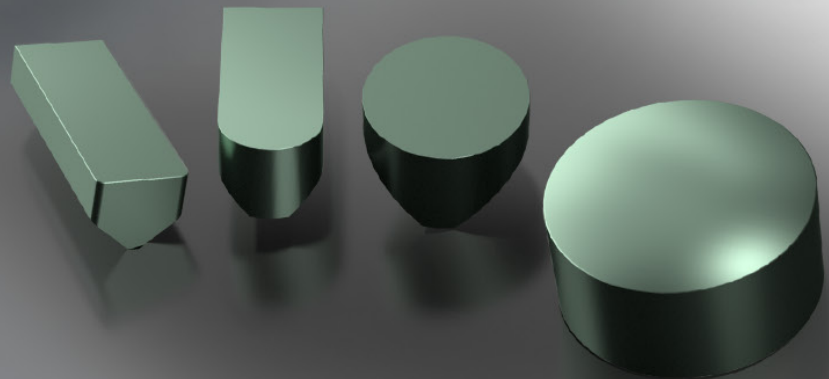


**ALLOYCAT**   
Whiskered ceramic inserts for high-temp alloys



**IDEAL FOR HEAT-RESISTANT  
SUPER ALLOYS**

## THE ADVANTAGE OF CERAMIC

**Whisker-reinforced ceramic, like our brand new CG-88 grade, provide excellent wear and shock resistance at high surface speeds.**

The AlloyCat CG-88 grade is ideal for machining nickel and cobalt based super alloys at metal removal rates 5-10 times higher than carbide.

## WHISKERED CERAMIC VS. CARBIDE

**Whiskered ceramic offers superior performance over carbide, in both finishing and roughing applications due to:**

High temperature resistance - allows for higher cutting speeds.

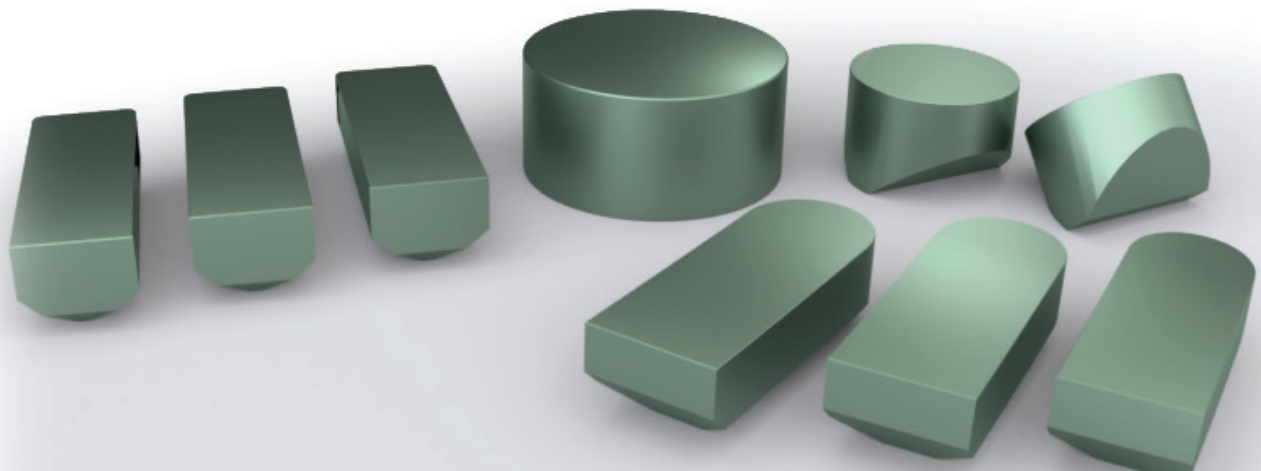
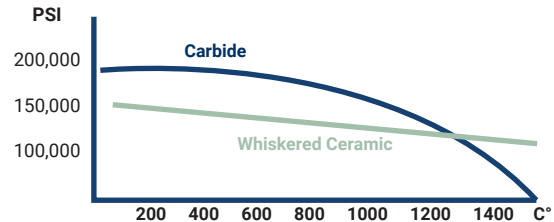
Higher toughness - interlaced fibers within the ceramic material improve toughness and bulk strength compared to both carbide and traditional ceramics.



### Whiskered Ceramic Properties

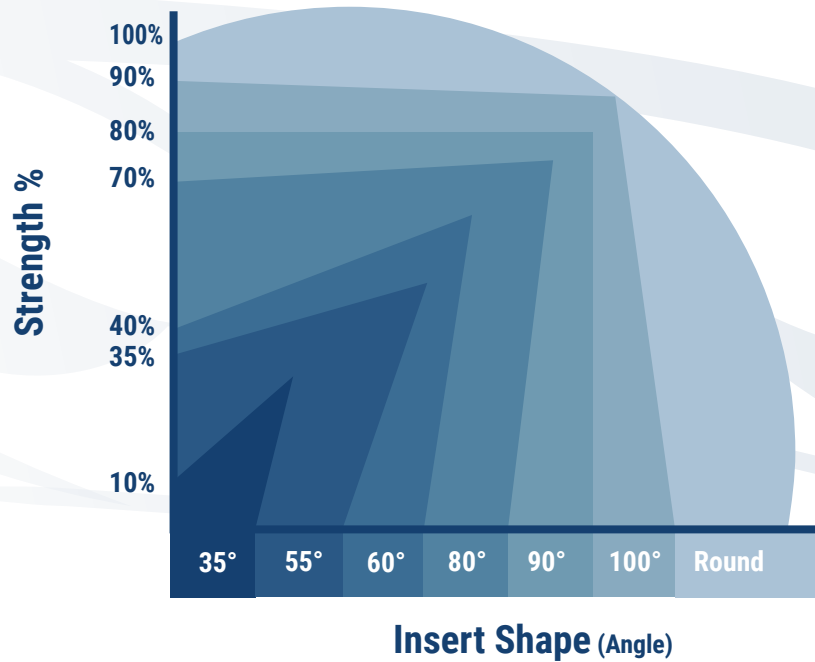


### Elevated Temperature Relative Strength

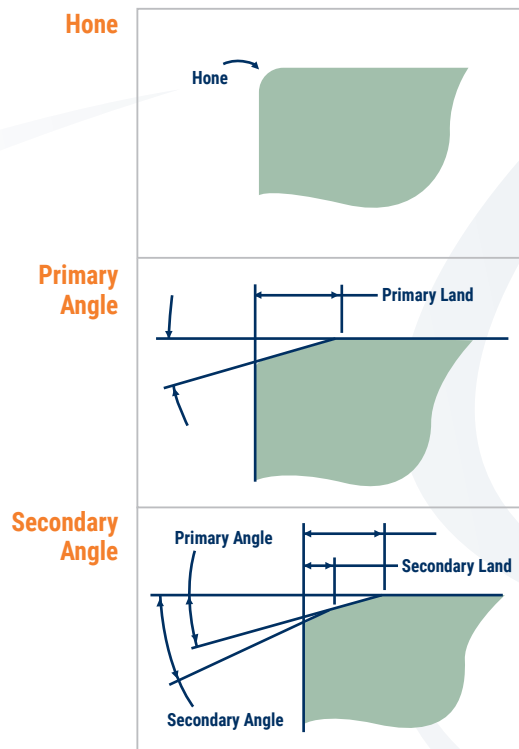


# SELECTING THE STRONGEST SHAPE FOR YOUR APPLICATION

Round inserts provide the strongest corner. Refer to the chart below to identify the strongest corner shape for your application.



## Edge Prep & Application Guide Identifying the correct edge prep for your application



Edge Prep	Hone	Primary Land	Primary Angle	Application
A	.0005 - .001" R.	-	-	Use when increased edge protection is needed on existing edge preparations for light finishing and grooving
T1	-	.002 - .004"	20°	Used for general purpose turning of clean HRSA turning applications
T1A	.0005 - .001" R.	.002 - .004"	20°	Use in light scale removal applications or light interruptions where more edge protection is needed than the standard T1
T2	-	.006 - .008"	20°	Use with light to medium feed rates in HRSA's and cast iron applications for turning
T2A	.0005 - .001" R.	.006 - .008"	20°	Use when cutting through scale or when slight interruptions are present in finish turning or milling of hard materials

# ULTIMATE PERFORMANCE

Premium Whiskered Ceramic Inserts for Super Alloys



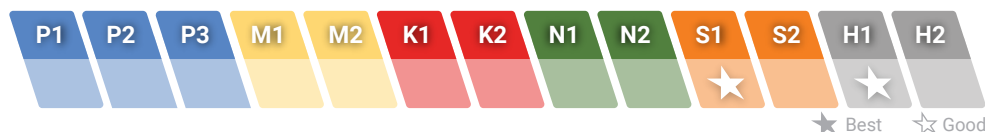
## Series 6000 Round

Shape	Whisker Grade	Description	Edge Prep	Dimensions (in)		EDP
				IC(A)	Thickness(T)	
	CG-88	RNGN-32	T1	0.375	0.125	600001
			T1A	0.375	0.125	600002
			T2A	0.375	0.125	600003
		RNGN-33	T1	0.375	0.187	600004
			T1A	0.375	0.187	600005
			T2A	0.375	0.187	600006
		RNGN-43	T1	0.500	0.187	600007
			T1A	0.500	0.187	600008
			T2	0.500	0.187	600009
		RNGN-45	T2A	0.500	0.187	600010
			T1	0.500	0.312	600011
			T1A	0.500	0.312	600012
			T2A	0.500	0.312	600013
			T2	0.500	0.312	600014
		A	0.500	0.312	600015	

### More about the Round Insert

Any standard or specialized edge prep are available.

Other ceramic grades available upon request include: Silicone Nitride, Alumina TIC, Al2O3



★ Best ☆ Good

# ULTIMATE PERFORMANCE

Premium Whiskered Ceramic Inserts for Super Alloys



## Series 6001 Round V-Bottom

Shape	Whisker Grade	Description	Edge Prep	Dimensions (in)		EDP
				IC(A)	Thickness(T)	
	CG-88	RPGN-2V	T1	0.250	0.187	<b>600101</b>
			T2A	0.250	0.187	<b>600102</b>
		RPGN-3V	T1	0.375	0.312	<b>600103</b>
			T2A	0.375	0.312	<b>600104</b>
		RPGN-4V	T1	0.500	0.312	<b>600105</b>
			T1A	0.500	0.312	<b>600106</b>
		T2A	0.500	0.312	<b>600107</b>	

### More about the Round V-Bottom

Any standard or specialized edge prep are available.

Other ceramic grades available upon request include: Silicone Nitride, Alumina TIC, Al2O3

## Round 6002 Round V-bottom

Shape	Whisker Grade	Description	Edge Prep	Dimensions (in)		EDP
				IC(A)	Thickness(T)	
	CG-88	RCGN-2V	T1	0.250	0.187	<b>600201</b>
			T2A	0.250	0.187	<b>600202</b>
		RCGN-3V	T1	0.375	0.312	<b>600203</b>
			T1A	0.375	0.312	<b>600204</b>
			T2A	0.375	0.312	<b>600205</b>
			T4B	0.375	0.312	<b>600206</b>
		RCGN-4V	T1	0.500	0.312	<b>600207</b>
			T1A	0.500	0.312	<b>600208</b>
			T2A	0.500	0.312	<b>600209</b>
			T2A	0.500	0.312	<b>600210</b>
			T5A	0.500	0.312	<b>600211</b>
			T5B	0.500	0.312	<b>600212</b>
			A	0.500	0.312	<b>600213</b>



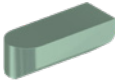
★ Best ☆ Good

# ULTIMATE PERFORMANCE

Premium Whiskered Ceramic Inserts for Super Alloys



## Series 6003 Dog Bone Full Nose

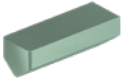
Shape	Whisker Grade	Description	Length	Dimensions (in)			EDP
				Width	Thickness	Radius	
	CG-88	4125	0.500	0.125	0.125	0.125	<b>600301</b>
		4156	0.500	0.156	0.125	0.125	<b>600302</b>
		4187	0.500	0.187	0.125	0.125	<b>600303</b>
		6218	0.750	0.218	0.187	0.187	<b>600304</b>
		6250	0.750	0.250	0.187	0.187	<b>600305</b>

### More about the Groover

Any standard or specialized edge prep are available.

Other ceramic grades available upon request include: Silicone Nitride, Alumina TIC, Al2O3

## Series 6004 Dog Bone Flat Nose

Shape	Whisker Grade	Description	Length	Dimensions (in)			EDP
				Width	Thickness	Radius	
	CG-88	4125-1	0.500	0.125	0.187	0.015	<b>600401</b>
		4125-2				0.031	<b>600402</b>
		4156-1	0.500	0.156	0.187	0.015	<b>600403</b>
		4156-2				0.031	<b>600404</b>
		4187-1	0.500	0.187	0.187	0.015	<b>600405</b>
		4187-2	0.500	0.187	0.187	0.031	<b>600406</b>
		6218-1	0.750	0.218	0.250	0.015	<b>600407</b>
		6218-2	0.750	0.218	0.250	0.031	<b>600408</b>
		6250-1	0.750	0.250	0.250	0.015	<b>600409</b>
		6250-2	0.750	0.250	0.250	0.031	<b>600410</b>
		6250-3	0.750	0.250	0.250	0.046	<b>600411</b>
		6250-4	0.750	0.250	0.250	0.062	<b>600412</b>



★ Best ☆ Good

# SPEED & FEED GUIDE

Optimum Performance



**Cutting speed should be balanced to generate enough heat to plasticize the chip without degrading the ceramic substate of the insert itself.**

The proper feed is based upon a chip thickness that is healthy enough to limit excess friction and work hardening, while not being so large that it causes edge chattering.

Higher feeds and depths of cut require lower cutting speeds.

## Round

	Cutting Speed (SFM)	Feed Rate (IPR)	Depth of Cut	Insert Style	Application
FSM (Up to first .400" Depth of Material)	500 - 660	0.006-0.008	up to 0.197	RNGN-32	General Turning
	500 - 660	0.006-0.008	up to 0.197	RNGN-33	General Turning
	500 - 660	0.006-0.008	up to 0.197	RNGN-43	General Turning
	500 - 660	0.006-0.008	up to 0.197	RNGN-45	General Turning
ISM (.020 to .200" Depth of Material)	500 - 660	0.004-0.008	up to 0.197	RC/PGN-2V	General Turning
	500 - 660	0.004-0.008	up to 0.197	RC/PGN-3V	General Turning
	500 - 660	0.004-0.008	up to 0.197	RC/PGN-4V	General Turning

## Dog Bone

ISM (.020 to .200" Depth of Material)	650 - 1325	0.002-0.004		4XXX	Grooving/ Profiling
	650 - 1325	0.002-0.004		6XXX	Grooving/ Profiling

# INSERT RECONDITIONING

The GWS Tool Group Reconditioning program regrinds your worn out, chipped and used tools back to newly manufactured tool quality. We don't just downsize our own tools - we can take inserts from any manufacturer and return them to newly manufactured tool quality with only a minor reduction in size.

## GROOVER DOWNSIZING EXAMPLE

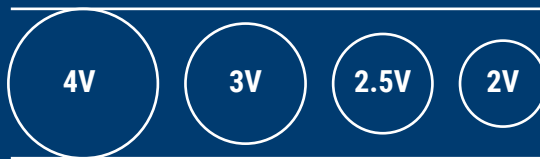
We can obtain any special groove width .020" or under original width, depending on the amount of wear on the original tool.



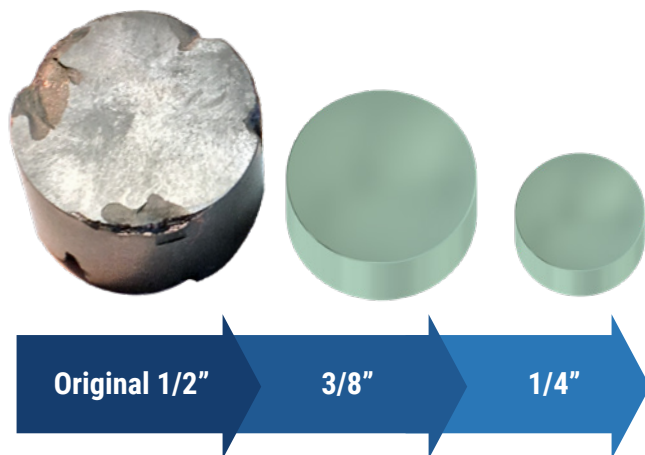
**.010in Minimum Length Reduction**

## ROUND DOWNSIZING EXAMPLE

Edge preparation available. All standard as well as special edge prep can be reconditioned.



We offer 3.5V as well as 1.5V and can make what ever customer needs or wants. We can customize each customer's downsized program to their needs.



*Downsizing progression example*



## QUICK TURNAROUND

Minimal material removal, shortening grind time and associated lead time.

## INVENTORY MANAGEMENT

Save time and space when you stock your reground tools at GWS Tool Group. We take your worn-out tools, regrind them and release them to you as needed.

## COMMUNICATION

Our Tool Tracking System gives you a customized communication experience. We provide live to the minute information on your tools regrind process and keep everything accessible through the cloud.

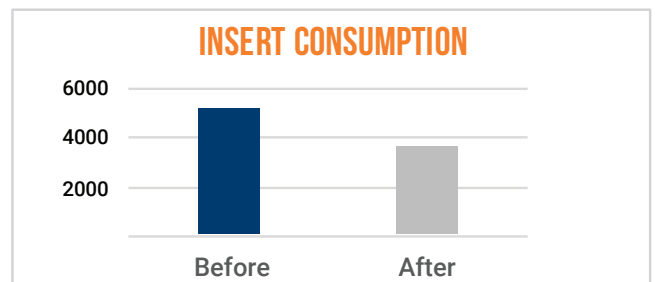
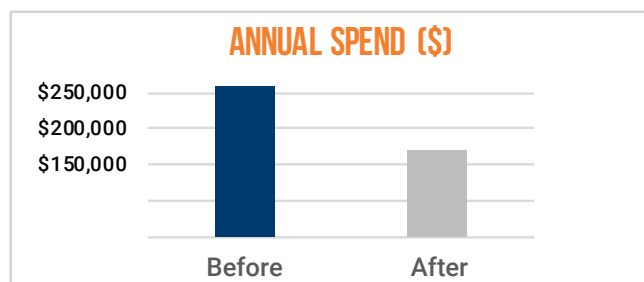
## QUALITY

Our regrinds aren't just made to be as good as your brand new tools, they're reground via your exact specifications. Our AS-9100 certification and vast knowledge of ceramic inserts ensures that you will get quality reground inserts every time.

## COST SAVINGS

Material costs, manufacturing process time, volume shipping and inventory reduction prove the cost savings of a GWS Regrind. Our cost savings are data-driven, not anecdotal. The Regrind Portal tracks and provides real-time comparisons between regrinds and the purchase of new tools.

### CASE STUDY



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**MORE OFFERINGS FROM**



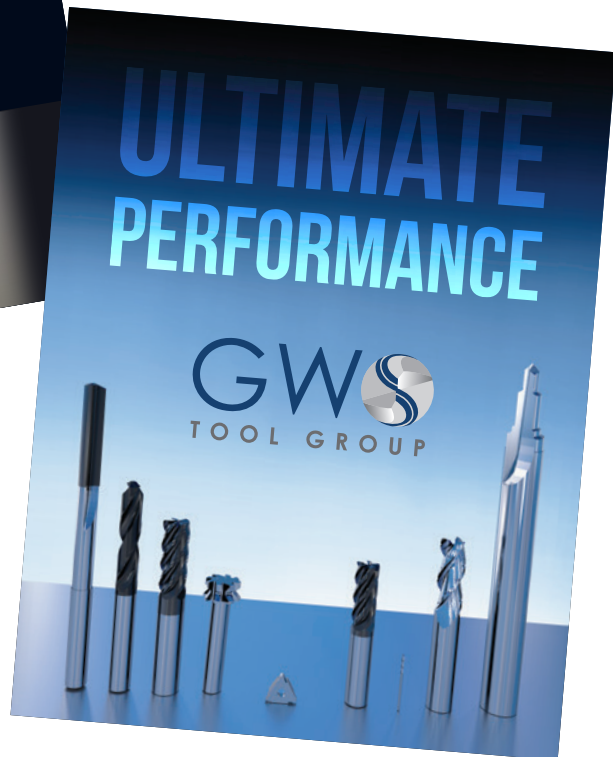
**The GWS Armory**

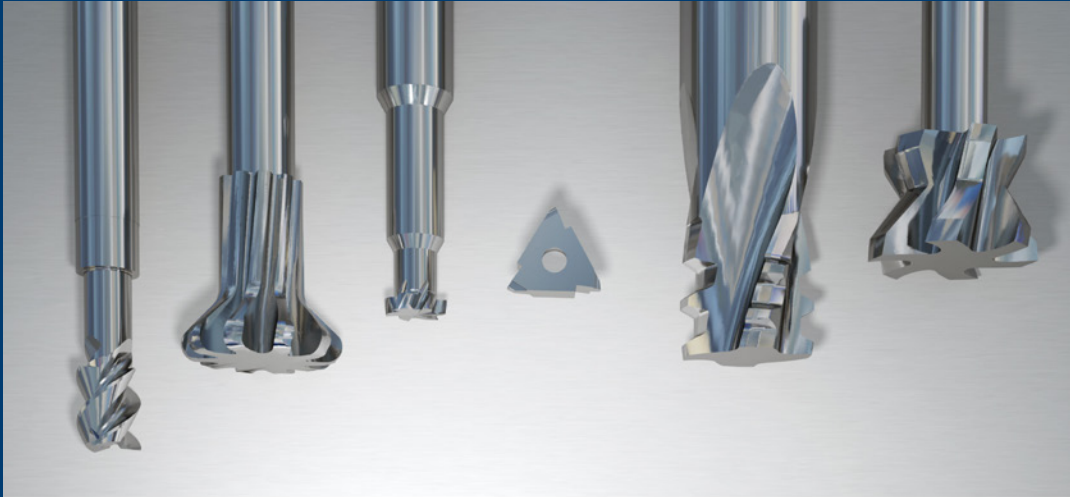
Offering the complete set of tools for the AR15. Learn more at [www.GWSArmory.com](http://www.GWSArmory.com)

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Providing an overview of our high performance endmills, holemaking tools & ISO turning inserts.

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[Sales@GWSToolGroup.com](mailto:Sales@GWSToolGroup.com)

## CUSTOM COMES STANDARD

### FLORIDA (HQ)

595 County Road 448  
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Grand Rapids, MI 49512

### MASSACHUSETTS

616 Dwight St  
Springfield, MA 01104