

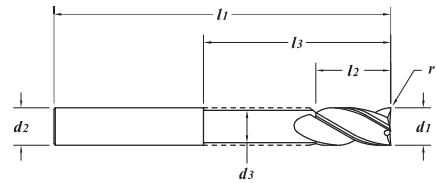
.2362" - .3125"
(6.000mm - 7.938mm)



TOLERANCES	
d_1	+0.000" - .002" (+.000mm - .050mm)
d_2	h6
r	+0.001" - .001" (+.025 - .025mm)

HIGH PERFORMANCE
END MILLS

Variable Helix End Mill - AlCrN Coated
Fräser mit Einer Variablen Spiralgeometrie - AlCrN-Beschichtet
Fresa de Hélice Variable - Recubrimiento de AlCrN
Fraise Avec un Angle Hélice Variable - Revêtement AlCrN
Fresa ad Elica Variabile - Rivestimento in AlCrN
不等螺旋铣刀 - 涂层铝氮化铬



Solid submicron grain carbide end mill - center cutting
 Engineered for High Efficiency Milling
Recommended for titanium, inconel, and stainless steel (<40 Rc)
 Minimizes burr on part
 Helix geometry varies over length of flutes
 Staggered flutes to control harmonics
 Variable flute design helps with chip evacuation in slots and pockets
 Variable rake aids in chip formation
 PCT (Polish Carbide Treatment) enhances tool life
 12mm and larger tools offered with weldon flat
 Smaller diameters can be modified with a flat within 48 hours
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 - Zentrumsschnitt
 Entwickelt für hocheffizientes Fräsen
Empfohlen für Titan, Inconel, und Rostfreie Stahl (<40HRC)
 PCT (Polish Carbide Treatment) steigert die Werkzeugstandzeit
 Reduziert die Gratbildung am Werkstück
 Spiralgeometrie variiert auf der gesamten Schneidlänge
 Spezielles Spannut-Design um Vibrationen zu reduzieren
 Variable Spannutgeometrie für eine bessere Spanabfuhr beim Schilitz- und Taschenfräsen
 Variabler Winkel für bessere Spangeometrie
 12 mm oder größere Durchmesser auch mit Weldon Schaft erhältlich
 Kleinere Durchmesser können innerhalb 48 Stunden mit einer Spannfläche geliefert werden
Die Kombination einer verlängerten Spannlänge mit einer Weldon-Spannfläche kann die Ursache bei Spannut-Auswaschungen bei einigen Fräsespannfuttern sein



Fresa de submicrograno sólido carburo de alto rendimiento - corte centrado
 Diseñado para el fresado de alta eficiencia
Recomendado para Titanio, Inconel, y Acero Inoxidable (<40 Rc)
 PCT (Polish Carbide Treatment, Tratamiento de pulido) aumenta la vida de la hta. hasta
 Minimiza las rebabas en la pieza
 La geometría de la hélice varía a lo largo de la longitud del labio
 Labios escalonados para control de vibraciones
 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
La combinación de una gran longitud de corte con un mango con plano Weldon puede causar que del labio alcance el interior de algunos portaherramientas



Fraises carbure submicrograin - coupe au centre
 Conçu pour un fraisage à haute efficacité
Recommandé pour les titane, inconel, et aciers (<40 HRC)
 PCT (le traitement pour poli le carbure) améliore la durée de vie de l'outil
 Minimise les bavures sur la pièce
 La géométrie de l'hélice varie sur la longueur de l'hélice
 Une denture variable réduit les vibrations
 Un design à denture variable améliore l'évacuation des copeaux lors des opérations de rainurage et d'usinage de 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
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
 Progettato per la fresatura ad alta efficienza
Raccomandata per lavorazioni su Titanio, Inconel, e Acciai (<40 Hrc)
 PCT (Polish Carbide Treatment, trattamento di lucidatura del metallo duro) incrementa la vita utensile
 Non crea bava sul pezzo
 La geometria dell'elica varia sulla lunghezza del tagliente
 Taglienti sfalsati per controllare le forze
 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
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
 有效的磨除铁屑
推荐的加工材：钛合金、不锈钢、不锈铁 (<40HRC)
 PCT (硬质合金抛光处理) 使刀具寿命提高
 使工件的毛刺最少
 整个切削刃的螺旋角可变
 交错式的刀刃能抑制噪音
 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
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#	d_1 †		d_2	l_1	l_2	r	l_3	d_3
	(plain)	(weldon)						
50000	-	.2362	6.000	6.0	50	13	-	-
50001	-	.2362	6.000	6.0	50	13	0.5	-
50002	-	.2362	6.000	6.0	65	19	-	-
50003	-	.2362	6.000	6.0	65	19	0.5	-
50004	-	.2362	6.000	6.0	65	13	-	20
50005	-	.2362	6.000	6.0	65	13	0.5	20
50006	-	.2362	6.000	6.0	65	13	1.0	20
50007	-	.2500	1/4"	6.350	1/4"	2"	3/8"	-
51000	-	.2500	1/4"	6.350	1/4"	2"	3/8"	.010"
50008	-	.2500	1/4"	6.350	1/4"	2"	3/8"	.015"
51001	-	.2500	1/4"	6.350	1/4"	2"	3/8"	.020"
50009	-	.2500	1/4"	6.350	1/4"	2"	3/8"	.030"
51002	-	.2500	1/4"	6.350	1/4"	2"	1/2"	-
51003	-	.2500	1/4"	6.350	1/4"	2"	1/2"	.010"
51004	-	.2500	1/4"	6.350	1/4"	2"	1/2"	.015"
50011	-	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	-
51005	-	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.010"
50012	-	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.015"
50013	-	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.020"
50014	-	.2500	1/4"	6.350	1/4"	2-1/2"	3/4"	.030"
50015	-	.2500	1/4"	6.350	1/4"	3"	1"	-
51006	-	.2500	1/4"	6.350	1/4"	3"	1"	.010"
51007	-	.2500	1/4"	6.350	1/4"	3"	1"	.015"
50016	-	.2500	1/4"	6.350	1/4"	3"	1"	.030"
50113	-	.2500	1/4"	6.350	1/4"	3"	1-1/8"	.030"
50017	-	.2500	1/4"	6.350	1/4"	4"	1/2"	.015"
51008	-	.2500	1/4"	6.350	1/4"	4"	1/2"	.015"
50023	-	.2756	7.000	8.0	65	22	0.2	-
50018	-	.3125	5/16"	7.938	5/16"	2-1/2"	13/16"	-
50019	-	.3125	5/16"	7.938	5/16"	2-1/2"	13/16"	.015"
50021	-	.3125	5/16"	7.938	5/16"	2-1/2"	13/16"	.020"
50022	-	.3125	5/16"	7.938	5/16"	2-1/2"	13/16"	.030"

MATERIAL HARDNESS (Rc)

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EDP#		d_1 †		d_2	l_1	l_2	r	l_3	d_3	
		(plain)	(weldon)							Decimal
50024	-	.3150		8.000	8.0	65	22	0.2	-	-
50025	-	.3150		8.000	8.0	65	22	0.5	-	-
50026	-	.3150		8.000	8.0	75	19	-	26	7.2
50027	-	.3150		8.000	8.0	75	19	0.5	26	7.2
50028	-	.3150		8.000	8.0	75	19	1.0	26	7.2
50029	-	.3750	3/8"	9.525	3/8"	2"	1/2"	-	-	-
50031	-	.3750	3/8"	9.525	3/8"	2"	1/2"	.015"	-	-
50032	-	.3750	3/8"	9.525	3/8"	2"	1/2"	.020"	-	-
50033	-	.3750	3/8"	9.525	3/8"	2"	1/2"	.030"	-	-
50034	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	-	-	-
50035	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.015"	-	-
50036	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.020"	-	-
50037	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.030"	-	-
50038	-	.3750	3/8"	9.525	3/8"	2-1/2"	1"	.060"	-	-
51009	-	.3750	3/8"	9.525	3/8"	3"	1-1/4"	.015"	-	-
50114	-	.3750	3/8"	9.525	3/8"	3"	1-1/4"	.030"	-	-
51010	-	.3750	3/8"	9.525	3/8"	4"	1-1/2"	.015"	-	-
50039	-	.3750	3/8"	9.525	3/8"	4"	2"	-	-	-
50041	-	.3750	3/8"	9.525	3/8"	4"	2"	.030"	-	-
51011	-	.3750	3/8"	9.525	3/8"	4"	1/2"	.015"	1-1/8"	.355"
50042	-	.3750	3/8"	9.525	3/8"	4"	7/8"	.015"	1-7/8"	.355"
51012	-	.3750	3/8"	9.525	3/8"	6"	1/2"	.015"	2-1/8"	.355"
51013	-	.3750	3/8"	9.525	3/8"	6"	1/2"	.015"	3-1/8"	.355"
51014	-	.3750	3/8"	9.525	3/8"	6"	1/2"	.015"	4-1/8"	.355"
50043	-	.3937		10.000	10.0	70	22	-	-	-
51015	-	.3937		10.000	10.0	70	22	0.30	-	-
50044	-	.3937		10.000	10.0	70	22	0.50	-	-
51016	-	.3937		10.000	10.0	70	22	0.75	-	-
51017	-	.3937		10.000	10.0	70	22	1.00	-	-
50045	-	.3937		10.000	10.0	75	22	-	32	9.0
50046	-	.3937		10.000	10.0	75	22	0.50	32	9.0
NEW 51018	-	.3937		10.000	10.0	75	22	0.75	32	9.0
50047	-	.3937		10.000	10.0	75	22	1.00	32	9.0
51019	-	.4724		12.000	12.0	65	19	-	-	-
51020	-	.4724		12.000	12.0	65	19	0.50	-	-
50484	50485	.4724		12.000	12.0	75	26	-	-	-
51021	-	.4724		12.000	12.0	75	26	0.30	-	-
50486	50487	.4724		12.000	12.0	75	26	0.50	-	-
51022	-	.4724		12.000	12.0	75	26	0.75	-	-
51023	-	.4724		12.000	12.0	75	26	1.00	-	-
50112	-	.4724		12.000	12.0	75	26	2.00	-	-
50115	-	.4724		12.000	12.0	75	26	2.50	-	-
50048	50299	.4724		12.000	12.0	75	32	-	-	-
51024	-	.4724		12.000	12.0	75	32	0.30	-	-
50049	50300	.4724		12.000	12.0	75	32	0.50	-	-
51025	-	.4724		12.000	12.0	75	32	0.75	-	-
51026	-	.4724		12.000	12.0	75	32	1.00	-	-
51027	-	.4724		12.000	12.0	100	38	-	-	-
51028	-	.4724		12.000	12.0	100	38	0.50	-	-
50423	-	.4724		12.000	12.0	100	42	-	-	-
50425	-	.4724		12.000	12.0	100	42	0.30	-	-
50427	-	.4724		12.000	12.0	100	42	0.50	-	-
50429	-	.4724		12.000	12.0	100	42	1.00	-	-
50431	-	.4724		12.000	12.0	100	42	2.00	-	-
51029	-	.4724		12.000	12.0	100	52	-	-	-
51030	-	.4724		12.000	12.0	100	52	0.50	-	-
50051	50301	.4724		12.000	12.0	100	26	-	38	10.8
50052	50302	.4724		12.000	12.0	100	26	0.50	38	10.8
50053	50303	.4724		12.000	12.0	100	26	1.00	38	10.8

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MATERIAL HARDNESS (Rc)

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continued →

Series V5 (continued)

.5000"
(12.700mm)

HIGH PERFORMANCE
END MILLS

EDP#		$d1$ †		$d2$	$l1$	$l2$	r	$l3$	$d3$
(plain)	(weldon)	Decimal	Diameter	Shank Diameter	Overall Length	Flute Length	Corner Radius	Reach Length	Neck Diameter
50054	50304	.5000	1/2"	12.700	1/2"	2-1/2"	5/8"	-	-
50106	50305	.5000	1/2"	12.700	1/2"	2-1/2"	5/8"	.010"	-
50055	50306	.5000	1/2"	12.700	1/2"	2-1/2"	5/8"	.020"	-
50107	50307	.5000	1/2"	12.700	1/2"	2-1/2"	5/8"	.030"	-
50056	50308	.5000	1/2"	12.700	1/2"	3"	1"	-	-
50108	50309	.5000	1/2"	12.700	1/2"	3"	1"	.010"	-
50057	50310	.5000	1/2"	12.700	1/2"	3"	1"	.020"	-
50109	50311	.5000	1/2"	12.700	1/2"	3"	1"	.030"	-
50058	50312	.5000	1/2"	12.700	1/2"	3"	1-1/4"	-	-
50111	50313	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.010"	-
50059	50314	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.015"	-
50061	50315	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.020"	-
50062	50316	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.030"	-
50063	50317	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.045"	-
50064	50318	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.060"	-
50065	50319	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.090"	-
50433	50435	.5000	1/2"	12.700	1/2"	4"	1-1/2"	.010"	-
51031	-	.5000	1/2"	12.700	1/2"	4"	1-1/2"	.015"	-
51032	-	.5000	1/2"	12.700	1/2"	4"	1-1/2"	.030"	-
50436	50437	.5000	1/2"	12.700	1/2"	4"	1-5/8"	-	-
50438	50439	.5000	1/2"	12.700	1/2"	4"	1-5/8"	.010"	-
50440	50441	.5000	1/2"	12.700	1/2"	4"	1-5/8"	.020"	-
50442	50443	.5000	1/2"	12.700	1/2"	4"	1-5/8"	.030"	-
50444	50445	.5000	1/2"	12.700	1/2"	4"	1-5/8"	.040"	-
50446	50447	.5000	1/2"	12.700	1/2"	4"	1-5/8"	.060"	-
50067	50321	.5000	1/2"	12.700	1/2"	4"	2-1/8"	-	-
51033	-	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.015"	-
50068	50322	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.030"	-
51034	-	.5000	1/2"	12.700	1/2"	6"	1"	.030"	-
51035	-	.5000	1/2"	12.700	1/2"	6"	3-1/8"	-	-
51036	-	.5000	1/2"	12.700	1/2"	6"	3-1/8"	.030"	-
51037	-	.5000	1/2"	12.700	1/2"	4"	5/8"	.015"	1-1/2"
51038	-	.5000	1/2"	12.700	1/2"	4"	5/8"	.015"	2-1/4"
50066	50320	.5000	1/2"	12.700	1/2"	4"	1-1/4"	.030"	2-1/4"
51039	-	.5000	1/2"	12.700	1/2"	6"	5/8"	.015"	3-3/8"
51040	-	.5000	1/2"	12.700	1/2"	6"	5/8"	.015"	4-1/8"

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MATERIAL HARDNESS (Rc)

EDP#		$d1$ †			$d2$	$l1$	$l2$	r	$l3$	$d3$
(plain)	(weldon)	Decimal	Diameter	Metric	Shank Diameter	Overall Length	Flute Length	Corner Radius	Reach Length	Neck Diameter
50069	50323	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	-	-	-
51041	-	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.020"	-	-
50071	50324	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.030"	-	-
50072	50325	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.060"	-	-
50401	50402	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.120"	-	-
51042	-	.6250	5/8"	15.875	5/8"	4"	1-5/8"	-	-	-
51043	-	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.030"	-	-
51044	-	.6250	5/8"	15.875	5/8"	4"	2-1/8"	-	-	-
51045	-	.6250	5/8"	15.875	5/8"	4"	2-1/8"	.030"	-	-
51046	-	.6250	5/8"	15.875	5/8"	6"	2-1/2"	.030"	-	-
50403	50404	.6250	5/8"	15.875	5/8"	6"	3-1/8"	.030"	-	-
51047	-	.6250	5/8"	15.875	5/8"	6"	3-1/8"	.060"	-	-
51048	-	.6250	5/8"	15.875	5/8"	6"	3-1/2"	.030"	-	-
51049	-	.6250	5/8"	15.875	5/8"	4"	3/4"	.030"	1-5/8"	.590"
50073	50326	.6250	5/8"	15.875	5/8"	4"	1-1/4"	.030"	2-1/4"	.590"
51050	-	.6250	5/8"	15.875	5/8"	6"	3/4"	.030"	2-3/8"	.590"
51051	-	.6250	5/8"	15.875	5/8"	6"	3/4"	.030"	3-3/8"	.590"
51052	-	.6250	5/8"	15.875	5/8"	6"	3/4"	.030"	4-1/8"	.590"
51053	-	.6299		16.000	16.0	75	19	-	-	-
51054	-	.6299		16.000	16.0	75	19	0.50	-	-
50074	50327	.6299		16.000	16.0	88	32	-	-	-
50075	50328	.6299		16.000	16.0	88	32	0.50	-	-
50420	-	.6299		16.000	16.0	88	32	1.00	-	-
51055	-	.6299		16.000	16.0	88	32	2.00	-	-
50422	-	.6299		16.000	16.0	88	32	3.00	-	-
50424	-	.6299		16.000	16.0	88	32	4.00	-	-
50430	-	.6299		16.000	16.0	100	40	0.50	-	-
50432	-	.6299		16.000	16.0	100	40	1.00	-	-
50434	-	.6299		16.000	16.0	100	40	3.00	-	-
50076	50329	.6299		16.000	16.0	100	32	-	50	14.4
50077	-	.6299		16.000	16.0	100	32	0.50	50	14.4
50426	-	.6299		16.000	16.0	100	32	1.00	50	14.4
51056	-	.6299		16.000	16.0	100	32	2.00	50	14.4
50428	-	.6299		16.000	16.0	100	32	3.00	50	14.4
50078	-	.7087		18.000	18.0	100	32	0.75	-	-

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MATERIAL HARDNESS (Rc)

continued →

Series V5 (continued)

.7500"
(19.050mm)

HIGH PERFORMANCE
END MILLS

EDP#		$d1$ †		$d2$	$l1$	$l2$	r	$l3$	$d3$	
(plain)	(weldon)	Decimal	Diameter	Metric	Shank Diameter	Overall Length	Flute Length	Corner Radius	Reach Length	Neck Diameter
50079	50332	.7500	3/4"	19.050	3/4"	3"	7/8"	-	-	-
51103	-	.7500	3/4"	19.050	3/4"	3"	7/8"	.015"	-	-
50081	50333	.7500	3/4"	19.050	3/4"	3"	7/8"	.030"	-	-
51057	-	.7500	3/4"	19.050	3/4"	3"	7/8"	.060"	-	-
51105	-	.7500	3/4"	19.050	3/4"	3"	7/8"	.120"	-	-
51107	-	.7500	3/4"	19.050	3/4"	4"	1-1/4"	.015"	-	-
51058	-	.7500	3/4"	19.050	3/4"	4"	1-1/4"	.030"	-	-
51109	-	.7500	3/4"	19.050	3/4"	4"	1-1/4"	.060"	-	-
50082	50334	.7500	3/4"	19.050	3/4"	4"	1-1/2"	-	-	-
51111	-	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.015"	-	-
50083	50335	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.030"	-	-
50084	50336	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.060"	-	-
51059	-	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.078"	-	-
50085	50337	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.120"	-	-
51113	-	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.190"	-	-
51060	-	.7500	3/4"	19.050	3/4"	4"	1-5/8"	-	-	-
51115	-	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.015"	-	-
51061	-	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.030"	-	-
51119	-	.7500	3/4"	19.050	3/4"	4"	1-5/8"	.060"	-	-
51062	-	.7500	3/4"	19.050	3/4"	4"	1-3/4"	-	-	-
51121	-	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.015"	-	-
51063	-	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.030"	-	-
51123	-	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.060"	-	-
50086	50338	.7500	3/4"	19.050	3/4"	5"	2-1/8"	-	-	-
51125	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.015"	-	-
50087	50339	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.030"	-	-
51064	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.060"	-	-
51065	-	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.120"	-	-
51127	-	.7500	3/4"	19.050	3/4"	5"	2-1/4"	.015"	-	-
51066	-	.7500	3/4"	19.050	3/4"	5"	2-1/4"	.030"	-	-
51129	-	.7500	3/4"	19.050	3/4"	5"	2-1/4"	.060"	-	-
51131	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.015"	-	-
51067	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.030"	-	-
51133	-	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.060"	-	-
51135	-	.7500	3/4"	19.050	3/4"	5"	2-3/4"	.015"	-	-
51068	-	.7500	3/4"	19.050	3/4"	5"	2-3/4"	.030"	-	-
51137	-	.7500	3/4"	19.050	3/4"	5"	2-3/4"	.060"	-	-
50089	50341	.7500	3/4"	19.050	3/4"	6"	3-1/4"	-	-	-
51139	-	.7500	3/4"	19.050	3/4"	6"	3-1/4"	.015"	-	-
50091	50342	.7500	3/4"	19.050	3/4"	6"	3-1/4"	.030"	-	-
51141	-	.7500	3/4"	19.050	3/4"	6"	3-1/4"	.060"	-	-
51143	-	.7500	3/4"	19.050	3/4"	7"	4-1/4"	.015"	-	-
51145	-	.7500	3/4"	19.050	3/4"	7"	4-1/4"	.030"	-	-
51147	-	.7500	3/4"	19.050	3/4"	7"	4-1/4"	.060"	-	-
51069	-	.7500	3/4"	19.050	3/4"	4"	1"	.030"	2"	.705"
51070	-	.7500	3/4"	19.050	3/4"	5"	1"	.030"	2-1/2"	.705"
50088	50340	.7500	3/4"	19.050	3/4"	5-1/2"	1-1/2"	.030"	3-1/4"	.705"
51071	-	.7500	3/4"	19.050	3/4"	6"	1"	.030"	4-1/8"	.705"

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MATERIAL HARDNESS (Rc)

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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						
50092	50343	.7874	20.000	20.0	100	38	-	-	-
51072	-	.7874	20.000	20.0	100	38	0.50	-	-
50093	50344	.7874	20.000	20.0	100	38	0.75	-	-
51073	-	.7874	20.000	20.0	100	38	1.00	-	-
51074	-	.7874	20.000	20.0	100	38	1.50	-	-
51075	-	.7874	20.000	20.0	100	38	2.00	-	-
51076	-	.7874	20.000	20.0	100	38	3.00	-	-
51077	-	.9843	25.000	25.0	100	38	-	-	-
51078	-	.9843	25.000	25.0	100	38	0.50	-	-
NEW 51079	-	.9843	25.000	25.0	100	38	0.75	-	-
51080	-	.9843	25.000	25.0	100	38	1.50	-	-
51081	-	.9843	25.000	25.0	100	38	3.00	-	-
50094	-	1.000	1"	25.400	1"	4"	1-1/4"	-	-
50095	-	1.000	1"	25.400	1"	4"	1-1/4"	.030"	-
NEW 51082	-	1.000	1"	25.400	1"	4"	1-1/4"	.120"	-
-	50348	1.000	1"	25.400	1"	4"	1-1/2"	-	-
-	50349	1.000	1"	25.400	1"	4"	1-1/2"	.030"	-
-	50350	1.000	1"	25.400	1"	4"	1-1/2"	.060"	-
51083	-	1.000	1"	25.400	1"	4"	1-1/2"	.120"	-
NEW 50116	-	1.000	1"	25.400	1"	4"	1-1/2"	.125"	-
50097	-	1.000	1"	25.400	1"	4"	1-3/4"	-	-
50098	-	1.000	1"	25.400	1"	4"	1-3/4"	.030"	-
50099	-	1.000	1"	25.400	1"	4"	1-3/4"	.060"	-
51084	-	1.000	1"	25.400	1"	4"	1-3/4"	.120"	-
51085	-	1.000	1"	25.400	1"	4-1/2"	2"	.030"	-
51086	-	1.000	1"	25.400	1"	4-1/2"	2"	.060"	-
51087	-	1.000	1"	25.400	1"	4-1/2"	2"	.120"	-
51088	-	1.000	1"	25.400	1"	4-1/2"	2"	.250"	-
51089	-	1.000	1"	25.400	1"	5"	2-1/2"	.030"	-
51090	-	1.000	1"	25.400	1"	5"	2-5/8"	.030"	-
50104	50354	1.000	1"	25.400	1"	6"	3-1/4"	-	-
50105	-	1.000	1"	25.400	1"	6"	3-1/4"	.030"	-
51091	-	1.000	1"	25.400	1"	6"	3-3/8"	.060"	-
51092	-	1.000	1"	25.400	1"	7"	4-1/4"	.030"	-
51093	-	1.000	1"	25.400	1"	7"	4-1/4"	.060"	-
51094	-	1.000	1"	25.400	1"	5"	1-1/4"	.030"	2-5/8"
50101	-	1.000	1"	25.400	1"	5-1/2"	1-3/4"	.030"	3-1/4"
50102	50352	1.000	1"	25.400	1"	5-1/2"	1-3/4"	.060"	3-1/4"
51095	-	1.000	1"	25.400	1"	6"	1-1/4"	.030"	3-3/8"
51096	-	1.000	1"	25.400	1"	7"	1-1/4"	.030"	4-1/4"

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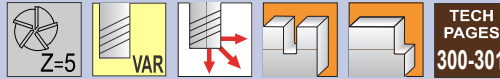
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MATERIAL HARDNESS (Rc)

Series V5C - Chip Splitter

HIGH EFFICIENCY MILLING

.4724" - .6299"
(12.000mm - 16.000mm)



TOLERANCES	
d_1	+0.000" -0.002" (+0.000mm -0.050mm)
d_2	h6
r	+0.001" -0.001" (+0.025 -0.025mm)

HIGH PERFORMANCE
END MILLS

Variable Helix End Mill - AlCrN Coated

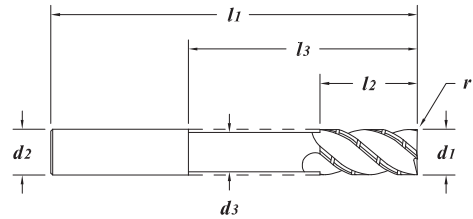
Fräser mit Einer Variablen Spiralgeometrie - AlCrN-Beschichtet

Fresa de Hélice Variable - Recubrimiento de AlCrN

Fraise Avec un Angle Hélice Variable - Revêtement AlCrN

Fresa ad Elica Variabile - Rivestimento in AlCrN

不等螺旋铣刀 - 涂层铝氮化铬



Solid submicron grain carbide end mill - center cutting
Chip splitter to help break long chips
Engineered for High Efficiency Milling
Recommended for titanium, inconel, and stainless steel (<40Rc)
Staggered flutes to control harmonics
Variable flute design helps with chip evacuation in slots and pockets
PCT (Polish Carbide Treatment) enhances tool life



Hochleistungs- Vollhartmetallfräser aus Feinkornhartmetall - Zentrumschnitt
Zu helfen, lange chips zu brechen
Entwickelt für hocheffizientes Fräsen
Empfohlen für Titan, Inconel, und Rostfreie Stahl (<40HRC)
PCT (Polish Carbide Treatment) steigert die Werkzeugstandzeit
Spezielles Spannut-Design um Vibrationen zu reduzieren
Variable Spannutgeometrie für eine bessere Spanabfuhr beim Schlitz- und Taschenfräsen



Fresa de submicrograno sólido carburo de alto rendimiento - corte centrado
Chip splitter para ayudar a romper chips largas
Diseñado para el fresado de alta eficiencia
Recomendado para Titanio, Inconel, y Acero Inoxidable (<40 Rc)
PCT (Polish Carbide Treatment, Tratamiento de pulido) aumenta la vida de la hta.
Labios escalonados para control de vibraciones
El diseño del labio variable contribuye a la evacuación de la viruta en ranuras y cajeras



Fraises carbure submicrograin - coupe au centre
Pour aider à briser de longues puce
Conçu pour un fraisage à haute efficacité
Recommandé pour les titane, inconel, et aciers (<40 HRC)
PCT (le traitement pour polir le carbure) améliore la durée de vie de l'outil
Une denture variable réduit les vibrations
Un design à denture variable améliore l'évacuation des copeaux lors des opérations de rainurage et d'usinage de poches



Fresa sub-micrograno metallo duro - taglio al centro
Per aiutare a rompere le lunghe chips
Progettato per la fresatura ad alta efficienza
Raccomandata per lavorazioni su Titanio, Inconel, e Acciai (<40 Hrc)
PCT (Polish Carbide Treatment, trattamento di lucidatura del metallo duro) incrementa la vita utensile
Taglienti sfalsati per controllare le forze
La geometria variabile del tagliente aiuta l'evacuazione del truciolo negli svuotamenti e nelle cave



超细晶粒整体硬质合金立铣刀 - 中心切削
芯片分离器有助于打破长芯片
有效的螺旋切削
推荐的加工钛、镍基合金、不锈钢 (<40HRC)
PCT (硬质合金抛光处理) 使刀具寿命提高
交错式的刃能抑制噪音
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

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
	Decimal	Metric						
50801	.4724	12.000	12.0	100	42	0.30	-	-
50800	.4724	12.000	12.0	100	42	1.00	-	-
50803	.5000	1/2"	12.700	1/2"	3"	1"	-	-
50807	.5000	1/2"	12.700	1/2"	3"	1"	.015"	-
50805	.5000	1/2"	12.700	1/2"	3"	1"	.020"	-
50809	.5000	1/2"	12.700	1/2"	3"	1"	.030"	-
50811	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.015"	-
50810	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.020"	-
50815	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.030"	-
50813	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.060"	-
50820	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.090"	-
50825	.5000	1/2"	12.700	1/2"	4"	1-1/2"	.010"	-
50817	.5000	1/2"	12.700	1/2"	4"	1-1/2"	.030"	-
50830	.5000	1/2"	12.700	1/2"	4"	1-5/8"	-	-
50819	.5000	1/2"	12.700	1/2"	4"	1-5/8"	.030"	-
50835	.5000	1/2"	12.700	1/2"	4"	2-1/8"	-	-
50836	.5000	1/2"	12.700	1/2"	4"	2-1/8"	.030"	-
50821	.5000	1/2"	12.700	1/2"	4"	5/8"	.015"	1-1/2"
50823	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.020"	-
50840	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.030"	-
50827	.6250	5/8"	15.875	5/8"	4"	1-5/8"	-	-
50829	.6250	5/8"	15.875	5/8"	4"	1-5/8"	.030"	-
50845	.6250	5/8"	15.875	5/8"	4"	2-1/8"	.030"	-
50831	.6250	5/8"	15.875	5/8"	6"	2-1/2"	.030"	-
50833	.6299	16.000	16.0	100	40	0.50	-	-
50837	.6299	16.000	16.0	100	40	1.00	-	-

MATERIAL HARDNESS (Rc)

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NEW ITEMS

Series V5C - Chip Splitter (continued)

.7500" - 1.0000"
(19.050mm - 25.400mm)

HIGH PERFORMANCE
END MILLS

EDP#	$d1$ †		$d2$	$l1$	$l2$	r	$l3$	$d3$
	Decimal	Diameter						
50839	.7500	3/4"	19.050	3/4"	3"	7/8"	-	-
50841	.7500	3/4"	19.050	3/4"	3"	7/8"	.030"	-
50843	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.030"	-
50847	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.060"	-
50850	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.120"	-
50849	.7500	3/4"	19.050	3/4"	4"	1-3/4"	-	-
50851	.7500	3/4"	19.050	3/4"	4"	1-3/4"	.030"	-
50855	.7500	3/4"	19.050	3/4"	5"	2-1/8"	.030"	-
50853	.7500	3/4"	19.050	3/4"	5"	2-1/4"	.030"	-
50857	.7500	3/4"	19.050	3/4"	5"	2-1/2"	.030"	-
50859	.7500	3/4"	19.050	3/4"	5"	2-3/4"	.015"	-
50861	.7500	3/4"	19.050	3/4"	5"	2-3/4"	.030"	-
50863	.7500	3/4"	19.050	3/4"	6"	3-1/4"	-	-
50860	.7500	3/4"	19.050	3/4"	6"	3-1/4"	.030"	-
50867	.7500	3/4"	19.050	3/4"	7"	4-1/4"	.015"	-
NEW 50869	1.000	1"	25.400	1"	5"	2-1/2"	.030"	-
NEW 50871	1.000	1"	25.400	1"	5"	2-5/8"	.030"	-
50873	1.000	1"	25.400	1"	6"	3-1/4"	.030"	-



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MATERIAL HARDNESS (Rc)

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