

Series V4R

6,000mm - 10,000mm
(.2362" - .3937")



TOLERANCES

| | |
|----|----------------------------------|
| d1 | +0,000 -0,050mm (+.000" - .002") |
| d2 | h6 |
| r | +0,025 -0,025mm (+.001" - .001") |

Variable Helix End Mill - Corner Radius - AlCrN-based Coated

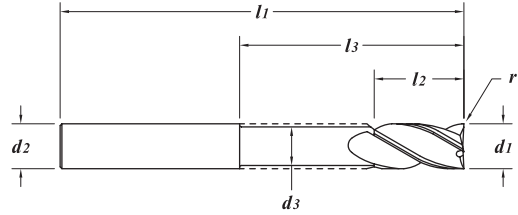
Fräser mit Einer Variablen Spiralgeometrie - Eckenradius - AlCrN-Basierende Beschichtet

Fresa de Hélice Variable - Ángulo Redondeado - Recubrimiento Basado en AlCrN

Fraise Avec un Angle Hélice Variable - Rayon de Coin - Revêtement à base de AlCrN

Fresa ad Elica Variabile - Torico - Rivestimento in Base AlCrN

不等螺旋铣刀 - 圆角半径 - 涂层铝氮化铬



Solid submicron grain carbide end mill - center cutting
Helix geometry varies of length of flutes
Variable flute design helps with chip evacuation in slots and pockets
Variable rake aids in chip formation

Recommended for titanium, inconel, and steels (<40 Rc)
PCT (Polish Carbide Treatment) enhances tool life by 20%
Minimizes burr on part
12mm and larger tools offered with weldon flat
Smaller diameters can be modified with a flat within 48 hours
V4 Square End - page 155
V4 Ball End - page 159

The combination of an extended flute length with a weldon flat may cause the flute washout to reach inside some end mill holders



Hochleistungs- Vollhartmetallfräser aus Feinkornhartmetall - Zentrumschnitt
Empfohlen für Titan, Inconel, und Stahl (<40 Hrc)
PCT (Polish Carbide Treatment, Treatment zum Polieren Hartmetall) steigert die Stanzzeit bis zu +20%
Reduziert die Gratbildung am Werkstück
Spiralgeometrie variiert auf der gesamten Schneidlänge
Variable Spanntypgeometrie für eine bessere Spannführung beim Schlitz- und Taschenfräsen
Variabler Winkel für bessere Spangeometrie
Ab Durchmesser 12 mm und grösser können die Werkzeuge mit Weldon-Spannfläche angeboten werden
Kleinere Durchmesser können innerhalb 48 Stunden mit einer Spannfläche geliefert werden
V4 Schaftfräser ohne Eckenradius - Seite 155
V4 Vollradiusfräser - Seite 159
Die Kombination einer verlängerten Spannlänge mit einer Weldon-Spannfläche kann die Ursache bei Spanntyp-Auswaschungen bei einigen Fräsespannfuttern sein



Fresa de submicrono sólido carburo de alto rendimiento - corte centrado
Recomendado para Titanio, Inconel, y Acero (<40 Hrc)
PCT (Polish Carbide Treatment, Tratamiento de pulido) aumenta la vida de la hta. hasta un 20%
Minimiza las rebabas en la pieza
La geometría de la hélice varía a lo largo de la longitud del labio
El diseño del labio variable contribuye a la evacuación de la viruta en ranuras y cajeras
El labio con filo variable que contribuye a la buena formación de la viruta
Htas de Ø12 mm. y mayores disponibles con mango Weldon
Es posible añadir un plano Weldon en diámetros menores en 48 horas
V4 Fresa de vástago sin radio de cantos - Página 155
V4 Fresadora de radios - Página 159
La combinación de una gran longitud de corte con un mango con plano Weldon puede causar que del labio alcance el interior de algunas portaherramientas



Fraises carbure submicron - coupe au centre
Recommandé pour les titane, inconel, et aciers (<40 Hrc)
PCT (le traitement pour polir le carbure) améliore la durée de vie de l'outil de 20%
Minimise les bavures sur la pièce
La géométrie de l'hélice varie sur la longueur de l'hélice
Variable des dents de coupe est d'aider à l'évacuation des copeaux de fentes et des poches
Un pas variable améliore la formation des copeaux
Des outils d'un dia. 12 mm ou supérieur sont disponibles avec une queue weldon
Les petits diamètres peuvent être modifiés avec une queue Weldon endéans 48 heures
V4 Rayon de Coin - Page 155
V4 Hemisphérique - Page 159
La combinaison d'une grande longueur de goujure avec une queue Weldon peut causer des vibrations qui peuvent se prolonger dans le mandrin



Fresa sub-micrograno metallo duro - taglio al centro
Raccomandata per lavorazioni su Titanio, Inconel, e Acciai (<40 Hrc)
PCT (Polish Carbide Treatment, trattamento di lucidatura del metallo duro) incrementa la vita utensile del 20%
Non crea bava sul pezzo
La geometria dell'elica varia sulla lunghezza del tagliente
La geometria variabile del tagliente aiuta l'evacuazione del truciolo negli svuotamenti e nelle cave
L'angolo di spoglia variabile aiuta la formazione del truciolo
Dal diametro 12 mm in su disponibili con attacco weldon
Diametri più piccoli possono essere modificati in 48 ore
VRX Toriche - Pagina 155
VRX Sleniche - Pagina 159
Estendere la lunghezza del tagliente su un attacco Weldon può causare la rottura dell'utensile in alcune applicazioni



超细晶粒整体硬质合金立铣刀 - 中心切削
推荐的加工材, 钛合金, 镍基合金, 钢铁 (<40HRC)
PCT (硬质合金抛光处理) 使刀具寿命提高20%
使工件的毛刺最少
整个切削刃的螺旋角可变
切削刃螺旋角可变的设计有利于碎屑在加工槽和型腔中排出
可变的前角有利于碎屑的形成
12mm及以上刀具提供侧固槽位设计
可在48小时内生产小直径的平底刀具
V4圆角 - 155页
V4球头 - 159页
过长的刀刃结合侧固槽的刀具可能会导致刀具夹头受到冲击而损坏

| EDP# | | d1 † | | d2 | l1 | l2 | r | l3 | d3 |
|------------------|---|---------|----------|-------|--------|--------|-------|--------|-------|
| | | (plain) | (weldon) | | | | | | |
| 50199 | - | .2362 | 6.000 | 6.000 | 65 | 12 | 0.30 | - | - |
| 50200 | - | .2362 | 6.000 | 6.0 | 65 | 12 | 0.50 | - | - |
| 50201 | - | .2362 | 6.000 | 6.0 | 65 | 12 | 0.75 | - | - |
| 50202 | - | .2362 | 6.000 | 6.0 | 65 | 12 | 1.00 | - | - |
| 50203 | - | .2362 | 6.000 | 6.0 | 65 | 12 | 1.50 | - | - |
| 50204 | - | .2362 | 6.000 | 6.0 | 65 | 19 | 0.30 | - | - |
| 50205 | - | .2362 | 6.000 | 6.0 | 65 | 19 | 0.50 | - | - |
| 50206 | - | .2362 | 6.000 | 6.0 | 65 | 19 | 1.00 | - | - |
| 50490 | - | .2500 | 6.350 | 6.350 | 2" | 3/8" | .015" | - | - |
| NEW 50614 | - | .2500 | 6.350 | 6.350 | 2" | 1/2" | .010" | - | - |
| NEW 50616 | - | .2500 | 6.350 | 6.350 | 2" | 1/2" | .015" | - | - |
| NEW 50618 | - | .2500 | 6.350 | 6.350 | 2" | 1/2" | .020" | - | - |
| 50207 | - | .2500 | 6.350 | 6.350 | 2-1/2" | 3/4" | .010" | - | - |
| 50208 | - | .2500 | 6.350 | 6.350 | 2-1/2" | 3/4" | .015" | - | - |
| NEW 50620 | - | .2500 | 6.350 | 6.350 | 2-1/2" | 3/4" | .020" | - | - |
| 50209 | - | .2500 | 6.350 | 6.350 | 2-1/2" | 3/4" | .030" | - | - |
| 50210 | - | .2500 | 6.350 | 6.350 | 2-1/2" | 3/4" | .060" | - | - |
| 50211 | - | .2500 | 6.350 | 6.350 | 4" | 3/8" | .015" | 1-1/4" | .230" |
| NEW 50622 | - | .3125 | 7.937 | 7.937 | 2" | 7/16" | .010" | - | - |
| NEW 50624 | - | .3125 | 7.937 | 7.937 | 2" | 7/16" | .015" | - | - |
| 50492 | - | .3125 | 7.937 | 7.937 | 2" | 7/16" | .020" | - | - |
| NEW 50626 | - | .3125 | 7.938 | 7.938 | 2-1/2" | 13/16" | .010" | - | - |
| NEW 50628 | - | .3125 | 7.938 | 7.938 | 2-1/2" | 13/16" | .015" | - | - |
| 50212 | - | .3125 | 7.938 | 7.938 | 2-1/2" | 13/16" | .020" | - | - |
| 50213 | - | .3125 | 7.938 | 7.938 | 2-1/2" | 13/16" | .030" | - | - |
| NEW 50630 | - | .3150 | 8.000 | 8.000 | 50 | 12 | 0.50 | - | - |
| 50214 | - | .3150 | 8.000 | 8.000 | 65 | 22 | 0.50 | - | - |
| 50356 | - | .3150 | 8.000 | 8.000 | 65 | 22 | 0.75 | - | - |
| 50215 | - | .3150 | 8.000 | 8.000 | 65 | 22 | 1.00 | - | - |
| 50357 | - | .3150 | 8.000 | 8.000 | 65 | 22 | 1.50 | - | - |
| 50358 | - | .3150 | 8.000 | 8.000 | 65 | 22 | 2.00 | - | - |
| NEW 50632 | - | .3750 | 9.525 | 9.525 | 2" | 1/2" | .010" | - | - |
| 50494 | - | .3750 | 9.525 | 9.525 | 2" | 1/2" | .020" | - | - |
| NEW 50634 | - | .3750 | 9.525 | 9.525 | 2" | 1/2" | .030" | - | - |
| 50216 | - | .3750 | 9.525 | 9.525 | 2-1/2" | 1" | .010" | - | - |
| 50217 | - | .3750 | 9.525 | 9.525 | 2-1/2" | 1" | .020" | - | - |
| 50218 | - | .3750 | 9.525 | 9.525 | 2-1/2" | 1" | .030" | - | - |
| 50219 | - | .3750 | 9.525 | 9.525 | 2-1/2" | 1" | .060" | - | - |
| NEW 50636 | - | .3750 | 9.525 | 9.525 | 2-1/2" | 1" | .090" | - | - |
| 50220 | - | .3750 | 9.525 | 9.525 | 4" | 1/2" | .020" | 1-7/8" | .350" |

| | EDP# | | d_1 † Diameter | | d_2 Shank Diameter | l_1 Overall Length | l_2 Flute Length | r Corner Radius | l_3 Reach Length | d_3 Neck Diameter |
|-----|---------|----------|---------------------|--------|----------------------------|----------------------------|--------------------------|-------------------------|--------------------------|---------------------------|
| | (plain) | (weldon) | Decimal | Metric | | | | | | |
| NEW | 50638 | - | .3937 | 10.000 | 10.0 | 50 | 14 | 0.50 | - | - |
| | 50221 | - | .3937 | 10.000 | 10.0 | 70 | 22 | 0.50 | - | - |
| | 50359 | - | .3937 | 10.000 | 10.0 | 70 | 22 | 0.75 | - | - |
| | 50360 | - | .3937 | 10.000 | 10.0 | 70 | 22 | 1.00 | - | - |
| | 50361 | - | .3937 | 10.000 | 10.0 | 70 | 22 | 1.50 | - | - |
| | 50362 | - | .3937 | 10.000 | 10.0 | 70 | 22 | 2.00 | - | - |
| | 50363 | 50369 | .4724 | 12.000 | 12.0 | 75 | 26 | 0.30 | - | - |
| | 50364 | 50370 | .4724 | 12.000 | 12.0 | 75 | 26 | 0.50 | - | - |
| | 50365 | 50366 | .4724 | 12.000 | 12.0 | 75 | 26 | 0.75 | - | - |
| | 50367 | 50371 | .4724 | 12.000 | 12.0 | 75 | 26 | 1.00 | - | - |
| | 50372 | 50373 | .4724 | 12.000 | 12.0 | 75 | 26 | 1.50 | - | - |
| | 50374 | 50375 | .4724 | 12.000 | 12.0 | 75 | 26 | 2.00 | - | - |
| | 50222 | 50270 | .4724 | 12.000 | 12.0 | 75 | 32 | 0.50 | - | - |
| | 50223 | 50271 | .4724 | 12.000 | 12.0 | 75 | 32 | 1.00 | - | - |
| | 50566 | - | .4724 | 12.000 | 12.0 | 100 | 42 | 0.30 | - | - |
| | 50568 | - | .4724 | 12.000 | 12.0 | 100 | 42 | 0.50 | - | - |
| | 50570 | - | .4724 | 12.000 | 12.0 | 100 | 42 | 1.00 | - | - |
| | 50572 | - | .4724 | 12.000 | 12.0 | 100 | 42 | 2.00 | - | - |
| | 50574 | - | .4724 | 12.000 | 12.0 | 100 | 42 | 3.00 | - | - |
| NEW | 50640 | 50497 | .5000 | 1/2" | 12.700 | 1/2" | 2-1/2" | 5/8" | .010" | - |
| | 50496 | 50497 | .5000 | 1/2" | 12.700 | 1/2" | 2-1/2" | 5/8" | .020" | - |
| NEW | 50642 | 50497 | .5000 | 1/2" | 12.700 | 1/2" | 2-1/2" | 5/8" | .030" | - |
| NEW | 50644 | 50497 | .5000 | 1/2" | 12.700 | 1/2" | 2-1/2" | 5/8" | .125" | - |
| | 50379 | 50380 | .5000 | 1/2" | 12.700 | 1/2" | 3" | 1" | .010" | - |
| | 50381 | 50382 | .5000 | 1/2" | 12.700 | 1/2" | 3" | 1" | .020" | - |
| | 50383 | 50384 | .5000 | 1/2" | 12.700 | 1/2" | 3" | 1" | .030" | - |
| | 50385 | 50386 | .5000 | 1/2" | 12.700 | 1/2" | 3" | 1" | .060" | - |
| | 50224 | 50272 | .5000 | 1/2" | 12.700 | 1/2" | 3" | 1-1/4" | .010" | - |
| | 50225 | 50273 | .5000 | 1/2" | 12.700 | 1/2" | 3" | 1-1/4" | .020" | - |
| | 50226 | 50274 | .5000 | 1/2" | 12.700 | 1/2" | 3" | 1-1/4" | .030" | - |
| | 50227 | 50275 | .5000 | 1/2" | 12.700 | 1/2" | 3" | 1-1/4" | .060" | - |
| | 50228 | 50276 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 5/8" | .020" | 2-1/4" |
| | 50580 | 50581 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 1-5/8" | .010" | - |
| | 50582 | 50583 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 1-5/8" | .020" | - |
| | 50584 | 50585 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 1-5/8" | .030" | - |
| | 50586 | 50587 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 1-5/8" | .040" | - |
| | 50588 | 50589 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 1-5/8" | .060" | - |
| | 50590 | 50591 | .5000 | 1/2" | 12.700 | 1/2" | 4" | 1-5/8" | .120" | - |
| | 50594 | - | .5000 | 1/2" | 12.700 | 1/2" | 6" | 5/8" | .020" | 4-1/8" |
| | 50596 | - | .5000 | 1/2" | 12.700 | 1/2" | 6" | 5/8" | .030" | 4-1/8" |
| | 50498 | 50499 | .6250 | 5/8" | 15.875 | 5/8" | 3" | 3/4" | .020" | - |
| | 50500 | 50501 | .6250 | 5/8" | 15.875 | 5/8" | 3" | 3/4" | .030" | - |
| | 50502 | 50503 | .6250 | 5/8" | 15.875 | 5/8" | 3" | 3/4" | .060" | - |
| | 50229 | 50277 | .6250 | 5/8" | 15.875 | 5/8" | 3-1/2" | 1-1/4" | .020" | - |
| | 50534 | 50535 | .6250 | 5/8" | 15.875 | 5/8" | 3-1/2" | 1-1/4" | .030" | - |
| | 50536 | 50537 | .6250 | 5/8" | 15.875 | 5/8" | 3-1/2" | 1-1/4" | .040" | - |
| | 50538 | 50539 | .6250 | 5/8" | 15.875 | 5/8" | 3-1/2" | 1-1/4" | .060" | - |
| | 50230 | 50278 | .6250 | 5/8" | 15.875 | 5/8" | 3-1/2" | 1-1/4" | .120" | - |
| | 50504 | - | .6299 | 16.000 | 16.0 | 75 | 19 | 0.50 | - | - |
| | 50506 | - | .6299 | 16.000 | 16.0 | 75 | 19 | 1.00 | - | - |
| | 50508 | - | .6299 | 16.000 | 16.0 | 75 | 19 | 3.00 | - | - |
| | 50231 | 50279 | .6299 | 16.000 | 16.0 | 88 | 32 | 0.50 | - | - |
| | 50409 | 50410 | .6299 | 16.000 | 16.0 | 88 | 32 | 0.75 | - | - |
| | 50411 | 50412 | .6299 | 16.000 | 16.0 | 88 | 32 | 1.00 | - | - |
| | 50413 | 50414 | .6299 | 16.000 | 16.0 | 88 | 32 | 1.50 | - | - |
| | 50415 | 50416 | .6299 | 16.000 | 16.0 | 88 | 32 | 2.00 | - | - |
| | 50417 | 50418 | .6299 | 16.000 | 16.0 | 88 | 32 | 3.00 | - | - |

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MATERIAL HARDNESS (Rc)

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continued →

Series V4R (continued)

19,050mm - 25,400mm
(.7500" - 1.000")

| EDP# | | $d1$ † Diameter | | $d2$ Shank Diameter | $l1$ Overall Length | $l2$ Flute Length | r Corner Radius | $l3$ Reach Length | $d3$ Neck Diameter | |
|---------|----------|--------------------|------|---------------------------|---------------------------|-------------------------|-------------------------|-------------------------|--------------------------|---|
| (plain) | (weldon) | Decimal | | Metric | | | | | | |
| 50510 | 50511 | .7500 | 3/4" | 19.050 | 3/4" | 4" | 1" | .020" | - | - |
| 50512 | 50513 | .7500 | 3/4" | 19.050 | 3/4" | 4" | 1" | .030" | - | - |
| 50514 | 50515 | .7500 | 3/4" | 19.050 | 3/4" | 4" | 1" | .060" | - | - |
| 50516 | 50517 | .7500 | 3/4" | 19.050 | 3/4" | 4" | 1-1/2" | .020" | - | - |
| 50232 | 50280 | .7500 | 3/4" | 19.050 | 3/4" | 4" | 1-1/2" | .030" | - | - |
| 50518 | 50519 | .7500 | 3/4" | 19.050 | 3/4" | 4" | 1-1/2" | .060" | - | - |
| 50520 | 50521 | .7500 | 3/4" | 19.050 | 3/4" | 4" | 1-1/2" | .120" | - | - |
| 50522 | 50523 | .7500 | 3/4" | 19.050 | 3/4" | 4" | 1-3/4" | .020" | - | - |
| 50524 | 50525 | .7500 | 3/4" | 19.050 | 3/4" | 4" | 1-3/4" | .030" | - | - |
| 50526 | 50527 | .7500 | 3/4" | 19.050 | 3/4" | 4" | 1-3/4" | .060" | - | - |
| 50528 | - | .7874 | | 20.000 | 20.0 | 100 | 38 | 1.00 | - | - |
| 50530 | - | .7874 | | 20.000 | 20.0 | 100 | 38 | 2.00 | - | - |
| 50532 | - | .7874 | | 20.000 | 20.0 | 100 | 38 | 3.00 | - | - |
| 50233 | 50281 | 1.000 | 1" | 25.400 | 1" | 4" | 1-1/2" | .030" | - | - |
| 50234 | 50282 | 1.000 | 1" | 25.400 | 1" | 5" | 2-1/8" | .030" | - | - |



V4-S series in 1018 material

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MATERIAL HARDNESS (Rc)