

**NEW  
SERIES**

Series X9, G9

# SERIES HIGHLIGHT

HIGH PERFORMANCE  
END MILLS



**S M P K**

## High Performance End Mills

X9 BALIQ® ALCRONOS Coating (AlCrN)

G9 BALIQ® TISINOS PRO Coating (AlTiSiN)

### X9 Target Materials:

Stainless Steel (Inox, Austenitic/Martensitic)

Carbon Tools Steels (Up to 50 HRC)

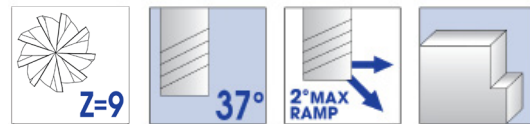
Cast Iron

### G9 Target Materials:

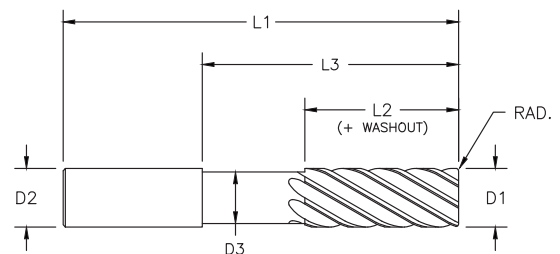
Heat Resistant Super Alloys

PH Stainless Steels (Inox, 13-8, 15-5, 17-4, Martensitic)

Conditioned Tool Steels (50-70 HRC)



CALCULATE IDEAL PARAMETERS  
FOR THE X9 AND G9 IN YOUR  
APPLICATION WITH THE GARR  
TECHNICAL ADVISOR



← View the X9

View the G9 →



**TOLERANCES**

<i>d1</i>	+0.000" - .002" (+.000mm - .050mm)
<i>d2</i>	h6
<i>r</i>	+0.001" - .001" (+.025 - .025mm)

**THE NEXT GENERATION**

Series X9, G9



.5000" - .7500"  
(12.700mm - 19.050mm)

**X9** Recommended for Low, Medium, and High Carbon Tool Steels (up to 50 HRC), cast iron, and stainless steel (Inox).

**G9** Recommended for tough machining materials such as Heat Resistant Super Alloys, PH Stainless steels (Inox), and conditioned tool steels. (50-70 HRC)

HIGH PERFORMANCE  
END MILLS

**9 Flute High Performance End Mills**

**X9** BALIQ® ALCRONOS Coating (AlCrN-based)

**G9** BALIQ® TISINOS PRO Coating (AlTiSiN)

Solid submicron grain carbide - center cutting

h6 shank tolerance

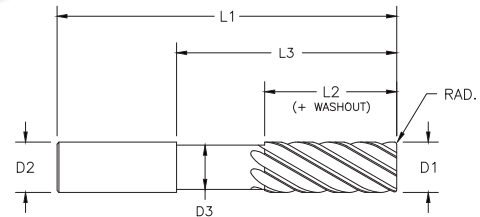
Engineered for High Efficiency Milling

Variable flute grind

Honed edge treatment

Polished fluting

Material and condition specific coatings



X9 EDP#	G9 EDP#	<i>d1</i> † Diameter		<i>d2</i> Shank Diameter	<i>l1</i> Overall Length	<i>l2</i> Flute Length	<i>r</i> Corner Radius	<i>d3</i> Neck Diameter	<i>l3</i> Reach Length	LIST PRICE	
		Decimal	Metric								
31100	31101	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.015"	-	92.19	
31102	31103	.5000	1/2"	12.700	1/2"	3"	1-1/4"	.030"	-	92.19	
31104	31105	.6250	5/8"	15.875	5/8"	3"	3/4"	.030"	-	136.15	
31106	31107	.6250	5/8"	15.875	5/8"	3-1/2"	3/4"	.060"	-	136.15	
31108	31109	.6250	5/8"	15.875	5/8"	3-1/2"	3/4"	.090"	-	136.15	
31110	31111	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.015"	-	140.89	
31112	31113	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.030"	-	140.89	
31114	31115	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.060"	-	140.89	
31116	31117	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/4"	.090"	-	140.89	
31118	31119	.6250	5/8"	15.875	5/8"	3-1/2"	1-1/2"	.020"	-	140.89	
31122	31121	.6250	5/8"	15.875	5/8"	3-1/2"	1-5/8"	.020"	-	140.89	
31124	31123	.6250	5/8"	15.875	5/8"	4"	1-7/8"	.030"	-	148.53	
31126	31125	.6250	5/8"	15.875	5/8"	5"	1-1/4"	.015"	.595"	2-1/2"	201.79
31128	31129	.6250	5/8"	15.875	5/8"	5"	1-1/4"	.030"	.595"	2-1/2"	201.79
31130	31131	.6250	5/8"	15.875	5/8"	5"	1-1/4"	.015"	.595"	3-1/8"	201.79
31132	31133	.6250	5/8"	15.875	5/8"	5"	1-1/4"	.030"	.595"	3-1/8"	201.79
31134	31135	.6299		16.000	16	100	42	1.00	-	157.80	
31136	31137	.6299		16.000	16	120	65	0.50	-	198.41	
31138	31139	.6299		16.000	16	120	40	0.50	15.2	65	202.30
31140	31141	.7500	3/4"	19.050	3/4"	3"	1"	.030"	-	184.90	
31142	31143	.7500	3/4"	19.050	3/4"	3"	1"	.060"	-	184.90	
31144	31145	.7500	3/4"	19.050	3/4"	3"	1"	.120"	-	184.90	
31146	31147	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.015"	-	194.04	
31148	31149	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.030"	-	194.04	
31152	31151	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.060"	-	194.04	
31154	31153	.7500	3/4"	19.050	3/4"	4"	1-1/2"	.120"	-	194.04	
31156	31155	.7500	3/4"	19.050	3/4"	5"	2-1/4"	.030"	-	262.80	
31158	31159	.7500	3/4"	19.050	3/4"	6"	1-1/2"	.015"	.720"	3"	319.35
31162	31161	.7500	3/4"	19.050	3/4"	6"	1-1/2"	.030"	.720"	3"	319.35
31164	31163	.7500	3/4"	19.050	3/4"	6"	1-1/2"	.015"	.720"	3-3/4"	319.35
31166	31165	.7500	3/4"	19.050	3/4"	6"	1-1/2"	.030"	.720"	3-3/4"	319.35

70 ← G9  
X9  
35 →  
MATERIAL HARDNESS (Rc)  
0 →