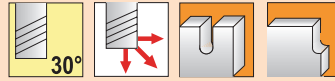


320MA (920MA metric) / z = 2
323MA (923MA metric) / z = 3
330MA (930MA metric) / z = 4
 .0312" - .3150"
 (0,79mm - 8,00mm)

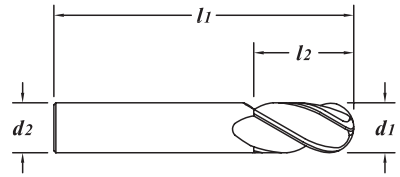
Technical information:
 page 200, 202



TOLERANCES

d_1	+0,000 -0,050mm (+.000" -.002")
d_2	3mm - 6mm -0,0000 -0,0075mm (-.0000" -.0003") 1/4" - 1" -0,0025 -0,0100mm (-.0001" -.0004")
Ball radius	+0,000 -0,025mm (+.000" -.001")

Standard Length - Ball End - TiALN Coated
Standard Länge - Vollradius - TiALN-Beschichtet
Longitud Estándar - Cabeza Esférica - Recubrimiento de TiALN
Longueur Standart - Hemispherique - Revêtement TiALN
Lunghezza Standard - Sferica - Rivestimento in TiALN
标准长度 - 球头 - TiALN 涂层



Solid submicron grain carbide end mill - center cutting
 Dry or semi-dry machining
 Up to 40% faster than uncoated
 Extremely versatile
 Uncoated - page 142
 TiN Coated - page 144
 TiCN Coated - page 145



Vollhartmetallfräser aus Feinkornhartmetall - Zentrumschnitt
 Trocken oder Halbtrockene Bearbeitung
 Bis zu 40% schneller als unbeschichtete Werkzeuge
 Extrem Vielseitig
 Radius Toleranz: +0,000 / -0,025 (+.000" -.001")
 Unbeschichtet - Seite 142
 TiN-Beschichtet - Seite 144
 TiCN-Beschichtet - Seite 145



Fresa de submicrograno sólido carburo - corte centrado
 Mecanizado seco o semiseco
 Hasta un 40% más rápido que sin recubrimiento
 Extremadamente versátil
 Tolerancia de la cabeza esférica +0,000 / -0,025 (+.000" -.001")
 Sin recubrimiento - Página 142
 Recubrimiento de TiN - Página 144
 Recubrimiento de TiCN - Página 145



Fraises carbure submicrograin - coupe au centre
 Usinage a sec ou avec l'air
 40% plus rapide que le non revetu
 Utilisations variables
 Tolerance du rayon de hemispherique +0,000 / -0,025 (+.000" -.001")
 Sans revêtement - Page 142
 Revêtement TiN - Page 144
 Revêtement TiCN - Page 145



Super sub-micrograno metallo duro - taglio al centro
 Lavorazione a secco o a umido
 40% più veloce rispetto non rivestito
 Estremamente versatile
 Tolleranza del raggio +0,000 / -0,025 (+.000" -.001")
 Non Rivestito - Pagina 142
 Rivestimento in TiN - Pagina 144
 Rivestimento in TiCN - Pagina 145



超细晶粒整体硬质合金立铣刀 - 中心切削
 干式或半干式机加工
 跟无涂层刀具相比可提高速度高达40%
 功能极多
 半径公差 +0,000 / -0,025 (+.000" -.001")
 未涂层 - 142页
 TiN 涂层 - 144页
 TiCN 涂层 - 145页

z = 2 EDP#	z = 3 EDP#	z = 4 EDP#	d_1 †		d_2 Shank Diameter	l_1 Overall Length	l_2 Flute Length
			Decimal	Diameter Metric			
16017	17017	18017	.0312	1/32"	0,79	1/8"	1-1/2"
47017	38017	48017	.0394		1,00	3,0	38
16027	17027	18027	.0469	3/64"	1,19	1/8"	1-1/2"
47027	38027	48027	.0591		1,50	3,0	38
16037	17037	18037	.0625	1/16"	1,59	1/8"	1-1/2"
16047	17047	18047	.0781	5/64"	1,98	1/8"	1-1/2"
47037	38037	48037	.0787		2,00	3,0	38
16057	17057	18057	.0938	3/32"	2,38	1/8"	1-1/2"
47047	38047	48047	.0984		2,50	3,0	38
16067	17067	18067	.1094	7/64"	2,78	1/8"	1-1/2"
47057	38057	48057	.1181		3,00	3,0	38
16077	17077	18077	.1250	1/8"	3,17	1/8"	1-1/2"
47067	38067	48067	.1378		3,50	4,0	50
16087	17087	18087	.1406	9/64"	3,57	3/16"	2"
16097	17097	18097	.1562	5/32"	3,97	3/16"	2"
47077	38077	48077	.1575		4,00	4,0	50
16107	17107	18107	.1719	11/64"	4,37	3/16"	2"
47087	38087	48087	.1772		4,50	5,0	50
16117	17117	18117	.1875	3/16"	4,76	3/16"	2"
47097	38097	48097	.1969		5,00	5,0	65
16127	17127	18127	.2031	13/64"	5,16	1/4"	2-1/2"
16137	17137	18137	.2188	7/32"	5,56	1/4"	2-1/2"
16147	17147	18147	.2344	15/64"	5,95	1/4"	2-1/2"
47107	38107	48107	.2362		6,00	6,0	65
16157	17157	18157	.2500	1/4"	6,35	1/4"	2-1/2"
16167	17167	18167	.2656	17/64"	6,75	5/16"	2-1/2"
47117	38117	48117	.2756		7,00	7,0	65
16177	17177	18177	.2812	9/32"	7,14	5/16"	2-1/2"
16187	17187	18187	.2969	19/64"	7,54	5/16"	2-1/2"
16197	17197	18197	.3125	5/16"	7,94	5/16"	2-1/2"
47127	38127	48127	.3150		8,00	8,0	65

320MA (920MA metric) / z = 2 (continued)

323MA (923MA metric) / z = 3 (continued)

330MA (930MA metric) / z = 4 (continued)

.3281" - 1.000"

(8,33mm - 25,40mm)

z = 2 EDP#	z = 3 EDP#	z = 4 EDP#	$d1^{\dagger}$		$d2$ Shank Diameter	$l1$ Overall Length	$l2$ Flute Length
			Decimal	Diameter			
16207	17207	18207	.3281	21/64"	8,33	3/8"	7/8"
16217	17217	18217	.3438	11/32"	8,73	3/8"	7/8"
47137	38137	48137	.3543		9,00	9,0	65
16227	17227	18227	.3594	23/64"	9,13	3/8"	7/8"
16237	17237	18237	.3750	3/8"	9,52	3/8"	7/8"
16247	17247	18247	.3906	25/64"	9,92	7/16"	7/8"
47147	38147	48147	.3937		10,00	10,0	70
16257	17257	18257	.4062	13/32"	10,32	7/16"	7/8"
16267	17267	18267	.4219	27/64"	10,72	7/16"	7/8"
47157	38157	48157	.4331		11,00	11,0	75
16277	17277	18277	.4375	7/16"	11,11	7/16"	1"
16287	17287	18287	.4531	29/64"	11,51	1/2"	1"
16297	17297	18297	.4688	15/32"	11,91	1/2"	1"
47167	38167	48167	.4724		12,00	12,0	75
16307	17307	18307	.4844	31/64"	12,30	1/2"	1"
16317	17317	18317	.5000	1/2"	12,70	1/2"	1"
47177	38177	48177	.5512		14,00	14,0	88
16327	17327	18327	.5625	9/16"	14,29	9/16"	1-1/4"
16337	17337	18337	.6250	5/8"	15,87	5/8"	1-1/4"
47187	38187	48187	.6299		16,00	16,0	88
16347	17347	18347	.6875	11/16"	17,46	3/4"	1-1/2"
47197	38197	48197	.7087		18,00	18,0	100
16357	17357	18357	.7500	3/4"	19,05	3/4"	1-1/2"
47207	38207	48207	.7874		20,00	20,0	100
47217	38217	48217	.8661		22,00	22,0	100
16367	17367	18367	.8750	7/8"	22,22	7/8"	1-1/2"
47227	38227	48227	.9843		25,00	25,0	100
16377	17377	18377	1.000	1"	25,40	1"	1-1/2"