GOLD•RHINO

INSERT STYLE
VNGX-ML
- **35 degree included angle**
- **.312" IC**
- **Double-sided**
- **Peripheral Ground**

CORNER RADII
.004" (0.1mm)
.008" (0.2mm)
.016" (0.4mm)

GRADES
K10 – Uncoated Carbide
TT5080 – Submicron Carbide, PVD-TiAlN + TiN

NEW PRODUCT ANNOUNCEMENT 2017

A New VNGX Type ML Insert Line Launched for Gold•Rhino!

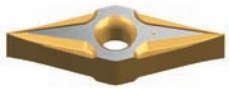
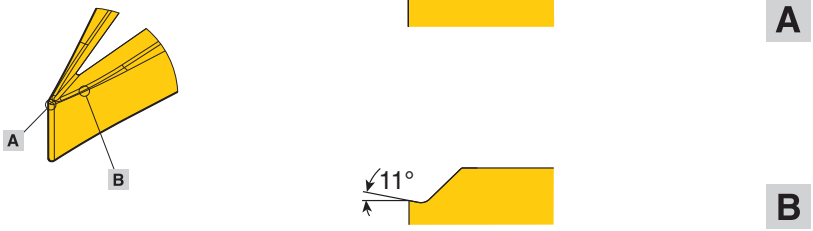
Ingersoll is pleased to introduce the latest addition to the Gold Rhino product line, 35 degree included angle, VNGX inserts with a high positive, ML chip breaker.

These double-sided, "G" tolerance inserts feature a corner radius as small as .004" (0.1mm) and are peripheral ground to provide a sharper cutting edge that reduces cutting force and minimizes built-up-edge. The result is longer, more consistent tool life and excellent surface finish, particularly in stainless steels, high temp alloys and non-ferrous materials.

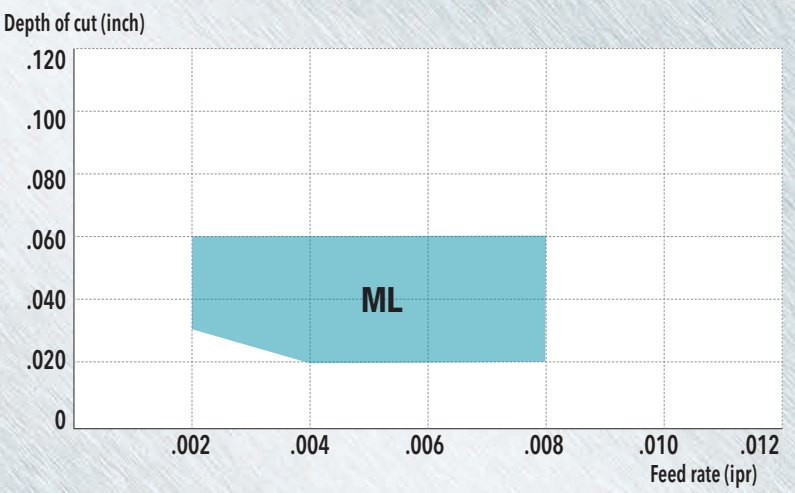
The VNGX-ML inserts join the existing Gold Rhino CNGG-ML (80 degree) and DNGX-ML (55 degree) inserts in forming a complete, economical solution for machining these gummy-like materials.

Member IMC Group
Ingersoll Cutting Tools

EDGE GEOMETRY OF THE ML CHIP BREAKER

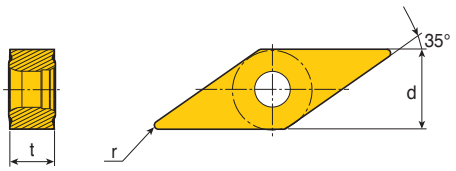
Chip breaker	Edge geometry
 VNGX ML	

CHIP BREAKER RANGE



- Insert : VNGX 2.531 (130404) ML
- Cutting speed (V) : 130 sfm
- Material : Inconel 718 (HB340~360)

VNGX Negative 35° rhombic inserts



Size	Dimension (inch)		
	d	t	r
2.530	.312	.187	.004
2.530.5	.312	.187	.008
2.531	.312	.187	.016

Insert	Designation		Feed (ipr)	ap (inch)	PVD coated	Uncoated
					TT5080	K10
	VNGX	2.530(130401) ML	.001 - .004	.004 - .040	●	●
		2.530.5(130402) ML	.002 - .006	.008 - .050	●	●
		2.531(130404) ML	.002 - .008	.020 - .060	●	●

● : Standard items

RECOMMENDED CUTTING SPEEDS (SFM)

ISO	Material		Condition	Tensile strength (N/mm²)	Hardness HB	Material No.	Cutting speed Vc(sfm)	
							PVD coated	Uncoated
							TT5080	K10
P	Non-alloy steel, cast steel, free cutting steel	< 0.25%C	Annealed	420	125	1		
		>= 0.25%C	Annealed	650	190	2		
		< 0.55%C	Quenched and tempered	850	250	3		
		>= 0.55%C	Annealed	750	220	4		
			Quenched and tempered	1000	300	5		
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	6		
			Quenched and tempered	930	275	7		
				1000	300	8		
				1200	350	9		
	High alloy steel, cast steel and tool steel		Annealed	680	200	10		
			Quenched and tempered	1100	325	11		
M	Stainless steel and cast steel		Ferritic / martensitic	680	200	12	520-1280	
			Martensitic	820	240	13	520-920	
			Austenitic	600	180	14	330-820	
K	Gray cast iron (GG)		Ferritic		160	15		360-590
			Pearlitic		250	16		310-460
	Cast iron nodular (GGG)		Ferritic		180	17		310-440
			Pearlitic		260	18		290-410
	Malleable cast iron		Ferritic		130	19		360-460
			Pearlitic		230	20		290-410
N	Aluminum - wrought alloy		Not cureable		60	21		650-3300
			Cured		100	22		650-3300
	Aluminum-cast, alloyed	<=12% Si	Not cureable		75	23		160-1300
			Cured		90	24		160-1640
		>12% Si	High temp.		130	25		130-1150
	Copper alloys	>1% Pb	Free cutting		110	26		160-1640
			Brass		90	27		160-1640
			Electrolitic copper		100	28		100-980
	Non-metallic		Duroplastics, fiber plastics			29		160-980
			Hard rubber			30		160-500
S	High temp. alloys	Fe based	Annealed		200	31	160-590	180-280
			Cured		280	32	130-520	131-215
		Ni or Co based	Annealed		250	33	150-330	105-180
			Cured		350	34	115-290	70-130
			Cast		320	35	100-260	50-85
	Titanium, Ti alloys			Rm 400		36	360-650	160-250
			Alpha+beta alloys cured	Rm 1050		37	160-330	150-230
H	Hardened steel		Hardened		55HRC	38		
			Hardened		60HRC	39		
	Chilled cast iron		Cast		400	40		
	Cast iron nodular		Hardened		55HRC	41		

Steel | Stainless steel | Cast iron | Nonferrous | High temp. alloys | Hardened steel