

GOLD RHINO



Insert Shapes

- YNMG 2.53

Corner Radii

- .016", .031"

Grades

- Cermet:
 - PV3010
 - CT3000
- Carbide:
 - TT8115 (CVD)
 - TT5080 (PVD)



Now Available, New YNMG 2.53 Inserts

Ingersoll is pleased to announce the expansion of the Gold-Rhino product line with a new YNMG style insert.

This new insert is designed with a 25° included angle shape that enables profile and grooving applications in cases where a 35° VNMG insert doesn't provide enough side clearance. This insert is also an excellent option for uninterrupted undercut machining applications.

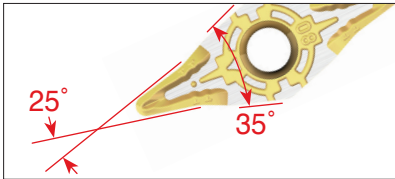
The YNMG insert is offered with our new FS chip breaker, featuring a sharp cutting edge which reduces radial and tangential forces during machining. Combined with the wide protrusion on the rake face, the result is minimal vibration and favorable chip control producing an excellent surface finish.

All YNMG inserts are interchangeable with the Gold-Rhino VNMX H-Type holders, but for optimal performance, it is recommended the new T-Type holders are used for all external applications.

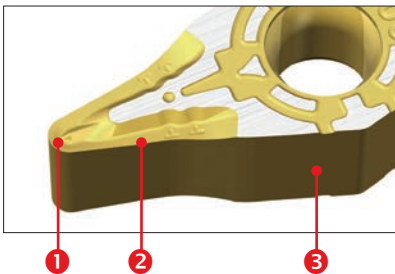
**NEW
PRODUCT
ANNOUNCEMENT
2016**

YNMG FS Features

- New profile machining concept: 25 degree included angle

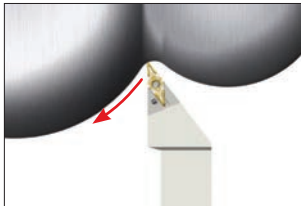


- FS chipbreaker features a sharp cutting edge and wide chip breaker shape for excellent chip control

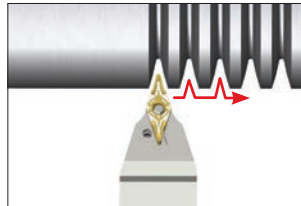


- 1 Wide chip breaker shape for chip control
- 2 Positive rake angle
- 3 Interchangeable with VNMX holders

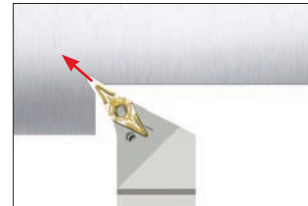
- Main applications



Profiling



Profiling



Undercut machining

➔ Improved productivity and cost savings

- Interchangeable with the recently launched VNMX insert holders



VNMX 2.53 insert setting



Can be fastened to the same holder



YNMG 2.53 insert setting


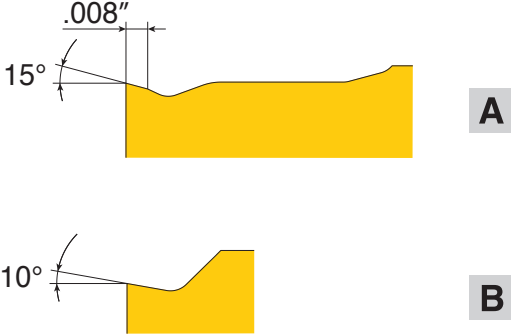
- YNMG 2.53 insert's cutting edge length



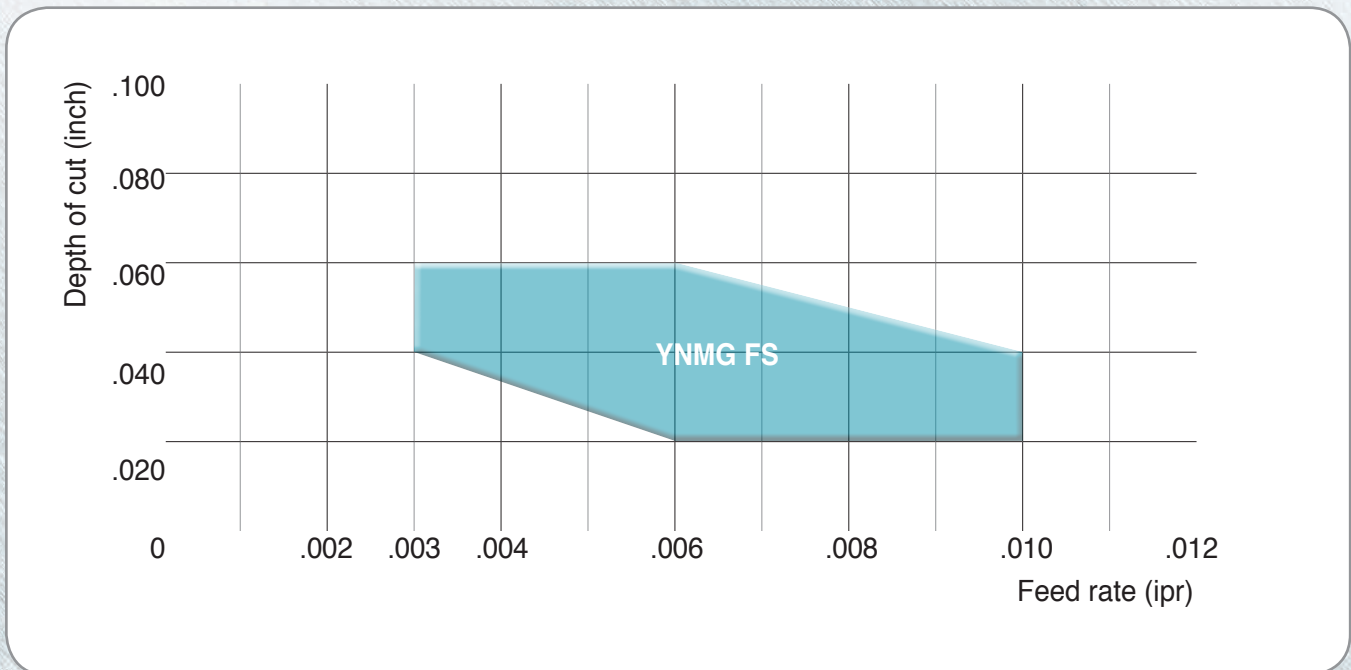
YNMG 2.531 ➔ E.L. = .185"

YNMG 2.532 ➔ E.L. = .165"

YNMG FS chipbreaker edge geometry

Chip breaker		Edge geometry
YNMG		
	YNMG FS	

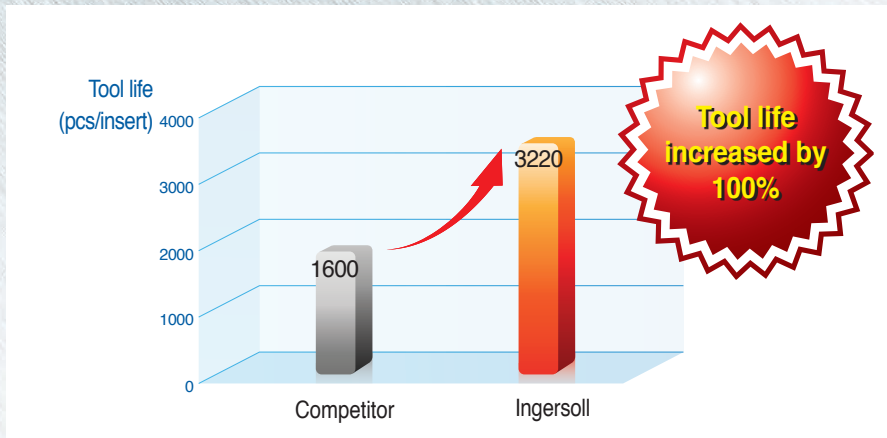
Chipbreaker range



- Insert: YNMG 2.532 (130408) FS
- Cutting Speed (V): 650 sfm
- Material: 0.45% Carbon steel (HB200~230)

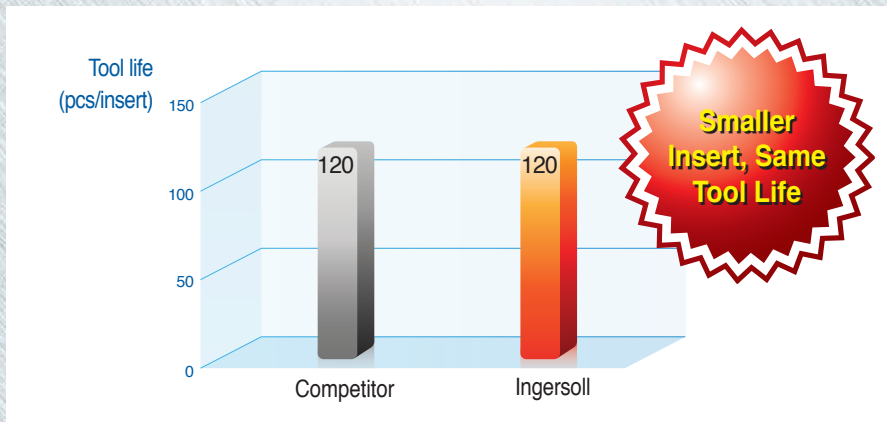
Case Study 1

		Competitor	Ingersoll
Workpiece		Pulley	
Workpiece material		Carbon steel (S40C, AISI 1040)	
Insert		'Y' type positive insert (2 corners)	YNMG 2.531 FS (4 corners)
Grade		P25 tungsten carbide coated	PV3010
Cutting speed	V (sfm)	1300	
Feed rate	f (ipr)	.008	
Depth of cut	ap (inch)	.008	
Coolant		Dry	
Tool life (pcs/insert)		1600	3220



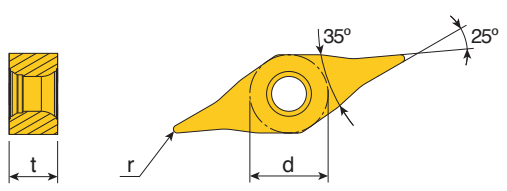
Case Study 2


		Competitor	Ingersoll
Workpiece		Shaft	
Workpiece material		Magnesium alloy	
Insert		YNMG 331 (4 corners)	YNMG 2.531 FS (4 corners)
Grade		P10 cermet grade	PV3010
Cutting speed	V (sfm)	850	
Feed rate	f (ipr)	.0023	
Depth of cut	ap (inch)	.020	
Coolant		Dry	
Tool life (pcs/insert)		120	120



GOLD RHINO

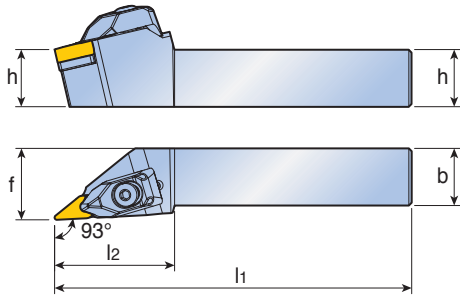
YNMG 2.53 Negative 25° rhombic inserts

	Size	Dimension (in)		
	2.53	d	t	r
		.312	.187	.016-.031

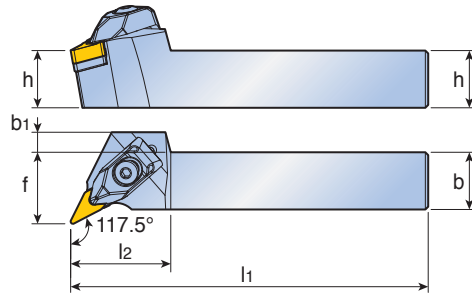
Insert	Designation ANSI (ISO)	Recommended machining conditions		Cermet		CVD Coated	PVD coated
		feed (ipr)	ap (in)	PV3010	CT3000	TT8115	TT5080
	YNMG 2.531 (130404) FS	.003-.008	.012-.040	•	•	•	•
	2.532 (130408) FS	.003-.010	.020-.060	•	•	•	•

• : Standard item

TVJNR/L TVQNR/L T-Type holder



TVJNR/L



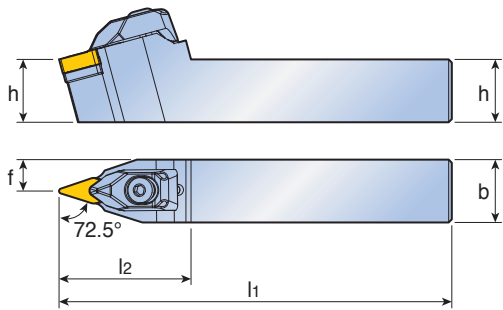
TVQNR/L

Approach angle	Designation	Dimension (inch)						Insert	
		h	b	l1	l2	f	b1		
93° 	TVJNR/L 12-2.53B	.750	.750	4.5	1.65	1.00	-	VNMX 2.53... YNMG 2.53...	
	16-2.53D	1.000	1.000	6.0	1.65	1.25	-		
	20-2.53D	1.250	1.250	6.0	1.77	1.50	-		
117.5° 	TVQNR/L 12-2.53B	.750	.750	4.5	1.38	1.00	.276		
	16-2.53D	1.000	1.000	6.0	1.38	1.25	-		

Spare parts

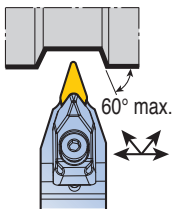
Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
...2.53	DLM 2.5V-NX	DLS 4	MSVI 2.522	SO 40085I	DSP 4	L-W 4	T 15

TVVNN T-Type holder



TVVNN

Approach angle	Designation	Dimension (inch)					Insert
		h	b	l1	l2	f	
72.5°	TVVNN 12-2.53B	.750	.750	4.5	1.65	.375	VNMX 2.53...
	16-2.53D	1.000	1.000	6.0	1.65	.500	YNMG 2.53...

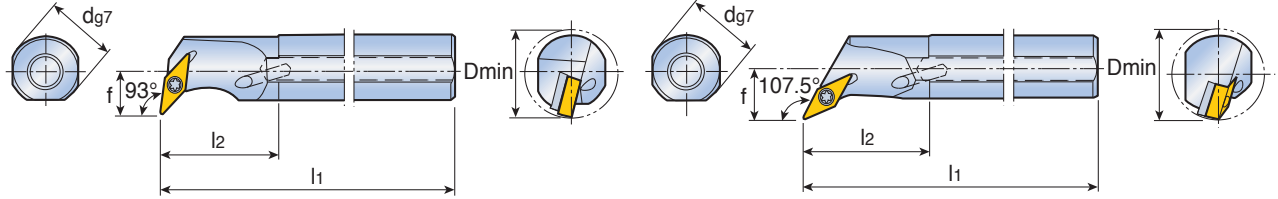


Spare parts

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench	
...1304	DLM 2.5V-NX	DLS 4	MSVI 2.522	SO 40085I	DSP 4	L-W 4	T 15

GOLD RHINO

A-SVUNR/L A-SVQNR/L Screw type holder



A-SVUNR/L

A-SVQNR/L

Approach angle	Designation	Dimension (in)					Insert	
		dg7	l1	l2	f	Dmin		
95° 	A16T	SVUNR/L-2.53	1.00	12.0	1.58	.625	1.25	VNMX 2.53...
	A20U	SVUNR/L-2.53	1.25	14.0	1.58	.750	1.50	
117.5° 	A16T	SVQNR/L-2.53	1.00	12.0	1.30	.750	1.30	
	A20U	SVQNR/L-2.53	1.25	14.0	1.38	.875	1.65	

Spare parts

Designation	Screw	Shim	Shim screw	Wrench 1	Wrench 2
VNMX 2.53x	TS 30120I/HG	SSVN 2.523	TS 5030062S	T 9(T-9/5)	L-W 3.5

OPERATING GUIDELINES

ISO	Material	Condition	Tensile strength (N/mm ²)	Hardness HB	Material No.	Cutting Speed Vc (sfm)					
						Cermet		Coated			
						PV3010	CT3000	TT8115	TT5080		
P	Non-alloy steel, cast steel, free cutting steel	< 0.25%C	Annealed	420	125	1	1150-2130	980-1870	920-1740		
		>= 0.25%C	Annealed	650	190	2	885-1700	820-1640	780-1575		
		< 0.55%C	Quenched and tempered	850	250	3	790-1575	720-1500	650-1440		
		>= 0.55%C	Annealed	750	220	4	850-1640	780-1540	720-1480		
			Quenched and tempered	1000	300	5	790-1510	720-1440	590-1380		
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed		600	200	6	790-1770	720-1700	650-1640		
				930	275	7	625-1080	560-980	500-920		
		Quenched and tempered		1000	300	8	550-980	490-885	425-820		
				1200	350	9	460-885	425-820	400-750		
	High alloy steel, cast steel and tool steel	Annealed		680	200	10	850-1325	820-1300	625-1250		
Quenched and tempered			1100	325	11	460-670	425-640	300-590			
M	Stainless steel and cast steel	Ferritic / martensitic		680	200	12	650-980	590-885		525-1280	
		Martensitic		820	240	13	650-885	560-820		525-920	
		Austenitic		600	180	14	560-850	490-780		330-820	
K	Gray cast iron (GG)	Ferritic			160	15	750-1080	720-1050			
		Pearlitic			250	16	700-950	670-920			
	Cast iron nodular (GGG)	Ferritic			180	17	560-870	525-830			
		Pearlitic			260	18	590-780	560-750			
	Malleable cast iron	Ferritic			130	19	475-720	440-650			
		Pearlitic			230	20	340-490	310-460			
N	Aluminum - wrought alloy	Not cureable			60	21					
		Cured			100	22					
	Aluminum-cast, alloyed	<=12% Si	Not cureable			75	23				
			Cured			90	24				
	Copper alloys	>12% Si	High temp.			130	25				
		>1% Pb	Free cutting			110	26				
			Brass			90	27				
			Electrolitic copper			100	28				
	Non-metallic	Duroplastics, fiber plastics					29				
		Hard rubber					30				
S	High temp. alloys	Fe based	Annealed			200	31			165-600	
			Cured			280	32			130-525	
		Ni or Co based	Annealed			250	33				150-330
			Cured			350	34				115-300
			Cast			320	35				100-260
	Titanium, Ti alloys			Rm 400			36			360-650	
				Alpha+beta alloys cured	Rm 1050			37		165-330	
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