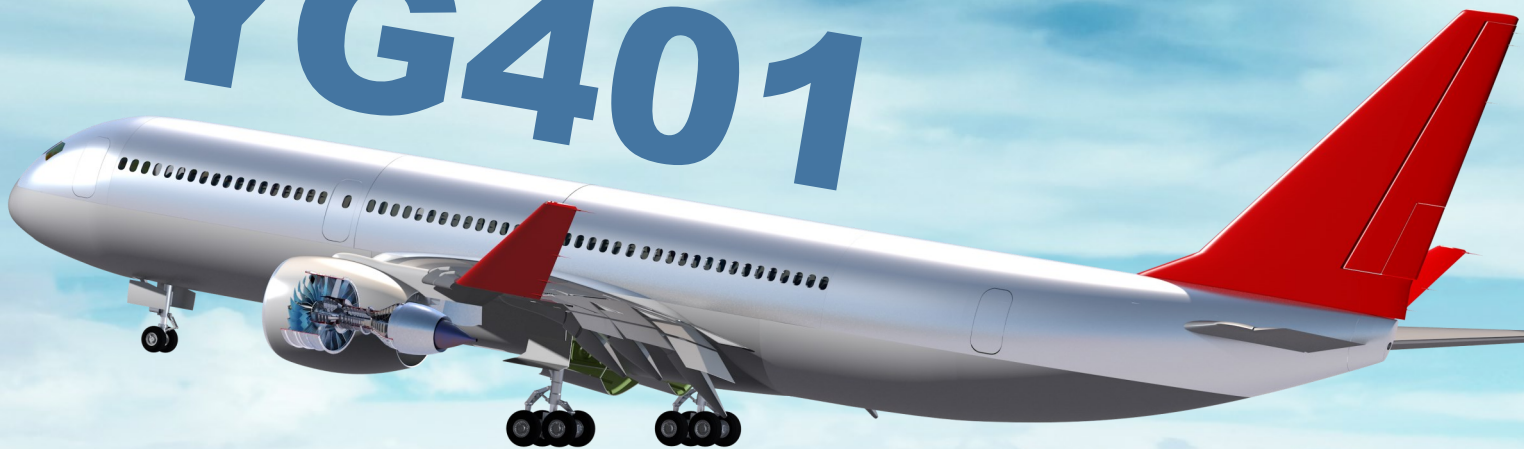


# New Product Announcement

NPAI-2103



FLYING WITH  
**YG401**



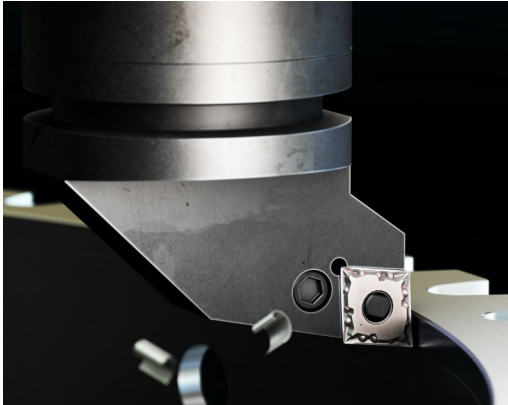
## **YG401 Grade for HRSA**

"YG-1 launched a new PVD coated grade for machining high resistance super alloys.

YG401 grade has exceptional performance at high cutting speed on HRSA material.

YG401 grade with three type chip breakers as SF, SM and SR can be performed well from finishing to roughing operation on HRSA material"





## Creating a Sensation to the Market

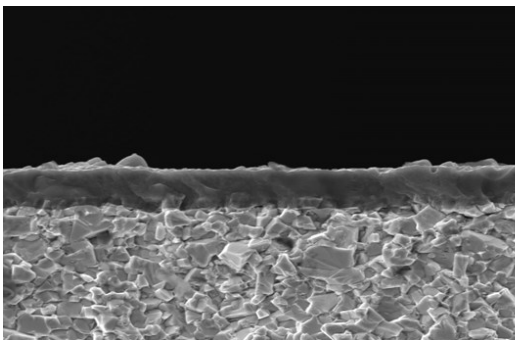
YG401 can be the best solution where Heat Resistant Super Alloy is using such as aerospace, power generation, oil and gas, and other industries.

April 16, 2021

## YGTURN YG401 for Super alloy

### Key Technologies

- Greatly improved adhesion realizes excellent boundary defect resistance.
- Top coating layer provides a smooth surface and lubricant effect
- Ultra-fine grained carbide with a balanced substrate
- Heat resistant TiAlN structure realizes excellent crater and flank wear resistance.



→ Coating Layer

→ Substrate

## GT TURN Chip Breakers

### Characteristic of Chipbreaker

**SF (Finish)** : Specialized geometry of side angle can dramatically decreased cutting force

**SM (Medium)** : Stable cutting edge for heat control

**SR (Rough)** : Variable land for strong cutting edge

Name	Image	Cutting Condition
SF		<p>Heat Resistant Alloy</p>
SM		<p>Difficult-to-Cut Materials</p>
SR		



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## YGTURN YG401 + SF, SM, SR

### Cutting Conditions

ISO	Work-Piece	Parameter	YG401-SF	YG401-SM	YG401-SR
S	Super Alloy	Vc(m/min.)	40~90	40~90	40~90
	Fe Based	fn(mm/rev)	0.1~0.25	0.1~0.25	0.2~0.35
		ap(mm)	0.2~1	0.5~3.0	1.0~4.5
S	Super Alloy	Vc(m/min.)	35~70	35~70	35~70
	Ni or Co Based	fn(mm/rev)	0.1~0.25	0.1~0.25	0.2~0.35
		ap(mm)	0.2~1	0.5~3.0	1.0~4.5
S	Titanium	Vc(m/min.)	80~150	80~150	80~150
		fn(mm/rev)	0.1~0.25	0.1~0.25	0.2~0.35
		ap(mm)	0.2~1	0.5~3.0	1.0~4.5
S	Titanium Alloy	Vc(m/min.)	40~80	40~80	40~80
		fn(mm/rev)	0.1~0.25	0.1~0.25	0.2~0.35
		ap(mm)	0.2~1	0.5~3.0	1.0~4.5



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## YGTURN YG401 Success Story

### Success Story

#### YG401 on HRSA

Case study– Turning

S

Inconel 718



Competitor T

Designation	CNGG 120408 (432)	
Chipbreaker	<b>SF</b>	ML
Grade	<b>YG401</b>	TT5080
Vc (Cutting Speed)	38 m/min (125 ft/min)	
Fn (Feed)	0.25 mm/rev (.01 in/rev)	
Ap (Depth of Cut)	1.27 mm (0.05 in)	
Tool Life	<b>11 pcs</b>	<b>10 pcs</b>

#### Aerospace Components



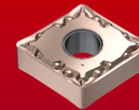
10% ↑

Tool Life

11 pcs



YG401



Competitor T

10 pcs



## YGTURN YG401 Success Story

### Success Story

#### YG401 on HRSA

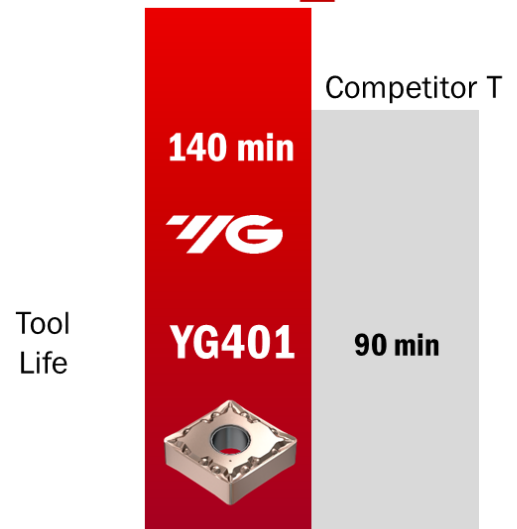
Case study– Turning

<b>S</b>	Hastelloy X	
		Competitor T
Designation	CNGG 120408 (432)	
Chipbreaker	<b>SF</b>	EM
Grade	<b>YG401</b>	TT9080
Vc (Cutting Speed)	37 m/min (120 ft/min)	
Fn (Feed)	0.2 mm/rev (.008 in/rev)	
Ap (Depth of Cut)	1.2 mm (0.05 in)	
Tool Life	<b>140 min</b>	<b>90 min</b>

#### Aerospace Components



**55%** ↑



## YGTURN YG401 Success Story

### Success Story

#### YG401 on HRSA

Case study– Turning

**S**

Inconel 625



Competitor G

Designation	CNGG 120408 (432)	
Chipbreaker	<b>SF</b>	TF
Grade	<b>YG401</b>	G925
Vc (Cutting Speed)	61 m/min (200 ft/min)	
Fn (Feed)	0.15 mm/rev (.006 in/rev)	
Ap (Depth of Cut)	0.6 mm (0.025 in)	
Tool Life	<b>4 pcs</b>	<b>2 pcs</b>

#### Aerospace Components



**100%** ↑

Tool Life

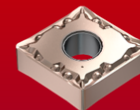
4 pcs



Competitor G

**YG401**

2 pcs



## YGTURN YG401 Success Story

### Success Story

#### YG401 on Ti Alloy

Case study– Turning



Titanium Alloy Steel  
→ 6Al4V Ti



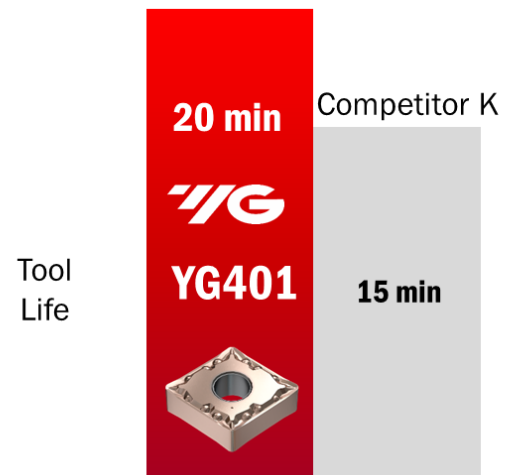
Competitor K

Designation	CNGG 120404 (431)	
Chipbreaker	<b>SF</b>	RP
Grade	<b>YG401</b>	KC5025
Vc (Cutting Speed)	53 m/min (174 ft/min)	
Fn (Feed)	0.18 mm/rev (.007 in/rev)	
Ap (Depth of Cut)	0.9 mm (0.035 in)	
Tool Life	<b>20 min</b>	<b>15 min</b>

#### Aerospace Components



**33%** ↑





## W/GTURN YG401 Success Story

### Success Story

#### YG401 on HRSA

Case study– Turning

**S**

Inconel 625



Competitor S

Designation	CNGG 120408 (432)	
Chipbreaker	<b>SF</b>	SGF
Grade	<b>YG401</b>	1105
Vc (Cutting Speed)	<b>73 m/min (240 ft/min)</b>	61 m/min (200 ft/min)
Fn (Feed)	0.15 mm/rev (.006 in/rev)	
Ap (Depth of Cut)	0.5 mm (0.02 in)	
Tool Life	<b>20 min</b>	<b>20min</b>

#### Aerospace Spacer



**20%** ↑

Cutting Speed





# New Product Announcement

April 16, 2021

## YGTURN YG401 + SF, SM, SR

### Insert

### Insert List

● Stock Available

EDP NO.	Description	Stock
22000943	CNGG120408-SF-YG401/CNGG432-SF	●
22000945	CNMG120408-SR-YG401/CNMG432-SR	●
22001189	CNMG120408-SM-YG401/CNMG432-SM	●
22001228	TNMG160408-SM-YG401/TNMG332-SM	●
22001279	CNMG120412-SR-YG401/CNMG433-SR	●
22001280	DNMG150608-SR-YG401/DNMG442-SR	●
22001291	CNGG120404-SF-YG401/CNGG431-SF	●
22001292	CNMG120412-SM-YG401/CNMG433-SM	●
22001293	DNGG150408-SF-YG401/DNGG432-SF	●
22001294	DNGG150608-SF-YG401/DNGG442-SF	●
22001295	DNGG150404-SF-YG401/DNGG431-SF	●
22001296	DNGG150604-SF-YG401/DNGG441-SF	●
22001297	DNMG150412-SR-YG401/DNMG433-SR	●
22001298	DNMG150408-SR-YG401/DNMG432-SR	●
22001299	DNMG150612-SR-YG401/DNMG443-SR	●
22001300	DNMG150408-SM-YG401/DNMG432-SM	●
22001301	DNMG150608-SM-YG401/DNMG442-SM	●

EDP NO.	Description	Stock
22001302	DNMG150612-SM-YG401/DNMG443-SM	●
22001303	DNMG150412-SM-YG401/DNMG433-SM	●
22001304	SNMG120412-SR-YG401/SNMG433-SR	●
22001305	SNMG120408-SR-YG401/SNMG432-SR	●
22001306	TNMG160412-SR-YG401/TNMG333-SR	●
22001307	TNMG160408-SR-YG401/TNMG332-SR	●
22001308	WNGG080408-SF-YG401/WNGG432-SF	●
22001309	WNMG080412-SR-YG401/WNMG433-SR	●
22001310	WNMG080408-SR-YG401/WNMG432-SR	●
22001311	WNMG080408-SM-YG401/WNMG432-SM	●
22001312	WNMG080412-SM-YG401/WNMG433-SM	●
22001427	TNMG160408-SF-YG401/TNMG332-SF	●
22001439	WNMG060412-SR-YG401/WNMG333-SR	●
22001449	VNMG160408-SR-YG401/VNMG332-SR	●
22001508	TNMG160412-SM-YG401/TNMG333-SM	●
22001696	SNMG120408-SM-YG401/SNMG432-SM	●



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