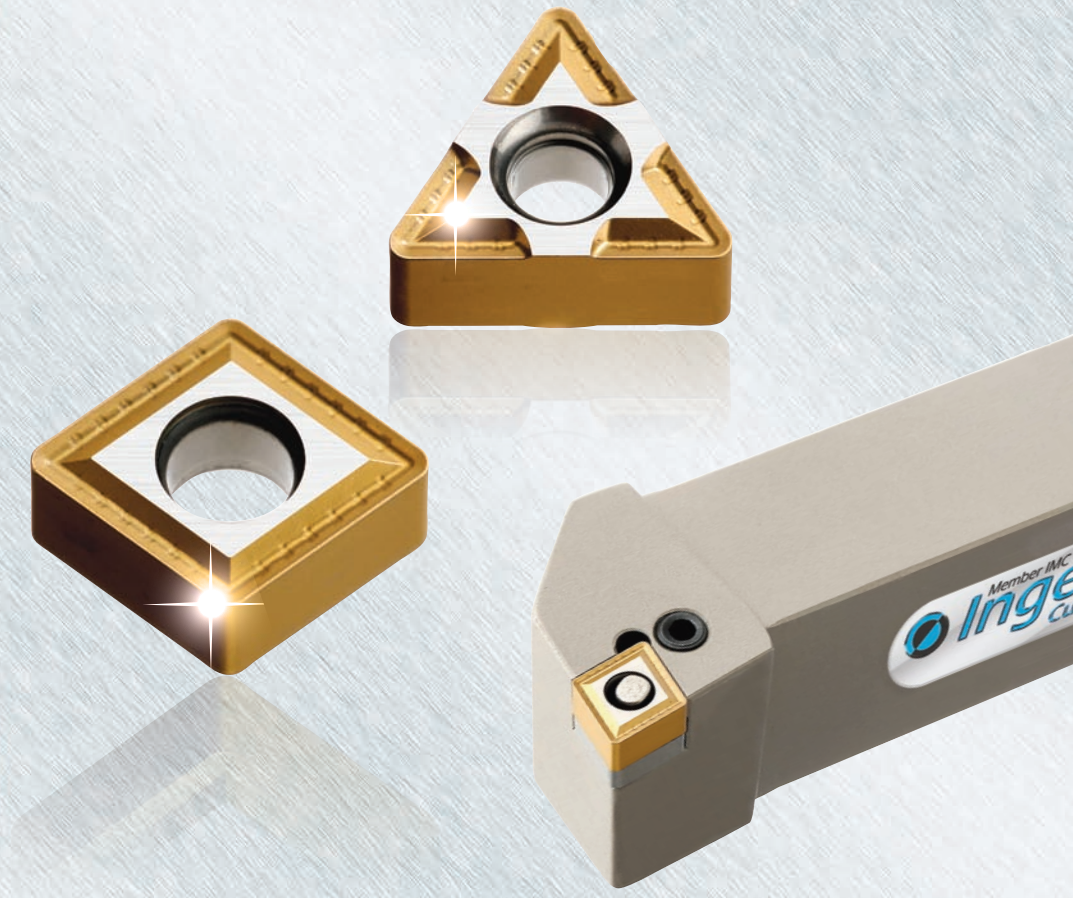
GOLD RHINO



Insert Shapes
- CNMG
- DNMG
- SNMG
- TNMG
- WNMX

Corner Radii
- .016", .031", .047"

Grades
- CVD - TT9225, TT9235
- PVD - TT5080, TT9080

Feed Rates
- .006 - .020 ipr

NEW PRODUCT ANNOUNCEMENT •2015•

MK Chip Breaker for Stainless Steel and Heat-Resistant Materials

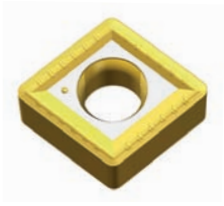
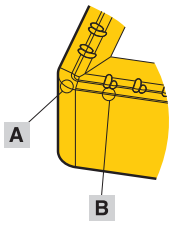
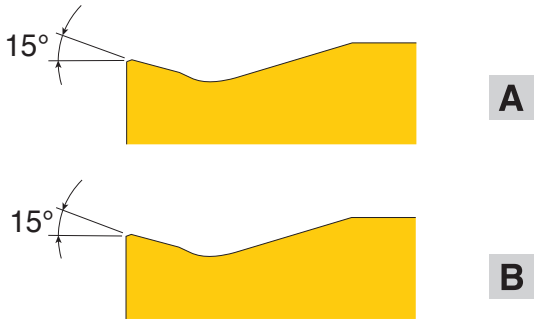
Ingersoll announces the addition of a new chip breaker to the Gold-Rhino product line for turning stainless steel and high temp alloys.

The MK designated chip breaker features a very stable rake face design with a 15 degree positive cutting angle at the corner and along the full cutting edge of each insert. This sharp geometry minimizes build-up that often occurs when machining soft, gummy materials, thereby providing longer and more consistent tool life. It is ideal for medium-light to medium-heavy turning operations in these materials.

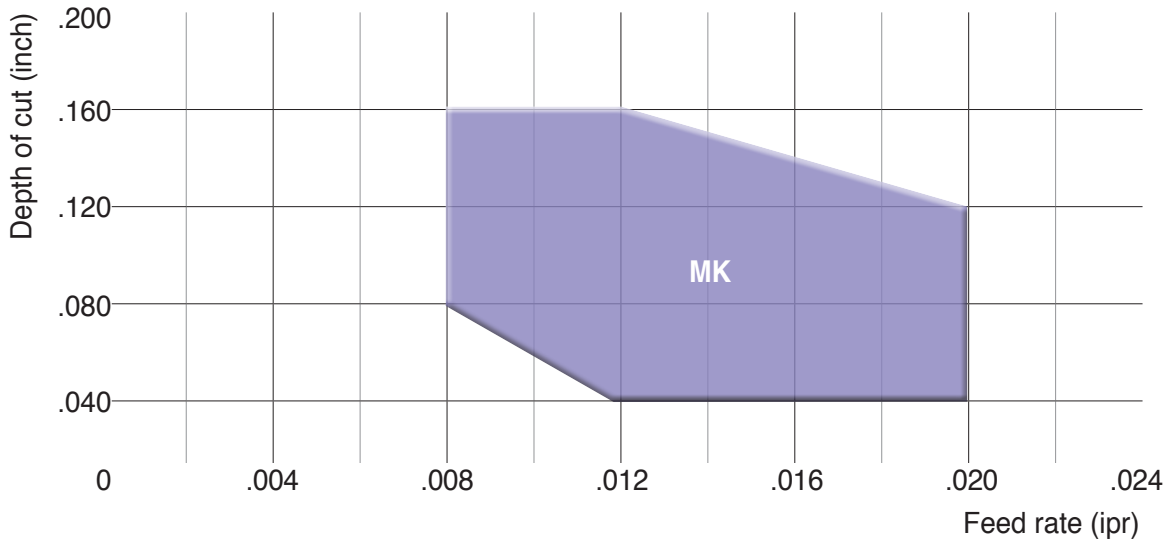
The MK chip breaker is available in five different shapes (CNMG, DNMG, SNMG, TNMG and WNMX), providing an opportunity to apply this economical Gold-Rhino solution across a wide variety of applications.

Member IMC Group Ingersoll Cutting Tools

Edge geometry of MK chip breaker

Chip breaker		Edge geometry	
CNMG	 MK		

Chipbreaker range

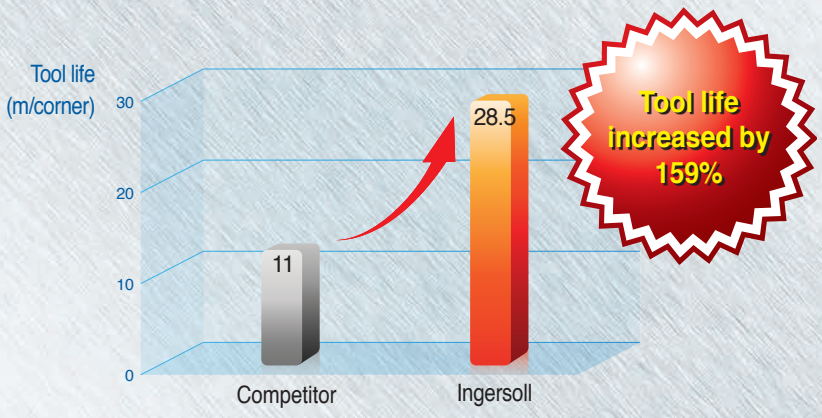


- Insert: CNMG 332 (090408) MK
- Cutting speed (V): 500 sfm

GOLD RHINO

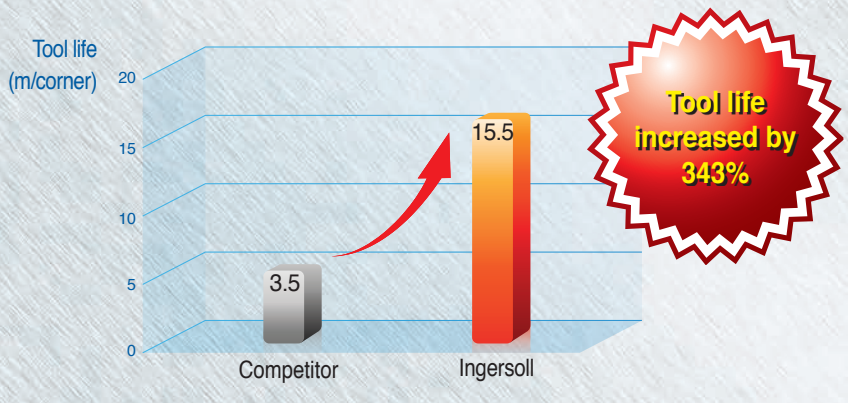
Case Study 1

		Competitor	Ingersoll
Workpiece material		Inconel 718	
Insert		CNMG 432	CNMG 332 MK
Grade		PVD coating grade	TT9080
Cutting speed	V (sfm)	130	130
Feed rate	f (ipr)	.006	.006
Depth of cut	ap (inch)	.040	.040
Coolant		Yes	Yes
Tool life (m/corner)		11	28.5
Remark		Continuous cut	



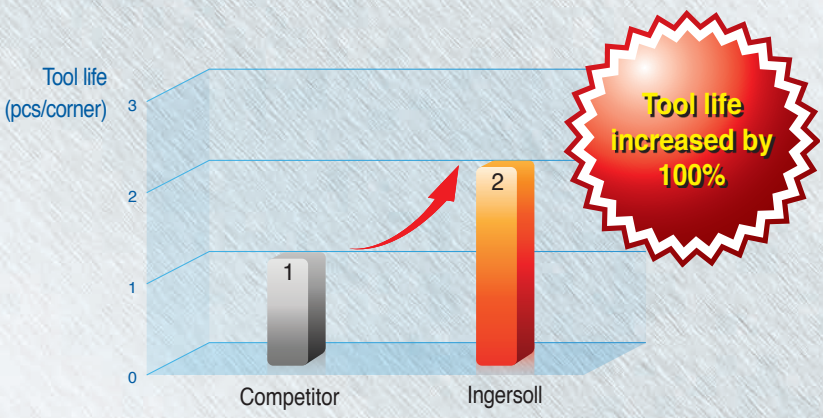
Case Study 2

		Competitor	Ingersoll
Workpiece material		SUS 304 (AISI 304)	
Insert		CNMG 432	CNMG 332 MK
Grade		PVD coating grade	TT9080
Cutting speed	V (sfm)	525	525
Feed rate	f (ipr)	.012	.012
Depth of cut	ap (inch)	.080	.080
Coolant		Yes	Yes
Tool life (m/corner)		3.5	15.5
Remark		Continuous cut	

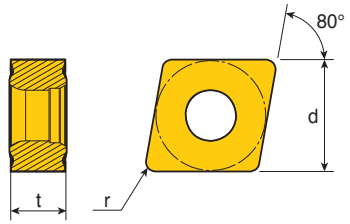


Case Study 3

		Competitor	Ingersoll
Workpiece material		Stellite 6	
Insert		CNMG 432	CNMG 332 MK
Grade		PVD coating grade	TT9080
Cutting speed	V (sfm)	100	100
Feed rate	f (ipr)	.0035	.0035
Depth of cut	ap (inch)	.020	.020
Coolant		Yes	Yes
Tool life (m/corner)		1	2
Remark		Continuous cut	



CNMG Negative 80° rhombic inserts

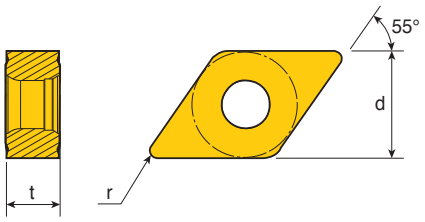


Size	Dimension (in)		
	d	t	r
331	.375	.187	.016
332	.375	.187	.031
333	.375	.187	.047

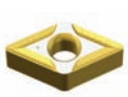
Insert	Designation ANSI (ISO)		Recommended machining conditions		CVD Coated		PVD coated		
			feed (ipr)	ap (in)	TT9225	TT9235	TT5080	TT9080	TT8020
	CNMG	331 (090404) MK	.006-.016	.028-.138	●	●	●	●	
		332 (090408) MK	.008-.018	.040-.138	●	●	●	●	●
		333 (090412) MK	.009-.020	.060-.138	●	●	●	●	

●: Standard item

DNMG Negative 55° rhombic inserts

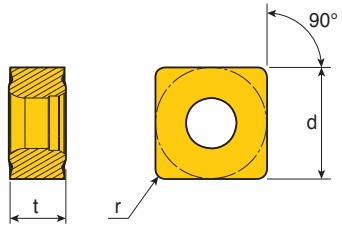


Size	Dimension (in)		
	d	t	r
3.53.51	.437	.219	.016
3.53.52	.437	.219	.031
3.53.53	.437	.219	.047

Insert	Designation ANSI (ISO)		Recommended machining conditions		CVD Coated		PVD coated	
			feed (ipr)	ap (in)	TT9225	TT9235	TT5080	TT9080
	DNMG	3.53.51 (130504) MK	.006-.016	.028-.157	●	●	●	●
		3.53.52 (130508) MK	.008-.018	.040-.157	●	●	●	●
		3.53.53 (130512) MK	.009-.020	.060-.157	●	●	●	●

●: Standard item

SNMG Negative square inserts

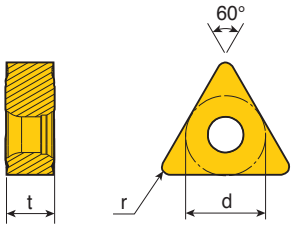


Size	Dimension (in)		
	d	t	r
331	.375	.187	.016
332	.375	.187	.031
333	.375	.187	.047	

Insert	Designation ANSI (ISO)	Recommended machining conditions		CVD Coated		PVD coated	
		feed (ipr)	ap (in)	TT9225	TT9235	TT5080	TT9080
	SNMG 331 (090404) MK	.006-.016	.028-.138	●	●	●	●
	332 (090408) MK	.008-.018	.040-.138	●	●	●	●
	333 (090412) MK	.009-.020	.060-.138	●	●	●	●

●: Standard item

TNMG Negative triangular inserts

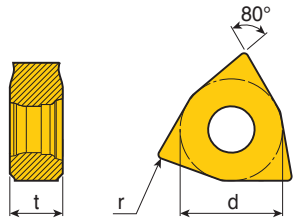


Size	Dimension (in)		
	d	t	r
2.531	.313	.187	.016
2.532	.313	.187	.031
2.533	.313	.187	.047

Insert	Designation ANSI (ISO)	Recommended machining conditions		CVD Coated		PVD coated	
		feed (ipr)	ap (in)	TT9225	TT9235	TT5080	TT9080
	TNMG 2.531 (130404) MK	.006-.016	.028-.118	●	●	●	●
	2.532 (130408) MK	.008-.018	.040-.118	●	●	●	●
	2.533 (130412) MK	.009-.020	.060-.118	●	●	●	●

●: Standard item

WNMX Negative 80° trigon inserts



Size	Dimension (in)		
	d	t	r
331	.375	.187	.016
332	.375	.187	.031
333	.375	.187	.047

Insert	Designation ANSI (ISO)	Recommended machining conditions		CVD Coated		PVD coated	
		feed (ipr)	ap (in)	TT9225	TT9235	TT5080	TT9080
	**WNMX 331 (060404) MK**	.006-.016	.028-.118	●	●	●	●
	332 (060408) MK	.008-.018	.040-.118	●	●	●	●
	333 (060412) MK	.009-.020	.060-.118	●	●	●	●

●: Standard item