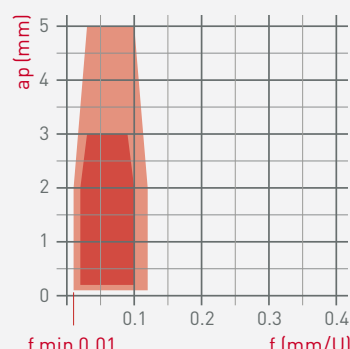
Super-finishing



18°

Arête de coupe vive  
Scharfe Schneidkante  
Sharp edge

Poli  
Poliert  
Polished




ap (mm)

f min 0.01 f (mm/U)

P	★★★★★
M	★★★★★
N	★★★★★
S	★★★★★


VCGT



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**FN-0**

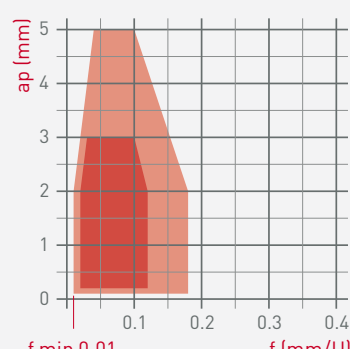
Finishing



0°

Arête de coupe vive  
Scharfe Schneidkante  
Sharp edge

Poli  
Poliert  
Polished




ap (mm)

f min 0.01 f (mm/U)

P	★★★
M	
N	★★★
S	

VCGW



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Géométries de coupe  
Spanformgeometrien  
Cutting geometries

G/M  
tolerance class

CERMET

**Finishing**

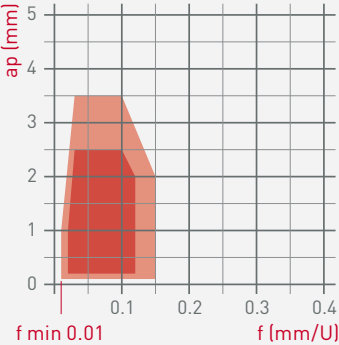
**FN-X8 CERMET**



8°

Arête de coupe vive  
Scharfe Schneidkante  
Sharp edge

Poli  
Poliert  
Polished



ap (mm)

f (mm/U)

f min 0.01


P	★★★★★
M	★★★
N	
S	

CCGT DCGT VCGT

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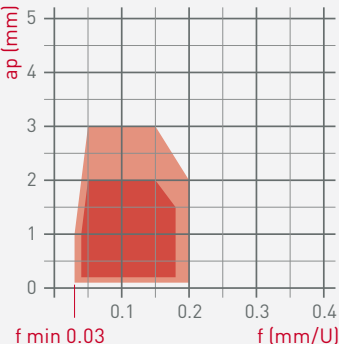
**Semi-finishing**

**ENP-KX CERMET**



8°

Arête de coupe honée  
Schneidkantenverrundung  
Honed edge



ap (mm)

f (mm/U)

f min 0.03

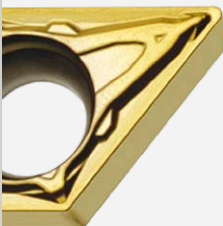
P	★★★★★
M	★★★
N	
S	

CCGT DCGT

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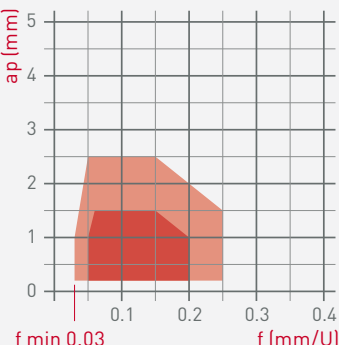
**Semi-finishing**

**EN-KM CERMET**



8°

Arête de coupe honée  
Schneidkantenverrundung  
Honed edge



ap (mm)

f (mm/U)

f min 0.03

P	★★★★★
M	★★★
N	
S	

CCMT DCMT

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# ISO-Line

Nuances

Sorten

Grades

Nuances Sorten Grades	Domaine d'application Anwendungsbereich Application area	Finishing / light machining	Semi-finishing / medium cut	Roughing / Heavy machining	Géométries de coupe disponibles Verfügbare Spanformgeometrien Available cutting geometries	Résistance à l'usure Verschleissfestigkeit Wear resistance	Ténacité, résistance à la rupture Zähigkeit, Bruchwiderstand Toughness, crack resistance	Résistance à la température Bearbeitungswarmfestigkeit Machining heat resistance	Revêtement et couleur Beschichtung und Farbe Coating and colour	Recommandations spéciales Sonder-Empfehlungen Special recommendations
<b>Carbide + PVD</b>										
<b>TiAlN</b>	★★★★★ ★★★★★ ★★★★★ ★★★★★	■	■	■	FN/ENP-X8 FN/ENP-X17 FN/ENP-X25 L/R-X10	■■■■■□	■■■■■□	■■■■■□	PVD	
<b>HTA</b>	★★★★★ ★★★★★ ★★★★★ ★★★★★	■			FN-X8 FN-X17 FN-X25 L/R-X10 FN-K18 FN-0	■■■■■	■■■■□□	■■■■■□	PVD	
<b>TiN</b>	★★★★★ ★★★★★ ★★★★★	■	■	■	FN/ENP-X8 FN/ENP-X17 FN/ENP-X25 L/R-X10	■■■■□□	■■■■□□	■■■■□□	PVD	High resistance to edge build up
<b>HTiN</b>	★★★★★ ★★★★★ ★★★★★	■			FN-K18 FN-0	■■■■□□	■■■■□□	■■■■□□	PVD	High resistance to edge build up
<b>TAC</b>	★★★★★ ★★★★★ ★★★★★ ★★★★★	■	■	■	EN-XF3 EN-XF2 EN-MF2 EN-HF	■■■■■□	■■■■□□	■■■■■□	PVD	
<b>HTAC</b>	★★★★★ ★★★★★ ★★★★★ ★★★★★	■	■		EN-XF3 EN-XF2 EN-MF2	■■■■■	■■■■□□	■■■■■□	PVD	
<b>TiX</b>	★★★★★ ★★★★★ ★★★			■	EN-HF3	■■■■□□	■■■■□□	■■■■□□	PVD	Easy wear out control with TiN top layer
<b>HTiX</b>	★★★★★ ★★★★★ ★★★★★ ★★★		■	■	ENP-X20 EN-HF3	■■■■□□	■■■■□□	■■■■□□	PVD	Easy wear out control with TiN top layer
<b>Tmax</b>	★★★★★ ★★★★★ ★★★★★ ★★★★★		■	■	EN-MF EN-HF	■■■■■□	■■■■□□	■■■■■□	PVD	
<b>ZTA</b>	★★★★★ ★★★★★ ★★★★★	■	■		ENP-X20	■■■■■□	■■■■□□	■■■■■□	PVD	perfect for titanium alloys & superalloys
<b>TiALX</b>	★★★★★ ★★★★★ ★★★★★	■	■		L/R-X10	■■■■■□	■■■■□□	■■■■■□	PVD	perfect for titanium alloys & superalloys
<b>HTAX</b>	★★★★★ ★★★★★ ★★★★★	■			L/R-X10	■■■■■	■■■■□□	■■■■■□	PVD	perfect for titanium alloys & superalloys

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<b>Carbide + CVD</b>										
Ti4	★★★★★ ★★★		■	■	EN-MF EN-HF3 EN-HF	■■■■■□	■■■■■□	■■■■■	CVD	
Ti5	★★★★★ ★★★		■	■	EN-MF2 EN-HF	■■■■■□	■■■■■□	■■■■■	CVD	Easy wear out control with TiN top layer
HTi5	★★★★★ ★★★		■	■	EN-XF2 EN-MF2 EN-HF	■■■■■	■■■■□□	■■■■■	CVD	Easy wear out control with TiN top layer
Ti6	★★★ ★★★★★ ★★★★		■	■	EN-HF3	■■■■■□	■■■■■□	■■■■■	CVD	
<b>Carbide uncoated</b>										
K10	★★★ ★★★		■		FN-X8 FN-X17 FN-X25 ELP-X10/ERP-X10 FN-K18 FN-0	■■■■□□	■■■■□□	■■□□□	uncoated	
K20	★★ ★★		■		FN/ENP-X8 FN/ENP-X17 FN/ENP-X25 ELP-X10/ERP-X10	■■□□□	■■■■□□	■■□□□	uncoated	
<b>CERMET</b>										
CTA	★★★★★ ★★★		■		FN-X8	■■■■■□	■■■■■□	■■■■■	CERMET +PVD	
CT7	★★★★★ ★★★		■	■	ENP-KX EN-KM	■■■■■□	■■■■■□	■■■■■	CERMET + PVD	Easy wear out control with TiN top layer
HCT7	★★★★★ ★★★		■	■	ENP-KX EN-KM	■■■■■	■■■■□□	■■■■■	CERMET + PVD	Easy wear out control with TiN top layer
CN6	★★★★		■		FN-X8 ENP-KX EN-KM	■■□□□	■■■■■□	■■■■■□	CERMET uncoated	