



# Greenleaf®

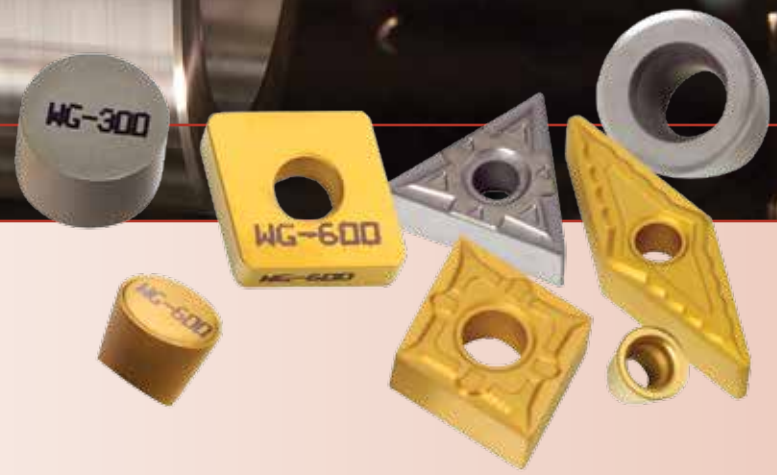
metalcutting tools and systems



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## 2016

# TURNING AND BORING



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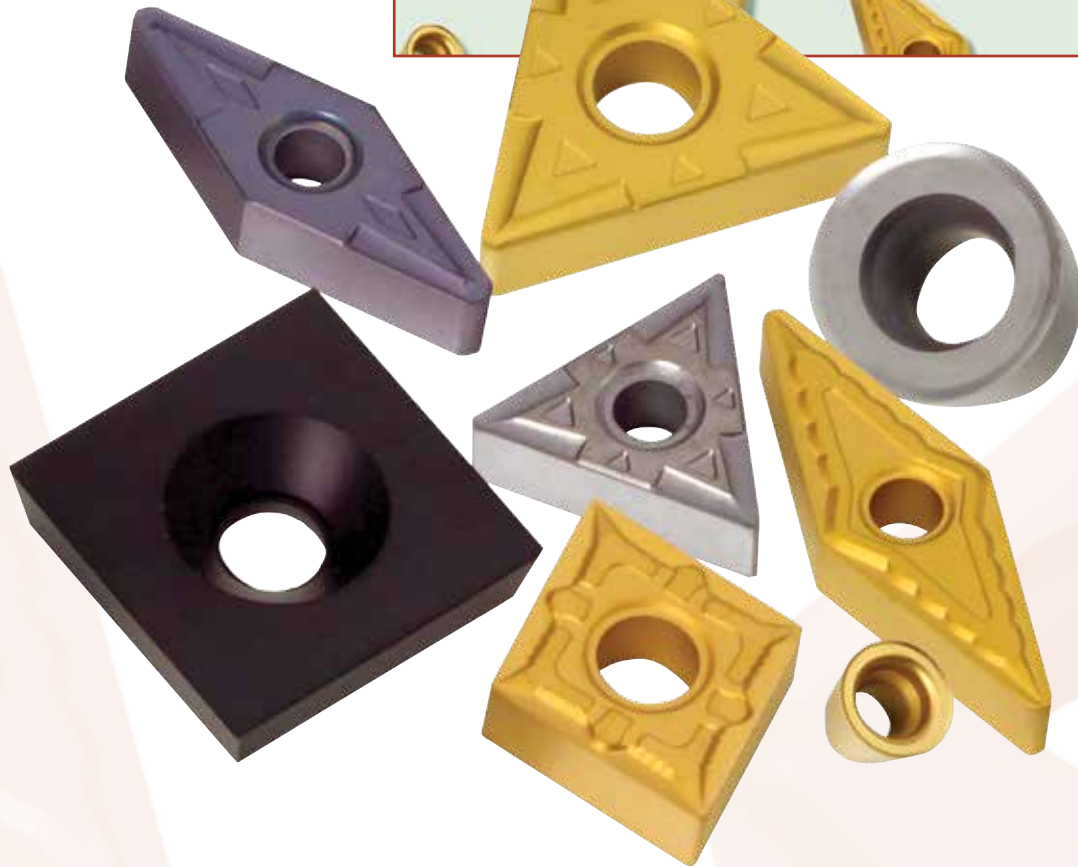


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## Advanced Carbide Inserts

Greenleaf offers a comprehensive line of carbide inserts in grades ranging from sub-micron C-1 through C-8 classifications. An industry pioneer in coated carbide, Greenleaf offers a variety of uncoated, MT-CVD coated and PVD-coated grades. Carbide inserts are available in ANSI standard geometries with multi-purpose chipbreakers for heavy roughing through finishing.



*Greenleaf Corporation is continually upgrading its products.  
For the most current information, please visit our web site at:*

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## Carbide Insert Grade Description

### **CARBIDE**

*Greenleaf offers a comprehensive line of carbide inserts in grades ranging from sub-micron C-1 through C-8 classifications. An industry pioneer in coated carbide, Greenleaf offers a variety of uncoated, MT-CVD coated and PVD-coated grades. Carbide inserts are available in ANSI standard geometries with multi-purpose chipbreakers for heavy roughing through finishing.*

#### **COATED – MT-CVD**

**GA5023** A high-speed performance grade for turning and milling cast iron. GA5023 features an advanced MT-CVD coating specifically developed for abrasive wear resistance. Application ranges from roughing to finishing on most cast iron materials including gray iron, ductile, nodular and other alloyed irons. The high wear and shock resistance of GA5023 allows machining at high speeds and a variety of feeds.

**GA5025** A high-speed MT-CVD coated grade for turning, light roughing and finishing of carbon and alloy steels, as well as selected stainless steels.

**GA5026** A high-speed grade developed for turning nickel- and cobalt-based super-alloys, stainless steels, and refractory metals. The advanced MT-CVD coating over a micro-grain substrate offers high wear resistance. GA5026 has exceptional resistance to the notching and deformation common to machining high strength materials. Apply at high speeds and light feeds in turning and selected milling applications.

**GA5035** A high-performance MT-CVD coated grade for turning all types of steels, and selected stainless steels. GA5035 can be used in rough, semi-finish, and finish turning situations requiring resistance to heat deformation, thermal shock, and abrasion. GA5035 should be applied at high speeds and a range of feeds.

**GA5036** A high-performance MT-CVD coated grade for milling steels at high speed. GA5036 should be used when milling forged and cast steels and selected ductile irons. GA5036 has a unique combination of toughness and heat resistance making it suitable for heavy- and light-duty milling at high cutting speeds.

**GA5125** New high-performance MT-CVD coated carbide milling grade especially suited for manganese steel. GA5125 is also applicable on chrome-moly steel, tool steel and similar high alloy steels. GA5125 provides excellent resistance to abrasion, crater wear, thermal shock, deformation and edge build-up. GA5125 should be applied at high speeds with moderate feed rates.

#### **COATED – PVD**

**G-915** Multi-layer PVD-coated grade, excellent for cut off, milling and turning high-temp alloys, stainless steel, and low carbon steels. The multi-layer PVD coating adds heat and abrasion resistance to the tough, shock-resistant substrate. G-915 should be run at moderate speeds and moderate to high feeds in milling and interrupted turning applications.

**G-920** PVD-coated grade for turning and milling high-strength materials such as high-temp alloys, titanium and stainless steel. G-920 is also an excellent grade for aluminum and refractory metals. This grade has the resistance to deformation and notching required for higher speeds than G-910.

**G-9230** PVD-coated grade developed for medium to heavy machining of nickel alloys, cobalt alloys, titanium alloys, stainless steels and alloyed irons. G-9230 has superior wear resistance and toughness and is excellent for cast and forged scale machining conditions.

**G-925** Multi-layer PVD-coated grade specifically designed for machining abrasive and difficult-to-machine materials. Typical applications include high-temp alloys, titanium and other refractory metals, stainless steel, and many cast irons. G-925 exhibits excellent resistance to notching and deformation. Apply at moderate to high speeds and moderate feeds.

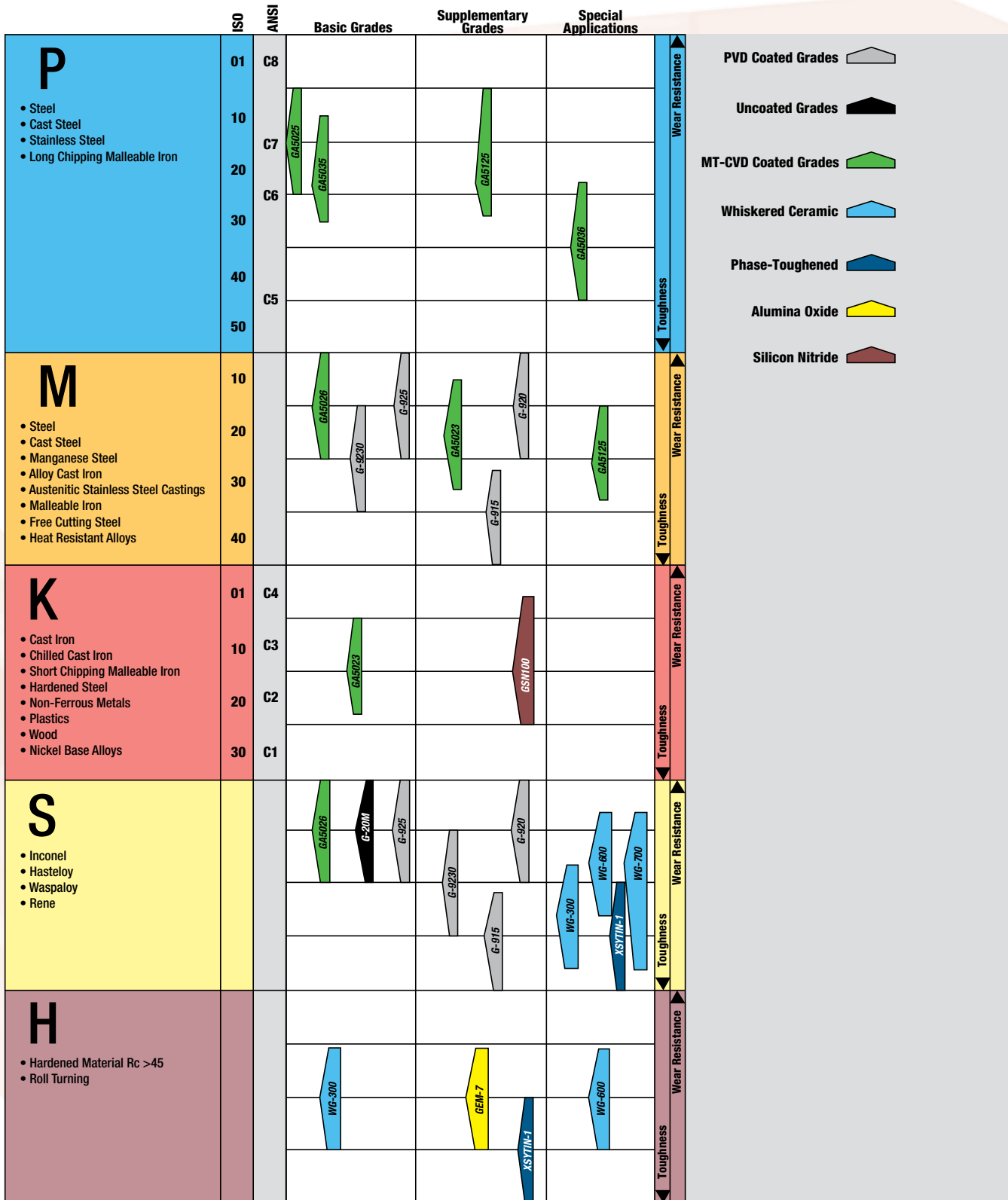
#### **UNCOATED**

**G-02** An excellent general-purpose grade for all types of machining of cast irons. G-02 should be used at moderate speeds and feeds. Also good for light roughing and finishing of high-temperature alloys, stainless steels, and aluminums.

**G-60** Used for heavy, rough turning of steel, steel castings, and steel forgings. G-60 should be used at moderate speeds and feeds.

**G-20M** A sub-micron C-2 carbide grade suited for use in turning and milling titanium and nickel-based super-alloys. G-20M has the strength and edge wear characteristics to resist notching when turning high-strength materials.

# Insert Grade Reference for Turning










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# Chipform Application Range

<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>PRECISION FINISHING</b></p>		<p><b>TF</b> Precision ground chipbreaker for nickel alloys. Good for feeds up to 0.009"/rev and depths to 0.03".</p> 
<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>FINISHING</b></p>		<p><b>FF and FF2</b> For finishing all types of material. Designed for feeds up to 0.0185"/rev and 0.15" depth of cut.</p> 
<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>GENERAL PURPOSE</b></p>		<p><b>GP and GP2</b> General purpose chipbreaker. Feed rates up to 0.02"/rev and 0.25" depth of cut.</p> 
<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>MEDIUM ROUGHING</b></p>		<p><b>MR and MR2</b> Used for medium roughing of all material. Feeds up to 0.028"/rev and depths up to 0.30".</p> 
<p style="writing-mode: vertical-rl; transform: rotate(180deg);"><b>HEAVY ROUGHING</b></p>		<p><b>HR</b> Heavy roughing for all materials. Feeds above 0.023"/rev. One-sided chipbreaker for heaviest feeds (MM). <i>Example: CNMM 644 HR</i></p> 



## A.N.S.I. Identification for Turning and Boring Inserts

Roll Dim. B	I.C. A	Thickness T
A	0.0002 <sup>(2)</sup>	0.001
B	0.0002	0.005
C	0.0005	0.001
D	0.0005	0.005
E	0.001	0.001
F	0.0002 <sup>(2)</sup>	0.0005
G	0.001	0.005
H	0.0005	0.0005
J	0.0002 <sup>(2)</sup>	0.002-0.005
K	0.0005	0.002-0.005
L	0.001	0.002-0.005
M	0.002-0.010 <sup>(3)</sup>	0.002-0.004 <sup>(3)</sup>
U	0.005-0.012 <sup>(3)</sup>	0.005-0.010 <sup>(3)</sup>
N	0.002-0.010 <sup>(3)</sup>	0.002-0.004 <sup>(3)</sup>

**Tolerance Class <sup>(1)</sup>**

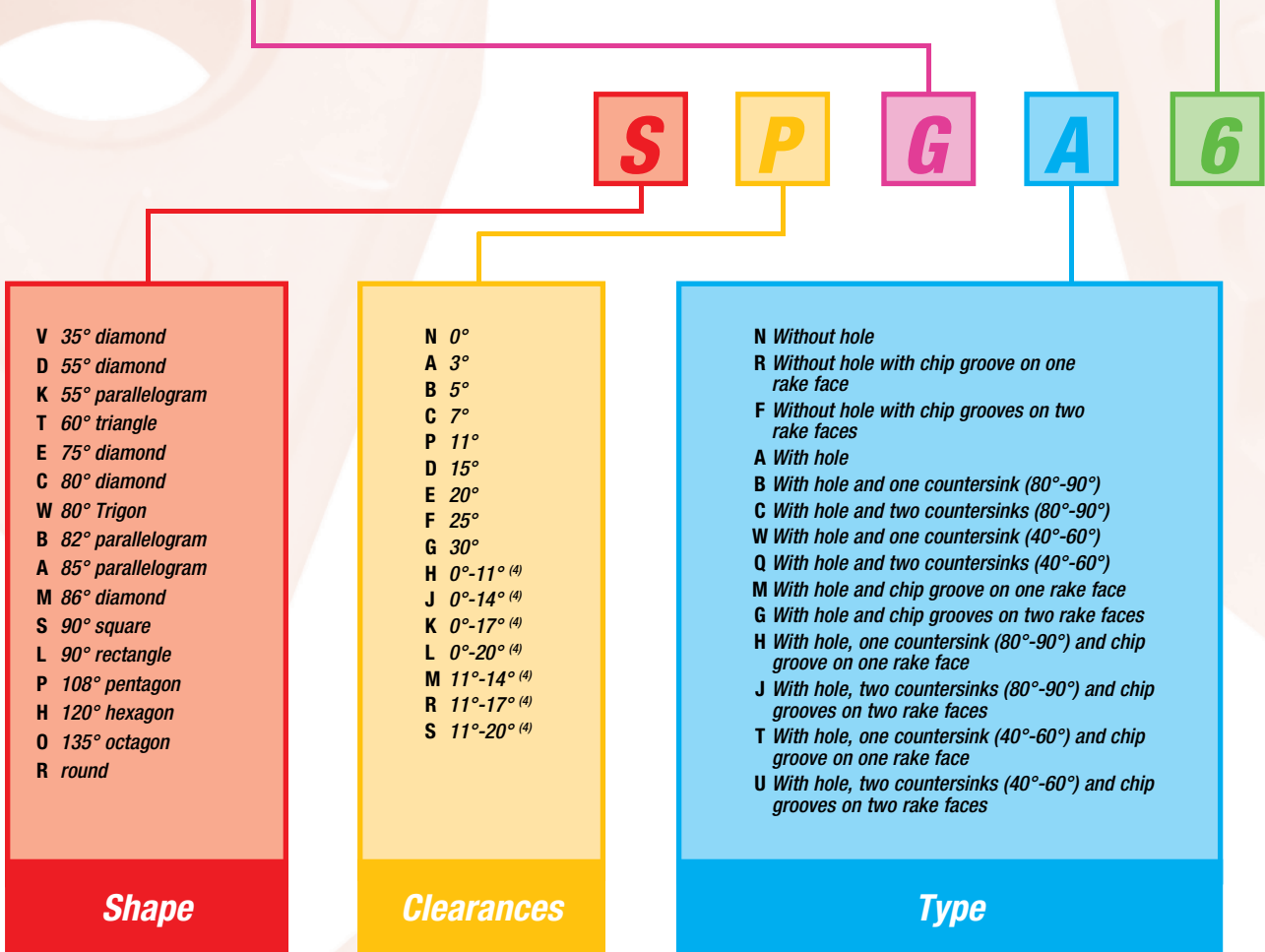
**Regular polygons and diamonds**  
Number of 1/8ths of an inch in the inscribed circle as per table below:

**Example:**

5/32" I.C.	1.2
3/16" I.C.	1.5
7/32" I.C.	1.8
1/4" I.C.	2
5/16" I.C.	2.5
3/8" I.C.	3
1/2" I.C.	4
5/8" I.C.	5
3/4" I.C.	6
7/8" I.C.	7
1" I.C.	8
1-1/4" I.C.	10

**Rectangles and parallelograms**  
Use two digits to size  
1st digit: Number of 1/8ths of an inch in width  
2nd digit: Number of 1/4ths of an inch in length

**Size (I.C.)**



**Regular polygons, diamonds, rectangles and parallelograms:**  
Number of 1/16ths of an inch in thickness as per table below:

**Example:**

3/32"	1.5
1/8"	2
5/32"	2.5
3/16"	3
7/32"	3.5
1/4"	4
5/16"	5
3/8"	6
7/16"	7
1/2"	8

**Thickness**

Only used following a letter in the seventh position.  
Number of 1/64ths of an inch in the primary facet length.

**Special Cutting Point Definition**

R Right  
L Left

**Hand (5)**

**3**

**3**

**3**

**3**

**A**

**0** Sharp Corner  
**1** 1/64" radius  
**2** 1/32" radius  
**3** 3/64" radius  
**4** 1/16" radius  
**5** 5/64" radius  
**6** 3/32" radius  
**7** 7/64" radius  
**8** 1/8" radius

**A** Square insert with 45° chamfer  
**D** Square insert with 30° chamfer  
**E** Square insert with 15° chamfer  
**F** Square insert with 3° chamfer  
**K** Square insert with 30° double chamfer  
**L** Square insert with 15° double chamfer  
**M** Square insert with 3° double chamfer  
**N** Truncated triangular insert  
**P** Flatted corner triangle – 90°

**Cutting Point Configuration**

**A** Honed (0.0005 to 0.001")  
**B** Honed (0.001 to 0.002")  
**C** Honed (0.005 to less than 0.007")  
**D** Honed (0.007" and over)  
**J** Polished to 4 microinch AA (rake face only)  
**T** Chamfered – manufacturer's standard (negative land – rake face only)

**Other Conditions (5)**

- (1) Tolerances given are plus and minus from nominal.
- (2) These tolerances normally apply to indexable inserts with facets (secondary cutting edges).
- (3) The tolerance depends on the size and shape of the insert and should be shown in the standards for the corresponding shapes and sizes (see ANSI B94.25).
- (4) Secondary facet angle may vary by +1°.
- (5) Shall only be used when required.
- (6) Dimensions are established prior to supplemental edge or coating modification.

# I.S.O. Identification for Turning and Boring Inserts

- A 85° parallelogram
- B 82° parallelogram
- C 80° diamond
- D 55° diamond
- H hexagon
- K 55° parallelogram
- L 90° rectangle
- M 86° diamond
- O octagon
- P pentagon
- R round
- S square
- T triangle
- V 35° diamond
- W 80° Trigon

**Shape**

**T**

	Dimensions		
	m	s	d
A	0.005	0.025	0.025
B	0.005	0.025	0.013
C	0.013	0.025	0.025
D	0.013	0.025	0.013
E	0.025	0.025	0.025
G	0.025	0.130	0.025
J	0.005	0.025	0.050-0.130
K	0.013	0.025	0.050-0.130
L	0.025	0.025	0.050-0.130
M	0.080-0.180	0.130	0.050-0.130
U	0.130-0.380	0.130	0.080-0.250

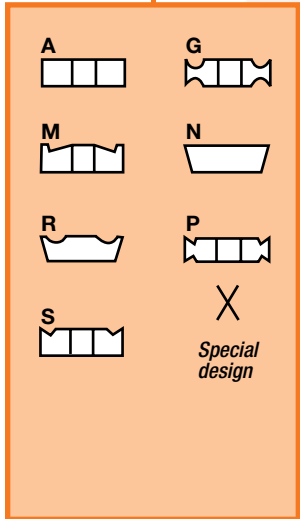
**Tolerance Class (±mm)**

**M**

- A 3°
- B 5°
- C 7°
- D 15°
- E 20°
- F 25°
- G 30°
- N 0°
- P 11°

**Clearances**

**G**



**Type**

Comparison cutting edge length in mm – IC in inches

△	06	09	11	16	22	27	33	44
□ ○				09	12	15	19	25
55°					15	19		
80°					12	16	19	25
35°				16	22			
IC = d	5/32"	7/32"	1/4"	3/8"	1/2"	5/8"	3/4"	
1"								

Integers to be preceded by a 0.  
Example: 9,52 mm indicated by 09.

**Cutting Edge Length**

**Cutting Edge**

22

04

01	s = 1,59
T1	s = 1,98
02	s = 2,38
03	s = 3,18
T3	s = 3,97
04	s = 4,76
05	s = 5,56
06	s = 6,35
07	s = 7,94
09	s = 9,52
10	s = 10,00
12	s = 12,00

**Thickness**

08

E

Radius in terms of 0.1 mm

00	Round insert sharp point
02	0.2
04	0.4
05	0.5
08	0.8
10	1.0
12	1.2
15	1.5
16	1.6
24	2.4
32	3.2
40	4.0

**Cutting Point Configuration**

Carbide Insert Usage Reference Guide

**Insert Type** **Geometry** **Coating Options** **Insert Geometry**

**Stocking**

**80° Diamond Inserts**

**Chip Control**

**80° Diamond Inserts**

**Flat Top (CNMA)**

**80° Diamond Inserts**

**Flat Top (CNGN)**

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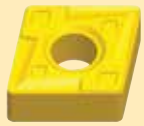
Chipform Application

Dimensions

Stocking Status

Grade with Application Range

**Negative Inserts**



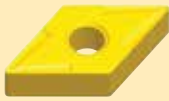
**80° Diamond**  
Chip Control  
page: T 14



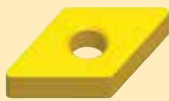
**80° Diamond**  
Flat Top  
page: T 15



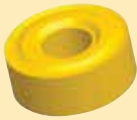
**80° Diamond**  
Flat Top  
page: T 15



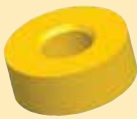
**55° Diamond**  
Chip Control  
page: T 16



**55° Diamond**  
Flat Top  
page: T 17



**Round**  
Chip Control  
page: T 18



**Round**  
Flat Top  
page: T 19



**Round**  
Flat Top  
page: T 19

**Negative Inserts *continued***



**Square**  
Chip Control  
page: T 20



**Square**  
Flat Top  
page: T 21



**Square**  
Flat Top  
page: T 22-23



**Triangle**  
Chip Control  
page: T 24-25



**Triangle**  
Flat Top  
page: T 26



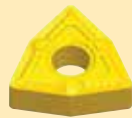
**Triangle**  
Flat Top  
page: T 27-28



**35° Diamond**  
Chip Control  
page: T 29



**35° Diamond**  
Flat Top  
page: T 30



**80° Trigon**  
Chip Control  
page: T 31



**80° Trigon**  
Flat Top  
page: T 32

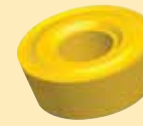
**Positive Inserts**



**80° Diamond**  
Positive Flat Top  
page: T 33



**Round**  
Positive Flat Top  
page: T 33



**Round**  
Positive Chip Control  
page: T 34



**Round**  
Positive Chip Control  
page: T 34



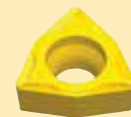
**Square**  
Positive Flat Top  
page: T 35



**Triangle**  
Positive Flat Top  
page: T 36-37



**Triangle**  
Positive Flat Top  
page: T 38



**80° Trigon**  
Chip Control: Screw On  
page: T 39

**Radius Forming Insert**

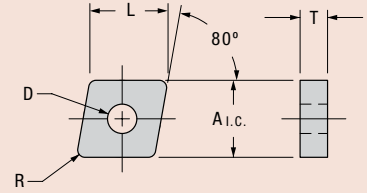


**SNMA-IR**  
Insert and Toolholder  
page: T 40



# 80° Diamond Inserts

## Chip Control



Shape: 80° Diamond	Part Number	Material													Part Number	Dimensions (inches)											
		Steel				Stainless Steel					Cast Iron	High-Temp Alloys				A.I.C.	L	T	D	R							
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S	G-925							G-920	G-9230	G-915	G-20M			
<b>PRECISION FINISHING</b> 	CNMG-430.3-TF					○	○	●	○							○	○	○	○		CNMG-120401.3-TF	0.500	0.507	0.187	0.203	0.005	
	CNMG-430.6-TF					○	●	●	○							○	●	○	○		CNMG-120402.6-TF	0.500	0.507	0.187	0.203	0.010	
	CNMG-431-TF					●	●	●	●							●	●	●	●		CNMG-120404-TF	0.500	0.507	0.187	0.203	0.015	
	CNMG-432-TF					●	●	●	●							●	●	●	●		CNMG-120408-TF	0.500	0.507	0.187	0.203	0.031	
	CNMG-433-TF					●	●	●	●							●	●	●	○		CNMG-120412-TF	0.500	0.507	0.187	0.203	0.047	
<b>FINISHING</b> 	CNMG-431-FF2	●	●	○	○	●	●	○	●	○	●	○	●	○	●	○	○	○	○	○	CNMG-120404-FF2	0.500	0.507	0.187	0.203	0.015	
	CNMG-432-FF2	●	●	○	○	●	○	○	●	○	●	○	●	○	●	○	○	○	○	○	CNMG-120408-FF2	0.500	0.507	0.187	0.203	0.031	
	CNMG-433-FF2					●	○	○	●						●	○	○	○	○	○	CNMG-120412-FF2	0.500	0.507	0.187	0.203	0.047	
	CNMG-434-FF2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMG-120416-FF2	0.500	0.507	0.187	0.203	0.062
	CNMG-542-FF	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMG-160608-FF	0.625	0.635	0.250	0.250	0.031
	CNMG-543-FF	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMG-160612-FF	0.625	0.635	0.250	0.250	0.047
<b>GENERAL PURPOSE</b> 	CNMG-432-GP2	●	●	○	○	●	○	○	●	○	●	○	●	○	●	○	○	○	○	○	CNMG-120408-GP2	0.500	0.507	0.187	0.203	0.031	
	CNMG-433-GP2	●	●	○	○	●	○	○	●	○	●	○	●	○	●	○	○	○	○	○	CNMG-120412-GP2	0.500	0.507	0.187	0.203	0.047	
	CNMG-434-GP2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMG-120416-GP2	0.500	0.507	0.187	0.203	0.062	
	CNMG-542-GP2	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMG-160608-GP2	0.625	0.635	0.250	0.250	0.031	
	CNMG-543-GP2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMG-160612-GP2	0.625	0.635	0.250	0.250	0.047	
	CNMG-643-GP	○	●	○	○				○	○	○	○				○	○	○	○	○	CNMG-190612-GP	0.750	0.761	0.250	0.312	0.047	
<b>MEDIUM ROUGHING</b> 	CNMG-432-MR2	●	●	○	○	●	○	○	●	○	●	○	●	○	●	○	○	○	○	○	CNMG-120408-MR2	0.500	0.507	0.187	0.203	0.031	
	CNMG-433-MR2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMG-120412-MR2	0.500	0.507	0.187	0.203	0.047	
	CNMG-434-MR2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMG-120416-MR2	0.500	0.507	0.187	0.203	0.062	
	CNMG-542-MR2	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMG-160608-MR2	0.625	0.635	0.250	0.250	0.031	
	CNMG-543-MR2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMG-160612-MR2	0.625	0.635	0.250	0.250	0.047	
	CNMG-642-MR	○	○	○	○				○	○	○					○	○	○	○	○	CNMG-190608-MR	0.750	0.761	0.250	0.312	0.031	
	CNMG-643-MR	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMG-190612-MR	0.750	0.761	0.250	0.312	0.047	
<b>HEAVY ROUGHING</b> 	CNMM-643-HR	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMM-190612-HR	0.750	0.761	0.250	0.312	0.047	
	CNMM-866-HR	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMM-250924-HR	1.000	1.015	0.375	0.359	0.094	

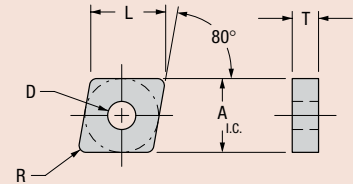
**Carbide Coatings**

MT-CVD Coated  
 PVD Coated  
 Uncoated

GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M
P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S	S	S	S	S	S
Steel				Stainless Steel					Cast Iron	High-Temp Alloys						

# 80° Diamond Inserts

## Flat Top (CNMA)



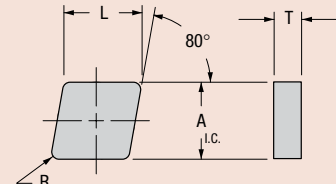
Shape: 80° Diamond	Part Number	Material										Part Number	Dimensions (inches)											
		Steel				Stainless Steel				Cast Iron	High-Temp Alloys		A.I.C.	L	T	D	R							
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35							K15	S					
	ANSI	GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	ISO	A.I.C.	L	T	D	R
	CNMA-431	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMA-120404	0.500	0.507	0.187	0.203	0.015	
	CNMA-432	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMA-120408	0.500	0.507	0.187	0.203	0.031	
	CNMA-433	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMA-120412	0.500	0.507	0.187	0.203	0.047	
	CNMA-434	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMA-120416	0.500	0.507	0.187	0.203	0.062	
	CNMA-542	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMA-160608	0.625	0.635	0.250	0.250	0.031	
	CNMA-543	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMA-160612	0.625	0.635	0.250	0.250	0.047	
	CNMA-642	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMA-190608	0.750	0.761	0.250	0.312	0.031	
	CNMA-643	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMA-190612	0.750	0.761	0.250	0.312	0.047	
	CNMA-644	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMA-190616	0.750	0.761	0.250	0.312	0.062	
CNMA-866	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNMA-250924	1.000	1.015	0.375	0.359	0.094		

**Carbide Coatings**

MT-CVD Coated  
 PVD Coated  
 Uncoated

# 80° Diamond Inserts

## Flat Top (CNGN)



Shape: 80° Diamond	Part Number	Material										Part Number	Dimensions (inches)										
		Steel				Stainless Steel				Cast Iron	High-Temp Alloys		A.I.C.	L	T	R							
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35						K15	S					
	ANSI	GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	ISO	A.I.C.	L	T	R
	CNGN-422	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNGN-120308	0.500	0.507	0.125	0.031	
	CNGN-432	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNGN-120408	0.500	0.507	0.187	0.031	
	CNGN-632	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNGN-190408	0.750	0.761	0.187	0.031	
	CNGN-633	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNGN-190412	0.750	0.761	0.187	0.047	
	CNGN-634	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNGN-190416	0.750	0.761	0.187	0.062	
	CNGN-643	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNGN-190612	0.750	0.761	0.250	0.047	
	CNGN-644	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CNGN-190616	0.750	0.761	0.250	0.062	

**Carbide Coatings**

MT-CVD Coated  
 PVD Coated  
 Uncoated

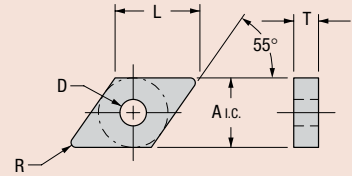
Not Recommended 
 Stocked or Available Upon Request 
 Stocked Standard





# 55° Diamond Inserts

## Chip Control



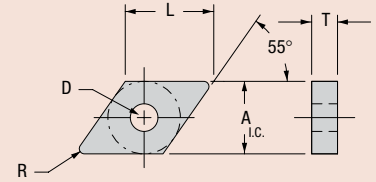
Shape: 55° Diamond	Part Number	Steel		Stainless Steel					Cast Iron	High-Temp Alloys					Part Number	Dimensions (inches)						
		P15	P25	P25	P35	M15	M15	M15	M20	M35	K15	S					A.I.C.	L	T	D	R	
		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925		G-920	G-9230	G-915	G-20M	ISO	A.I.C.	L
PRECISION FINISHING 	DNGG-430.3-TF					○	○	○				○	○	○	○	●	DNGG-150401.3-TF	0.500	0.610	0.187	0.203	0.005
	DNGG-430.6-TF					○	○	○				○	○	○	○	●	DNGG-150402.6-TF	0.500	0.610	0.187	0.203	0.010
	DNGG-431-TF					●	●	●	○			●	●	●	○	○	DNGG-150404-TF	0.500	0.610	0.187	0.203	0.015
	DNGG-432-TF					●	●	●	○			●	●	●	○	○	DNGG-150408-TF	0.500	0.610	0.187	0.203	0.031
	DNGG-433-TF					●	●	●	○			●	●	●	○	○	DNGG-150412-TF	0.500	0.610	0.187	0.203	0.047
	DNGG-542-TF					○	○	○	○			○	○	○	○	○	DNGG-190608-TF	0.625	0.763	0.250	0.250	0.031
	DNGG-543-TF					○	○	○	○			○	○	○	○	○	DNGG-190612-TF	0.625	0.763	0.250	0.250	0.047
FINISHING 	DNMG-431-FF2	●	●	○	○	●	●	○	●	●	○	●	●	●	○	○	DNMG-150404-FF2	0.500	0.610	0.187	0.203	0.015
	DNMG-432-FF2	●	●	○	○	●	●	○	●	●	○	●	●	●	○	○	DNMG-150408-FF2	0.500	0.610	0.187	0.203	0.031
	DNMG-433-FF2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMG-150412-FF2	0.500	0.610	0.187	0.203	0.047
	DNMG-441-FF2	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	DNMG-150604-FF2	0.500	0.610	0.250	0.203	0.015
	DNMG-442-FF2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMG-150608-FF2	0.500	0.610	0.250	0.203	0.031
	DNMG-443-FF2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMG-150612-FF2	0.500	0.610	0.250	0.203	0.047
	DNMG-542-FF2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMG-190608-FF2	0.625	0.763	0.250	0.250	0.031
DNMG-543-FF2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMG-190612-FF2	0.625	0.763	0.250	0.250	0.047	
GENERAL PURPOSE 	DNMG-432-GP2	●	●	○	○	●	●	○	●	●	○	●	●	○	○	DNMG-150408-GP2	0.500	0.610	0.187	0.203	0.031	
	DNMG-433-GP2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMG-150412-GP2	0.500	0.610	0.187	0.203	0.047	
	DNMG-442-GP2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMG-150608-GP2	0.500	0.610	0.250	0.203	0.031	
	DNMG-443-GP2	○	○	○	○	●	○	○	○	○	○	○	○	○	○	DNMG-150612-GP2	0.500	0.610	0.250	0.203	0.047	
	DNMG-542-GP2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMG-190608-GP2	0.625	0.763	0.250	0.250	0.031	
	DNMG-543-GP2	●	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMG-190612-GP2	0.625	0.763	0.250	0.250	0.047	
MEDIUM ROUGHING 	DNMG-432-MR	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMG-150408-MR	0.500	0.610	0.187	0.203	0.031	
	DNMG-442-MR	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMG-150608-MR	0.500	0.610	0.250	0.203	0.031	
	DNMG-542-MR	○	●	○	○	○	○	○	○	○	○	○	○	○	○	DNMG-190608-MR2	0.625	0.763	0.250	0.250	0.031	
	DNMG-543-MR2	●	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMG-190612-MR2	0.625	0.763	0.250	0.250	0.047	

**Carbide Coatings**

MT-CVD Coated
  PVD Coated
  Uncoated

# 55° Diamond Inserts

## Flat Top



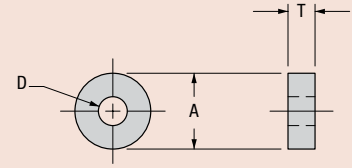
Shape: 55° Diamond	Part Number	Steel		Stainless Steel					Cast Iron	High-Temp Alloys					Part Number	Dimensions (inches)								
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S					A.I.C.	L	T	D	R		
		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925		G-920	G-9230	G-915	G-20M	ISO	A.I.C.	L	T	D
	DNMA-431	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMA-150404	0.500	0.610	0.187	0.203	0.015	
	DNMA-432	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMA-150408	0.500	0.610	0.187	0.203	0.031
	DNMA-433	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMA-150412	0.500	0.610	0.187	0.203	0.047
	DNMA-434	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMA-150416	0.500	0.610	0.187	0.203	0.062
	DNMA-533	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMA-190412	0.625	0.763	0.187	0.250	0.047
	DNMA-542	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMA-190608	0.625	0.763	0.250	0.250	0.031
	DNMA-543	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMA-190612	0.625	0.763	0.250	0.250	0.047
	DNMA-544	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	DNMA-190616	0.625	0.763	0.250	0.250	0.062
<b>Carbide Coatings</b> 		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M						
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S											
		Steel				Stainless Steel					Cast Iron	High-Temp Alloys												

Not Recommended Stocked or Available Upon Request Stocked Standard



# Round Inserts

## Chip Control



Shape: Round	Part Number	Steel		Stainless Steel					Cast Iron	High-Temp Alloys					Part Number	Dimensions (inches)								
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S					A I.C.	T	D				
		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925		G-920	G-9230	G-915	G-20M					
PRECISION FINISHING 	RNGG-43-TF			○	●	○	○	○					●	○	○	○	○		RNGG-120400-TF	0.500	0.187	0.203		
GENERAL PURPOSE 	RNMG-32-GP	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		RNMG-090300-GP	0.375	0.125	0.150		
	RNMG-33-GP	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		RNMG-090400-GP	0.375	0.187	0.150		
	RNMG-43-GP	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		RNMG-120400-GP	0.500	0.187	0.203		
MEDIUM ROUGHING 	RNMG-64-MR	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		RNMG-190600-MR	0.750	0.250	0.312		
	RNMG-86-MR	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		RNMG-250900-MR	1.000	0.375	0.359		
HEAVY ROUGHING 	RNMM-84 MR	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○		RNMM-250600-MR	1.000	0.250	0.359		
<b>Carbide Coatings</b> <span style="display: inline-block; width: 15px; height: 15px; background-color: #90EE90; border: 1px solid black; margin-right: 5px;"></span> MT-CVD Coated <span style="display: inline-block; width: 15px; height: 15px; background-color: #D3D3D3; border: 1px solid black; margin-left: 20px; margin-right: 5px;"></span> PVD Coated <span style="display: inline-block; width: 15px; height: 15px; background-color: black; border: 1px solid black; margin-left: 20px; margin-right: 5px;"></span> Uncoated		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M						
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S											
		Steel		Stainless Steel					Cast Iron	High-Temp Alloys														

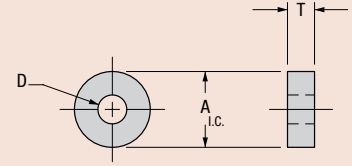
### Greenleaf Sales

Phone: 814-763-2915 • 800-458-1850 • Fax: 814-763-4423  
 sales@greenleafcorporation.com • www.greenleafglobalsupport.com

Stocked Standard
  Stocked or Available Upon Request
  Not Recommended



# Round Inserts Flat Top (RNMA)



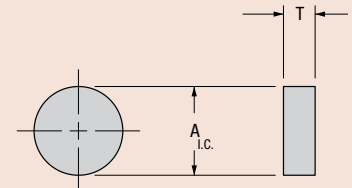
Shape: Round	Part Number	Steel										Stainless Steel					Cast Iron	High-Temp Alloys					Part Number	Dimensions (inches)		
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S	G-925	G-920	G-9230	G-915	G-20M	ISO	A I.C.	T	D				
	ANSI	GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	RNMA-090300	0.375	0.125	0.150				
	RNMA-32	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	RNMA-090400	0.375	0.187	0.150				
	RNMA-33	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	RNMA-120400	0.500	0.187	0.203				
	RNMA-43	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	RNMA-150600	0.625	0.250	0.250				
	RNMA-54	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	RNMA-190600	0.750	0.250	0.312				
	RNMA-64	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	RNMA-250900	1.000	0.375	0.359				
	RNMA-86	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	RNMA-310900	1.250	0.375	0.500				
RNMA-106	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○									



**Carbide Coatings**

MT-CVD Coated
  PVD Coated
  Uncoated

# Round Inserts Flat Top (RNGN)



Shape: Round	Part Number	Steel										Stainless Steel					Cast Iron	High-Temp Alloys					Part Number	Dimensions (inches)	
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S	G-925	G-920	G-9230	G-915	G-20M	ISO	A I.C.	T				
	ANSI	GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	RNGN-090300	0.375	0.125				
	RNGN-32	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	RNGN-120300	0.500	0.125				
	RNGN-42	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	RNGN-120400	0.500	0.187				
	RNGN-43	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	RNGN-120700	0.500	0.312				
	RNGN-45	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	RNGN-150400	0.625	0.187				
	RNGN-53	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	RNGN-190400	0.750	0.187				
	RNGN-63	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	RNGN-250600	1.000	0.250				
RNGN-84	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○								



**Carbide Coatings**

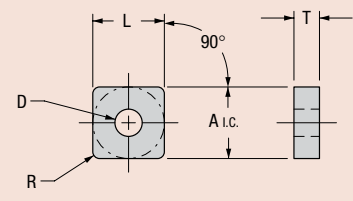
MT-CVD Coated
  PVD Coated
  Uncoated

Not Recommended 
 Stocked or Available Upon Request 
 Stocked Standard



# Square Inserts

## Chip Control



Shape: Square	Part Number	Steel		Stainless Steel					Cast Iron	High-Temp Alloys					Part Number	Dimensions (inches)								
		P15	P25	P25	P35	M15	M15	M15	M20	M35	K15	S					A.I.C.	L	T	D	R			
		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925		G-920	G-9230	G-915	G-20M	ISO	A.I.C.	L	T	D
<b>FINISHING</b> 	SNMG-322-FF2	●	○	○	○				○	○	○								SNMG-090308-FF2	0.375	0.375	0.125	0.150	0.031
	SNMG-432-FF2	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-120408-FF2	0.500	0.500	0.187	0.203	0.031
	SNMG-433-FF	○	○	○	○				○	○	○								SNMG-120412-FF	0.500	0.500	0.187	0.203	0.047
	SNMG-543-FF	○	○	○	○				○	○	○								SNMG-150612-FF	0.625	0.625	0.250	0.250	0.047
<b>GENERAL PURPOSE</b> 	SNMG-322-GP	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-090308-GP	0.375	0.375	0.125	0.150	0.031
	SNMG-432-GP2	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-120408-GP2	0.500	0.500	0.187	0.203	0.031
	SNMG-433-GP2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-120412-GP2	0.500	0.500	0.187	0.203	0.047
	SNMG-434-GP	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-120416-GP	0.500	0.500	0.187	0.203	0.062
	SNMG-543-GP2	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-150612-GP2	0.625	0.625	0.250	0.250	0.047
	SNMG-643-GP2	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-190612-GP2	0.750	0.750	0.250	0.312	0.047
	SNMG-644-GP2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-190616-GP2	0.750	0.750	0.250	0.312	0.062
<b>MEDIUM ROUGHING</b> 	SNMG-432-MR2	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-120408-MR2	0.500	0.500	0.187	0.203	0.031	
	SNMG-442-MR	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-120608-MR	0.500	0.500	0.250	0.203	0.031
	SNMG-543-MR2	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-150612-MR2	0.625	0.625	0.250	0.250	0.047
	SNMG-643-MR	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-190612-MR	0.750	0.750	0.250	0.312	0.047
	SNMG-644-MR	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-190616-MR	0.750	0.750	0.250	0.312	0.062
	SNMG-866-MR	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMG-250924-MR	1.000	1.000	0.375	0.359	0.094
<b>HEAVY ROUGHING</b> 	SNMM-643-HR	○	○	○	○				○	○	○							SNMM-190612-HR	0.750	0.750	0.250	0.312	0.047	
	SNMM-644-HR	○	○	○	○				○	○	○								SNMM-190616-HR	0.750	0.750	0.250	0.312	0.062

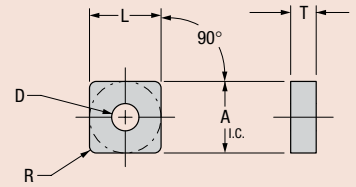
**Carbide Coatings**

MT-CVD Coated
  PVD Coated
  Uncoated

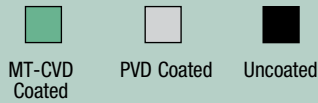
Stocked Standard
  Stocked or Available Upon Request
  Not Recommended

# Square Inserts

## Flat Top (SNMA)



Shape: Square	Part Number	Material															Part Number	Dimensions (inches)					
		Steel				Stainless Steel					Cast Iron	High-Temp Alloys						A I.C.	L	T	D	R	
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S	S	S	S							S
GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	ISO						
	SNMA-321	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMA-090304	0.375	0.375	0.125	0.150	0.015
	SNMA-322	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMA-090308	0.375	0.375	0.125	0.150	0.031
	SNMA-323	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMA-090312	0.375	0.375	0.125	0.150	0.047
	SNMA-431	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMA-120404	0.500	0.500	0.187	0.203	0.015
	SNMA-432	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMA-120408	0.500	0.500	0.187	0.203	0.031
	SNMA-433	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMA-120412	0.500	0.500	0.187	0.203	0.047
	SNMA-434	○	○	○	○	○	○	○	○	○	●	○	●	○	○	○	○	SNMA-120416	0.500	0.500	0.187	0.203	0.062
	SNMA-542	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMA-150608	0.625	0.625	0.250	0.250	0.031
	SNMA-543	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMA-150612	0.625	0.625	0.250	0.250	0.047
	SNMA-544	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMA-150616	0.625	0.625	0.250	0.250	0.062
	SNMA-643	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMA-190612	0.750	0.750	0.250	0.312	0.047
	SNMA-644	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMA-190616	0.750	0.750	0.250	0.312	0.062
	SNMA-864	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMA-250916	1.000	1.000	0.375	0.359	0.062
	SNMA-866	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNMA-250924	1.000	1.000	0.375	0.359	0.094

**Carbide Coatings**


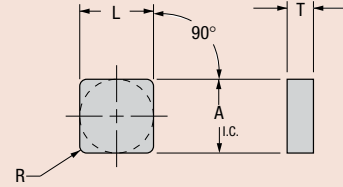
Not Recommended   
 Stocked or Available Upon Request   
 Stocked Standard

90°



# Square Inserts

## Flat Top (SNGN)



Shape: Square	Part Number	Material															Part Number	Dimensions (inches)					
		Steel					Stainless Steel					Cast Iron	High-Temp Alloys					ISO	A I.C.	L	T	R	
		P15	P25	P25	P35	P35	M15	M15	M15	M15	M20	M35	K15	S									
GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M							
	SNGN-321	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-090304	0.375	0.375	0.125	0.015
	SNGN-322	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-090308	0.375	0.375	0.125	0.031
	SNGN-422	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-120308	0.500	0.500	0.125	0.031
	SNGN-423	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-120312	0.500	0.500	0.125	0.047
	SNGN-430	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-120400	0.500	0.500	0.187	0.005
	SNGN-431	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-120404	0.500	0.500	0.187	0.015
	SNGN-432	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-120408	0.500	0.500	0.187	0.031
	SNGN-433	○	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-120412	0.500	0.500	0.187	0.047
	SNGN-434	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-120416	0.500	0.500	0.187	0.062
	SNGN-533	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-150412	0.625	0.625	0.187	0.047
	SNGN-534	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-150416	0.625	0.625	0.187	0.062
	SNGN-543	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-150612	0.625	0.625	0.250	0.047
	SNGN-631	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-190404	0.750	0.750	0.187	0.015
	SNGN-632	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-190408	0.750	0.750	0.187	0.031
	SNGN-633	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-190412	0.750	0.750	0.187	0.047
	SNGN-634	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-190416	0.750	0.750	0.187	0.062
	SNGN-638	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-190432	0.750	0.750	0.187	0.125
	SNGN-643	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-190612	0.750	0.750	0.250	0.047
	SNGN-644	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-190616	0.750	0.750	0.250	0.062
	SNGN-646	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-190624	0.750	0.750	0.250	0.094
	SNGN-844	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-250616	1.000	1.000	0.250	0.062
	SNGN-854	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-250716	1.000	1.000	0.312	0.062
	SNGN-10412	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-310648	1.250	1.250	0.250	0.187
	SNGN-1066	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-310924	1.250	1.250	0.375	0.094
	SNGN-1068	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-310932	1.250	1.250	0.375	0.125
	SNGN-1288	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SNGN-381232	1.500	1.500	0.500	0.125

**Carbide Coatings**

MT-CVD Coated
  PVD Coated
  Uncoated

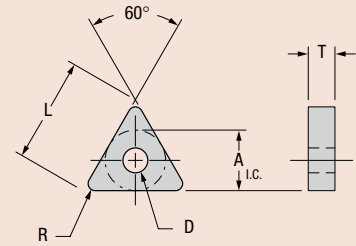









# Triangle Inserts

## Chip Control

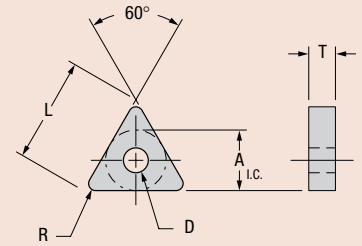


Shape: Triangle	Part Number	Steel		Stainless Steel					Cast Iron	High-Temp Alloys					Part Number	Dimensions (inches)						
		P15	P25	P25	P35	M15	M15	M15	M20	M35	K15	S					A.I.C.	L	T	D	R	
		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925		G-920	G-9230	G-915	G-20M	ISO	A.I.C.	L
PRECISION FINISHING 	TNGG-330.3-TF					○	○	○				○	○	○	○	○	TNGG-160401.3-TF	0.375	0.650	0.187	0.150	0.005
	TNGG-330.6-TF					○	○	○				○	○	○	○	○	TNGG-160402.6-TF	0.375	0.650	0.187	0.150	0.010
	TNGG-331-TF					○	○	○				○	○	○	○	○	TNGG-160404-TF	0.375	0.650	0.187	0.150	0.015
	TNGG-332-TF					●	○	○				●	○	○	○	○	TNGG-160408-TF	0.375	0.650	0.187	0.150	0.031
	TNGG-430.3-TF					○	○	○				○	○	○	○	○	TNGG-220401.3-TF	0.500	0.866	0.187	0.203	0.005
	TNGG-430.6-TF					○	○	○				○	○	○	○	○	TNGG-220402.6-TF	0.500	0.866	0.187	0.203	0.010
	TNGG-431-TF					○	○	○				○	○	○	○	○	TNGG-220404-TF	0.500	0.866	0.187	0.203	0.015
	TNGG-432-TF					●	●	○				●	●	○	○	○	TNGG-220408-TF	0.500	0.866	0.187	0.203	0.031
FINISHING 	TNMG-321-FF2					○	○	○				○	○	○	○	○	TNMG-160304-FF2	0.375	0.650	0.125	0.150	0.015
	TNMG-322-FF2	●	○	○	○	○	○	○				○	○	○	○	○	TNMG-160308-FF2	0.375	0.650	0.125	0.150	0.031
	TNMG-323-FF2	○	○	○	○	○	○	○				○	○	○	○	○	TNMG-160312-FF2	0.375	0.650	0.125	0.150	0.047
	TNMG-324-FF2	○	○	○	○	○	○	○				○	○	○	○	○	TNMG-160316-FF2	0.375	0.650	0.125	0.150	0.062
	TNMG-331-FF2					○	○	○				○	○	○	○	○	TNMG-160404-FF2	0.375	0.650	0.187	0.150	0.015
	TNMG-332-FF2	○	○	○	○	○	○	○				○	○	○	○	○	TNMG-160408-FF2	0.375	0.650	0.187	0.150	0.031
	TNMG-334-FF2	○	○	○	○	○	○	○				○	○	○	○	○	TNMG-160416-FF2	0.375	0.650	0.187	0.150	0.062
	TNMG-431-FF2	●	○	○	○	○	○	○				○	○	○	○	○	TNMG-220404-FF2	0.500	0.866	0.187	0.203	0.015
	TNMG-432-FF2	●	●	○	○	○	○	○				○	○	○	○	○	TNMG-220408-FF2	0.500	0.866	0.187	0.203	0.031
	TNMG-433-FF2	○	○	○	○	○	○	○				○	○	○	○	○	TNMG-220412-FF2	0.500	0.866	0.187	0.203	0.047
	TNMG-434-FF2	○	○	○	○	○	●	○				○	○	○	○	○	TNMG-220416-FF2	0.500	0.866	0.187	0.203	0.062
	TNMG-542-FF2	●	○	○	○	○	○	○				○	○	○	○	○	TNMG-270608-FF2	0.625	1.083	0.250	0.250	0.031
TNMG-543-FF2	○	○	○	○	○	○	○				○	○	○	○	○	TNMG-270612-FF2	0.625	1.083	0.250	0.250	0.047	
GENERAL PURPOSE 	TNMG-321-GP2	○	○	○	○	○	○				○	○	○	○	○	TNMG-160304-GP2	0.375	0.650	0.125	0.150	0.015	
	TNMG-322-GP2	●	○	○	○	○	○				○	○	○	○	○	TNMG-160308-GP2	0.375	0.650	0.125	0.150	0.031	
	TNMG-323-GP2	○	○	○	○	○	○	○				○	○	○	○	○	TNMG-160312-GP2	0.375	0.650	0.125	0.150	0.047
	TNMG-324-GP2	○	○	○	○	○	○	○				○	○	○	○	○	TNMG-160316-GP2	0.375	0.650	0.125	0.150	0.062
	TNMG-333-GP2	○	○	○	○	○	○	○				○	○	○	○	○	TNMG-160412-GP2	0.375	0.650	0.187	0.150	0.047
	TNMG-432-GP2	●	●	○	○	○	○	○	●	●	●	○	○	○	○	○	TNMG-220408-GP2	0.500	0.866	0.187	0.203	0.031
	TNMG-433-GP2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMG-220412-GP2	0.500	0.866	0.187	0.203	0.047
	TNMG-434-GP2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMG-220416-GP2	0.500	0.866	0.187	0.203	0.062
	TNMG-542-GP2	●	○	○	○	○	○	○				○	○	○	○	○	TNMG-270608-GP2	0.625	1.083	0.250	0.250	0.031

Continued on next page.

# Triangle Inserts

## Chip Control *Continued*



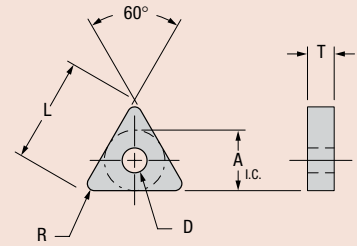
Shape: Triangle	Part Number	Steel		Stainless Steel					Cast Iron	High-Temp Alloys					Part Number	Dimensions (inches)																
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S																			
		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925		G-920	G-9230	G-915	G-20M													
ANSI	ISO	A I.C.	L	T	D	R																										
<b>MEDIUM ROUGHING</b> 	TNMG-222-MR2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMG-110308-MR2	0.250	0.433	0.125	0.093	0.031								
	TNMG-433-MR2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMG-220412-MR2	0.500	0.866	0.187	0.203	0.047								
	TNMG-434-MR2	○	○	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	TNMG-220416-MR2	0.500	0.866	0.187	0.203	0.062								
	TNMG-438-MR2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMG-220432-MR2	0.500	0.866	0.187	0.203	0.125								
	TNMG-542-MR2	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMG-270608-MR2	0.625	1.083	0.250	0.250	0.031								
	TNMG-543-MR2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMG-270612-MR2	0.625	1.083	0.250	0.250	0.047								
	TNMG-544-MR2	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMG-270616-MR2	0.625	1.083	0.250	0.250	0.062								
	TNMG-546-MR2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMG-270624-MR2	0.625	1.083	0.250	0.250	0.094								
	TNMG-666-MR	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMG-330924-MR	0.750	1.299	0.375	0.312	0.094								
<b>HEAVY ROUGHING</b> 	TNMM-433-HR	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMM-220412-HR	0.500	0.866	0.187	0.203	0.047									
	TNMM-544-HR	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMM-270616-HR	0.625	1.083	0.250	0.250	0.062								
<b>Carbide Coatings</b>																																
	MT-CVD Coated																															
	PVD Coated																															
	Uncoated																															
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S																			
		Steel				Stainless Steel					Cast Iron	High-Temp Alloys																				

Not Recommended Stocked or Available Upon Request Stocked Standard



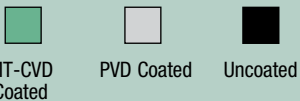
# Triangle Inserts

## Flat Top (TNMA)



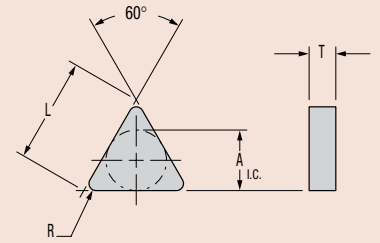
Shape: Triangle	Part Number	Material															Part Number	Dimensions (inches)						
		Steel					Stainless Steel					Cast Iron	High-Temp Alloys					A.I.C.	L	T	D	R		
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S											
GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M								
	ANSI																		ISO					
	TNMA-222	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-110308	0.250	0.433	0.125	0.093	0.031
	TNMA-321	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-160304	0.375	0.650	0.125	0.150	0.015
	TNMA-322	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-160308	0.375	0.650	0.125	0.150	0.031
	TNMA-323	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-160312	0.375	0.650	0.125	0.150	0.047
	TNMA-324	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-160316	0.375	0.650	0.125	0.150	0.062
	TNMA-332	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-160408	0.375	0.650	0.187	0.150	0.031
	TNMA-333	○	○	○	○	○	○	○	○	●	○	●	○	○	○	○	○	○	TNMA-160412	0.375	0.650	0.187	0.150	0.047
	TNMA-431	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-220404	0.500	0.866	0.187	0.203	0.015
	TNMA-432	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-220408	0.500	0.866	0.187	0.203	0.031
	TNMA-433	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-220412	0.500	0.866	0.187	0.203	0.047
	TNMA-434	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-220416	0.500	0.866	0.187	0.203	0.062
	TNMA-542	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-270608	0.625	1.083	0.250	0.250	0.031
	TNMA-543	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-270612	0.625	1.083	0.250	0.250	0.047
	TNMA-544	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-270616	0.625	1.083	0.250	0.250	0.062
	TNMA-548	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-270632	0.625	1.083	0.250	0.250	0.125
	TNMA-556	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-270724	0.625	1.083	0.312	0.250	0.094
	TNMA-566	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-270924	0.625	1.083	0.375	0.250	0.094
	TNMA-642	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-330608	0.750	1.299	0.250	0.312	0.031
	TNMA-643	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-330612	0.750	1.299	0.250	0.312	0.047
	TNMA-644	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-330616	0.750	1.299	0.250	0.312	0.062
	TNMA-664	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-330916	0.750	1.299	0.375	0.312	0.062
	TNMA-666	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-330924	0.750	1.299	0.375	0.312	0.094
	TNMA-668	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TNMA-330932	0.750	1.299	0.375	0.312	0.125

**Carbide Coatings**



# Triangle Inserts

## Flat Top (TNGN)



Shape: Triangle	Part Number ANSI	Steel				Stainless Steel					Cast Iron	High-Temp Alloys					Part Number ISO	Dimensions (inches)					
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S					A.I.C.	L	T	R		
		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230		G-915	G-20M				
TNGN-222																			TNGN-110308	0.250	0.433	0.125	0.031
TNGN-223																			TNGN-110312	0.250	0.433	0.125	0.047
TNGN-320																			TNGN-160300	0.375	0.650	0.125	0.005
TNGN-321																			TNGN-160304	0.375	0.650	0.125	0.015
TNGN-322																			TNGN-160308	0.375	0.650	0.125	0.031
TNGN-323																			TNGN-160312	0.375	0.650	0.125	0.047
TNGN-324																			TNGN-160316	0.375	0.650	0.125	0.062
TNGN-331																			TNGN-160404	0.375	0.650	0.187	0.015
TNGN-332																			TNGN-160408	0.375	0.650	0.187	0.031
TNGN-333																			TNGN-160412	0.375	0.650	0.187	0.047
TNGN-334																			TNGN-160416	0.375	0.650	0.187	0.062
TNGN-431																			TNGN-220404	0.500	0.866	0.187	0.015
TNGN-432																			TNGN-220408	0.500	0.866	0.187	0.031
TNGN-433																			TNGN-220412	0.500	0.866	0.187	0.047
TNGN-434																			TNGN-220416	0.500	0.866	0.187	0.062
TNGN-438																			TNGN-220432	0.500	0.866	0.187	0.125
TNGN-442																			TNGN-220608	0.500	0.866	0.250	0.031
TNGN-443																			TNGN-220612	0.500	0.866	0.250	0.047
TNGN-444																			TNGN-220616	0.500	0.866	0.250	0.062
TNGN-532																			TNGN-270408	0.625	1.083	0.187	0.031
TNGN-538																			TNGN-270432	0.625	1.083	0.187	0.125
TNGN-541																			TNGN-270604	0.625	1.083	0.250	0.015
TNGN-542																			TNGN-270608	0.625	1.083	0.250	0.031
TNGN-543																			TNGN-270612	0.625	1.083	0.250	0.047
TNGN-544																			TNGN-270616	0.625	1.083	0.250	0.062
TNGN-554																			TNGN-270716	0.625	1.083	0.312	0.062
TNGN-556																			TNGN-270724	0.625	1.083	0.312	0.094
TNGN-654																			TNGN-330716	0.750	1.299	0.312	0.062
TNGN-656																			TNGN-330724	0.750	1.299	0.312	0.094
TNGN-664																			TNGN-330916	0.750	1.299	0.375	0.062
TNGN-666																			TNGN-330924	0.750	1.299	0.375	0.094
TNGN-668																			TNGN-330932	0.750	1.299	0.375	0.125
TNGN-776																			TNGN-381124	0.875	1.516	0.437	0.094
TNGN-778																			TNGN-381132	0.875	1.516	0.437	0.125
TNGN-7710																			TNGN-381140	0.875	1.516	0.437	0.156
TNGN-878																			TNGN-441132	1.000	1.732	0.437	0.125

**Carbide Coatings**

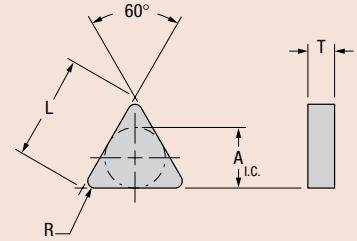
MT-CVD Coated  
 PVD Coated  
 Uncoated

Not Recommended   
 Stocked or Available Upon Request   
 Stocked Standard



# Triangle Inserts

## Flat Top (TNUN)



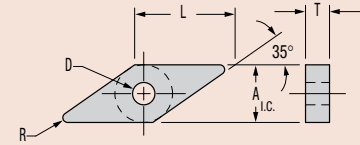
Shape: Triangle	Part Number ANSI	Steel		Stainless Steel						Cast Iron	High-Temp Alloys					Part Number ISO	Dimensions (inches)					
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S					A.I.C.	L	T	R	
		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920		G-9230	G-915	G-20M			
TNUN-321																		TNUN-160304	0.375	0.650	0.125	0.015
TNUN-322																		TNUN-160308	0.375	0.650	0.125	0.031
TNUN-323																		TNUN-160312	0.375	0.650	0.125	0.047
TNUN-332																		TNUN-160408	0.375	0.650	0.187	0.031
TNUN-333																		TNUN-160412	0.375	0.650	0.187	0.047
TNUN-334																		TNUN-160416	0.375	0.650	0.187	0.062
TNUN-432																		TNUN-220408	0.500	0.866	0.187	0.031
TNUN-433																		TNUN-220412	0.500	0.866	0.187	0.047
TNUN-434																		TNUN-220416	0.500	0.866	0.187	0.062
TNUN-438																		TNUN-220432	0.500	0.866	0.187	0.125
TNUN-441																		TNUN-220604	0.500	0.866	0.250	0.015
TNUN-442																		TNUN-220608	0.500	0.866	0.250	0.031
TNUN-443																		TNUN-220612	0.500	0.866	0.250	0.047
TNUN-444																		TNUN-220616	0.500	0.866	0.250	0.062
TNUN-448																		TNUN-220632	0.500	0.866	0.250	0.125
TNUN-542																		TNUN-270608	0.625	1.083	0.250	0.031
TNUN-543																		TNUN-270612	0.625	1.083	0.250	0.047
TNUN-544																		TNUN-270616	0.625	1.083	0.250	0.062
TNUN-546																		TNUN-270624	0.625	1.083	0.250	0.094
TNUN-552																		TNUN-270708	0.625	1.083	0.312	0.031
TNUN-553																		TNUN-270712	0.625	1.083	0.312	0.047
TNUN-554																		TNUN-270716	0.625	1.083	0.312	0.062
TNUN-556																		TNUN-270724	0.625	1.083	0.312	0.094
TNUN-654																		TNUN-330716	0.750	1.299	0.312	0.062
TNUN-656																		TNUN-330724	0.750	1.299	0.312	0.094
TNUN-664																		TNUN-330916	0.750	1.299	0.375	0.062
TNUN-666																		TNUN-330924	0.750	1.299	0.375	0.094
TNUN-668																		TNUN-330932	0.750	1.299	0.375	0.125
TNUN-776																		TNUN-381124	0.875	1.516	0.437	0.094
TNUN-778																		TNUN-381132	0.875	1.516	0.437	0.125
TNUN-7710																		TNUN-381140	0.875	1.516	0.437	0.156

Carbide Coatings			GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M
MT-CVD Coated	PVD Coated	Uncoated	P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S					
			Steel	Stainless Steel								Cast Iron	High-Temp Alloys						
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>																	
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>																	

# 35° Diamond Inserts

## Chip Control



Shape: 35° Diamond	Part Number	Steel		Stainless Steel					Cast Iron	High-Temp Alloys					Part Number	Dimensions (inches)							
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S					A.I.C.	L	T	D	R	
		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925		G-920	G-9230	G-915	G-20M	ISO	A.I.C.	L	T
<b>PRECISION FINISHING</b> 	VNNG-330.3-TF			○		●	●	○				○	●	●	○	○		VNNG-160401.3-TF	0.375	0.654	0.187	0.150	0.005
	VNNG-330.6-TF			○		○	●	○				○	○	●	○	○		VNNG-160402.6-TF	0.375	0.654	0.187	0.150	0.010
	VNNG-331-TF			○		●	●	●				●	●	●	●	●		VNNG-160404-TF	0.375	0.654	0.187	0.150	0.015
	VNNG-332-TF			○		●	●	●				●	●	○	○	●		VNNG-160408-TF	0.375	0.654	0.187	0.150	0.031
	VNNG-333-TF			○		●	●	○				●	●	○	○	○		VNNG-160412-TF	0.375	0.654	0.187	0.150	0.047
<b>FINISHING</b> 	VNMG-331-FF2	●	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	VNMG-160404-FF2	0.375	0.654	0.187	0.150	0.015
	VNMG-332-FF2	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	VNMG-160408-FF2	0.375	0.654	0.187	0.150	0.031
	VNMG-333-FF2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	VNMG-160412-FF2	0.375	0.654	0.187	0.150	0.047
	VNMG-432-FF2	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	VNMG-220408-FF2	0.500	0.872	0.187	0.203	0.031
<b>GENERAL PURPOSE</b> 	VNMG-332-GP2	●	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	VNMG-160408-GP2	0.375	0.654	0.187	0.150	0.031
	VNMG-333-GP2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	VNMG-160412-GP2	0.375	0.654	0.187	0.150	0.047
	VNMG-432-GP2	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	VNMG-220408-GP2	0.500	0.872	0.187	0.203	0.031

**Carbide Coatings**

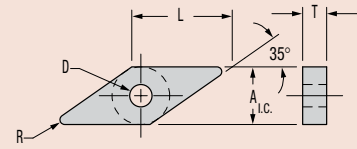
MT-CVD Coated
  PVD Coated
  Uncoated

Not Recommended 
Stocked or Available Upon Request 
Stocked Standard



# 35° Diamond Inserts

## Flat Top



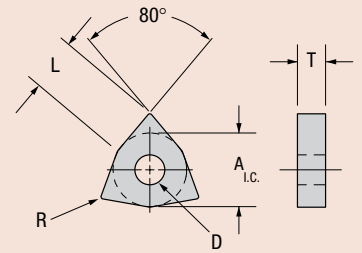
Shape: 35° Diamond	Part Number	Material													Part Number	Dimensions (inches)							
		Steel				Stainless Steel					Cast Iron	High-Temp Alloys				A.I.C.	L	T	D	R			
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S										
ANSI	GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	ISO					
	VNMA-331	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	VNMA-160404	0.375	0.654	0.187	0.150	0.015
	VNMA-332	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	VNMA-160408	0.375	0.654	0.187	0.150	0.031
	VNMA-431	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	VNMA-220404	0.500	0.872	0.187	0.203	0.015
	VNMA-432	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	VNMA-220408	0.500	0.872	0.187	0.203	0.031

**Carbide Coatings**

MT-CVD Coated
  PVD Coated
  Uncoated

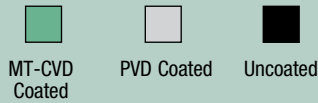
# 80° Trigon Inserts

## Chip Control



Shape: 80° Trigon		Part Number	Material															Part Number	Dimensions (inches)								
			Steel				Stainless Steel					Cast Iron	High-Temp Alloys						A.I.C.	L	T	D	R				
		ANSI	GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	M35	K15	GA5026	G-925	G-920	G-9230	G-915	G-20M	ISO	A.I.C.	L	T	D	R	
FINISHING		WNUMG-331-FF2	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	WNUMG-060404-FF2	0.375	0.257	0.187	0.150	0.015
		WNUMG-332-FF2	●	●	○	○	●	○	○	○	○	○	○	○	○	●	○	○	○	○	○	WNUMG-060408-FF2	0.375	0.257	0.187	0.150	0.031
		WNUMG-431-FF2	●	○	○	○	●	○	○	○	○	○	○	○	○	●	○	○	○	○	○	WNUMG-080404-FF2	0.500	0.342	0.187	0.203	0.015
		WNUMG-432-FF2	●	●	○	○	●	○	○	○	○	○	○	○	○	●	○	○	○	○	○	WNUMG-080408-FF2	0.500	0.342	0.187	0.203	0.031
GENERAL PURPOSE		WNUMG-331-GP2	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	WNUMG-060404-GP2	0.375	0.257	0.187	0.150	0.015	
		WNUMG-332-GP2	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	WNUMG-060408-GP2	0.375	0.257	0.187	0.150	0.031
		WNUMG-431-GP2	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	WNUMG-080404-GP2	0.500	0.342	0.187	0.203	0.015
		WNUMG-432-GP2	●	●	○	●	●	○	○	○	○	○	○	○	○	●	●	○	○	○	○	WNUMG-080408-GP2	0.500	0.342	0.187	0.203	0.031
		WNUMG-433-GP2	●	●	○	●	●	○	○	○	○	○	○	○	○	●	●	○	○	○	○	WNUMG-080412-GP2	0.500	0.342	0.187	0.203	0.047
		WNUMG-434-GP2	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	WNUMG-080416-GP2	0.500	0.342	0.187	0.203
MEDIUM ROUGHING		WNUMG-432-MR2	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	WNUMG-080408-MR2	0.500	0.342	0.187	0.203	0.031	
		WNUMG-433-MR2	●	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	WNUMG-080412-MR2	0.500	0.342	0.187	0.203	0.047

Carbide Coatings



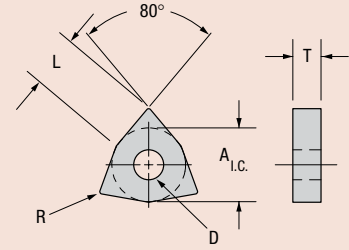
Not Recommended  
 Stocked or Available Upon Request  
 Stocked Standard  
 Stocked Standard





# 80° Trigon Inserts

## Flat Top

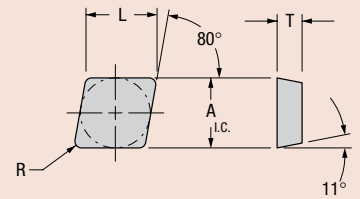


Shape: 80° Trigon	Part Number	Material															Part Number	Dimensions (inches)					
		Steel					Stainless Steel					Cast Iron	High-Temp Alloys					A.I.C.	L	T	D	R	
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S										
GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	ISO						
	WNMA-331	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	WNMA-060404	0.375	0.257	0.187	0.150	0.015
	WNMA-332	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	WNMA-060408	0.375	0.257	0.187	0.150	0.031
	WNMA-333	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	WNMA-060412	0.375	0.257	0.187	0.150	0.047
	WNMA-431	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	WNMA-080404	0.500	0.342	0.187	0.203	0.015
	WNMA-432	○	○	○	○	○	○	○	○	○	●	○	○	○	○	○	○	WNMA-080408	0.500	0.342	0.187	0.203	0.031
	WNMA-433	○	○	○	○	○	○	○	○	○	●	○	○	○	○	○	○	WNMA-080412	0.500	0.342	0.187	0.203	0.047
	WNMA-434	○	○	○	○	○	○	○	○	○	●	○	○	○	○	○	○	WNMA-080416	0.500	0.342	0.187	0.203	0.062
<b>Carbide Coatings</b> MT-CVD Coated     PVD Coated     Uncoated		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M					
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S										
		Steel					Stainless Steel					Cast Iron	High-Temp Alloys										



# 80° Diamond Inserts

## Positive Flat Top



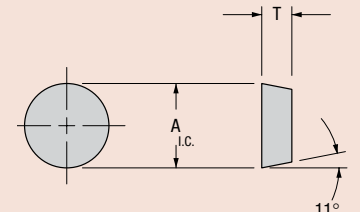
Shape: 80° Diamond	Part Number	Material												Part Number	Dimensions (inches)								
		Steel				Stainless Steel				Cast Iron	High-Temp Alloys				A I.C.	L	T	R					
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S										
	ANSI	GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	ISO				
	CPGN-422	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CPGN-120308	0.500	0.507	0.125	0.031
	CPGN-424	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CPGN-120316	0.500	0.507	0.125	0.062
	CPGN-426	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CPGN-120324	0.500	0.507	0.125	0.094
	CPGN-433	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CPGN-120412	0.500	0.507	0.187	0.047
	CPGN-434	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	CPGN-120416	0.500	0.507	0.187	0.062
	CPGN-632	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CPGN-190408	0.750	0.761	0.187	0.031
	CPGN-633	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	CPGN-190412	0.750	0.761	0.187	0.047

Carbide Coatings																	
MT-CVD Coated	PVD Coated	Uncoated															
GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	
P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S						
Steel				Stainless Steel				Cast Iron	High-Temp Alloys								

# Round Inserts

## Positive Flat Top



Shape: Round	Part Number	Material												Part Number	Dimensions (inches)						
		Steel				Stainless Steel				Cast Iron	High-Temp Alloys				A I.C.	T					
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S								
	ANSI	GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	ISO		
	RPGN-43	○	○	●	●	○	●	○	○	○	○	○	○	○	○	○	○	○	RPGN-120400	0.500	0.187

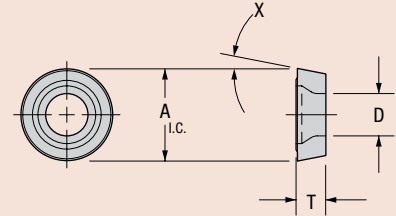
Carbide Coatings																	
MT-CVD Coated	PVD Coated	Uncoated															
GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	
P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S						
Steel				Stainless Steel				Cast Iron	High-Temp Alloys								

Not Recommended   
 Stocked or Available Upon Request   
 Stocked Standard



# Round Inserts

## Positive Chip Control (RCGT/RPGT)



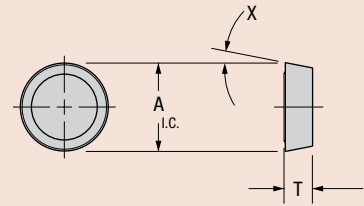
Shape: Round	Part Number ANSI	Steel		Stainless Steel					Cast Iron	High-Temp Alloys					Part Number ISO	Dimensions (inches)						
		P15	P25	P25	P35	M15	M15	M15	M20	M35	K15	S					A I.C.	T	D	X		
		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925		G-920	G-9230	G-915	G-20M			
	RCGT-22-TF			○		○	○	○				○	○	○	○	○		RCGT-060300-TF	0.250	0.125	.134	7°
	RCGT-32.5-TF			○		○	○	○				○	○	○	○	○		RCGT-09T300-TF	0.375	0.156	.173	7°
	RCGT-43-TF			○		○	●	○	○			○	●	○	○	○		RCGT-120400-TF	0.500	0.187	.217	7°
	RPGT-22-TF			○		○	○	○				○	○	○	○	○		RPGT-060300-TF	0.250	0.125	.134	11°
	RPGT-32.5-TF			○		○	○	○				○	○	○	○	○		RPGT-09T300-TF	0.375	0.156	.173	11°
RPGT-43-TF			○		○	●	○	○				○	●	○	○		RPGT-120400-TF	0.500	0.187	.217	11°	

**Carbide Coatings**

MT-CVD Coated
  PVD Coated
  Uncoated

# Round Inserts

## Positive Chip Control (RCGR/RPGR)



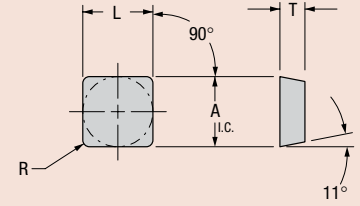
Shape: Round	Part Number ANSI	Steel		Stainless Steel					Cast Iron	High-Temp Alloys					Part Number ISO	Dimensions (inches)					
		P15	P25	P25	P35	M15	M15	M15	M20	M35	K15	S					A I.C.	T	X		
		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925		G-920	G-9230	G-915	G-20M		
	RCGR-22-TF			○		○	○	○				○	○	○	○	○		RCGR-060300-TF	0.250	0.125	7°
	RCGR-32.5-TF			○		○	○	○				○	○	○	○	○		RCGR-09T300-TF	0.375	0.156	7°
	RCGR-43-TF			○		○	○	○				○	○	○	○	○		RCGR-120400-TF	0.500	0.187	7°
	RPGR-22-TF			○		○	○	○				○	○	○	○	○		RPGR-060300-TF	0.250	0.125	11°
	RPGR-32.5-TF			○		○	○	○				○	○	○	○	○		RPGR-09T300-TF	0.375	0.156	11°
RPGR-43-TF			○		○	○	○				○	○	○	○	○		RPGR-120400-TF	0.500	0.187	11°	

**Carbide Coatings**

MT-CVD Coated
  PVD Coated
  Uncoated

# Square Inserts

## Positive Flat Top



Shape: Square	Part Number	Steel				Stainless Steel					Cast Iron	High-Temp Alloys					Part Number	Dimensions (inches)					
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S					A l.c.	L	T	R		
ANSI		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	ISO				
	SPGN-322	○	○	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-090308	0.375	0.375	0.125	0.031
	SPGN-323	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-090312	0.375	0.375	0.125	0.047
	SPGN-422	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-120308	0.500	0.500	0.125	0.031
	SPGN-423	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-120312	0.500	0.500	0.125	0.047
	SPGN-424	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-120316	0.500	0.500	0.125	0.062
	SPGN-432	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-120408	0.500	0.500	0.187	0.031
	SPGN-433	○	○	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-120412	0.500	0.500	0.187	0.047
	SPGN-434	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-120416	0.500	0.500	0.187	0.062
	SPGN-532	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-150408	0.625	0.625	0.187	0.031
	SPGN-534	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-150416	0.625	0.625	0.187	0.062
	SPGN-631	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-190404	0.750	0.750	0.187	0.015
	SPGN-632	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-190408	0.750	0.750	0.187	0.031
	SPGN-633	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-190412	0.750	0.750	0.187	0.047
	SPGN-634	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-190416	0.750	0.750	0.187	0.062
SPGN-636	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-190424	0.750	0.750	0.187	0.094	
SPGN-638	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPGN-190432	0.750	0.750	0.187	0.125	
	SPUN-422	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-120308	0.500	0.500	0.125	0.031	
	SPUN-423	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-120312	0.500	0.500	0.125	0.047	
	SPUN-424	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-120316	0.500	0.500	0.125	0.062	
	SPUN-432	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-120408	0.500	0.500	0.187	0.031	
	SPUN-433	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-120412	0.500	0.500	0.187	0.047	
	SPUN-633	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-190412	0.750	0.750	0.187	0.047	
	SPUN-634	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-190416	0.750	0.750	0.187	0.062	
	SPUN-643	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-190612	0.750	0.750	0.250	0.047	
	SPUN-644	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-190616	0.750	0.750	0.250	0.062	
	SPUN-864	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-250916	1.000	1.000	0.375	0.062	
	SPUN-866	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-250924	1.000	1.000	0.375	0.094	
	SPUN-868	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-250932	1.000	1.000	0.375	0.125	
SPUN-1068	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-310932	1.250	1.250	0.375	0.125		
SPUN-1288	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	SPUN-381232	1.500	1.500	0.500	0.125		

**Carbide Coatings**

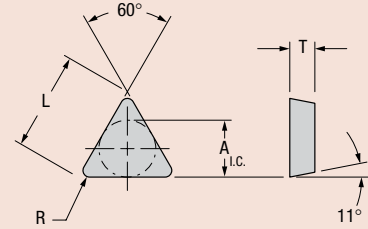
MT-CVD Coated
  PVD Coated
  Uncoated

Not Recommended 
  
 Stocked or Available Upon Request 
  
 Stocked Standard



# Triangle Inserts

## Positive Flat Top (TPGN)



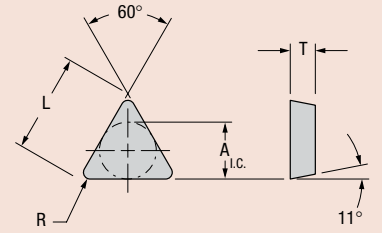
Shape: Triangle	Part Number ANSI	Steel		Stainless Steel					Cast Iron	High-Temp Alloys					Part Number ISO	Dimensions (inches)							
		P15	P25	P25	P35	M15	M15	M15	M20	M35	K15	S					A.I.C.	L	T	R			
		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925		G-920	G-9230	G-915	G-20M				
TPGN-221																			TPGN-110304	0.250	0.433	0.125	0.015
TPGN-222																			TPGN-110308	0.250	0.433	0.125	0.031
TPGN-223																			TPGN-110312	0.250	0.433	0.125	0.047
TPGN-224																			TPGN-110316	0.250	0.433	0.125	0.062
TPGN-320																			TPGN-160300	0.375	0.650	0.125	0.005
TPGN-321																			TPGN-160304	0.375	0.650	0.125	0.015
TPGN-322																			TPGN-160308	0.375	0.650	0.125	0.031
TPGN-323																			TPGN-160312	0.375	0.650	0.125	0.047
TPGN-324																			TPGN-160316	0.375	0.650	0.125	0.062
TPGN-334																			TPGN-160416	0.375	0.650	0.187	0.062
TPGN-336																			TPGN-160424	0.375	0.650	0.187	0.094
TPGN-431																			TPGN-220404	0.500	0.866	0.187	0.015
TPGN-432																			TPGN-220408	0.500	0.866	0.187	0.031
TPGN-433																			TPGN-220412	0.500	0.866	0.187	0.047
TPGN-434																			TPGN-220416	0.500	0.866	0.187	0.062
TPGN-436																			TPGN-220424	0.500	0.866	0.187	0.094
TPGN-532																			TPGN-270408	0.625	1.083	0.187	0.031
TPGN-533																			TPGN-270412	0.625	1.083	0.187	0.047
TPGN-534																			TPGN-270416	0.625	1.083	0.187	0.062
TPGN-541																			TPGN-270604	0.625	1.083	0.250	0.015
TPGN-542																			TPGN-270608	0.625	1.083	0.250	0.031
TPGN-543																			TPGN-270612	0.625	1.083	0.250	0.047
TPGN-544																			TPGN-270616	0.625	1.083	0.250	0.062
TPGN-548																			TPGN-270632	0.625	1.083	0.250	0.125
TPGN-554																			TPGN-270716	0.625	1.083	0.312	0.062
TPGN-556																			TPGN-270724	0.625	1.083	0.312	0.094
TPGN-666																			TPGN-330924	0.750	1.299	0.375	0.094

**Carbide Coatings**

MT-CVD Coated    
  PVD Coated    
  Uncoated

# Triangle Inserts

## Positive Flat Top (TPUN)



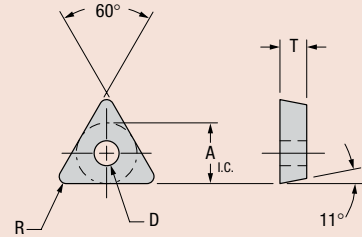
Shape: Triangle	Part Number	Steel				Stainless Steel					Cast Iron	High-Temp Alloys					Part Number	Dimensions (inches)																							
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S					A.I.C.	L	T	R																				
ANSI	ISO	GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	TPUN-160304	TPUN-160308	TPUN-160312	TPUN-220404	TPUN-220408	TPUN-220412	TPUN-220416	TPUN-270608	TPUN-270612	TPUN-270616	TPUN-270708	TPUN-270712	TPUN-270716	TPUN-270724	TPUN-330916	TPUN-330924							
	TPUN-321	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.375	0.650	0.125	0.015	
	TPUN-322	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.375	0.650	0.125	0.031
	TPUN-323	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.375	0.650	0.125	0.047
	TPUN-431	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.500	0.866	0.187	0.015
	TPUN-432	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.500	0.866	0.187	0.031
	TPUN-433	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.500	0.866	0.187	0.047
	TPUN-434	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.500	0.866	0.187	0.062
	TPUN-542	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.625	1.083	0.250	0.031
	TPUN-543	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.625	1.083	0.250	0.047
	TPUN-544	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.625	1.083	0.250	0.062
	TPUN-552	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.625	1.083	0.312	0.031
	TPUN-553	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.625	1.083	0.312	0.047
	TPUN-554	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.625	1.083	0.312	0.062
	TPUN-556	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.625	1.083	0.312	0.094
	TPUN-664	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.750	1.299	0.375	0.062
	TPUN-666	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	0.750	1.299	0.375	0.094
<b>Carbide Coatings</b> MT-CVD Coated             PVD Coated             Uncoated		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M																							
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S																												
		Steel				Stainless Steel					Cast Iron	High-Temp Alloys																													

Not Recommended Stocked or Available Upon Request Stocked Standard



# Triangle Inserts

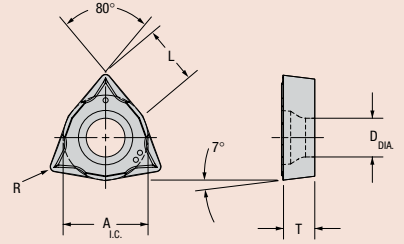
## Positive Flat Top (TP/TPGA)



Shape: Triangle	Part Number	Steel		Stainless Steel					Cast Iron	High-Temp Alloys					Part Number	Dimensions (inches)							
		P15	P25	P25	P35	M15	M15	M15	M20	M35	K15	S					ISO	A I.C.	T	D	R		
	ANSI	GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M	TP-41	0.250	0.093	0.137	0.015
	TP-41	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TP-41	0.250	0.093	0.137	0.015
	TP-42	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TP-42	0.250	0.093	0.137	0.031
	TP-62	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TP-62	0.375	0.125	0.163	0.031
	TP-64	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TP-64	0.375	0.125	0.163	0.062
TP-82	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TP-82	0.500	0.187	0.203	0.031	
	TPGA-321	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TPGA-160304	0.375	0.125	0.150	0.015	
	TPGA-322	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TPGA-160308	0.375	0.125	0.150	0.031	
	TPGA-323	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	TPGA-160312	0.375	0.125	0.150	0.047	
<b>Carbide Coatings</b> MT-CVD Coated               PVD Coated               Uncoated		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-915	G-20M					
		P15	P25	P25	P35	M15	M15	M15	M20	M35	K15	S											
		Steel			Stainless Steel					Cast Iron	High-Temp Alloys												

# 80° Trigon Inserts

## Chip Control: Screw On



Shape: 80° Trigon	Part Number	Steel			Stainless Steel					Cast Iron	High-Temp Alloys					Part Number	Dimensions (inches)																									
		P15	P25	P25	P35	M15	M15	M15	M15	M20	M35	K15	S					A I.C.	L	T	D	R																				
		GA5025	GA5035	GA5125	GA5036	GA5026	G-925	G-920	G-9230	GA5023	G-915	GA5023	GA5026	G-925	G-920		G-9230						G-915	G-20M																		
MT-CVD Coated PVD Coated Uncoated	ANSI																																									
	WCMT-21.55-X3	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																		
	WCMT-21.51-X3	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																		
	WCMT-32.51-X3	○	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																		
	WCMT-32.52-X3	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○																			

CARBIDE INSERTS

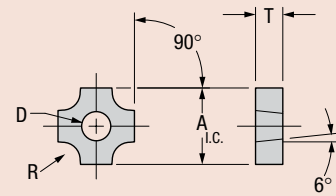
Not Recommended  
 Stocked or Available Upon Request  
 Stocked Standard  
 Stocked Standard





# Radius Forming Inserts

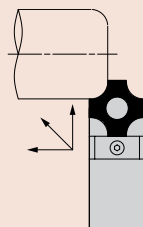
Shape: Square	Part Number ANSI	Carbide Coatings				Part Number ISO	Dimensions (inches)			
		G-02	G-60	GA5035	GA5036		A I.C.	T	D	R
	SNMA-64IR4	○	●	○	○	SNMA-64IR4	0.750	0.250	0.312	0.062
	SNMA-64IR6	●	●	○	○	SNMA-64IR6	0.750	0.250	0.312	0.093
	SNMA-64IR8	○	●	●	●	SNMA-64IR8	0.750	0.250	0.312	0.125
	SNMA-64IR10	○	●	○	○	SNMA-64IR10	0.750	0.250	0.312	0.156
	SNMA-84IR12	○	○	●	○	SNMA-84IR12	1.000	0.250	0.359	0.187
	SNMA-84IR14	○	●	○	○	SNMA-84IR14	1.000	0.250	0.359	0.218
	SNMA-84IR16	●	●	○	○	SNMA-84IR16	1.000	0.250	0.359	0.250
	SNMA-106IR20	○	○	○	○	SNMA-106IR20	1.250	0.375	0.500	0.312
	SNMA-106IR24	●	○	○	○	SNMA-106IR24	1.250	0.375	0.500	0.375
	SNMA-126IR28	○	●	○	○	SNMA-126IR28	1.500	0.375	0.500	0.437
SNMA-126IR32	●	○	○	○	SNMA-126IR32	1.500	0.375	0.500	0.500	



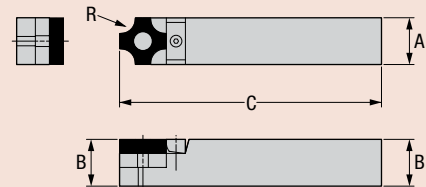
**Carbide Coatings**

MT-CVD Coated
  PVD Coated
  Uncoated

## Style GSRN



Neutral Toolholder Shown



Part Number	Stock	Dimensions (inches)			Standard Components				Tune-Up Kit	Insert Options	
		A	B	C	Shim	Center Pin	Clamp	Clamp Screw		Includes All Standard Components	Insert
<b>Neutral</b>	<b>N</b>										
GSRN-646	●	0.750	1.000	6.000	SR6	30309	30308-2	30301-1	TK-01117	SNMA-64IR4	0.062
GSRN-656	○	0.750	1.250	6.000	SR6	30309	30308-2	30301-1	TK-01117	SNMA-64IR6	0.093
GSRN-666	●	0.750	1.500	7.000	SR6	30309	30308-2	30301-1	TK-01117	SNMA-64IR8	0.125
										SNMA-64IR10	0.156
GSRN-168	●	1.000	1.000	6.000	SR8	30327-1	30308-2	30301-1	TK-00572	SNMA-84IR12	0.187
GSRN-858	○	1.000	1.250	7.000	SR8	30327-1	30308-2	30301-1	TK-00572	SNMA-84IR14	0.218
GSRN-868	●	1.000	1.500	8.000	SR8	30327-1	30308-2	30301-1	TK-00572	SNMA-84IR16	0.250
GSRN-2010	●	1.250	1.250	7.000	SR10	30454	30319-2	30320	TK-00573	SNMA-106IR20	0.312
GSRN-2410	●	1.500	1.500	8.000	SR10	30454	30319-2	30320	TK-00573	SNMA-106IR24	0.375
GSRN-2412	●	1.500	1.500	8.000	SR12	30454	30319-2	30320	TK-00574	SNMA-126IR28	0.437
										SNMA-126IR32	0.500

These toolholders are Greenleaf standard and do not conform to the ANSI identification system.

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Inserts and Steel Products	Inserts Only	Steel Products Only
● <input type="checkbox"/> Stocked Standard ○ <input type="checkbox"/> Stocked or Available Upon Request	○ <input type="checkbox"/> Stocked or Available Upon Request	○ <input type="checkbox"/> 10 Business Days or Less

## Ceramic Inserts

Greenleaf is the industry leader in the development and manufacture of ceramic and coated ceramic inserts in ANSI standard and special geometries.



Greenleaf Corporation is continually upgrading its products.  
For the most current information, please visit our web site at:

[www.greenleafglobalsupport.com](http://www.greenleafglobalsupport.com)

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## Ceramic Insert Grade Description

### **CERAMIC**

*Greenleaf is the industry leader in the development and manufacture of ceramic and coated ceramic inserts in ANSI standard and special geometries. Some of the most prominent include:*

**WG-300**<sup>®</sup> Whisker-reinforced ceramic with excellent wear and shock resistance at high surface speeds. WG-300 is very effective at machining nickel and cobalt based super-alloys, and other hard materials at metal removal rates up to 10 times higher than carbide.

**WG-600**<sup>®</sup> Coated whisker-reinforced ceramic offering longer tool life and better performance over uncoated ceramics due to outstanding thermal properties and shock-resistance at high cutting speeds. Application areas include rough and finish turning, as well as high-performance milling of high-strength alloys, hardened steels and select stainless steels. *U.S. Patent No. 6,447,896 B1.*

**WG-700**<sup>™</sup> New whisker-reinforced Al<sub>2</sub>O<sub>3</sub> ceramic substrate featuring improved toughness and a unique high-speed coating. WG-700 is ideal for machining nickel- and cobalt-based super alloys and other difficult-to-machine materials. WG-700 exhibits high metal-removal rates with exceptional tool life. *U.S. Patent No. 6,447,896 B1.*

**XSYTIN**<sup>™-1</sup> New phase-toughened ceramic capable of extreme feed rates. XSYTIN<sup>™-1</sup> excels at machining a wide variety of materials including steels, cast and ductile irons, high-temperature alloys and other challenging metals. XSYTIN<sup>™-1</sup> is ideal for use in interrupted cuts, scale, abrasive casting materials and milling.

**GSN100**<sup>™</sup> New engineered blend of silicon nitride and proprietary toughening agents that redefines productivity in the machining of cast iron. GSN100 delivers outstanding tool life at high cutting speeds in turning, grooving and milling applications.

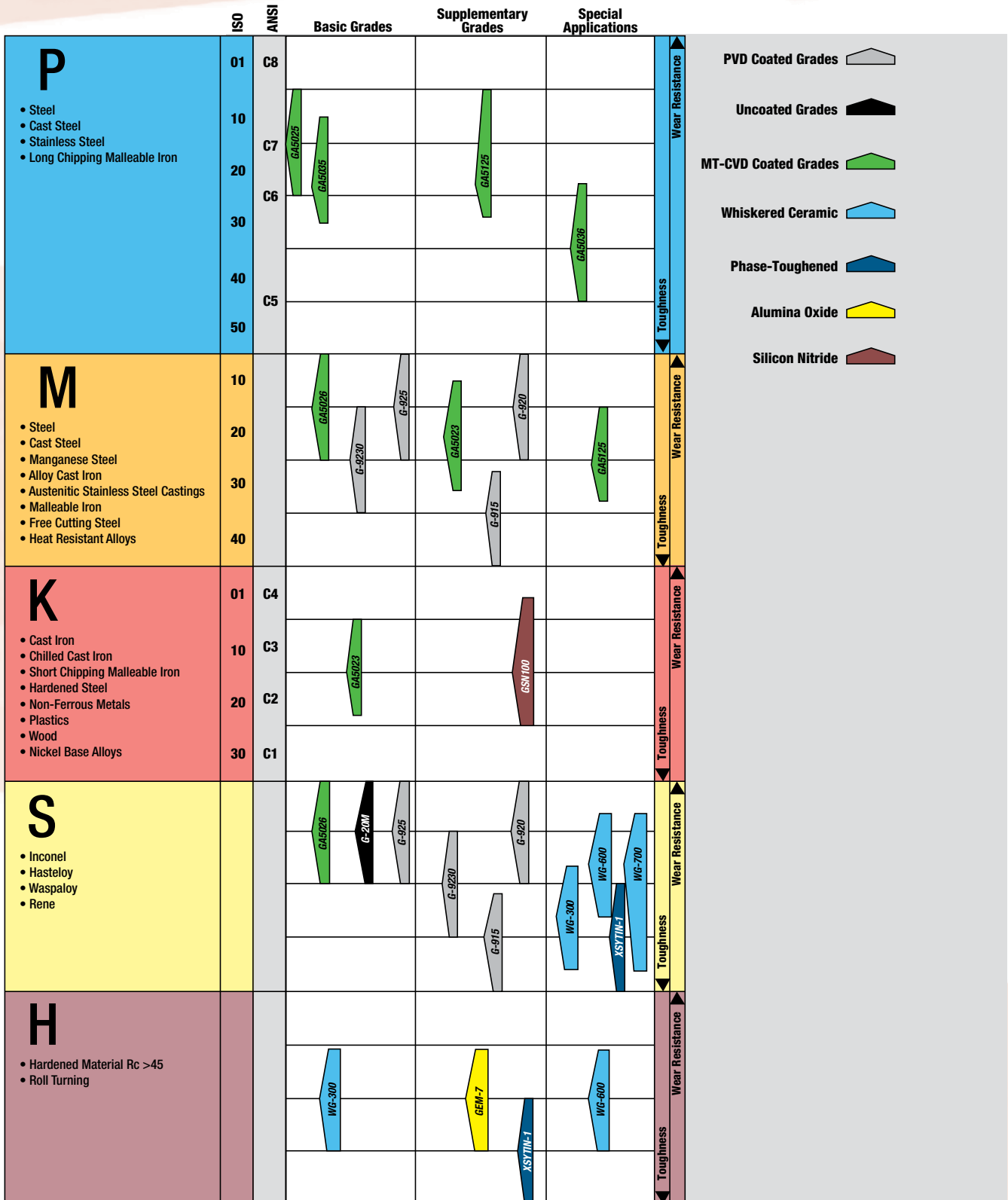
**GEM-7**<sup>™</sup> Al<sub>2</sub>O<sub>3</sub> + TiC composite ceramic with a high degree of predictability in roll turning and hard alloy (up to 65 R/c) machining.

**GEM-19**<sup>™</sup> Cold pressed and sintered Al<sub>2</sub>O<sub>3</sub> ceramic for economical roughing and finishing of cast iron grades application range on severe interruption or old machinery.

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# Insert Grade Reference for Turning

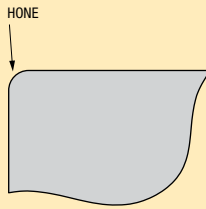


CERAMIC INSERTS

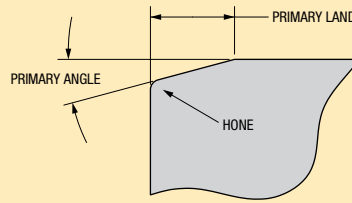
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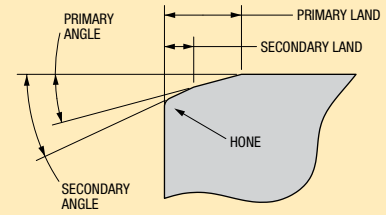
# Edge Preparation and Application Guide



**HONE**



**PRIMARY ANGLE**



**SECONDARY ANGLE**

Edge Prep	Hone	Primary Land	Primary Angle	Application
<b>A</b>	.0005 - .001" R.	-	-	For light finishing and grooving, also added to designated negative lands (i.e. T1, T2, T9).
<b>T1</b>	-	.002 - .004"	20°	General purpose for turning and light milling in clean high-temp. alloys and materials <50R/C.
<b>T1A</b>	.0005 - .001" R.	.002 - .004"	20°	Used where more protection is needed than T1 such as in scale and light interruptions, hard turning.
<b>T2</b>	-	.006 - .008"	20°	General purpose chamfer for light to medium feed rates, cast-iron machining.
<b>T2A</b>	.0005 - .001" R.	.006 - .008"	20°	Scale applications, light interruptions, weld overlays, finish turning and milling of hardened materials.

See page ATI 19 for other Greenleaf edge preps or call Greenleaf Technical Service for application concerns.

# A.N.S.I. Identification for Turning and Boring Inserts

CERAMIC INSERTS

Roll Dim. B	I.C. A	Thickness T
A	0.0002 <sup>(2)</sup>	0.001
B	0.0002	0.001
C	0.0005	0.001
D	0.0005	0.001
E	0.001	0.001
F	0.0002 <sup>(2)</sup>	0.0005
G	0.001	0.001
H	0.0005	0.0005
J	0.0002 <sup>(2)</sup>	0.002-0.005
K	0.0005	0.002-0.005
L	0.001	0.002-0.005
M	0.002-0.010 <sup>(3)</sup>	0.002-0.004 <sup>(3)</sup>
U	0.005-0.012 <sup>(3)</sup>	0.005-0.010 <sup>(3)</sup>
N	0.002-0.010 <sup>(3)</sup>	0.002-0.004 <sup>(3)</sup>

**Tolerance Class <sup>(1)</sup>**

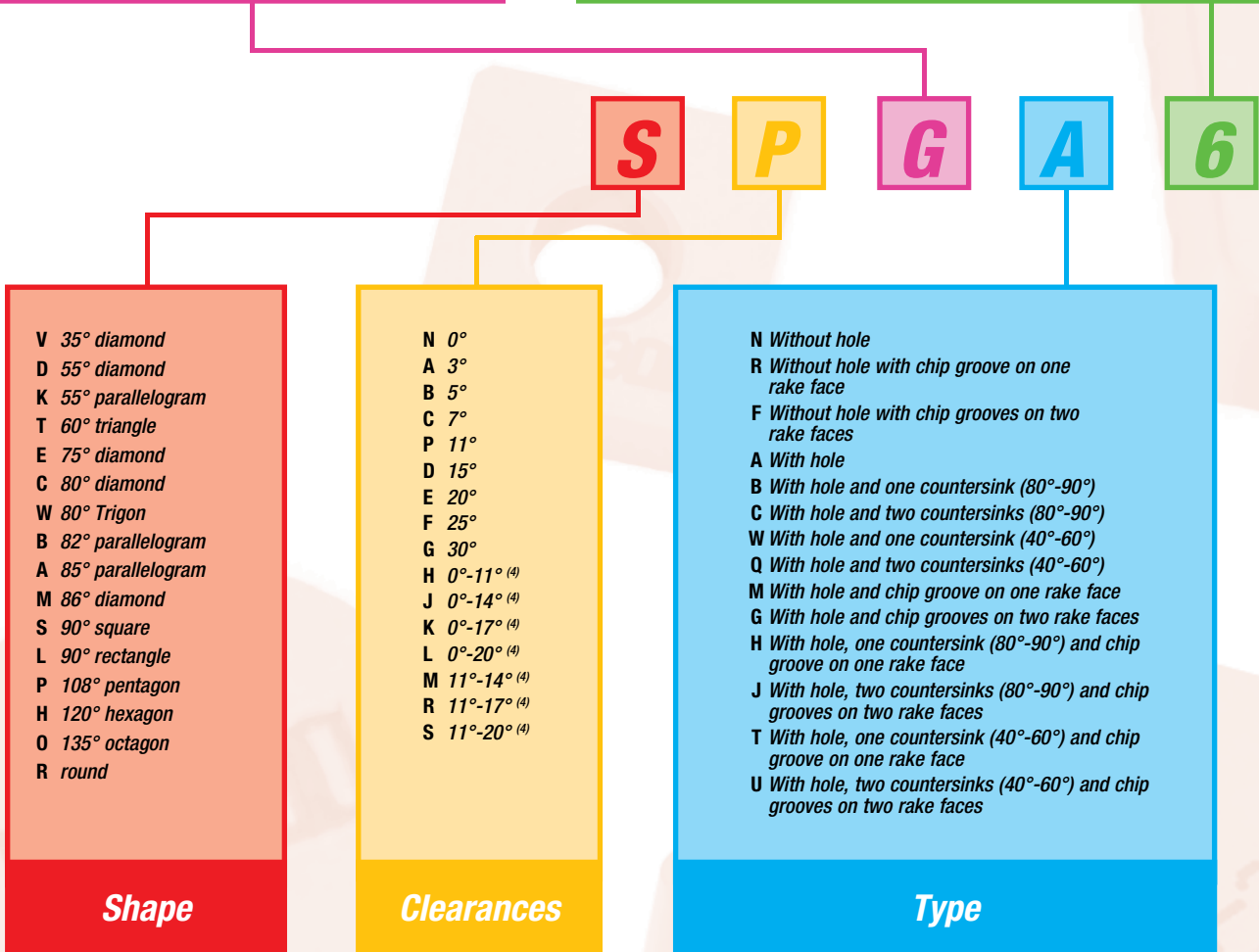
**Regular polygons and diamonds**  
Number of 1/8ths of an inch in the inscribed circle as per table below:

**Example:**

5/32" I.C.	1.2
3/16" I.C.	1.5
7/32" I.C.	1.8
1/4" I.C.	2
5/16" I.C.	2.5
3/8" I.C.	3
1/2" I.C.	4
5/8" I.C.	5
3/4" I.C.	6
7/8" I.C.	7
1" I.C.	8
1-1/4" I.C.	10

**Rectangles and parallelograms**  
Use two digits to size  
1st digit: Number of 1/8ths of an inch in width  
2nd digit: Number of 1/4ths of an inch in length

**Size (I.C.)**



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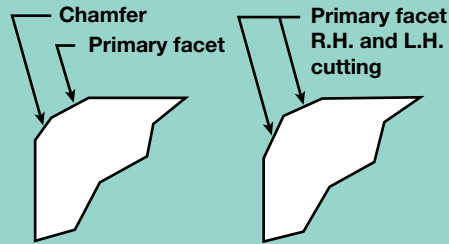
**Regular polygons, diamonds, rectangles and parallelograms:**  
Number of 1/16ths of an inch in thickness as per table below:

**Example:**

3/32"	1.5
1/8"	2
5/32"	2.5
3/16"	3
7/32"	3.5
1/4"	4
5/16"	5
3/8"	6
7/16"	7
1/2"	8

**Thickness**

Only used following a letter in the seventh position.  
Number of 1/64ths of an inch in the primary facet length.



**Special Cutting Point Definition**

R Right  
L Left

**Hand (5)**

3

3

A

- 0 Sharp Corner
- 1 1/64" radius
- 2 1/32" radius
- 3 3/64" radius
- 4 1/16" radius
- 5 5/64" radius
- 6 3/32" radius
- 7 7/64" radius
- 8 1/8" radius

- A Square insert with 45° chamfer
- D Square insert with 30° chamfer
- E Square insert with 15° chamfer
- F Square insert with 3° chamfer
- K Square insert with 30° double chamfer
- L Square insert with 15° double chamfer
- M Square insert with 3° double chamfer
- N Truncated triangular insert
- P Flatted corner triangle – 90°

**Cutting Point Configuration**

- A Honed (0.0005 to less than 0.001")
- B Honed (0.001 to less than 0.002")
- C Honed (0.005 to less than 0.007")
- D Honed (0.007" and over)
- J Polished to 4 microinch AA (rake face only)
- T Chamfered – manufacturer's standard (negative land – rake face only)

**Other Conditions (5)**

- (1) Tolerances given are plus and minus from nominal.
- (2) These tolerances normally apply to indexable inserts with facets (secondary cutting edges).
- (3) The tolerance depends on the size and shape of the insert and should be shown in the standards for the corresponding shapes and sizes (see ANSI B94.25).
- (4) Secondary facet angle may vary by +1°.
- (5) Shall only be used when required.
- (6) Dimensions are established prior to supplemental edge or coating modification.



# I.S.O. Identification for Turning and Boring Inserts

- A 85° parallelogram
- B 82° parallelogram
- C 80° diamond
- D 55° diamond
- H hexagon
- K 55° parallelogram
- L 90° rectangle
- M 86° diamond
- O octagon
- P pentagon
- R round
- S square
- T triangle
- V 35° diamond
- W 80° Trigon

**Shape**

	Dimensions		
	m	s	d
A	0.005	0.025	0.025
B	0.005	0.025	0.013
C	0.013	0.025	0.025
D	0.013	0.025	0.013
E	0.025	0.025	0.025
G	0.025	0.130	0.025
J	0.005	0.025	0.050-0.130
K	0.013	0.025	0.050-0.130
L	0.025	0.025	0.050-0.130
M	0.080-0.180	0.130	0.050-0.130
U	0.130-0.380	0.130	0.080-0.250

**Tolerance Class (±mm)**

**T**

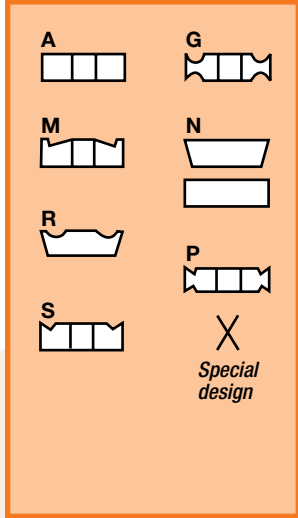
**N**

**M**

**G**

- A 3°
- B 5°
- C 7°
- D 15°
- E 20°
- F 25°
- G 30°
- N 0°
- P 11°

**Clearances**



**Type**

Comparison cutting edge length in mm – IC in inches

△	06	09	11	16	22	27	33	44
□ ○				09	12	15	19	25
55°					15	19		
80°					12	16	19	25
35°				16	22			
IC = d	5/32"	7/32"	1/4"	3/8"	1/2"	5/8"	3/4"	1"

Integers to be preceded by a 0.  
Example: 9,52 mm indicated by 09.

**Cutting Edge Length**

**Cutting Edge**

22

04

08

E

01	s= 1,59
T1	s= 1,98
02	s= 2,38
03	s= 3,18
T3	s= 3,97
04	s= 4,76
05	s= 5,56
06	s= 6,35
07	s= 7,94
09	s= 9,52
10	s= 10,00
12	s= 12,00

**Thickness**

Radius in terms of 0.1 mm

00	Round insert sharp point
00	
02	0.2
04	0.4
05	0.5
08	0.8
10	1.0
12	1.2
15	1.5
16	1.6
24	2.4
32	3.2
40	4.0

**Cutting Point Configuration**

# Ceramic Insert Usage Reference Guide

CERAMIC INSERTS

**Insert Type**

80° Diamond Inserts Negative (CNGA)

**Geometry**

80° Diamond Inserts Negative (CNGN)

**Insert Geometry**

**Stocking**

Part Number	Edge Prep	Whisker	Dimensions (inches)
Part Number	Edge Prep	Whisker	Dimensions (inches)
CNGA-431	T1	None	0.500 0.508 0.187 0.203 0.015
CNGA-432	T1A	None	0.500 0.508 0.187 0.203 0.015
CNGA-433	T2	None	0.500 0.508 0.187 0.203 0.015
CNGA-434	T2A	None	0.500 0.508 0.187 0.203 0.015
CNGA-435	A	None	0.500 0.508 0.187 0.203 0.015

Part Number	Edge Prep	Whisker	Dimensions (inches)
Part Number	Edge Prep	Whisker	Dimensions (inches)
CNGN-431	T1	None	0.500 0.508 0.187 0.203 0.015
CNGN-432	T1A	None	0.500 0.508 0.187 0.203 0.015
CNGN-433	T2	None	0.500 0.508 0.187 0.203 0.015
CNGN-434	T2A	None	0.500 0.508 0.187 0.203 0.015
CNGN-435	A	None	0.500 0.508 0.187 0.203 0.015

**Part Number (with edge condition)**

**Stocking Status**

**Edge Conditions**

**Dimensions**

**Insert Model**

**Grade Categories**

**Negative Inserts**



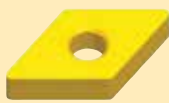
80° Diamond  
page: T 52



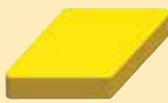
80° Diamond  
page: T 53



80° Diamond  
Rough Stuff®  
page: T 54



55° Diamond  
page: T 55



55° Diamond  
page: T 56



Round  
page: T 57



Round  
page: T 58

**Negative Inserts *continued***



Square  
page: T 59



Square  
page: T 60



Square  
Rough Stuff®  
page: T 61



Triangle  
page: T 62



Triangle  
page: T 63



35° Diamond  
page: T 64



Trigon  
page: T 65

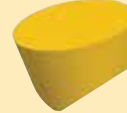
**Positive Inserts**



80° Diamond  
Positive Flat Top  
page: T 66



Round  
Positive Flat Top  
page: T 66



Round  
V-Bottom  
page: T 67



Square  
Positive Flat Top  
page: T 68

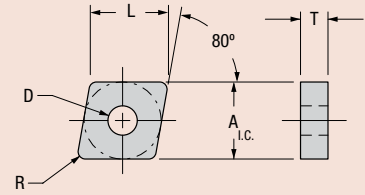


Triangle  
Positive Flat Top  
page: T 69



Triangle  
page: T 70

# 80° Diamond Inserts Negative (CNGA)



CNGA



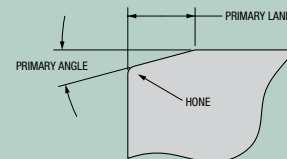
Shape: 80° Diamond	Part Number ANSI	Edge Prep	Whisker						Part Number ISO	Edge Prep	Dimensions (inches)				
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7			GEM-19	A I.C.	L	T	D
	CNGA-431	T1	●	○	●	○	○	○	CNGA-120404	T1	0.500	0.508	0.187	0.203	0.015
		T1A	●	○	●	○	○	○		T1A	0.500	0.508	0.187	0.203	0.015
		T2	●	○	●	○	○	○		T2	0.500	0.508	0.187	0.203	0.015
		T2A	●	○	●	○	○	●		T2A	0.500	0.508	0.187	0.203	0.015
	CNGA-432	A	○	○	○	○	○	○	A	0.500	0.508	0.187	0.203	0.015	
		T1	●	●	●	○	○	○	CNGA-120408	T1	0.500	0.508	0.187	0.203	0.031
		T1A	●	●	●	○	○	○		T1A	0.500	0.508	0.187	0.203	0.031
		T2	●	●	●	○	○	○		T2	0.500	0.508	0.187	0.203	0.031
	T2A	●	○	●	○	○	○	T2A		0.500	0.508	0.187	0.203	0.031	
	CNGA-433	A	○	○	○	○	○	○	A	0.500	0.508	0.187	0.203	0.031	
		T1	●	○	●	○	○	○	CNGA-120412	T1	0.500	0.508	0.187	0.203	0.047
		T1A	●	●	●	○	○	○		T1A	0.500	0.508	0.187	0.203	0.047
		T2	●	○	●	○	○	○		T2	0.500	0.508	0.187	0.203	0.047
	T2A	●	○	●	○	○	○	T2A		0.500	0.508	0.187	0.203	0.047	
	CNGA-434	A	○	○	○	●	○	○	A	0.500	0.508	0.187	0.203	0.047	
		T1	●	○	●	○	○	○	CNGA-120416	T1	0.500	0.508	0.187	0.203	0.062
		T1A	●	○	●	○	○	○		T1A	0.500	0.508	0.187	0.203	0.062
		T2	○	○	○	○	○	○		T2	0.500	0.508	0.187	0.203	0.062
	T2A	●	○	●	○	○	○	T2A		0.500	0.508	0.187	0.203	0.060	
	CNGA-453	T3A	○	○	○	○	○	○	T3A	0.500	0.508	0.187	0.203	0.060	
A		○	○	○	○	○	○	A	0.500	0.508	0.187	0.203	0.060		
T1		●	○	●	○	○	○	CNGA-120712	T1	0.500	0.508	0.312	0.203	0.047	
T2		○	○	○	○	○	○		T2	0.500	0.508	0.312	0.203	0.047	
CNGA-454	T2	○	○	○	○	○	○	CNGA-120716	T2	0.500	0.508	0.312	0.203	0.062	
CNGA-542	T2A	●	○	●	○	○	○	CNGA-160608	T2A	0.625	0.635	0.250	0.250	0.031	
CNGA-543	T1	●	○	●	○	○	○	CNGA-160612	T1	0.625	0.635	0.250	0.250	0.047	
CNGA-544	T2A	●	○	●	○	○	○	CNGA-160616	T2A	0.625	0.635	0.250	0.250	0.062	
CNGA-643	T2A	●	●	●	○	○	○	CNGA-190612	T2A	0.750	0.762	0.250	0.312	0.047	
CNGA-644	T2A	○	○	○	○	○	○	CNGA-190616	T2A	0.750	0.762	0.250	0.312	0.062	
CNGA-652	T2A	○	○	○	○	○	○	CNGA-190708	T2A	0.750	0.762	0.312	0.312	0.031	
CNGA-653	T2A	○	○	○	○	○	○	CNGA-190712	T2A	0.750	0.762	0.312	0.312	0.047	
CNGA-654	T2A	○	○	○	○	○	○	CNGA-190716	T2A	0.750	0.762	0.312	0.312	0.062	

Ceramic Classification

Whisker Ceramic	Phase Toughened	Silicon Nitride	Alumina TiC	Al <sub>2</sub> O <sub>3</sub>

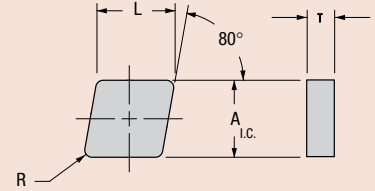
WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker	Phase Toughened	Si <sub>3</sub> N <sub>4</sub>	Al <sub>2</sub> O <sub>3</sub> -TiC	Al <sub>2</sub> O <sub>3</sub>		

Additional Edge Preps – page T 45



Page T 42 – grade description

# 80° Diamond Inserts Negative (CNGN)



CERAMIC INSERTS

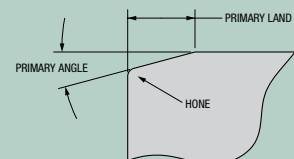
Shape: 80° Diamond	Part Number ANSI	Edge Prep	Whisker						Part Number ISO	Edge Prep	Dimensions (inches)			
			WG-300	WG-600	WG-700	XSYTIN-1 Phase Toughened	GSM100 SiAlN	GEM-7 AlO <sub>2</sub> -TiC			GEM-19 AlN	A.L.C.	L	T
	CNGN-431	T1	●	●	●	○	○	○	CNGN-120404	T1	0.500	0.508	0.187	0.015
	CNGN-432	T1	●	●	●	○	○	○	CNGN-120408	T1	0.500	0.508	0.187	0.031
		T1A	●	●	●	○	○	○		T1A	0.500	0.508	0.187	0.031
		T2	●	●	●	○	○	○		T2	0.500	0.508	0.187	0.031
		T2A	●	●	●	○	○	○		T2A	0.500	0.508	0.187	0.031
		A	○	○	○	○	○	○		A	0.500	0.508	0.187	0.031
	CNGN-433	T1	●	●	●	○	○	○	CNGN-120412	T1	0.500	0.508	0.187	0.047
		T1A	●	●	●	○	○	○		T1A	0.500	0.508	0.187	0.047
		T2	○	○	○	○	●	○		T2	0.500	0.508	0.187	0.047
		T2A	●	○	○	○	●	○		T2A	0.500	0.508	0.187	0.047
		T9	○	○	○	○	●	○		T9	0.500	0.508	0.187	0.047
		A	○	○	○	●	○	○		A	0.500	0.508	0.187	0.047
	CNGN-434	T1	●	●	●	○	○	○	CNGN-120416	T1	0.500	0.508	0.187	0.062
		T1A	○	○	○	●	○	○		T1A	0.500	0.508	0.187	0.062
		T2	●	○	○	○	●	○		T2	0.500	0.508	0.187	0.062
		T2A	●	○	○	○	●	○		T2A	0.500	0.508	0.187	0.062
		A	○	○	○	●	○	○		A	0.500	0.508	0.187	0.062
	CNGN-451	T1	○	○	○	○	○	○	CNGN-120704	T1	0.500	0.508	0.312	0.015
	CNGN-452	T1	●	○	●	○	○	○	CNGN-120708	T1	0.500	0.508	0.312	0.031
		T2	○	○	○	○	○	○		T2	0.500	0.508	0.312	0.031
		T2A	●	○	○	○	○	○		T2A	0.500	0.508	0.312	0.031
	CNGN-453	T1	●	●	●	○	○	○	CNGN-120712	T1	0.500	0.508	0.312	0.047
		T1A	○	○	○	●	●	○		T1A	0.500	0.508	0.312	0.047
		T2	○	○	○	○	●	○		T2	0.500	0.508	0.312	0.047
		T2A	●	○	○	○	○	○		T2A	0.500	0.508	0.312	0.047
		A	○	○	○	●	○	○		A	0.500	0.508	0.312	0.047
	CNGN-454	T1	●	●	○	○	○	○	CNGN-120716	T1	0.500	0.508	0.312	0.062
		T1A	○	○	○	●	●	○		T1A	0.500	0.508	0.312	0.062
		T2	○	○	○	○	○	○		T2	0.500	0.508	0.312	0.062
		T2A	●	○	○	○	○	○		T2A	0.500	0.508	0.312	0.062
	A	○	○	○	●	○	○		A	0.500	0.508	0.312	0.062	
CNGN-542	T1	●	○	○	○	○	○	CNGN-160608	T1	0.625	0.635	0.250	0.031	
CNGN-543	T1	●	○	○	○	○	○	CNGN-160612	T1	0.625	0.635	0.250	0.047	
	T2A	○	○	○	○	○	○		T2A	0.625	0.635	0.250	0.047	
CNGN-642	T1	○	○	○	○	○	○	CNGN-190608	T1	0.750	0.762	0.250	0.031	
CNGN-643	T1	●	●	○	○	○	○	CNGN-190612	T1	0.750	0.762	0.250	0.047	
	T2	○	○	○	○	○	○		T2	0.750	0.762	0.250	0.047	
	T2A	●	●	○	○	○	○		T2A	0.750	0.762	0.250	0.047	
CNGN-644	T2A	○	○	○	○	○	○	CNGN-190616	T2A	0.750	0.762	0.250	0.062	
CNGN-658	T2A	○	○	○	○	○	○	CNGN-190732	T2A	0.750	0.762	0.312	0.125	

**Ceramic Classification**

Whisker Ceramic	Phase Toughened	Silicon Nitride	Alumina TiC	Al <sub>2</sub> O <sub>3</sub>

WG-300	WG-600	WG-700	XSYTIN-1	GSM100	GEM-7	GEM-19
Whisker			Phase Toughened	SiAlN	AlO <sub>2</sub> -TiC	AlN

Additional Edge Preps – page T 45



Page T 42 – grade description

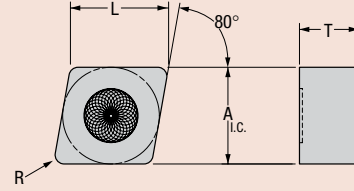
Not Recommended		Stocked or Available Upon Request		Stocked Standard	
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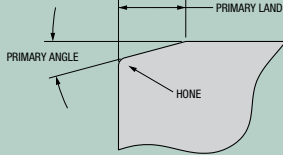
80°



CERAMIC INSERTS

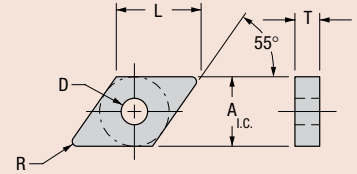
# 80° Diamond Inserts Rough Stuff®



Shape: 80° Diamond	Part Number ANSI	Edge Prep	Whisker				Part Number ISO	Edge Prep	Dimensions (inches)			
			WG-300	WG-600	WG-700	GSN100			A.I.C.	L	T	R
	CNGX-452-RS	T2	○	○	○	○	CNGX-120708-RS	T2	0.500	0.508	0.312	0.031
		T2A	○	○	○	○		T2A	0.500	0.508	0.312	0.031
	CNGX-453-RS	T2	○	○	○	○	CNGX-120712-RS	T2	0.500	0.508	0.312	0.047
		T2A	○	○	○	○		T2A	0.500	0.508	0.312	0.047
	CNGX-454-RS	T2	○	○	○	○	CNGX-120716-RS	T2	0.500	0.508	0.312	0.062
		T2A	○	○	○	○		T2A	0.500	0.508	0.312	0.062
	<b>Ceramic Classification</b>  Whisker Ceramic  Silicon Nitride			WG-300	WG-600	WG-700	GSN100	<b>Additional Edge Preps – page T 45</b> 				
				Whisker			SiAlN					

Page T 42 – grade description

# 55° Diamond Inserts Negative (DNGA)



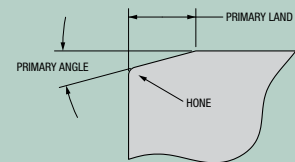
Shape: 55° Diamond	Part Number ANSI	Edge Prep	Whisker						Part Number ISO	Edge Prep	Dimensions (inches)				
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7			GEM-19	A I.C.	L	T	D
	DNGA-322	T1	○	○	○	○	○	○	DNGA-110308	T1	0.375	0.458	0.125	0.150	0.031
	DNGA-323	T1	○	○	○	○	○	○	DNGA-110312	T1	0.375	0.458	0.125	0.150	0.047
	DNGA-324	T1	○	○	○	○	○	○	DNGA-110316	T1	0.375	0.458	0.125	0.150	0.062
	DNGA-332	T1	○	○	○	○	○	○	DNGA-110408	T1	0.375	0.458	0.187	0.150	0.031
	DNGA-431	T1	●	○	○	○	○	○	DNGA-150404	T1	0.500	0.610	0.187	0.203	0.015
		T2	●	○	○	○	○	○		T2	0.500	0.610	0.187	0.203	0.015
	DNGA-432	T1	●	○	○	○	○	○	DNGA-150408	T1	0.500	0.610	0.187	0.203	0.031
		T1A	●	○	○	○	○	○		T1A	0.500	0.610	0.187	0.203	0.031
		T2	●	○	○	○	●	○		T2	0.500	0.610	0.187	0.203	0.031
		T2A	●	○	○	○	○	●		T2A	0.500	0.610	0.187	0.203	0.031
		A	○	○	○	○	○	○		A	0.500	0.610	0.187	0.203	0.031
	DNGA-433	T1	●	○	○	○	○	○	DNGA-150412	T1	0.500	0.610	0.187	0.203	0.047
		T1A	●	○	○	○	○	○		T1A	0.500	0.610	0.187	0.203	0.047
		T2	●	○	○	○	●	○		T2	0.500	0.610	0.187	0.203	0.047
		T2A	●	○	○	○	○	●		T2A	0.500	0.610	0.187	0.203	0.047
	DNGA-434	T1	●	○	○	○	○	○	DNGA-150416	T1	0.500	0.610	0.187	0.203	0.062
	T1A	●	○	○	○	○	○		T1A	0.500	0.610	0.187	0.203	0.062	
	T2A	●	○	○	○	○	○		T2A	0.500	0.610	0.187	0.203	0.062	
DNGA-443	T1	○	○	○	○	○	○	DNGA-150612	T1	0.500	0.610	0.250	0.203	0.047	
DNGA-543	T2A	●	○	○	○	○	○	DNGA-190612	T2A	0.625	0.763	0.250	0.250	0.047	

**Ceramic Classification**

Whisker Ceramic	Phase Toughened	Silicon Nitride	Alumina TiC	Al <sub>2</sub> O <sub>3</sub>

Page T 42 – grade description

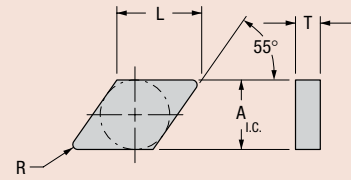
WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker	Phase Toughened	SiN <sub>4</sub>	Al <sub>2</sub> O <sub>3</sub> -TiC	Al <sub>2</sub> O <sub>3</sub>		

**Additional Edge Preps – page T 45**


Not Recommended 
 Stocked or Available Upon Request 
 Stocked Standard



# 55° Diamond Inserts Negative (DNGN)



Shape: 55° Diamond	Part Number ANSI	Edge Prep	Whisker					Al <sub>2</sub> O <sub>3</sub> -TIC	Al <sub>2</sub> O <sub>3</sub>	Part Number ISO	Edge Prep	Dimensions (inches)			
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100					GEM-7	GEM-19	A I.C.	L
	DNGN-322	T1	○	○	○	○	○	○	DNGN-110308	T1	0.375	0.458	0.125	0.031	
	DNGN-323	T1	○	○	○	○	○	○	DNGN-110312	T1	0.375	0.458	0.125	0.047	
	DNGN-324	T1	○	○	○	○	○	○	DNGN-110316	T1	0.375	0.458	0.125	0.062	
	DNGN-432	T1	●	○	●	○	○	○	DNGN-150408	T1	0.500	0.610	0.187	0.031	
		T2A	○	○	○	○	○	○		T2A	0.500	0.610	0.187	0.031	
	DNGN-433	T1	●	○	●	○	○	○	DNGN-150412	T1	0.500	0.610	0.187	0.047	
	DNGN-434	T1	●	○	○	○	○	○	DNGN-150416	T1	0.500	0.610	0.187	0.062	
		T2A	○	○	○	○	○	○		T2A	0.500	0.610	0.187	0.062	

**Ceramic Classification**

■ Whisker Ceramic  
■ Phase Toughened  
■ Silicon Nitride  
■ Alumina TiC  
■ Al<sub>2</sub>O<sub>3</sub>

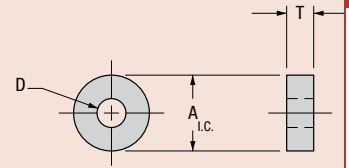
WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker	Phase Toughened	Si <sub>3</sub> N <sub>4</sub>	Al <sub>2</sub> O <sub>3</sub> -TIC	Al <sub>2</sub> O <sub>3</sub>		

**Additional Edge Preps – page T 45**

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# Round Inserts Negative (RNGA)



Shape: Round	Part Number ANSI	Edge Prep	Whisker						Part Number ISO	Edge Prep	Dimensions (inches)		
			WG-300	WG-600	WG-700	XSYTIN-1 Phase Toughened	GSN100 SiN <sub>4</sub>	GEM-7 AlO <sub>2</sub> -TiC			GEM-19 AlO <sub>2</sub>	A I.C.	T
	RNGA-32	T1	○	○	○	○	○	○	RNGA-090300	T1	0.375	0.125	0.150
	RNGA-33	T1	○	○	○	○	○	○	RNGA-090400	T1	0.375	0.187	0.150
	RNGA-43	T1	○	○	○	○	○	○	RNGA-120400	T1	0.500	0.187	0.203
	RNGA-45	T1	○	○	○	○	○	○	RNGA-120700	T1	0.500	0.312	0.203
	RNGA-55	T2A	○	○	○	○	○	○	RNGA-150700	T2A	0.625	0.312	0.250
	RNGA-65	T2A	○	○	○	○	○	○	RNGA-190700	T2A	0.750	0.312	0.312
	RNGA-85	T2A	○	○	○	○	○	○	RNGA-250700	T2A	1.000	0.312	0.359

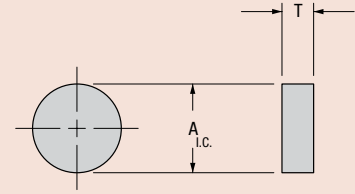
<b>Ceramic Classification</b> <span style="display: inline-block; width: 15px; height: 15px; background-color: green; margin-right: 5px;"></span> Whisker Ceramic <span style="display: inline-block; width: 15px; height: 15px; background-color: blue; margin-right: 5px;"></span> Phase Toughened <span style="display: inline-block; width: 15px; height: 15px; background-color: orange; margin-right: 5px;"></span> Silicon Nitride <span style="display: inline-block; width: 15px; height: 15px; background-color: purple; margin-right: 5px;"></span> Alumina TiC <span style="display: inline-block; width: 15px; height: 15px; background-color: red; margin-right: 5px;"></span> Al <sub>2</sub> O <sub>3</sub>					<table border="1"> <tr> <td>WG-300</td> <td>WG-600</td> <td>WG-700</td> <td>XSYTIN-1</td> <td>GSN100</td> <td>GEM-7</td> <td>GEM-19</td> </tr> <tr> <td>Whisker</td> <td>Whisker</td> <td>Whisker</td> <td>Phase Toughened</td> <td>SiN<sub>4</sub></td> <td>AlO<sub>2</sub>-TiC</td> <td>AlO<sub>2</sub></td> </tr> </table>	WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19	Whisker	Whisker	Whisker	Phase Toughened	SiN <sub>4</sub>	AlO <sub>2</sub> -TiC	AlO <sub>2</sub>	<b>Additional Edge Preps – page T 45</b> 
WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19														
Whisker	Whisker	Whisker	Phase Toughened	SiN <sub>4</sub>	AlO <sub>2</sub> -TiC	AlO <sub>2</sub>														

Page T 42 – grade description

Not Recommended  Stocked or Available Upon Request  Stocked Standard



# Round Inserts Negative (RNGN)



RNGN



Shape: Round	Part Number ANSI	Edge Prep	Whisker						Al <sub>2</sub> O <sub>3</sub> -TIC	Al <sub>2</sub> O <sub>3</sub>	Part Number ISO	Edge Prep	Dimensions (inches)	
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7					GEM-19	A I.C.
	RNGN-32	T1	●	○	○	○	○	○	○	RNGN-090300	T1	0.375	0.125	
		T1A	●	●	●	●	○	○	○	T1A	0.375	0.125		
		T2A	●	○	○	○	○	○	○	T2A	0.375	0.125		
		A	○	○	○	●	○	○	○	A	0.375	0.125		
	RNGN-33	T1	●	○	○	○	○	○	○	RNGN-090400	T1	0.375	0.187	
		T1A	●	○	●	○	○	○	○	T1A	0.375	0.187		
		T2A	●	○	●	○	○	○	○	T2A	0.375	0.187		
	RNGN-42	T1A	●	○	○	●	○	○	○	RNGN-120300	T1A	0.500	0.125	
		T2A	○	○	○	○	○	○	○	T2A	0.500	0.125		
		A	○	○	○	●	○	○	○	RNGN-120400	T1	0.500	0.125	
	RNGN-43	T1	●	○	●	●	○	○	○		T1A	0.500	0.187	
		T1A	●	●	●	○	○	○	○	T2	0.500	0.187		
		T2	●	○	●	●	○	○	○	T2A	0.500	0.187		
		T2A	●	●	●	○	○	●	○	A	0.500	0.187		
		A	○	○	○	○	○	○	○	RNGN-120700	T1	0.500	0.187	
	RNGN-45	T1	●	●	●	●	○	○	○		T1A	0.500	0.312	
		T1A	●	●	●	○	○	○	○	T2	0.500	0.312		
		T2	●	●	●	●	○	○	○	T2A	0.500	0.312		
		T2A	●	●	●	○	●	○	○	T5A	0.500	0.312		
		T5A	○	○	○	○	●	○	○	A	0.500	0.312		
A		●	○	○	●	○	○	○	RNGN-150700	T1	0.500	0.312		
RNGN-55	T1	●	○	○	○	○	○	○		T2A	0.625	0.312		
	T2A	○	○	○	○	○	○	○	RNGN-190600	T2A	0.625	0.312		
RNGN-64	T2A	○	○	○	○	○	○	○	RNGN-190700	T1	0.750	0.250		
RNGN-65	T1	●	○	○	●	○	○	○		T1A	0.750	0.312		
	T1A	○	○	○	○	○	○	○	T2A	0.750	0.312			
	T2A	●	○	●	○	○	○	○			0.750	0.312		
	A	○	○	○	●	○	○	○			0.750	0.312		
RNGN-84	T2A	○	○	○	○	○	○	○	RNGN-250600	T2A	1.000	0.250		
RNGN-85	T2A	○	○	○	○	○	○	○	RNGN-250700	T2A	1.000	0.312		
RNGN-86	T2A	○	○	○	○	○	○	○	RNGN-250900	T2A	1.000	0.375		
RNGN-106	T2A	○	○	○	○	○	○	○	RNGN-310900	T2A	1.250	0.375		

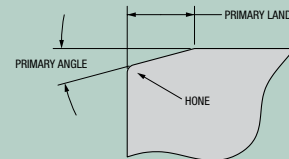
**Ceramic Classification**

Whisker Ceramic	Phase Toughened	Silicon Nitride	Alumina TIC	Al <sub>2</sub> O <sub>3</sub>

Page T 42 – grade description

WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker	Phase Toughened	Si <sub>3</sub> N <sub>4</sub>	Al <sub>2</sub> O <sub>3</sub> -TIC	Al <sub>2</sub> O <sub>3</sub>		

**Additional Edge Preps – page T 45**

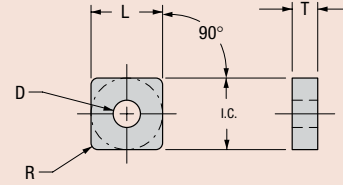


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Stocked Standard	Stocked or Available Upon Request	Not Recommended	

# Square Inserts Negative (SNGA)



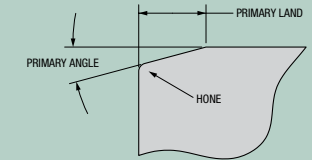
Shape: Square	Part Number ANSI	Edge Prep	Whisker					Part Number ISO	Edge Prep	Dimensions (inches)					
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100			GEM-7	GEM-19	A I.C.	L	T	D
	SNGA-432	T2	●	○	○	○	○	○	SNGA-120408	T2	0.500	0.500	0.187	0.203	0.031
	SNGA-433	T1	●	○	○	○	○	○	SNGA-120412	T1	0.500	0.500	0.187	0.203	0.047
		T2	○	○	○	○	●	○		T2	0.500	0.500	0.187	0.203	0.047
		T2A	○	○	○	○	○	○		T2A	0.500	0.500	0.187	0.203	0.047
	SNGA-434	T1	○	○	○	○	○	○	SNGA-120416	T1	0.500	0.500	0.187	0.203	0.062
		T2	○	○	○	○	●	○		T2	0.500	0.500	0.187	0.203	0.062
	SNGA-452	T1	○	○	○	○	○	○	SNGA-120708	T1	0.500	0.500	0.312	0.203	0.031
	SNGA-453	T1	○	○	○	○	○	○	SNGA-120712	T1	0.500	0.500	0.312	0.203	0.047
		T2	○	○	○	○	●	○		T2	0.500	0.500	0.312	0.203	0.047
	SNGA-454	T1	○	○	○	○	○	○	SNGA-120716	T1	0.500	0.500	0.312	0.203	0.062
		T2	○	○	○	○	●	○		T2	0.500	0.500	0.312	0.203	0.062
	SNGA-542	T2A	○	○	○	○	○	○	SNGA-150608	T2A	0.625	0.625	0.250	0.250	0.031
	SNGA-543	T2A	○	○	○	○	○	○	SNGA-150612	T2A	0.625	0.625	0.250	0.250	0.047
	SNGA-544	T2A	○	○	○	○	○	○	SNGA-150616	T2A	0.625	0.625	0.250	0.250	0.062
SNGA-642	T2A	○	○	○	○	○	○	SNGA-190608	T2A	0.750	0.750	0.250	0.312	0.031	
SNGA-643	T2A	○	○	○	○	○	○	SNGA-190612	T2A	0.750	0.750	0.250	0.312	0.047	
SNGA-644	T2A	○	○	○	○	○	○	SNGA-190616	T2A	0.750	0.750	0.250	0.312	0.062	

**Ceramic Classification**

■ Whisker Ceramic  
■ Phase Toughened  
■ Silicon Nitride  
■ Alumina TiC  
■ Al<sub>2</sub>O<sub>3</sub>

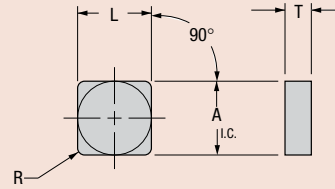
Page T 42 – grade description

WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker			Phase Toughened	Si <sub>3</sub> N <sub>4</sub>	Al <sub>2</sub> O <sub>3</sub> -TiC	Al <sub>2</sub> O <sub>3</sub>

**Additional Edge Preps – page T 45**


Not Recommended 
 Stocked or Available Upon Request 
 Stocked Standard

# Square Inserts Negative (SNGN)



Shape: Square	Part Number ANSI	Edge Prep	Whisker						Part Number ISO	Edge Prep	Dimensions (inches)				
			WG-300	WG-600	WG-700	XSXTIN-1	GSN100	GEM-7			GEM-19	A I.C.	L	T	R
	SNGN-322	T2A	○	○	○	○	○	○	SNGN-090308	T2A	0.375	0.375	0.125	0.031	
	SNGN-333	T2	○	○	○	○	○	○	SNGN-090412	T2	0.375	0.375	0.187	0.047	
	SNGN-432	T1	●	○	○	○	○	○	SNGN-120408	T1	0.500	0.500	0.187	0.031	
		T1A	●	○	○	○	○	○		T1A	0.500	0.500	0.187	0.031	
		T2	○	○	○	○	○	○		T2	0.500	0.500	0.187	0.031	
		T2A	●	○	○	○	○	○		T2A	0.500	0.500	0.187	0.031	
		A	○	○	○	○	○	○		A	0.500	0.500	0.187	0.031	
		SNGN-433	T1	●	○	●	○	○	○	SNGN-120412	T1	0.500	0.500	0.187	0.047
		T1A	○	○	○	●	●	○	○		T1A	0.500	0.500	0.187	0.047
		T2	●	○	●	●	○	○	○		T2	0.500	0.500	0.187	0.047
		T2A	●	○	●	●	○	○	○		T2A	0.500	0.500	0.187	0.047
		A	○	○	○	●	○	○	○		A	0.500	0.500	0.187	0.047
		SNGN-434	T1	●	○	○	○	○	○	SNGN-120416	T1	0.500	0.500	0.187	0.062
		T1A	○	○	○	●	●	○	○		T1A	0.500	0.500	0.187	0.062
		T2	●	○	○	●	○	○	○		T2	0.500	0.500	0.187	0.062
		T2A	●	○	○	○	○	●	○		T2A	0.500	0.500	0.187	0.062
		A	○	○	○	●	○	○	○		A	0.500	0.500	0.187	0.062
		SNGN-452	T1	●	○	●	○	○	○	SNGN-120708	T1	0.500	0.500	0.312	0.031
		T2	●	○	○	○	○	○	○		T2	0.500	0.500	0.312	0.031
		SNGN-453	T1	●	○	●	○	○	○	SNGN-120712	T1	0.500	0.500	0.312	0.047
		T1A	○	○	○	●	○	○	○		T1A	0.500	0.500	0.312	0.047
		T2	●	○	○	●	○	○	○		T2	0.500	0.500	0.312	0.047
		T2A	●	○	○	○	○	○	○		T2A	0.500	0.500	0.312	0.047
		A	○	○	○	●	○	○	○		A	0.500	0.500	0.312	0.047
		SNGN-454	T1	●	○	○	○	○	○	SNGN-120716	T1	0.500	0.500	0.312	0.062
		T1A	○	○	○	●	○	○	○		T1A	0.500	0.500	0.312	0.062
		T2	○	○	○	●	○	○	○		T2	0.500	0.500	0.312	0.062
		T2A	●	○	○	○	○	○	○		T2A	0.500	0.500	0.312	0.062
		A	○	○	○	●	○	○	○		A	0.500	0.500	0.312	0.062
		SNGN-542	T2A	○	○	○	○	○	○	SNGN-150608	T2A	0.625	0.625	0.250	0.031
	SNGN-543	T1	●	○	●	○	○	○	SNGN-150612	T1	0.625	0.625	0.250	0.047	
	T2A	○	○	○	○	○	○	○		T2A	0.625	0.625	0.250	0.047	
	SNGN-544	T1	○	○	○	○	○	○	SNGN-150616	T1	0.625	0.625	0.250	0.062	
	SNGN-6416	T2A	○	○	○	○	○	○	SNGN-190663	T2A	0.750	0.750	0.250	0.250	
	SNGN-642	T2A	○	○	○	○	○	○	SNGN-190608	T2A	0.750	0.750	0.250	0.031	
	SNGN-643	T1	●	○	●	○	○	○	SNGN-190612	T1	0.750	0.750	0.250	0.047	
	T2A	●	○	○	○	○	○	○		T2A	0.750	0.750	0.250	0.047	
	A	○	○	○	●	○	○	○		A	0.750	0.750	0.250	0.047	

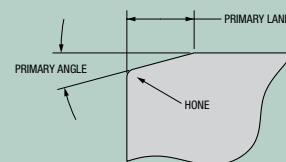
Ceramic Classification

■ Whisker Ceramic  
■ Phase Toughened  
■ Silicon Nitride  
■ Alumina TIC  
■ Al<sub>2</sub>O<sub>3</sub>

Page T 42 – grade description

■ WG-300 Whisker  
■ WG-600 Phase Toughened  
■ WG-700 Silicon Nitride  
■ XSXTIN-1 Alumina TIC  
■ GSN100 Al<sub>2</sub>O<sub>3</sub>  
■ GEM-7  
■ GEM-19

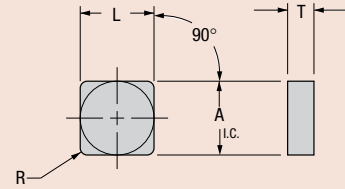
Additional Edge Preps – page T 45



Continued on next page.

# Square Inserts

## Negative (SNGN) *(continued)*



Shape: Square	Part Number ANSI	Edge Prep	Whisker					Part Number ISO	Edge Prep	Dimensions (inches)			
			WG-300	WG-600	WG-700	XSYTIN-1 Phase Toughened SiN <sub>x</sub>	GSN100 SiN <sub>x</sub>			Al <sub>2</sub> O <sub>3</sub> -TiC GEM-7	Al <sub>2</sub> O <sub>3</sub> GEM-19	A I.C.	L
	SNGN-644	T1	●	○	●	○	○	SNGN-190616	T1	0.750	0.750	0.250	0.062
		T1A	●	○	○	○	○		T1A	0.750	0.750	0.250	0.062
		T2A	●	○	○	○	○		T2A	0.750	0.750	0.250	0.062
		A	○	○	○	●	○		A	0.750	0.750	0.250	0.062
	SNGN-652	T2A	○	○	●	○	○	SNGN-190708	T2A	0.750	0.750	0.312	0.031
		SNGN-653	T2A	○	○	○	○	SNGN-190712	T2A	0.750	0.750	0.312	0.047
	SNGN-654	T1	●	○	●	○	○	SNGN-190716	T1	0.750	0.750	0.312	0.062
		T2A	○	○	○	○	○		T2A	0.750	0.750	0.312	0.062
		A	○	○	○	●	○		A	0.750	0.750	0.312	0.062
	SNGN-655	T2A	○	○	○	○	○	SNGN-190720	T2A	0.750	0.750	0.312	0.078
	SNGN-656	A	○	○	○	●	○	SNGN-190723	A	0.750	0.750	0.312	0.094
	SNGN-866	T2A	○	○	○	○	○	SNGN-250923	T2A	1.000	1.000	0.375	0.094

**Ceramic Classification**

■  
Whisker Ceramic

■  
Phase Toughened

■  
Silicon Nitride

■  
Alumina TiC

■  
Al<sub>2</sub>O<sub>3</sub>

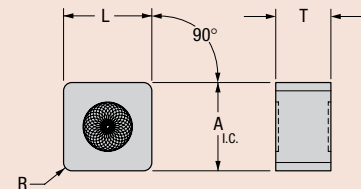
Page T 42 – grade description

WG-300	WG-600	WG-700	XSYTIN-1 Phase Toughened SiN <sub>x</sub>	GSN100 SiN <sub>x</sub>	Al <sub>2</sub> O <sub>3</sub> -TiC GEM-7	Al <sub>2</sub> O <sub>3</sub> GEM-19
Whisker	Whisker	Whisker	Phase Toughened SiN <sub>x</sub>	SiN <sub>x</sub>	Al <sub>2</sub> O <sub>3</sub> -TiC GEM-7	Al <sub>2</sub> O <sub>3</sub> GEM-19

**Additional Edge Preps – page T 45**

# Square Inserts

## Rough Stuff®



Shape: Square	Part Number ANSI	Edge Prep	Whisker				Part Number ISO	Edge Prep	Dimensions (inches)			
			WG-300	WG-600	WG-700	GSN100 SiN <sub>x</sub>			A I.C.	L	T	R
	SNGX-452-RS	T2	○	○	○	○	SNGX-120708-RS	T2	0.500	0.500	0.312	0.031
		T2A	○	○	○	○		T2A	0.500	0.500	0.312	0.031
	SNGX-453-RS	T2	○	○	○	○	SNGX-120712-RS	T2	0.500	0.500	0.312	0.047
		T2A	○	○	○	○		T2A	0.500	0.500	0.312	0.047
	SNGX-454-RS	T2	○	○	○	○	SNGX-120716-RS	T2	0.500	0.500	0.312	0.062
		T2A	○	○	○	○		T2A	0.500	0.500	0.312	0.062

**Ceramic Classification**

■  
Whisker Ceramic

■  
Silicon Nitride

Page T 42 – grade description

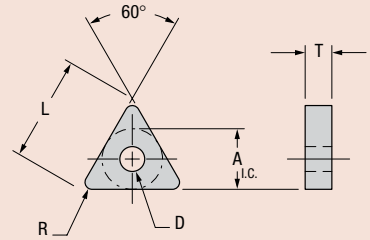
WG-300	WG-600	WG-700	GSN100 SiN <sub>x</sub>
Whisker	Whisker	Whisker	SiN <sub>x</sub>

**Additional Edge Preps - Page T 45**

Not Recommended □ Stocked or Available Upon Request ○ Stocked Standard ●



# Triangle Inserts Negative (TNGA)



Shape: Triangle	Part Number ANSI	Edge Prep	Whisker						Part Number ISO	Edge Prep	Dimensions (inches)				
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7			GEM-19	A.I.C.	L	T	D
<p>TNGA</p>	TNGA-331	T1	○	○	○	○	○	○	TNGA-160404	T1	0.375	0.650	0.187	0.150	0.015
	TNGA-332	T1	●	○	○	○	○	○	TNGA-160408	T1	0.375	0.650	0.187	0.150	0.031
		T2A	○	○	○	○	○	○		T2A	0.375	0.650	0.187	0.150	0.031
	TNGA-333	T1	○	○	○	○	○	○	TNGA-160412	T1	0.375	0.650	0.187	0.150	0.047
	TNGA-334	T1	○	○	○	○	○	○	TNGA-160416	T1	0.375	0.650	0.187	0.150	0.062
	TNGA-432	T1	●	○	●	○	○	○	TNGA-220408	T1	0.500	0.866	0.187	0.203	0.031
		T1A	●	○	○	○	○	○		T1A	0.500	0.866	0.187	0.203	0.031
		T2A	●	○	○	○	○	●		T2A	0.500	0.866	0.187	0.203	0.031
	TNGA-433	T2A	○	○	○	○	○	○	TNGA-220412	T2A	0.500	0.866	0.187	0.203	0.047
	TNGA-434	T1	●	○	○	○	○	○	TNGA-220416	T1	0.500	0.866	0.187	0.203	0.062
	A	○	○	○	○	○	○		A	0.500	0.866	0.187	0.203	0.062	
TNGA-454	T1	○	○	○	○	○	○	TNGA-220716	T1	0.500	0.866	0.312	0.203	0.062	

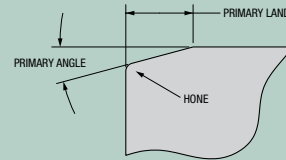
**Ceramic Classification**

Whisker Ceramic	Phase Toughened	Silicon Nitride	Alumina TiC	Al <sub>2</sub> O <sub>3</sub>

Page T 42 – grade description

WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker	Phase Toughened	Si <sub>3</sub> N <sub>4</sub>	Al <sub>2</sub> O <sub>3</sub> -TiC	Al <sub>2</sub> O <sub>3</sub>		

**Additional Edge Preps – page T 45**



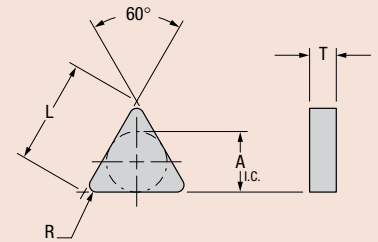
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	Stocked Standard		Stocked or Available Upon Request		Not Recommended
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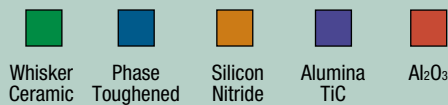
# Triangle Inserts

## Negative (TNGN)



Shape: Triangle	Part Number ANSI	Edge Prep	Whisker						Part Number ISO	Edge Prep	Dimensions (inches)			
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7			GEM-19	A l.c.	L	T
	TNGN-222	T2A	○	○	○	○	○	○	TNGN-110308	T2A	0.250	0.433	0.125	0.031
		A	○	○	○	○	○	○		A	0.250	0.433	0.125	0.031
	TNGN-321	T1	○	○	○	○	○	○	TNGN-160304	T1	0.375	0.650	0.125	0.015
	TNGN-322	T1	○	○	○	○	○	○	TNGN-160308	T1	0.375	0.650	0.125	0.031
		T2	○	○	○	○	○	○		T2	0.375	0.650	0.125	0.031
		T2A	○	○	○	○	○	○		T2A	0.375	0.650	0.125	0.031
	TNGN-331	T1	○	○	○	○	○	○	TNGN-160404	T1	0.375	0.650	0.187	0.015
		T2	○	○	○	○	○	○		T2	0.375	0.650	0.187	0.015
	TNGN-332	T1	○	○	○	○	○	○	TNGN-160408	T1	0.375	0.650	0.187	0.031
		T2	○	○	○	○	○	○		T2	0.375	0.650	0.187	0.031
		T2A	●	○	○	○	○	○		T2A	0.375	0.650	0.187	0.031
	TNGN-333	T1	○	○	○	○	○	○	TNGN-160412	T1	0.375	0.650	0.187	0.047
		T2A	●	○	○	○	○	○		T2A	0.375	0.650	0.187	0.047
	TNGN-334	T1	○	○	○	○	○	○	TNGN-160416	T1	0.375	0.650	0.187	0.062
	TNGN-431	T1	●	○	○	○	○	○	TNGN-220404	T1	0.500	0.866	0.187	0.015
	TNGN-432	T1	●	○	○	○	○	○	TNGN-220408	T1	0.500	0.866	0.187	0.031
		T2A	●	○	○	○	○	●		T2A	0.500	0.866	0.187	0.031
		A	○	○	○	○	○	○		A	0.500	0.866	0.187	0.031
	TNGN-433	T1	●	○	●	○	○	○	TNGN-220412	T1	0.500	0.866	0.187	0.047
	TNGN-434	T1	●	○	●	○	○	○	TNGN-220416	T1	0.500	0.866	0.187	0.062
	TNGN-438	T2A	○	○	○	○	○	○	TNGN-220432	T2A	0.500	0.866	0.187	0.125
	TNGN-452	T2A	○	○	○	○	○	○	TNGN-220708	T2A	0.500	0.866	0.312	0.031
	TNGN-453	T1	●	○	○	○	○	○	TNGN-220712	T1	0.500	0.866	0.312	0.047
		T2A	○	○	○	○	○	○		T2A	0.500	0.866	0.312	0.047
	TNGN-454	T1	●	○	○	○	○	○	TNGN-220716	T1	0.500	0.866	0.312	0.062
		T2A	○	○	○	○	○	○		T2A	0.500	0.866	0.312	0.062
	TNGN-543	T2A	○	○	○	○	○	○	TNGN-270612	T2A	0.625	1.083	0.250	0.047
	TNGN-544	T1	○	○	○	○	○	○	TNGN-270616	T1	0.625	1.083	0.250	0.062
	T2	○	○	○	○	○	○		T2	0.625	1.083	0.250	0.062	
TNGN-548	T2	○	○	○	○	○	○	TNGN-270632	T2	0.625	1.083	0.250	0.125	
TNGN-666	T2A	○	○	○	○	○	○	TNGN-330924	T2A	0.750	1.299	0.375	0.094	
TNGN-868	T2A	○	○	○	○	○	○	TNGN-440932	T2A	1.000	1.732	0.375	0.125	

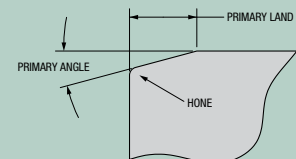
### Ceramic Classification



Page T 42 – grade description

WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker	Whisker	Whisker	Phase Toughened	Si3N4	Al2O3-TiC	Al2O3

### Additional Edge Preps – page T 45



Not Recommended Stacked or Available Upon Request Stacked Standard

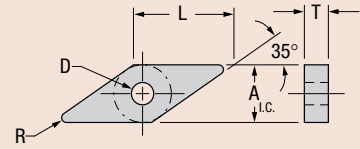


35°



CERAMIC INSERTS

# 35° Diamond Inserts Negative



Shape: 35° Diamond	Part Number ANSI	Edge Prep	Whisker						Part Number ISO	Edge Prep	Dimensions (inches)				
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7			GEM-19	A.I.C.	L	T	D
	VNGA-332	T1	●	○	●	○	○	○	VNGA-160408	T1	0.375	0.654	0.187	0.150	0.031
		T2A	○	○	○	○	○	●	○	T2A	0.375	0.654	0.187	0.150	0.031
	VNGA-333	T1	●	○	●	○	○	○	VNGA-160412	T1	0.375	0.654	0.187	0.150	0.047
	VNGA-432	T2A	●	○	●	○	○	○	VNGA-220408	T2A	0.500	0.872	0.187	0.203	0.031
	VNGA-436	T1	●	○	●	○	○	○	VNGA-220424	T1	0.500	0.872	0.187	0.203	0.094

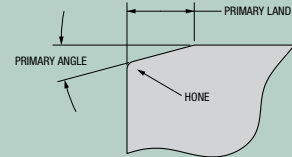
Ceramic Classification

■ Whisker Ceramic  
■ Phase Toughened  
■ Silicon Nitride  
■ Alumina TIC  
■ Al<sub>2</sub>O<sub>3</sub>

Page T 42 – grade description

WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker	Phase Toughened	Si <sub>3</sub> N <sub>4</sub>	Al <sub>2</sub> O <sub>3</sub> -TIC	Al <sub>2</sub> O <sub>3</sub>		

Additional Edge Preps – page T 45

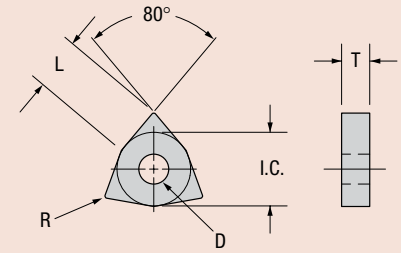


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  Not Recommended

# Trigon Inserts Negative



Shape: Trigon	Part Number ANSI	Edge Prep	Whisker					Part Number ISO	Edge Prep	Dimensions (inches)						
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100			GEM-7	GEM-19	A I.C.	L	T	D	R
	WNGA-331	T1	○	○	○	○	○	○	WNGA-060404	T1	0.375	0.257	0.187	0.152	0.015	
	WNGA-332	T1	●	●	●	○	○	○	WNGA-060408	T1	0.375	0.257	0.187	0.152	0.031	
	WNGA-333	T1	○	○	○	○	○	○	WNGA-060412	T1	0.375	0.257	0.187	0.152	0.047	
	WNGA-431	T1	●	○	○	○	○	○	WNGA-080404	T1	0.500	0.342	0.187	0.203	0.015	
		T1A	○	○	○	○	○	○		T1A	0.500	0.342	0.187	0.203	0.015	
	WNGA-432	T1	●	○	○	○	○	○	WNGA-080408	T1	0.500	0.342	0.187	0.203	0.031	
		T1A	●	○	○	○	○	○		T1A	0.500	0.342	0.187	0.203	0.031	
		T2A	●	○	○	○	○	○		T2A	0.500	0.342	0.187	0.203	0.031	
	WNGA-433	T2	○	○	○	○	●	○	○	WNGA-080412	T2	0.500	0.342	0.187	0.203	0.047
		T2A	○	○	○	○	○	○	○		T2A	0.500	0.342	0.187	0.203	0.047

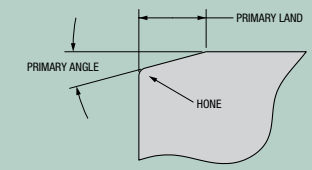
**Ceramic Classification**

Whisker Ceramic  
 Phase Toughened  
 Silicon Nitride  
 Alumina TiC  
 Al<sub>2</sub>O<sub>3</sub>

Page T 42 – grade description

WG-300  
 WG-600  
 WG-700  
 XSYTIN-1  
 GSN100  
 GEM-7  
 GEM-19

**Additional Edge Preps – page T 45**

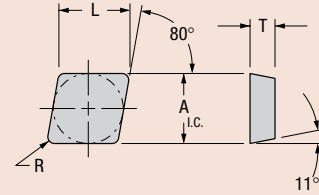


Not Recommended 
 Stocked or Available Upon Request 
 Stocked Standard



# 80° Diamond Inserts

## Positive Flat Top



Shape: 80° Diamond	Part Number ANSI	Edge Prep	Whisker					Part Number ISO	Edge Prep	Dimensions (inches)				
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100			GEM-7	GEM-19	A I.C.	L	T
	CPGN-321	T1	●	○	●	○	○	○	CPGN-090304	T1	0.375	0.380	0.125	0.015
	CPGN-322	T1	●	○	●	○	○	○	CPGN-090308	T1	0.375	0.380	0.125	0.031
	CPGN-323	T1	○	○	○	○	○	○	CPGN-090312	T1	0.375	0.380	0.125	0.047
	CPGN-424	T2A	○	○	○	○	○	○	CPGN-120308	T1	0.500	0.508	0.125	0.031
	CPGN-432	T1	●	○	●	○	○	○	CPGN-120316	T2A	0.500	0.508	0.125	0.062
	CPGN-433	T1	●	○	●	○	○	○	CPGN-120408	T1	0.500	0.508	0.187	0.031
		T1A	○	○	○	●	○	○	CPGN-120412	T1	0.500	0.508	0.187	0.047
		T2	○	○	○	○	○	○		T1A	0.500	0.508	0.187	0.047
		T2A	○	○	○	○	○	○		T2	0.500	0.508	0.187	0.047
		A	○	○	○	●	○	○		T2A	0.500	0.508	0.187	0.047
	CPGN-434	T1	●	○	●	○	○	○	CPGN-120416	T1	0.500	0.508	0.187	0.062

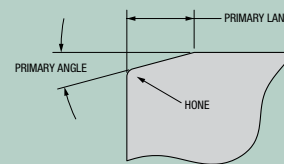
**Ceramic Classification**

■ Whisker Ceramic  
■ Phase Toughened  
■ Silicon Nitride  
■ Alumina TiC  
■ Al<sub>2</sub>O<sub>3</sub>

Page T 42 – grade description

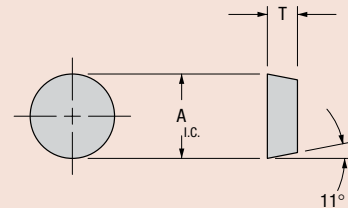
WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker	Phase Toughened	SiN <sub>x</sub>	Al <sub>2</sub> O <sub>3</sub> -TiC	Al <sub>2</sub> O <sub>3</sub>		

**Additional Edge Preps – page T 45**



# Round Inserts

## Positive Flat Top



Shape: Round	Part Number ANSI	Edge Prep	Whisker					Part Number ISO	Edge Prep	Dimensions (inches)		
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100			GEM-7	GEM-19	A I.C.
	RPGN-32	T1	●	●	●	○	○	○	RPGN-090300	T1	0.375	0.125
		T1A	●	●	●	○	○	○		T1A	0.375	0.125
		T2A	○	○	○	○	○	○		T2A	0.375	0.125
		A	○	○	○	●	○	○		T2A	0.375	0.125
	RPGN-43	T1	●	○	●	○	○	○	RPGN-120400	T1	0.500	0.187
		T1A	●	○	●	○	○	○		T1A	0.500	0.187
		T2	○	○	○	○	○	○		T2	0.500	0.187
		T2A	●	○	○	○	○	○		T2A	0.500	0.187
		A	○	○	○	●	○	○		A	0.500	0.187

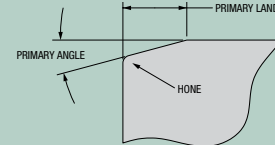
**Ceramic Classification**

■ Whisker Ceramic  
■ Phase Toughened  
■ Silicon Nitride  
■ Alumina TiC  
■ Al<sub>2</sub>O<sub>3</sub>

Page T 42 – grade description

WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker	Phase Toughened	SiN <sub>x</sub>	Al <sub>2</sub> O <sub>3</sub> -TiC	Al <sub>2</sub> O <sub>3</sub>		

**Additional Edge Preps – page T 45**



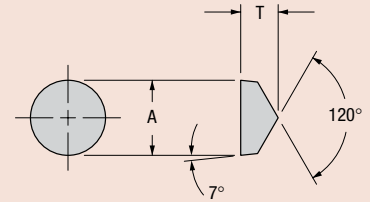
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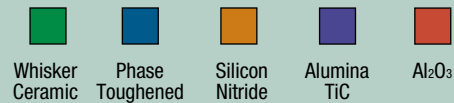


# Round V-Bottom Inserts Positive (RCGN-V)



Shape: Round V-Bottom	Part Number ANSI	Edge Prep	Whisker					Part Number ISO	Edge Prep	Dimensions (inches)		
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100			GEM-7	GEM-19	A I.C.
	RCGN-2V	T1	●	●	●	○	○	○	RCGX-060400	T1	0.250	0.187
		T2A	●	○	○	○	○	○		T2A	0.250	0.187
		A	○	○	○	○	○	○		A	0.250	0.187
	RCGN-3V	T1	●	●	●	●	○	○	RCGX-090700	T1	0.375	0.312
		T1A	○	○	○	○	○	○		T1A	0.375	0.312
		T2A	●	○	○	○	○	○		T2A	0.375	0.312
	RCGN-4V	T1	●	●	●	●	○	○	RCGX-120700	T1	0.500	0.312
		T1A	○	○	○	○	○	○		T1A	0.500	0.312
		T2	●	○	○	○	○	○		T2	0.500	0.312
	RCGN-6V	T2A	○	○	○	○	○	○	RCGX-191200	T2A	0.750	0.500

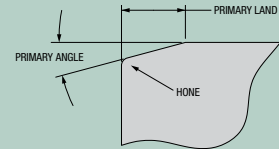
### Ceramic Classification



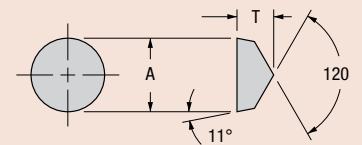
Page T 42 – grade description

WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker	Phase Toughened	SiN <sub>4</sub>	Al <sub>2</sub> O <sub>3</sub> -TiC	Al <sub>2</sub> O <sub>3</sub>		

### Additional Edge Preps – page T 45



# Round V-Bottom Inserts Positive (RPGN-V)



Shape: Round V-Bottom	Part Number ANSI	Edge Prep	Whisker					Part Number ISO	Edge Prep	Dimensions (inches)		
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100			GEM-7	GEM-19	A I.C.
	RPGN-2V	T1	●	●	●	○	○	○	RPGX-060400	T1	0.250	0.187
		T2	○	○	○	○	○	○		T2	0.250	0.187
		T2A	●	○	○	○	○	○		T2A	0.250	0.187
		A	○	○	○	○	○	○		A	0.250	0.187
	RPGN-3V	T1	●	●	●	○	○	○	RPGX-090700	T1	0.375	0.312
		T1A	○	○	○	○	○	○		T1A	0.375	0.312
		T2	○	○	○	○	○	○		T2	0.375	0.312
		T2A	●	○	○	○	○	○		T2A	0.375	0.312
	RPGN-4V	T1	○	○	○	○	○	○	RPGX-120700	T1	0.500	0.312
		T1A	○	○	○	○	○	○		T1A	0.500	0.312
		T2	○	○	○	○	○	○		T2	0.500	0.312
		T2A	○	○	○	○	○	○		T2A	0.500	0.312
RPGN-6V	T2A	○	○	○	○	○	○	RPGX-191200	T2A	0.750	0.500	

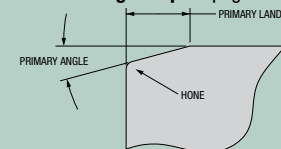
### Ceramic Classification



Page T 42 – grade description

WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker	Phase Toughened	SiN <sub>4</sub>	Al <sub>2</sub> O <sub>3</sub> -TiC	Al <sub>2</sub> O <sub>3</sub>		

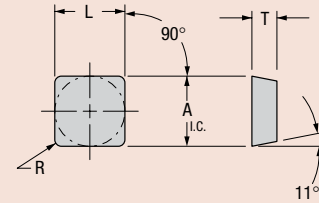
### Additional Edge Preps – page T 45



Not Recommended Stocked or Available Upon Request Stocked Standard

# Square Inserts

## Positive Flat Top



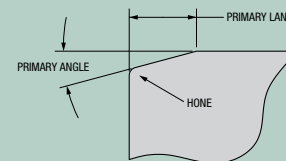
Shape: Square	Part Number ANSI	Edge Prep	Whisker							Part Number ISO	Edge Prep	Dimensions (inches)			
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19			A I.C.	L	T	R
	SPGN-322	T1	●	○	○	○	○	○	○	SPGN-090308	T1	0.375	0.375	0.125	0.031
		T1A	○	○	○	●	●	○	○		T1A	0.375	0.375	0.125	0.031
		A	○	○	○	●	○	○	○		A	0.375	0.375	0.125	0.031
	SPGN-422	T1	●	○	○	○	○	○	○	SPGN-120308	T1	0.500	0.500	0.125	0.031
		T2A	○	○	○	○	○	○	○		T2A	0.500	0.500	0.125	0.031
	SPGN-423	T1	○	○	○	○	○	○	○	SPGN-120312	T1	0.500	0.500	0.125	0.047
		A	○	○	○	○	○	○	○		A	0.500	0.500	0.125	0.047
	SPGN-432	T1	●	○	●	○	○	○	○	SPGN-120408	T1	0.500	0.500	0.187	0.031
		T1A	○	○	●	●	○	○	○		T1A	0.500	0.500	0.187	0.031
		T2	○	○	○	●	○	○	○		T2	0.500	0.500	0.187	0.031
		T2A	●	○	○	○	○	○	○		T2A	0.500	0.500	0.187	0.031
	SPGN-433	T1	○	○	○	○	○	○	○	SPGN-120412	T1	0.500	0.500	0.187	0.047
		T1A	○	○	○	○	○	○	○		T1A	0.500	0.500	0.187	0.047
		T2	○	○	○	○	○	○	○		T2	0.500	0.500	0.187	0.047
		T2A	○	○	○	○	○	○	○		T2A	0.500	0.500	0.187	0.047
	SPGN-434	T1	○	○	○	○	○	○	○	SPGN-120416	T1	0.500	0.500	0.187	0.062
		T2	○	○	○	○	○	○	○		T2	0.500	0.500	0.187	0.062
		T2A	○	○	○	○	○	○	○		T2A	0.500	0.500	0.187	0.062
A		○	○	○	○	○	○	○	A		0.500	0.500	0.187	0.062	
SPGN-632	T2A	○	○	○	○	○	○	○	SPGN-190408	T2A	0.750	0.750	0.187	0.031	
SPGN-633	T2A	○	○	○	○	○	○	○	SPGN-190412	T2A	0.750	0.750	0.187	0.047	
SPGN-634	T2A	○	○	○	○	○	○	○	SPGN-190416	T2A	0.750	0.750	0.187	0.062	
SPGN-642	T1A	○	○	○	○	○	○	○	SPGN-190608	T1A	0.750	0.750	0.250	0.031	

Ceramic Classification

■ Whisker Ceramic  
■ Phase Toughened  
■ Silicon Nitride  
■ Alumina TiC  
■ Al<sub>2</sub>O<sub>3</sub>

■ WG-300 Whisker  
■ WG-600 Whisker  
■ WG-700 Whisker  
■ XSYTIN-1 Phase Toughened  
■ GSN100 Si<sub>3</sub>N<sub>4</sub>  
■ GEM-7 Al<sub>2</sub>O<sub>3</sub>-TiC  
■ GEM-19 Al<sub>2</sub>O<sub>3</sub>

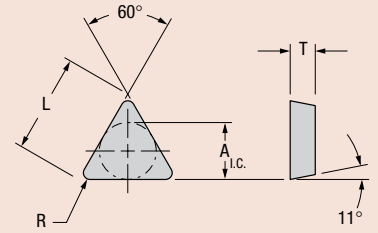
Additional Edge Preps – page T 45



Page T 42 – grade description

# Triangle Inserts

## Positive Flat Top



Shape: Triangle	Part Number ANSI	Edge Prep	Whisker						Part Number ISO	Edge Prep	Dimensions (inches)					
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7			GEM-19	A.I.C.	L	T	R	
	TPGN-221	T1	●	○	●	○	○	○	○	TPGN-110304	T1	0.250	0.433	0.125	0.015	
	TPGN-222	T1	●	○	●	○	○	○	○	TPGN-110308	T1	0.250	0.433	0.125	0.031	
		T1A	●	○	○	○	○	○	○		T1A	0.250	0.433	0.125	0.031	
		T2A	●	○	○	○	○	○	○		T2A	0.250	0.433	0.125	0.031	
	TPGN-321	T1	●	○	●	○	○	○	○	TPGN-160304	T1	0.375	0.650	0.125	0.015	
		T2A	○	○	○	○	○	○	○		T2A	0.375	0.650	0.125	0.015	
	TPGN-322	T1	●	○	●	○	○	○	○	TPGN-160308	T1	0.375	0.650	0.125	0.031	
		T1A	○	○	○	○	○	○	○		T1A	0.375	0.650	0.125	0.031	
		T2A	●	○	○	○	●	●	○		T2A	0.375	0.650	0.125	0.031	
		A	○	○	○	○	○	○	○		A	0.375	0.650	0.125	0.031	
	TPGN-323	T1	●	○	●	○	○	○	○	TPGN-160312	T1	0.375	0.650	0.125	0.047	
		T1A	○	○	○	○	○	○	●	○		T1A	0.375	0.650	0.125	0.047
		A	○	○	○	○	○	○	○		A	0.375	0.650	0.125	0.047	
	TPGN-324	T1	●	○	○	○	○	○	○	TPGN-160316	T1	0.375	0.650	0.125	0.062	
	TPGN-431	T1	●	○	●	○	○	○	○	TPGN-220404	T1	0.500	0.866	0.187	0.015	
	TPGN-432	T1	●	○	●	○	○	○	○	TPGN-220408	T1	0.500	0.866	0.187	0.031	
	T2A	○	○	○	○	○	○	○		T2A	0.500	0.866	0.187	0.031		
TPGN-433	T1	●	○	●	○	○	○	○	TPGN-220412	T1	0.500	0.866	0.187	0.047		
TPGN-434	T1	●	○	●	○	○	○	○	TPGN-220416	T1	0.500	0.866	0.187	0.062		

CERAMIC INSERTS

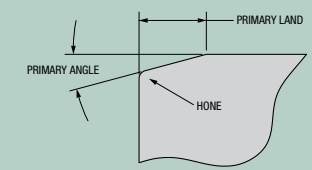
**Ceramic Classification**

Whisker Ceramic	Phase Toughened	Silicon Nitride	Alumina TiC	Al <sub>2</sub> O <sub>3</sub>

Page T 42 – grade description

WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker	Whisker	Whisker	Phase Toughened	SiNc	Al <sub>2</sub> O <sub>3</sub> -TiC	Al <sub>2</sub> O <sub>3</sub>

**Additional Edge Preps – page T 45**

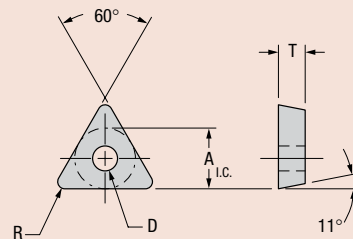


Not Recommended		Stocked or Available Upon Request		Stocked Standard	
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CERAMIC INSERTS

# Triangle Inserts Positive (TP)



Shape: Triangle TP	Part Number ANSI	Edge Prep	Whisker						Part Number ISO	Edge Prep	Dimensions (inches)				
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7			GEM-19	A I.C.	T	D	R
	TP-41	A	●	○	○	○	○	○	○	TP-41	A	0.250	0.093	0.137	0.015
	TP-42	A	○	○	○	○	○	○	○	TP-42	A	0.250	0.093	0.137	0.031
	TP-62	A	○	○	○	○	○	○	○	TP-62	A	0.375	0.125	0.163	0.031
	TP-64	A	○	○	○	○	○	○	○	TP-64	A	0.375	0.125	0.163	0.062
	TP-82	A	○	○	○	○	○	○	○	TP-82	A	0.500	0.187	0.203	0.031

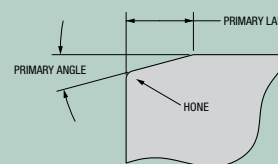
### Ceramic Classification

■ Whisker Ceramic  
■ Phase Toughened  
■ Silicon Nitride  
■ Alumina TiC  
■ Al<sub>2</sub>O<sub>3</sub>

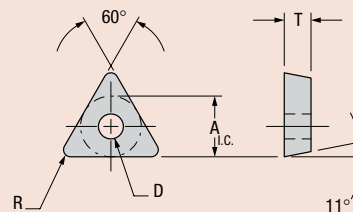
Page T 42 – grade description

WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker			Phase Toughened	SiN <sub>4</sub>	Al <sub>2</sub> O <sub>3</sub> -TiC	Al <sub>2</sub> O <sub>3</sub>

### Additional Edge Preps – page T 45



# Triangle Inserts Positive (TPGA)



Shape: Triangle TPGA	Part Number ANSI	Edge Prep	Whisker						Part Number ISO	Edge Prep	Dimensions (inches)				
			WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7			GEM-19	A	T	R	D
	TPGA-321	T1	○	○	○	○	○	○	○	TPGA-160304	T1	0.375	0.125	0.015	0.150
		T1A	○	○	○	○	○	○	○	TPGA-160304	T1A	0.375	0.125	0.015	0.150
	TPGA-322	T1A	○	○	○	○	○	○	○	TPGA-160308	T1A	0.375	0.125	0.031	0.150

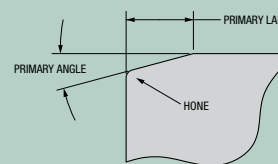
### Ceramic Classification

■ Whisker Ceramic  
■ Phase Toughened  
■ Silicon Nitride  
■ Alumina TiC  
■ Al<sub>2</sub>O<sub>3</sub>

Page T 42 – grade description

WG-300	WG-600	WG-700	XSYTIN-1	GSN100	GEM-7	GEM-19
Whisker			Phase Toughened	SiN <sub>4</sub>	Al <sub>2</sub> O <sub>3</sub> -TiC	Al <sub>2</sub> O <sub>3</sub>

### Additional Edge Preps – page T 45



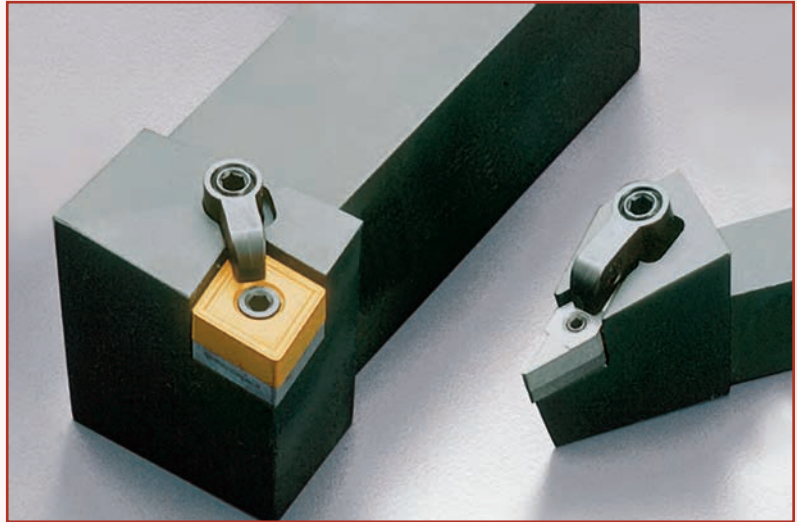
### Greenleaf Sales

Phone: 814-763-2915 • 800-458-1850 • Fax: 814-763-4423  
 sales@greenleafcorporation.com • www.greenleafglobalsupport.com

● Stocked Standard  
○ Stocked or Available Upon Request  
  Not Recommended

## Industry-Standard Toolholders

Greenleaf manufactures a complete line of industry-standard toolholders in conformance with ANSI specifications in 4140 and 4150 alloy steel, hardened up to 42 Rc and oxide coated.



### **Greenleaf Tune-Up Kits**

*A Tune-Up Kit consists of all the standard hardware to refurbish a particular toolholder, boring bar, or milling cutter. A toolholder will have a readily visible, laser-inscribed Tune-Up Kit number on it for ease in ordering. This number will prevent any confusion created by searching a catalog for hardware, and it will help reduce downtime.*

*Greenleaf Corporation is continually upgrading its products. For the most current information, please visit our web site at:*

[www.greenleafglobalsupport.com](http://www.greenleafglobalsupport.com)

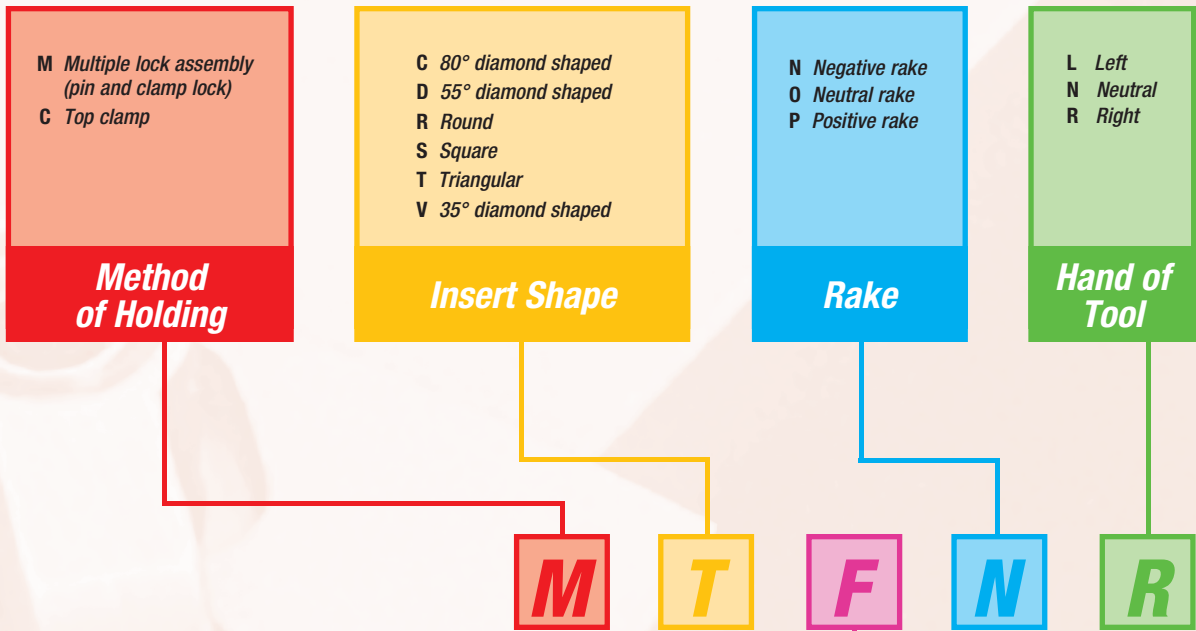
### **Greenleaf Sales**

Phone: 814-763-2915 • 800-458-1850 • Fax: 814-763-4423  
sales@greenleafcorporation.com • www.greenleafglobalsupport.com



# Industry-Standard Toolholder Identification System

TOOLHOLDERS



**Toolholder Style**

<p><b>A</b> Straight shank with 0° (90°) side cutting edge angle</p> <p><b>B</b> Straight shank with 15° (75°) side cutting edge angle</p> <p><b>C</b> Straight shank with 0° (90°) end cutting edge angle</p> <p><b>D</b> Straight shank with 45° side cutting edge angle</p> <p><b>E</b> Straight shank with 30° (60°) side cutting edge angle</p> <p><b>F</b> Offset shank with 0° (90°) end cutting edge angle</p> <p><b>G</b> Offset shank with 0° (90°) side cutting edge angle</p> <p><b>†H</b> Offset shank for I.D. threading and shallow grooving</p> <p><b>†I</b> Offset shank with 27.5° (62.5°) end cutting edge angle</p> <p><b>J</b> Offset shank with negative 3° (93°) side cutting edge angle</p> <p><b>K</b> Offset shank with 15° (75°) end or side cutting edge angle</p> <p><b>L</b> Offset shank with negative 5° (95°) end or side cutting edge angle</p>	<p><b>M</b> Straight shank with 50° (40°) side cutting edge angle</p> <p><b>N</b> Straight shank with 27° (63°) side cutting edge angle</p> <p><b>†O</b> Straight shank with centrally located round insert</p> <p><b>P</b> Straight shank with 27.5° (62.5°) side cutting edge angle</p> <p><b>R</b> Offset shank with 15° (75°) side cutting edge angle</p> <p><b>S</b> Offset shank with 45° side cutting edge angle</p> <p><b>†T</b> Offset shank with negative 27.5° (62.5°) side or end cutting edge angle</p> <p><b>†U</b> Offset shank for deep grooving</p> <p><b>†V</b> Offset shank with negative 17.5° (72.5°) side or end cutting edge angle</p> <p><b>W</b> Offset shank with 10° (80°) side cutting edge angle</p>
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**NOTE:**  
 The angles shown in parentheses are the angles as shown in the ANSI standard.  
 † Greenleaf standard.

**S** Single wall pocket construction. Full pocket construction when letter position is vacant.

**Pocket Style**

Number of  $\frac{1}{16}$ ths of I.C.

**Insert Size I.C.**

**A** American Tool Standard Wedge Angle  
**B** Bullard Standard Wedge Angle  
**G** Gidding & Lewis Standard Wedge Angle  
**L** LeBlond Standard Wedge Angle  
**M** Monarch Standard End Angle  
**N** New Britain Machine Standard Wedge Angle  
**S** Saginaw Machine Standard Wedge Angle

**Shank Modification (Standard Options)**

**S**

**16**

=

**4**

**D**

**B**

For shanks  $\frac{5}{16}$ " square and over, number =  $\frac{1}{16}$ ths of width and height

For shanks under  $\frac{5}{16}$ " square, number =  $\frac{1}{16}$ th of cross section

For rectangular holders, first digit = number of  $\frac{1}{16}$ ths of width

For rectangular holders, second digit = number of  $\frac{1}{16}$ ths of height

**Basic Toolholder Shank Size**

<b>A</b> 4.000 length and width control	<b>R</b> 6.000 length and side control
<b>B</b> 4.500 length and width control	<b>S</b> 7.000 length and side control
<b>C</b> 5.000 length and width control	<b>T</b> 8.000 length and side control
<b>D</b> 6.000 length and width control	<b>†U</b> 5.500 length and side control
<b>E</b> 7.000 length and width control	<b>†V</b> 9.000 length and side control
<b>F</b> 8.000 length and width control	<b>W</b> Special length and standard side control (specify length)
<b>†G</b> 5.500 length and width control	<b>†X</b> 12.000 length and side control
<b>†H</b> 9.000 length and width control	<b>†Y</b> 14.000 length and side control
<b>J</b> Special length and standard width control (specify length)	<b>†Z</b> Qualified length control only (specify nominal length)
<b>†K</b> 12.000 length and width control	e.g. MTJNRS—20—4Z (5.500)
<b>†L</b> 14.000 length and width control	
<b>M</b> 4.000 length and side control	
<b>N</b> 4.500 length and side control	
<b>P</b> 5.000 length and side control	

**Shank Qualifications**

**NOTE:**  
 All toolholders are shipped qualified over insert gage radius to  $\pm .003$ " on C and F dimensions as standard. Some toolholders are qualifiable on length only (C dimension).

All toolholders to be qualified other than above should be designated with the appropriate letter under heading "Shank Qualifications."

# Industry-Standard Toolholder Usage Reference Guide

TOOLHOLDERS

**Toolholder Style**

**Insert Geometry**

**Toolholder Dimensions**

**Insert Type**

**Toolholder Application**

### G-MCFNR/L

Style F  
80° Diamond  
Negative Rake  
0° Lead

Part Number	Right	Left	Insert	Dimensions (inches)							Standard Components				Tune-Up Kit		Optional Components			
				R	A	B	C	E	F	SEAT	LOCK PIN	CLAMP	SCREW	SEAT	LOCK PIN	CLAMP	SCREW	SEAT	LOCK PIN	
G-MCFNR 12-4C			CMMS-432	1	0.750	0.750	5	1.250	1.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCFNR 16-4D			CMMS-432	1	1.000	1.000	6	1.250	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCFNR 18-4D			CMMS-432	1	1.000	1.250	6	1.250	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCFNR 20-4D			CMMS-432	1	1.250	1.250	6	1.250	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCFNR 16-5D			CMMS-543	1	1.000	1.000	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543	-	-	-	-
G-MCFNR 18-5D			CMMS-543	1	1.000	1.250	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543	-	-	-	-
G-MCFNR 20-5D			CMMS-543	1	1.250	1.250	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543	-	-	-	-
G-MCFNR 24-5D			CMMS-543	1	1.500	1.500	6	1.380	2.000	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543	-	-	-	-
G-MCFNR 16-6D			CMMS-643	1	1.000	1.000	6	1.500	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCFNR 18-6D			CMMS-643	1	1.000	1.250	6	1.500	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCFNR 20-6D			CMMS-643	1	1.250	1.250	6	1.500	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCFNR 24-6D			CMMS-643	1	1.500	1.500	6	1.500	2.000	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCFNR 24-8D			CMMS-866	1	1.500	1.500	6	1.625	2.000	CSN-846	NL-810	CL-24	XNS-610	TK-00718	S-810	-	-	-	-	

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

### G-MCKNR/L

Style K  
80° Diamond  
(Using 100° Corner)  
Negative Rake, 15° Lead

Part Number	Right	Left	Insert	Dimensions (inches)							Standard Components				Tune-Up Kit		Optional Components			
				R	A	B	C	E	F	SEAT	LOCK PIN	CLAMP	SCREW	SEAT	LOCK PIN	CLAMP	SCREW	SEAT	LOCK PIN	
G-MCKNR 12-4C			CMMS-432	1	0.750	0.750	5	1.190	1.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCKNR 16-4D			CMMS-432	1	1.000	1.000	6	1.190	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCKNR 18-4D			CMMS-432	1	1.000	1.250	6	1.190	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCKNR 20-4D			CMMS-432	1	1.250	1.250	6	1.190	2.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCKNR 16-5D			CMMS-543	1	1.000	1.000	6	1.470	1.250	CSN-533	NL-58	CL-9	XNS-50	TK-00548	S-58	CSN-543	-	-	-	-
G-MCKNR 18-5D			CMMS-543	1	1.000	1.250	6	1.470	1.250	CSN-533	NL-58	CL-9	XNS-50	TK-00548	S-58	CSN-543	-	-	-	-
G-MCKNR 20-5D			CMMS-543	1	1.250	1.250	6	1.470	1.250	CSN-533	NL-58	CL-9	XNS-50	TK-00548	S-58	CSN-543	-	-	-	-
G-MCKNR 24-5D			CMMS-543	1	1.500	1.500	6	1.470	2.000	CSN-533	NL-58	CL-9	XNS-50	TK-00548	S-58	CSN-543	-	-	-	-
G-MCKNR 16-6D			CMMS-643	1	1.000	1.000	6	1.440	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCKNR 18-6D			CMMS-643	1	1.000	1.250	6	1.440	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCKNR 20-6D			CMMS-643	1	1.250	1.250	6	1.440	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCKNR 24-6D			CMMS-643	1	1.500	1.500	6	1.440	2.000	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCKNR 24-8D			CMMS-866	1	1.500	1.500	6	1.390	2.000	CSN-846	NL-810	CL-24	XNS-610	TK-00718	S-810	-	-	-	-	

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

### G-MCGNR/L

Style G  
80° Diamond  
Negative Rake  
0° Lead

Part Number	Right	Left	Insert	Dimensions (inches)							Standard Components				Tune-Up Kit		Optional Components			
				R	A	B	C	E	F	SEAT	LOCK PIN	CLAMP	SCREW	SEAT	LOCK PIN	CLAMP	SCREW	SEAT	LOCK PIN	
G-MCGNR 12-4C			CMMS-432	1	0.750	0.750	5	1.250	1.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCGNR 16-4D			CMMS-432	1	1.000	1.000	6	1.250	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCGNR 18-4D			CMMS-432	1	1.000	1.250	6	1.250	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCGNR 20-4D			CMMS-432	1	1.250	1.250	6	1.250	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCGNR 16-5D			CMMS-543	1	1.000	1.000	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543	-	-	-	-
G-MCGNR 18-5D			CMMS-543	1	1.000	1.250	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543	-	-	-	-
G-MCGNR 20-5D			CMMS-543	1	1.250	1.250	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543	-	-	-	-
G-MCGNR 24-5D			CMMS-543	1	1.500	1.500	6	1.380	2.000	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543	-	-	-	-
G-MCGNR 16-6D			CMMS-643	1	1.000	1.000	6	1.625	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCGNR 18-6D			CMMS-643	1	1.000	1.250	6	1.625	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCGNR 20-6D			CMMS-643	1	1.250	1.250	6	1.625	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCGNR 24-6D			CMMS-643	1	1.500	1.500	6	1.625	2.000	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCGNR 24-8D			CMMS-866	1	1.500	1.500	6	1.625	2.000	CSN-846	NL-810	CL-24	XNS-610	TK-00718	S-810	-	-	-	-	

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

### G-MCLNR/L

Style L  
80° Diamond  
Negative Rake  
5° Reverse Lead

Part Number	Right	Left	Insert	Dimensions (inches)							Standard Components				Tune-Up Kit		Optional Components			
				R	A	B	C	E	F	SEAT	LOCK PIN	CLAMP	SCREW	SEAT	LOCK PIN	CLAMP	SCREW	SEAT	LOCK PIN	
G-MCLNR 12-4C			CMMS-432	1	0.750	0.750	5	1.190	1.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCLNR 16-4D			CMMS-432	1	1.000	1.000	6	1.190	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCLNR 18-4D			CMMS-432	1	1.000	1.250	6	1.190	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCLNR 20-4D			CMMS-432	1	1.250	1.250	6	1.190	2.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	-	-	-	-	-
G-MCLNR 16-5D			CMMS-543	1	1.000	1.000	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543	-	-	-	-
G-MCLNR 18-5D			CMMS-543	1	1.000	1.250	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543	-	-	-	-
G-MCLNR 20-5D			CMMS-543	1	1.250	1.250	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543	-	-	-	-
G-MCLNR 24-5D			CMMS-543	1	1.500	1.500	6	1.380	2.000	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543	-	-	-	-
G-MCLNR 16-6D			CMMS-643	1	1.000	1.000	6	1.390	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCLNR 18-6D			CMMS-643	1	1.000	1.250	6	1.390	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCLNR 20-6D			CMMS-643	1	1.250	1.250	6	1.390	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCLNR 24-6D			CMMS-643	1	1.500	1.500	6	1.390	2.000	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643	-	-	-	-
G-MCLNR 24-8D			CMMS-866	1	1.500	1.500	6	1.390	2.000	CSN-846	NL-810	CL-24	XNS-610	TK-00718	S-810	-	-	-	-	

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

**Part Number**

**Optional Components**

**Stocking Program**

**Tune-up Kits**

**Standard Components**

**Dimensions**

**80° Diamond – Negative**

**G-MCFNR/L**  
Style F  
80° Diamond  
Negative Rake  
0° Lead  
page: T 76

**G-MCGNR/L**  
Style G  
80° Diamond  
Negative Rake  
0° Lead  
page: T 76

**G-MCKNR/L**  
Style K  
80° Diamond  
(Using 100° Corner)  
Negative Rake  
15° Lead  
page: T 77

**G-MCLNR/L**  
Style L  
80° Diamond  
Negative Rake  
5° Reverse Lead  
page: T 77

**G-MCRNR/L**  
Style R  
80° Diamond  
(Using 100° Corner)  
Negative Rake  
15° Lead  
page: T 78

**55° Diamond – Negative**

**G-MDJNR/L**  
Style J  
55° Diamond  
Negative Rake  
3° Reverse Lead  
page: T 79

**G-MDPNN**  
Style P  
55° Diamond  
Negative Rake  
27° 30' Lead  
page: T 79

**Round – Negative**

**G-MRANR/L**  
Style A  
Round  
Negative Rake  
page: T 80

**G-MRGNR/L**  
Style G  
Round  
Negative Rake  
page: T 80

**Square – Negative**

**G-MSBNR/L**  
Style B  
Square  
Negative Rake  
15° Lead  
page: T 81

**G-MSDNN**  
Style D  
Square  
Negative Rake  
45° Lead  
page: T 82

**G-MSKNR/L**  
Style K  
Square  
Negative Rake  
15° Lead  
page: T 82

**G-MSRRR/L**  
Style R  
Square  
Negative Rake  
15° Lead  
page: T 83

**G-MSSNR/L**  
Style S  
Square  
Negative Rake  
45° Lead  
page: T 83

**Triangle – Negative**

**G-MTANR/L**  
Style A  
Triangle  
Negative Rake  
0° Lead  
page: T 84

**Triangle – Negative contd.**

**G-MTBNR/L**  
Style B  
Triangle  
Negative Rake  
15° Lead  
page: T 84

**G-MTENNS**  
Style E  
Triangle  
Negative Rake  
30° Lead  
page: T 85

**G-MTFNR/L**  
Style F  
Triangle  
Negative Rake  
0° Lead  
page: T 86

**G-MTGNR/L**  
Style G  
Triangle  
Negative Rake  
0° Lead  
page: T 87

**G-MTJNRS**  
Style J  
Triangle  
Negative Rake  
3° Reverse Lead  
page: T 87

**G-MTLNR/L**  
Style L  
Triangle  
Negative Rake  
5° Reverse Lead  
page: T 88

**G-MTRNR/L**  
Style R  
Triangle  
Negative Rake  
15° Lead  
page: T 88

**35° Diamond – Negative**

**G-MVJNR/L**  
Style J  
35° Diamond  
Negative Rake  
3° Reverse Lead  
page: T 89

**G-MVTNR/L**  
Style T  
35° Diamond  
Negative Rake  
27° 30' Lead  
page: T 89

**G-MVVNN**  
Style V  
35° Diamond  
Negative Rake  
17° 30' Reverse Lead  
page: T 90

**Trigon – Negative**

**G-MWLNR/L**  
Style L  
Trigon  
Negative Rake  
5° Reverse Lead  
page: T 90

**80° Diamond – Positive**

**G-CCLPR/L**  
Style L  
80° Diamond  
Positive Rake  
5° Reverse Lead  
page: T 91

**G-CCRPR/L**  
Style R  
80° Diamond  
(Using 100° Corner)  
Positive Rake  
15° Lead  
page: T 91

**Square – Positive**

**G-CSBPR/L**  
Style B  
Square  
Positive Rake  
15° Lead  
page: T 92

**G-CSDPN**  
Style D  
Square  
Positive Rake  
45° Lead  
page: T 92

**Square – Positive contd.**

**G-CSKPR/L**  
Style K  
Square  
Positive Rake  
15° Lead  
page: T 93

**Triangle – Positive**

**G-CTAPR/L**  
Style A  
Triangle  
Positive Rake  
0° Lead  
page: T 94

**G-CTBPR/L**  
Style B  
Triangle  
Positive Rake  
15° Lead  
page: T 94

**G-CTCPN**  
Style C  
Triangle  
Positive Rake  
0° Lead  
page: T 95

**G-CTEOR/L**  
Style E  
Triangle  
Positive Rake  
30° Lead  
page: T 95

**G-CTFPR/L**  
Style F  
Triangle  
Positive Rake  
0° Lead  
page: T 96

**G-CTGPR/L**  
Style G  
Triangle  
Positive Rake  
0° Lead  
page: T 96

**Radius Forming**

**GSRN**  
Style GSRN  
page: T 97

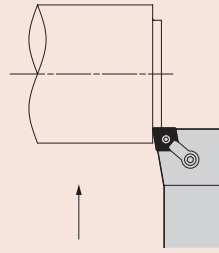
**Greenleaf Sales**

80°

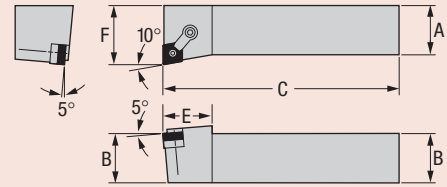


# G-MCFNR/L

Style F  
80° Diamond  
Negative Rake  
0° Lead



Right-Hand  
Toolholder Shown



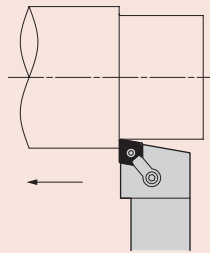
TOOLHOLDERS

Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MCFNR 12-4C	G-MCFNL 12-4C	CNMG-432	○	○	0.750	0.750	5	1.250	1.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCFNR 16-4D	G-MCFNL 16-4D	CNMG-432	○	○	1.000	1.000	6	1.250	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCFNR 85-4D	G-MCFNL 85-4D	CNMG-432	○	○	1.000	1.250	6	1.250	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCFNR 20-4D	G-MCFNL 20-4D	CNMG-432	○	○	1.250	1.250	6	1.250	1.500	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCFNR 16-5D	G-MCFNL 16-5D	CNMG-543	○	○	1.000	1.000	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543
G-MCFNR 85-5D	G-MCFNL 85-5D	CNMG-543	○	○	1.000	1.250	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543
G-MCFNR 20-5D	G-MCFNL 20-5D	CNMG-543	○	○	1.250	1.250	6	1.380	1.500	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543
G-MCFNR 24-5D	G-MCFNL 24-5D	CNMG-543	○	○	1.500	1.500	6	1.380	2.000	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543
G-MCFNR 16-6D	G-MCFNL 16-6D	CNMG-643	○	○	1.000	1.000	6	1.500	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCFNR 85-6D	G-MCFNL 85-6D	CNMG-643	○	○	1.000	1.250	6	1.500	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCFNR 86-6D	G-MCFNL 86-6D	CNMG-643	○	○	1.000	1.500	6	1.500	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCFNR 20-6D	G-MCFNL 20-6D	CNMG-643	○	○	1.250	1.250	6	1.500	1.500	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCFNR 24-6D	G-MCFNL 24-6D	CNMG-643	○	○	1.500	1.500	6	1.500	2.000	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCFNR 24-8D	G-MCFNL 24-8D	CNMG-866	○	○	1.500	1.500	6	1.500	2.000	CSN-846	NL-810	CL-24	XNS-610	TK-00718	S-810	—

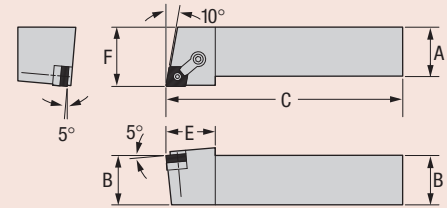
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# G-MCGNR/L

Style G  
80° Diamond  
Negative Rake  
0° Lead



Right-Hand  
Toolholder Shown

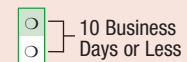
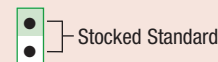


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MCGNR 12-4C	G-MCGNL 12-4C	CNMG-432	○	○	0.750	0.750	5	1.250	1.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCGNR 16-4D	G-MCGNL 16-4D	CNMG-432	●	○	1.000	1.000	6	1.250	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCGNR 85-4D	G-MCGNL 85-4D	CNMG-432	○	○	1.000	1.250	6	1.250	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCGNR 20-4D	G-MCGNL 20-4D	CNMG-432	○	○	1.250	1.250	6	1.250	1.500	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCGNR 24-4D	G-MCGNL 24-4D	CNMG-432	○	○	1.500	1.500	6	1.250	2.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCGNR 16-5D	G-MCGNL 16-5D	CNMG-543	○	○	1.000	1.000	6	1.500	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543
G-MCGNR 85-5D	G-MCGNL 85-5D	CNMG-543	○	○	1.000	1.250	6	1.500	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543
G-MCGNR 20-5D	G-MCGNL 20-5D	CNMG-543	○	○	1.250	1.250	6	1.500	1.500	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543
G-MCGNR 24-5D	G-MCGNL 24-5D	CNMG-543	○	○	1.500	1.500	6	1.500	2.000	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543
G-MCGNR 16-6D	G-MCGNL 16-6D	CNMG-643	○	○	1.000	1.000	6	1.500	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCGNR 85-6D	G-MCGNL 85-6D	CNMG-643	○	○	1.000	1.250	6	1.500	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCGNR 86-6D	G-MCGNL 86-6D	CNMG-643	○	○	1.000	1.500	6	1.500	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCGNR 20-6D	G-MCGNL 20-6D	CNMG-643	○	○	1.250	1.250	6	1.500	1.500	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCGNR 24-6D	G-MCGNL 24-6D	CNMG-643	○	○	1.500	1.500	6	1.500	2.000	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCGNR 24-8D	G-MCGNL 24-8D	CNMG-866	○	○	1.500	1.500	6	1.630	2.000	CSN-846	NL-810	CL-24	XNS-610	TK-00718	S-810	—

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

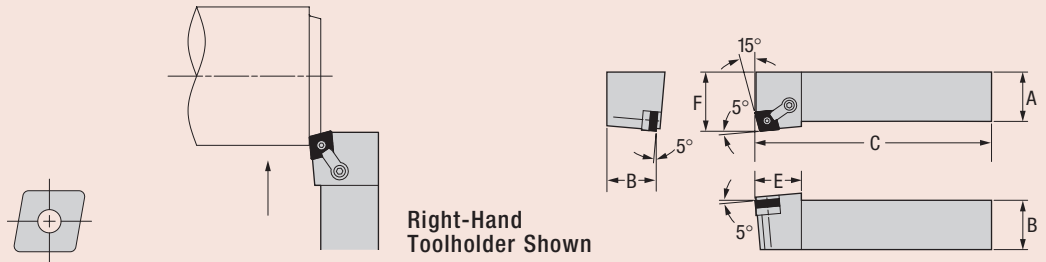
**Greenleaf Sales**

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sales@greenleafcorporation.com • www.greenleafglobalsupport.com



# G-MCKNR/L

Style K  
80° Diamond  
(Using 100° Corner)  
Negative Rake, 15° Lead



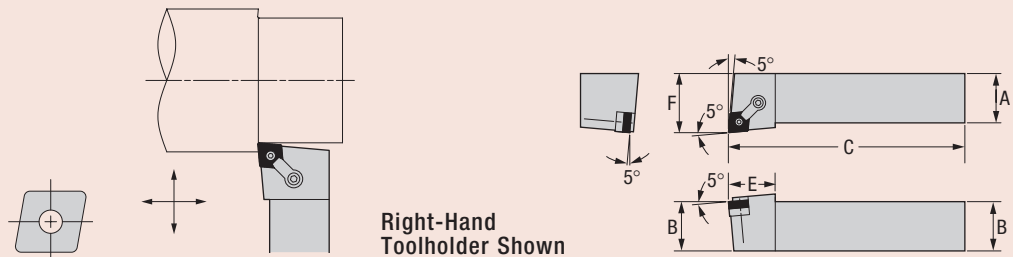
Right-Hand  
Toolholder Shown

Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MCKNR 12-4C	G-MCKNL 12-4C	CNMG-432	○	○	0.750	0.750	5	1.190	1.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCKNR 16-4D	G-MCKNL 16-4D	CNMG-432	○	○	1.000	1.000	6	1.190	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCKNR 20-4D	G-MCKNL 20-4D	CNMG-432	○	○	1.250	1.250	6	1.190	1.500	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCKNR 24-4D	G-MCKNL 24-4D	CNMG-432	○	○	1.500	1.500	6	1.190	2.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCKNR 16-5D	G-MCKNL 16-5D	CNMG-543	○	○	1.000	1.000	6	1.440	1.250	CSN-533	NL-58	CL-9	XNS-59	TK-00548	S-58	CSN-543
G-MCKNR 85-5D	G-MCKNL 85-5D	CNMG-543	○	○	1.000	1.250	6	1.440	1.250	CSN-533	NL-58	CL-9	XNS-59	TK-00548	S-58	CSN-543
G-MCKNR 86-5D	G-MCKNL 86-5D	CNMG-543	○	○	1.000	1.500	6	1.440	1.250	CSN-533	NL-58	CL-9	XNS-59	TK-00548	S-58	CSN-543
G-MCKNR 20-5D	G-MCKNL 20-5D	CNMG-543	○	○	1.250	1.250	6	1.440	1.500	CSN-533	NL-58	CL-9	XNS-59	TK-00548	S-58	CSN-543
G-MCKNR 16-6D	G-MCKNL 16-6D	CNMG-643	○	○	1.000	1.000	6	1.440	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCKNR 85-6D	G-MCKNL 85-6D	CNMG-643	○	○	1.000	1.250	6	1.440	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCKNR 86-6D	G-MCKNL 86-6D	CNMG-643	○	○	1.000	1.500	6	1.440	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCKNR 20-6D	G-MCKNL 20-6D	CNMG-643	○	○	1.250	1.250	6	1.440	1.500	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCKNR 24-6D	G-MCKNL 24-6D	CNMG-643	○	○	1.500	1.500	6	1.440	2.000	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCKNR 24-8D	G-MCKNL 24-8D	CNMG-866	○	○	1.500	1.500	6	1.940	2.000	CSN-846	NL-810	CL-24	XNS-610	TK-00718	S-810	—

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# G-MCLNR/L

Style L  
80° Diamond  
Negative Rake  
5° Reverse Lead



Right-Hand  
Toolholder Shown

Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MCLNR 12-4C	G-MCLNL 12-4C	CNMG-432	●	○	0.750	0.750	5	1.190	1.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCLNR 16-4D	G-MCLNL 16-4D	CNMG-432	●	●	1.000	1.000	6	1.190	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCLNR 85-4D	G-MCLNL 85-4D	CNMG-432	○	○	1.000	1.250	6	1.190	1.250	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCLNR 20-4D	G-MCLNL 20-4D	CNMG-432	●	●	1.250	1.250	6	1.190	1.500	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCLNR 24-4D	G-MCLNL 24-4D	CNMG-432	○	●	1.500	1.500	6	1.190	2.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	—
G-MCLNR 16-5D	G-MCLNL 16-5D	CNMG-543	○	○	1.000	1.000	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543
G-MCLNR 85-5D	G-MCLNL 85-5D	CNMG-543	○	○	1.000	1.250	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543
G-MCLNR 86-5D	G-MCLNL 86-5D	CNMG-543	○	○	1.000	1.500	6	1.380	1.250	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543
G-MCLNR 20-5D	G-MCLNL 20-5D	CNMG-543	○	○	1.250	1.250	6	1.380	1.500	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543
G-MCLNR 24-5D	G-MCLNL 24-5D	CNMG-543	●	●	1.500	1.500	6	1.380	2.000	CSN-533	NL-58	CL-12	XNS-510	TK-00547	S-58	CSN-543
G-MCLNR 16-6D	G-MCLNL 16-6D	CNMG-643	○	○	1.000	1.000	6	1.380	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCLNR 85-6D	G-MCLNL 85-6D	CNMG-643	○	○	1.000	1.250	6	1.380	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCLNR 86-6D	G-MCLNL 86-6D	CNMG-643	○	○	1.000	1.500	6	1.380	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCLNR 20-6D	G-MCLNL 20-6D	CNMG-643	●	●	1.250	1.250	6	1.380	1.500	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCLNR 24-6D	G-MCLNL 24-6D	CNMG-643	●	●	1.500	1.500	6	1.380	2.000	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCLNR 24-8D	G-MCLNL 24-8D	CNMG-866	●	○	1.500	1.500	6	1.500	2.000	CSN-846	NL-810	CL-24	XNS-610	TK-00718	S-810	—

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

10 Business Days or Less

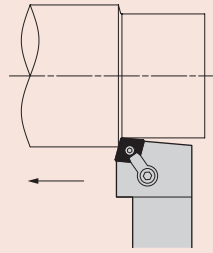
Stocked Standard

80°

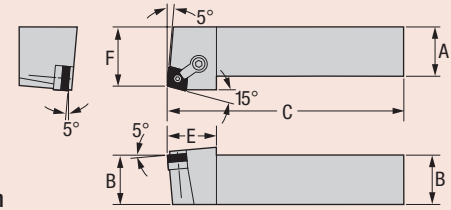


# G-MCRNR/L

Style R  
80° Diamond  
(Using 100° Corner)  
Negative Rake, 15° Lead



Right-Hand Toolholder Shown



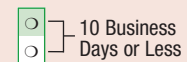
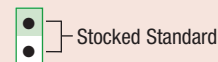
TOOLHOLDERS

Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MCRNR 12-4C	G-MCRNL 12-4C	CNMG-432	○	○	0.750	0.750	5	1.250	1.000	CSN-433	NL-46	CL-9	XNS-59	TK-00549	S-46	—
G-MCRNR 16-4D	G-MCRNL 16-4D	CNMG-432	●	●	1.000	1.000	6	1.250	1.250	CSN-433	NL-46	CL-9	XNS-59	TK-00549	S-46	—
G-MCRNR 20-4D	G-MCRNL 20-4D	CNMG-432	○	○	1.250	1.250	6	1.250	1.500	CSN-433	NL-46	CL-9	XNS-59	TK-00549	S-46	—
G-MCRNR 24-4D	G-MCRNL 24-4D	CNMG-432	○	○	1.500	1.500	6	1.250	2.000	CSN-433	NL-46	CL-9	XNS-59	TK-00549	S-46	—
G-MCRNR 16-5D	G-MCRNL 16-5D	CNMG-543	○	○	1.000	1.000	6	1.340	1.250	CSN-533	NL-58	CL-9	XNS-510	TK-00550	S-58	CSN-543
G-MCRNR 85-5D	G-MCRNL 85-5D	CNMG-543	○	○	1.000	1.250	6	1.340	1.250	CSN-533	NL-58	CL-9	XNS-510	TK-00550	S-58	CSN-543
G-MCRNR 86-5D	G-MCRNL 86-5D	CNMG-543	○	○	1.000	1.500	6	1.340	1.250	CSN-533	NL-58	CL-9	XNS-510	TK-00550	S-58	CSN-543
G-MCRNR 20-5D	G-MCRNL 20-5D	CNMG-543	○	○	1.250	1.250	6	1.340	1.500	CSN-533	NL-58	CL-9	XNS-510	TK-00550	S-58	CSN-543
G-MCRNR 85-6D	G-MCRNL 85-6D	CNMG-643	○	○	1.000	1.250	6	1.480	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCRNR 86-6D	G-MCRNL 86-6D	CNMG-643	○	○	1.000	1.500	6	1.480	1.250	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCRNR 20-6D	G-MCRNL 20-6D	CNMG-643	○	○	1.250	1.250	6	1.480	1.500	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCRNR 24-6D	G-MCRNL 24-6D	CNMG-643	●	○	1.500	1.500	6	1.480	2.000	CSN-633	NL-68	CL-12	XNS-510	TK-00546	S-68	CSN-643
G-MCRNR 24-8D	G-MCRNL 24-8D	CNMG-866	○	○	1.500	1.500	6	1.620	2.000	CSN-846	NL-810	CL-24	XNS-610	TK-00718	S-810	—

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

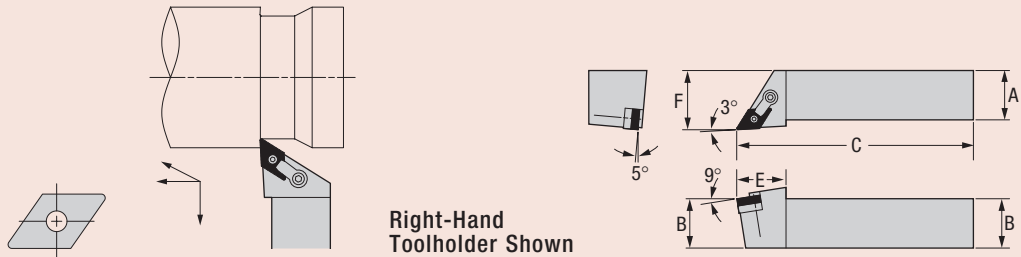
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# G-MDJNR/L

Style J  
55° Diamond  
Negative Rake  
3° Reverse Lead

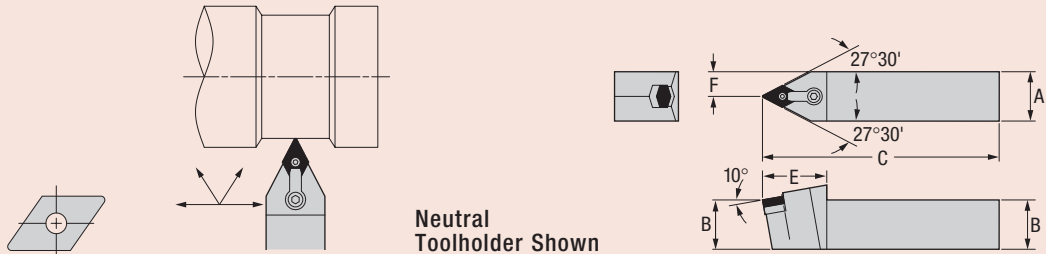


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MDJNR 12-4C	G-MDJNL 12-4C	DNMG-432	●	○	0.750	0.750	5	1.380	1.000	DSN-433	NL-46	CL-20	XNS-48	TK-00551	S-46	DSN-423**
G-MDJNR 16-4D	G-MDJNL 16-4D	DNMG-432	●	●	1.000	1.000	6	1.380	1.250	DSN-433	NL-46	CL-20	XNS-48	TK-00551	S-46	DSN-423**
G-MDJNR 85-4D	G-MDJNL 85-4D	DNMG-432	○	○	1.000	1.250	6	1.380	1.250	DSN-433	NL-46	CL-20	XNS-48	TK-00551	S-46	DSN-423**
G-MDJNR 20-4D	G-MDJNL 20-4D	DNMG-432	●	●	1.250	1.250	6	1.380	1.500	DSN-433	NL-46	CL-20	XNS-48	TK-00551	S-46	DSN-423**
G-MDJNR 24-4D	G-MDJNL 24-4D	DNMG-432	●	●	1.500	1.500	6	1.380	2.000	DSN-433	NL-46	CL-20	XNS-48	TK-00551	S-46	DSN-423**
G-MDJNR 16-5D	G-MDJNL 16-5D	DNMG-543	○	○	1.000	1.000	6	1.470	1.250	DSN-533	NL-58	CL-12	XNS-510	TK-00552	S-58	DSN-543
G-MDJNR 85-5D	G-MDJNL 85-5D	DNMG-543	○	○	1.000	1.250	6	1.470	1.250	DSN-533	NL-58	CL-12	XNS-510	TK-00552	S-58	DSN-543
G-MDJNR 86-5D	G-MDJNL 86-5D	DNMG-543	○	○	1.000	1.500	6	1.470	1.250	DSN-533	NL-58	CL-12	XNS-510	TK-00552	S-58	DSN-543
G-MDJNR 20-5D	G-MDJNL 20-5D	DNMG-543	●	○	1.250	1.250	6	1.470	1.500	DSN-533	NL-58	CL-12	XNS-510	TK-00552	S-58	DSN-543
G-MDJNR 24-5D	G-MDJNL 24-5D	DNMG-543	○	○	1.500	1.500	6	1.470	2.000	DSN-533	NL-58	CL-12	XNS-510	TK-00552	S-58	DSN-543

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.  
\*\* Cannot be used with lock pin.

# G-MDPNN

Style P  
55° Diamond  
Negative Rake  
27° 30' Lead



Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Neutral		Insert	N		A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MDPNN 12-4C		DNMG-432	○		0.750	0.750	5	1.620	0.375	DSN-433	NL-46	CL-12	XNS-510	TK-00553	S-46	DSN-423**
G-MDPNN 16-4D		DNMG-432	●		1.000	1.000	6	1.620	0.500	DSN-433	NL-46	CL-12	XNS-510	TK-00553	S-46	DSN-423**
G-MDPNN 85-4D		DNMG-432	○		1.000	1.250	6	1.620	0.500	DSN-433	NL-46	CL-12	XNS-510	TK-00553	S-46	DSN-423**
G-MDPNN 20-4D		DNMG-432	●		1.250	1.250	6	1.620	0.625	DSN-433	NL-46	CL-12	XNS-510	TK-00553	S-46	DSN-423**
G-MDPNN 24-4D		DNMG-432	○		1.500	1.500	6	1.620	0.750	DSN-433	NL-46	CL-12	XNS-510	TK-00553	S-46	DSN-423**
G-MDPNN 16-5D		DNMG-543	○		1.000	1.000	6	1.920	0.500	DSN-533	NL-58	CL-12	XNS-510	TK-00552	S-58	DSN-543
G-MDPNN 85-5D		DNMG-543	○		1.000	1.250	6	1.920	0.500	DSN-533	NL-58	CL-12	XNS-510	TK-00552	S-58	DSN-543
G-MDPNN 86-5D		DNMG-543	○		1.000	1.500	6	1.920	0.500	DSN-533	NL-58	CL-12	XNS-510	TK-00552	S-58	DSN-543
G-MDPNN 20-5D		DNMG-543	○		1.250	1.250	6	1.920	0.625	DSN-533	NL-58	CL-12	XNS-510	TK-00552	S-58	DSN-543
G-MDPNN 24-5D		DNMG-543	●		1.500	1.500	6	1.920	0.750	DSN-533	NL-58	CL-12	XNS-510	TK-00552	S-58	DSN-543

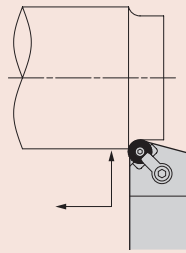
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.  
\*\* Cannot be used with lock pin.



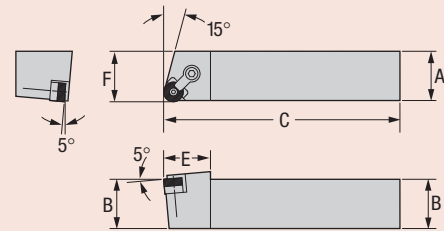


## G-MRANR/L

Style A  
Round  
Negative Rake



Right-Hand  
Toolholder Shown



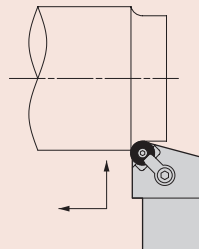
TOOLHOLDERS

Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MRANR 16-4D	G-MRANL 16-4D	RNMG-43	○	○	1.000	1.000	6	1.190	1.031	IRSN-43	NL-46	CL-9	XNS-59	TK-00554	S-46	IRSN-44
G-MRANR 85-4D	G-MRANL 85-4D	RNMG-43	○	○	1.000	1.250	6	1.190	1.031	IRSN-43	NL-46	CL-9	XNS-59	TK-00554	S-46	IRSN-44
G-MRANR 86-4D	G-MRANL 86-4D	RNMG-43	○	○	1.000	1.500	6	1.190	1.031	IRSN-43	NL-46	CL-9	XNS-59	TK-00554	S-46	IRSN-44
G-MRANR 20-4D	G-MRANL 20-4D	RNMG-43	○	○	1.250	1.250	6	1.190	1.281	IRSN-43	NL-46	CL-9	XNS-59	TK-00554	S-46	IRSN-44
G-MRANR 16-5D	G-MRANL 16-5D	RNMG-54	○	○	1.000	1.000	6	1.300	1.031	RSN-53	NL-58	CL-9	XNS-59	TK-00555	S-58	-
G-MRANR 85-5D	G-MRANL 85-5D	RNMG-54	○	○	1.000	1.250	6	1.300	1.031	RSN-53	NL-58	CL-9	XNS-59	TK-00555	S-58	-
G-MRANR 20-5D	G-MRANL 20-5D	RNMG-54	○	○	1.250	1.250	6	1.300	1.281	RSN-53	NL-58	CL-9	XNS-59	TK-00555	S-58	-
G-MRANR 16-6D	G-MRANL 16-6D	RNMG-64	○	○	1.000	1.000	6	1.560	1.031	RSN-63	NL-68	CL-12	XNS-59	TK-00556	S-68	-
G-MRANR 85-6D	G-MRANL 85-6D	RNMG-64	○	○	1.000	1.250	6	1.560	1.031	RSN-63	NL-68	CL-12	XNS-59	TK-00556	S-68	-
G-MRANR 20-6D	G-MRANL 20-6D	RNMG-64	○	○	1.250	1.250	6	1.560	1.281	RSN-63	NL-68	CL-12	XNS-59	TK-00556	S-68	-
G-MRANR 24-8D	G-MRANL 24-8D	RNMG-86	○	○	1.500	1.500	6	1.700	1.531	RSN-84	NL-810	CL-24	XNS-610	TK-00557	S-810	-

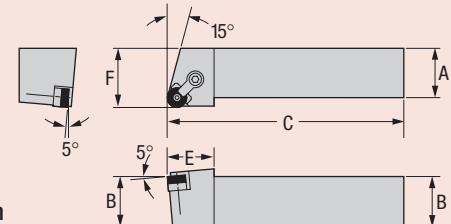
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

## G-MRGNR/L

Style G  
Round  
Negative Rake



Right-Hand  
Toolholder Shown

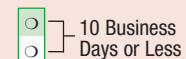
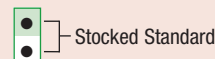


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MRGNR 12-3C	G-MRGNL 12-3C	RNMG-32	○	○	0.750	0.750	5	1.000	1.000	-	NL-33	CL-6	XNS-36	TK-00740	-	-
G-MRGNR 12-4C	G-MRGNL 12-4C	RNMG-43	○	○	0.750	0.750	5	1.190	1.000	IRSN-43	NL-46	CL-9	XNS-59	TK-00554	S-46	IRSN-44
G-MRGNR 16-4D	G-MRGNL 16-4D	RNMG-43	●	●	1.000	1.000	6	1.190	1.250	IRSN-43	NL-46	CL-9	XNS-59	TK-00554	S-46	IRSN-44
G-MRGNR 85-4D	G-MRGNL 85-4D	RNMG-43	●	●	1.000	1.250	6	1.190	1.250	IRSN-43	NL-46	CL-9	XNS-59	TK-00554	S-46	IRSN-44
G-MRGNR 86-4D	G-MRGNL 86-4D	RNMG-43	○	○	1.000	1.500	6	1.190	1.250	IRSN-43	NL-46	CL-9	XNS-59	TK-00554	S-46	IRSN-44
G-MRGNR 20-4D	G-MRGNL 20-4D	RNMG-43	●	●	1.250	1.250	6	1.190	1.500	IRSN-43	NL-46	CL-9	XNS-59	TK-00554	S-46	IRSN-44
G-MRGNR 16-5D	G-MRGNL 16-5D	RNMG-54	○	○	1.000	1.000	6	1.380	1.250	RSN-53	NL-58	CL-9	XNS-59	TK-00555	S-58	-
G-MRGNR 85-5D	G-MRGNL 85-5D	RNMG-54	○	○	1.000	1.250	6	1.380	1.250	RSN-53	NL-58	CL-9	XNS-59	TK-00555	S-58	-
G-MRGNR 20-5D	G-MRGNL 20-5D	RNMG-54	○	○	1.250	1.250	6	1.380	1.500	RSN-53	NL-58	CL-9	XNS-59	TK-00555	S-58	-
G-MRGNR 16-6D	G-MRGNL 16-6D	RNMG-64	○	○	1.000	1.000	6	1.520	1.250	RSN-63	NL-68	CL-12	XNS-59	TK-00556	S-68	-
G-MRGNR 85-6D	G-MRGNL 85-6D	RNMG-64	○	○	1.000	1.250	6	1.520	1.250	RSN-63	NL-68	CL-12	XNS-59	TK-00556	S-68	-
G-MRGNR 20-6D	G-MRGNL 20-6D	RNMG-64	●	●	1.250	1.250	6	1.520	1.500	RSN-63	NL-68	CL-12	XNS-59	TK-00556	S-68	-
G-MRGNR 24-8D	G-MRGNL 24-8D	RNMG-86	○	○	1.500	1.500	6	1.700	2.000	RSN-84	NL-810	CL-24	XNS-610	TK-00557	S-810	-

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

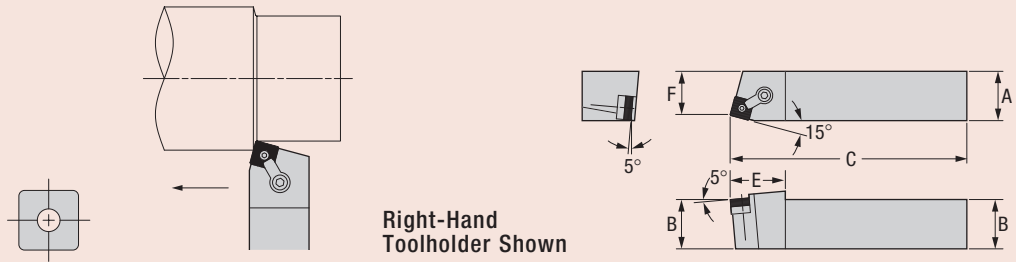
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# G-MSBNR/L

Style B  
Square  
Negative Rake  
15° Lead



Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MSBNR 8-3C	G-MSBNL 8-3C	SNMG-322	○	○	0.500	0.500	5	1.060	0.500	ISSN-322	NL-34	CL-6	XNS-36	TK-00561	S-34	-
G-MSBNR 10-3C	G-MSBNL 10-3C	SNMG-322	○	○	0.625	0.625	5	1.060	0.500	ISSN-322	NL-34	CL-6	XNS-36	TK-00561	S-34	-
G-MSBNR 12-3C	G-MSBNL 12-3C	SNMG-322	○	○	0.750	0.750	5	1.060	0.625	ISSN-322	NL-34	CL-6	XNS-36	TK-00561	S-34	-
G-MSBNR 16-3D	G-MSBNL 16-3D	SNMG-322	○	○	1.000	1.000	6	1.060	0.875	ISSN-322	NL-34	CL-6	XNS-36	TK-00561	S-34	-
G-MSBNR 12-4C	G-MSBNL 12-4C	SNMG-432	○	○	0.750	0.750	5	1.410	0.750	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSBNR 16-4D	G-MSBNL 16-4D	SNMG-432	○	○	1.000	1.000	6	1.410	0.843	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSBNR 85-4D	G-MSBNL 85-4D	SNMG-432	○	○	1.000	1.250	6	1.410	0.843	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSBNR 20-4D	G-MSBNL 20-4D	SNMG-432	○	○	1.250	1.250	6	1.410	1.093	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSBNR 16-5D	G-MSBNL 16-5D	SNMG-543	○	○	1.000	1.000	6	1.560	0.828	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSBNR 85-5D	G-MSBNL 85-5D	SNMG-543	○	○	1.000	1.250	6	1.560	0.828	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSBNR 20-5D	G-MSBNL 20-5D	SNMG-543	○	○	1.250	1.250	6	1.560	1.078	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSBNR 24-5D	G-MSBNL 24-5D	SNMG-543	○	○	1.500	1.500	6	1.560	1.328	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSBNR 20-6D	G-MSBNL 20-6D	SNMG-643	○	○	1.250	1.250	6	1.590	1.031	ISSN-633	NL-68	CL-12	XNS-510	TK-00560	S-68	ISSN-643
G-MSBNR 24-6D	G-MSBNL 24-6D	SNMG-643	○	○	1.500	1.500	6	1.590	1.281	ISSN-633	NL-68	CL-12	XNS-510	TK-00560	S-68	ISSN-643
G-MSBNR 24-8D	G-MSBNL 24-8D	SNMG-866	○	○	1.500	1.500	6	1.970	1.250	SSN-844	NL-810	CL-24	XNS-610	TK-00714	S-810	-

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

10 Business Days or Less

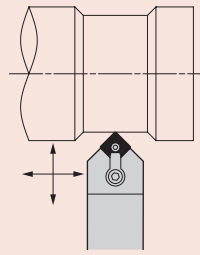
Stocked Standard

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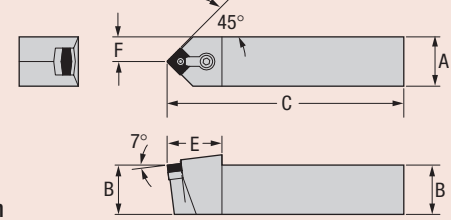
TOOLHOLDERS

# G-MSDNN

Style D  
Square  
Negative Rake  
45° Lead



Neutral  
Toolholder Shown



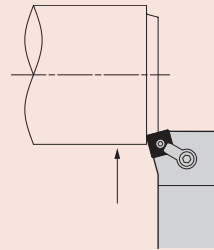
TOOLHOLDERS

Part Number	Gage 	Stock	Dimensions (inches)					Standard Components				* Tune-Up Kit Includes All Standard Components	Optional Components		
			Neutral	Insert	N	A	B	C	E	F	Seat		Lock Pin	Clamp	Clamp Screw
G-MSDNN 8-3C	SNMG-322	○	○	0.500	0.500	5	1.140	0.250	ISSN-322	NL-34	CL-6	XNS-36	TK-00561	S-34	—
G-MSDNN 10-3C	SNMG-322	○	○	0.625	0.625	5	1.140	0.312	ISSN-322	NL-34	CL-6	XNS-36	TK-00561	S-34	—
G-MSDNN 12-3C	SNMG-322	○	○	0.750	0.750	5	1.140	0.375	ISSN-322	NL-34L	CL-6	XNS-36	TK-00761	S-34	—
G-MSDNN 12-4C	SNMG-432	○	○	0.750	0.750	5	1.390	0.375	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSDNN 16-4D	SNMG-432	●	○	1.000	1.000	6	1.390	0.500	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSDNN 85-4D	SNMG-432	○	○	1.000	1.250	6	1.390	0.500	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSDNN 20-4D	SNMG-432	●	○	1.250	1.250	6	1.390	0.625	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSDNN 16-5D	SNMG-543	○	○	1.000	1.000	6	1.610	0.500	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSDNN 85-5D	SNMG-543	○	○	1.000	1.250	6	1.610	0.500	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSDNN 86-5D	SNMG-543	○	○	1.000	1.500	6	1.610	0.500	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSDNN 20-5D	SNMG-543	○	○	1.250	1.250	6	1.610	0.625	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSDNN 24-5D	SNMG-543	○	○	1.500	1.500	6	1.610	0.750	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSDNN 85-6D	SNMG-643	○	○	1.000	1.250	6	1.730	0.500	ISSN-633	NL-68	CL-12	XNS-510	TK-00560	S-68	ISSN-643
G-MSDNN 20-6D	SNMG-643	●	○	1.250	1.250	6	1.730	0.625	ISSN-633	NL-68	CL-12	XNS-510	TK-00560	S-68	ISSN-643
G-MSDNN 24-6D	SNMG-643	●	○	1.500	1.500	6	1.730	0.750	ISSN-633	NL-68	CL-12	XNS-510	TK-00560	S-68	ISSN-643
G-MSDNN 24-8D	SNMG-866	●	○	1.500	1.500	6	2.230	0.750	SSN-844	NL-810	CL-24	XNS-610	TK-00714	S-810	—

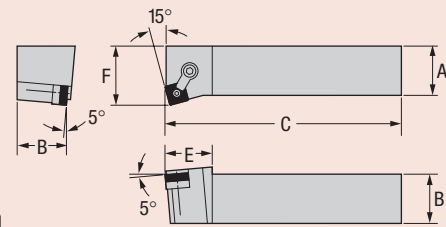
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# G-MSKNR/L

Style K  
Square  
Negative Rake  
15° Lead



Right-Hand  
Toolholder Shown

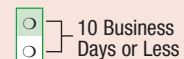
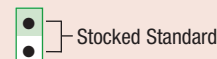


Part Number		Gage 	Stock	Dimensions (inches)					Standard Components				* Tune-Up Kit Includes All Standard Components	Optional Components		
Right	Left			Insert	R	L	A	B	C	E	F	Seat		Lock Pin	Clamp	Clamp Screw
G-MSKNR 8-3C	G-MSKNL 8-3C	SNMG-322	○	○	0.500	0.500	5	1.000	0.625	ISSN-322	NL-34	CL-6	XNS-36	TK-00561	S-34	—
G-MSKNR 10-3C	G-MSKNL 10-3C	SNMG-322	○	○	0.625	0.625	5	1.000	0.750	ISSN-322	NL-34	CL-6	XNS-36	TK-00561	S-34	—
G-MSKNR 12-3C	G-MSKNL 12-3C	SNMG-322	○	○	0.750	0.750	5	1.000	0.875	ISSN-322	NL-34	CL-6	XNS-36	TK-00561	S-34	—
G-MSKNR 16-3D	G-MSKNL 16-3D	SNMG-322	○	○	1.000	1.000	6	1.000	1.125	ISSN-322	NL-34	CL-6	XNS-36	TK-00561	S-34	—
G-MSKNR 12-4C	G-MSKNL 12-4C	SNMG-432	○	○	0.750	0.750	5	1.220	1.000	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSKNR 16-4D	G-MSKNL 16-4D	SNMG-432	●	●	1.000	1.000	6	1.220	1.250	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSKNR 85-4D	G-MSKNL 85-4D	SNMG-432	○	○	1.000	1.250	6	1.220	1.250	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSKNR 20-4D	G-MSKNL 20-4D	SNMG-432	○	○	1.250	1.250	6	1.220	1.500	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSKNR 16-5D	G-MSKNL 16-5D	SNMG-543	○	○	1.000	1.000	6	1.440	1.250	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSKNR 85-5D	G-MSKNL 85-5D	SNMG-543	○	○	1.000	1.250	6	1.440	1.250	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSKNR 20-5D	G-MSKNL 20-5D	SNMG-543	○	○	1.250	1.250	6	1.440	1.500	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSKNR 85-6D	G-MSKNL 85-6D	SNMG-643	○	○	1.000	1.250	6	1.550	1.250	ISSN-633	NL-68	CL-12	XNS-510	TK-00560	S-68	ISSN-643
G-MSKNR 20-6D	G-MSKNL 20-6D	SNMG-643	○	○	1.250	1.250	6	1.550	1.500	ISSN-633	NL-68	CL-12	XNS-510	TK-00560	S-68	ISSN-643
G-MSKNR 24-6D	G-MSKNL 24-6D	SNMG-643	○	○	1.500	1.500	6	1.550	2.000	ISSN-633	NL-68	CL-12	XNS-510	TK-00560	S-68	ISSN-643
G-MSKNR 24-8D	G-MSKNL 24-8D	SNMG-866	○	○	1.500	1.500	6	1.970	2.000	SSN-844	NL-810	CL-24	XNS-610	TK-00714	S-810	—

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

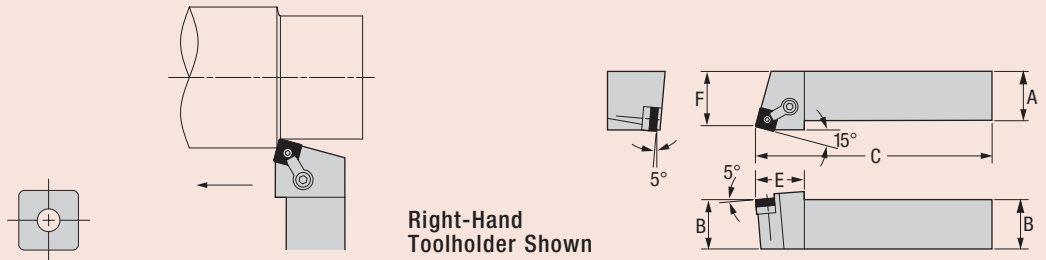
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# G-MSRNR/L

Style R  
Square  
Negative Rake  
15° Lead

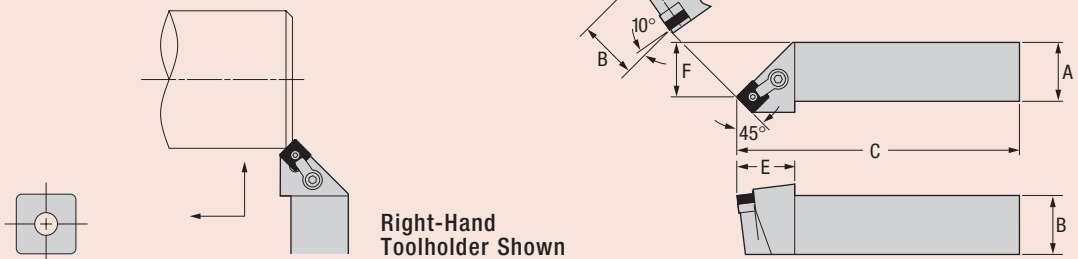


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MSRNR 8-3C	G-MSRNL 8-3C	SNMG-322	○	○	0.500	0.500	5	1.060	0.656	ISSN-322	NL-34	CL-6	XNS-36	TK-00561	S-34	-
G-MSRNR 10-3C	G-MSRNL 10-3C	SNMG-322	○	○	0.625	0.625	5	1.060	0.781	ISSN-322	NL-34	CL-6	XNS-36	TK-00561	S-34	-
G-MSRNR 12-3C	G-MSRNL 12-3C	SNMG-322	○	○	0.750	0.750	5	1.060	0.906	ISSN-322	NL-34L	CL-6	XNS-36	TK-00761	S-34	-
G-MSRNR 12-4C	G-MSRNL 12-4C	SNMG-432	○	○	0.750	0.750	5	1.230	0.875	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSRNR 16-4D	G-MSRNL 16-4D	SNMG-432	●	●	1.000	1.000	6	1.230	1.125	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSRNR 85-4D	G-MSRNL 85-4D	SNMG-432	○	○	1.000	1.250	6	1.230	1.125	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSRNR 20-4D	G-MSRNL 20-4D	SNMG-432	●	●	1.250	1.250	6	1.230	1.375	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSRNR 16-5D	G-MSRNL 16-5D	SNMG-543	○	○	1.000	1.000	6	1.470	1.093	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSRNR 85-5D	G-MSRNL 85-5D	SNMG-543	○	○	1.000	1.250	6	1.470	1.093	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSRNR 20-5D	G-MSRNL 20-5D	SNMG-543	○	○	1.250	1.250	6	1.470	1.343	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSRNR 24-5D	G-MSRNL 24-5D	SNMG-543	○	○	1.500	1.500	6	1.470	1.843	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSRNR 85-6D	G-MSRNL 85-6D	SNMG-643	○	○	1.000	1.250	6	1.500	1.062	ISSN-633	NL-68	CL-12	XNS-510	TK-00560	S-68	ISSN-643
G-MSRNR 86-6D	G-MSRNL 86-6D	SNMG-643	○	○	1.000	1.500	6	1.500	1.062	ISSN-633	NL-68	CL-12	XNS-510	TK-00560	S-68	ISSN-643
G-MSRNR 20-6D	G-MSRNL 20-6D	SNMG-643	●	●	1.250	1.250	6	1.500	1.312	ISSN-633	NL-68	CL-12	XNS-510	TK-00560	S-68	ISSN-643
G-MSRNR 24-6D	G-MSRNL 24-6D	SNMG-643	●	○	1.500	1.500	6	1.500	1.812	ISSN-633	NL-68	CL-12	XNS-510	TK-00560	S-68	ISSN-643
G-MSRNR 24-8D	G-MSRNL 24-8D	SNMG-866	○	○	1.500	1.500	6	1.620	1.765	SSN-844	NL-810	CL-24	XNS-610	TK-00714	S-810	-

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# G-MSSNR/L

Style S  
Square  
Negative Rake  
45° Lead



Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MSSNR 12-4C	G-MSSNL 12-4C	SNMG-432	○	○	0.750	0.750	5	1.230	0.656	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSSNR 16-4D	G-MSSNL 16-4D	SNMG-432	●	●	1.000	1.000	6	1.230	0.906	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSSNR 85-4D	G-MSSNL 85-4D	SNMG-432	○	○	1.000	1.250	6	1.230	0.906	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSSNR 20-4D	G-MSSNL 20-4D	SNMG-432	●	●	1.250	1.250	6	1.230	1.156	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSSNR 16-5D	G-MSSNL 16-5D	SNMG-543	○	○	1.000	1.000	6	1.380	0.828	SSN-533	NL-58	CL-9	XNS-510	TK-00562	S-58	ISSN-543
G-MSSNR 85-5D	G-MSSNL 85-5D	SNMG-543	○	○	1.000	1.250	6	1.380	0.828	SSN-533	NL-58	CL-9	XNS-510	TK-00562	S-58	ISSN-543
G-MSSNR 86-5D	G-MSSNL 86-5D	SNMG-543	○	○	1.000	1.500	6	1.380	0.828	SSN-533	NL-58	CL-9	XNS-510	TK-00562	S-58	ISSN-543
G-MSSNR 20-5D	G-MSSNL 20-5D	SNMG-543	○	○	1.250	1.250	6	1.380	1.078	SSN-533	NL-58	CL-9	XNS-510	TK-00562	S-58	ISSN-543
G-MSSNR 24-5D	G-MSSNL 24-5D	SNMG-543	○	○	1.500	1.500	6	1.380	1.328	SSN-533	NL-58	CL-9	XNS-510	TK-00562	S-58	ISSN-543
G-MSSNR 85-6D	G-MSSNL 85-6D	SNMG-643	○	○	1.000	1.250	6	1.480	0.750	ISSN-633	NL-68	CL-9	XNS-510	TK-00563	S-68	ISSN-643
G-MSSNR 86-6D	G-MSSNL 86-6D	SNMG-643	○	○	1.000	1.500	6	1.480	0.750	ISSN-633	NL-68	CL-9	XNS-510	TK-00563	S-68	ISSN-643
G-MSSNR 20-6D	G-MSSNL 20-6D	SNMG-643	○	○	1.250	1.250	6	1.480	1.000	ISSN-633	NL-68	CL-9	XNS-510	TK-00563	S-68	ISSN-643
G-MSSNR 24-6D	G-MSSNL 24-6D	SNMG-643	○	○	1.500	1.500	6	1.480	1.500	ISSN-633	NL-68	CL-9	XNS-510	TK-00563	S-68	ISSN-643

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

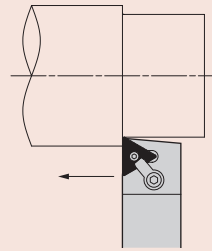
10 Business Days or Less

Stocked Standard

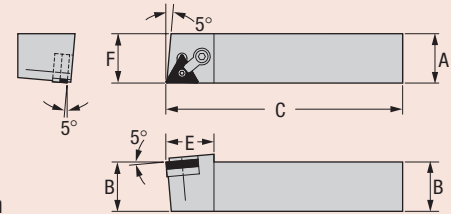


# G-MTANR/L

Style A  
Triangle  
Negative Rake  
0° Lead



Right-Hand  
Toolholder Shown



TOOLHOLDERS

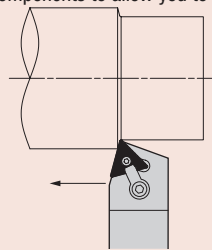
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MTANR 8-2C	G-MTANL 8-2C	TNMG-221	○	○	0.500	0.500	5	0.970	0.500	—	NL-23	CL-19	XNS-36	TK-00742	—	—
G-MTANR 10-2C	G-MTANL 10-2C	TNMG-221	○	○	0.625	0.625	5	0.970	0.625	—	NL-23	CL-19	XNS-36	TK-00742	—	—
G-MTANR 10-3C	G-MTANL 10-3C	TNMG-322	○	○	0.625	0.625	5	1.120	0.625	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTANR 12-3C	G-MTANL 12-3C	TNMG-322	○	○	0.750	0.750	5	1.120	0.750	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTANR 16-3D	G-MTANL 16-3D	TNMG-322	○	○	1.000	1.000	6	1.120	1.000	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTANR 85-3D	G-MTANL 85-3D	TNMG-322	○	○	1.000	1.250	6	1.120	1.000	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTANR 16-4D	G-MTANL 16-4D	TNMG-432	○	○	1.000	1.000	6	1.220	1.000	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTANR 85-4D	G-MTANL 85-4D	TNMG-432	○	○	1.000	1.250	6	1.220	1.000	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTANR 20-4D	G-MTANL 20-4D	TNMG-432	○	○	1.250	1.250	6	1.220	1.250	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTANR 24-4D	G-MTANL 24-4D	TNMG-432	○	○	1.500	1.500	6	1.220	1.500	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTANR 16-5D	G-MTANL 16-5D	TNMG-543	○	○	1.000	1.000	6	1.450	1.000	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTANR 85-5D	G-MTANL 85-5D	TNMG-543	○	○	1.000	1.250	6	1.450	1.000	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTANR 86-5D	G-MTANL 86-5D	TNMG-543	○	○	1.000	1.500	6	1.450	1.000	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTANR 20-5D	G-MTANL 20-5D	TNMG-543	○	○	1.250	1.250	6	1.450	1.250	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTANR 24-5D	G-MTANL 24-5D	TNMG-543	○	○	1.500	1.500	6	1.450	1.500	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTANR 24-6D	G-MTANL 24-6D	TNMG-663	○	○	1.500	1.500	6	1.480	1.500	TSN-637	NL-68L	CL-12	XNS-510	TK-00567	S-68	TSN-657

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

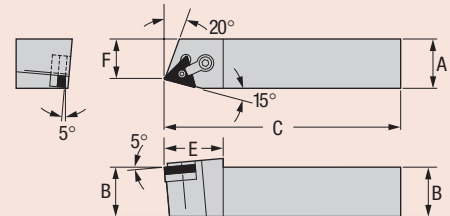
\*\* Cannot be used with lock pin.

# G-MTBNR/L

Style B  
Triangle  
Negative Rake  
15° Lead



Right-Hand  
Toolholder Shown



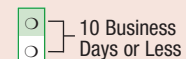
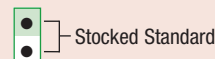
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MTBNR 8-2C	G-MTBNL 8-2C	TNMG-221	○	○	0.500	0.500	5	0.900	0.375	—	NL-23	CL-19	XNS-36	TK-00742	—	—
G-MTBNR 10-2C	G-MTBNL 10-2C	TNMG-221	○	○	0.625	0.625	5	0.900	0.500	—	NL-23	CL-19	XNS-36	TK-00742	—	—
G-MTBNR 10-3C	G-MTBNL 10-3C	TNMG-322	○	○	0.625	0.625	5	1.330	0.453	ITSN-333	NL-34L	CL-20	XNS-46	TK-00568	S-34	ITSN-323
G-MTBNR 12-3C	G-MTBNL 12-3C	TNMG-322	○	○	0.750	0.750	5	1.330	0.578	ITSN-333	NL-34L	CL-20	XNS-46	TK-00568	S-34	ITSN-323
G-MTBNR 16-3D	G-MTBNL 16-3D	TNMG-322	○	○	1.000	1.000	6	1.330	0.828	ITSN-333	NL-34L	CL-20	XNS-46	TK-00568	S-34	ITSN-323
G-MTBNR 85-3D	G-MTBNL 85-3D	TNMG-322	○	○	1.000	1.250	6	1.330	0.828	ITSN-333	NL-34L	CL-20	XNS-46	TK-00568	S-34	ITSN-323
G-MTBNR 16-4D	G-MTBNL 16-4D	TNMG-432	○	○	1.000	1.000	6	1.500	0.765	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTBNR 85-4D	G-MTBNL 85-4D	TNMG-432	○	○	1.000	1.250	6	1.500	0.765	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTBNR 20-4D	G-MTBNL 20-4D	TNMG-432	○	○	1.250	1.250	6	1.500	1.015	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTBNR 24-4D	G-MTBNL 24-4D	TNMG-432	○	○	1.500	1.500	6	1.500	1.265	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTBNR 16-5D	G-MTBNL 16-5D	TNMG-543	○	○	1.000	1.000	6	1.670	0.718	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTBNR 85-5D	G-MTBNL 85-5D	TNMG-543	○	○	1.000	1.250	6	1.670	0.718	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTBNR 20-5D	G-MTBNL 20-5D	TNMG-543	○	○	1.250	1.250	6	1.670	0.968	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTBNR 24-5D	G-MTBNL 24-5D	TNMG-543	○	○	1.500	1.500	6	1.670	1.218	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTBNR 24-6D	G-MTBNL 24-6D	TNMG-663	○	○	1.500	1.500	6	1.750	1.187	TSN-637	NL-68L	CL-12	XNS-510	TK-00567	S-68	TSN-657

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

\*\* Cannot be used with lock pin.

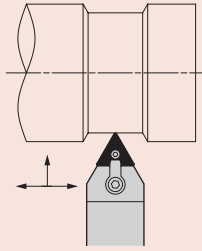
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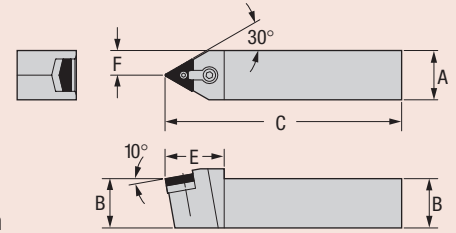


# G-MTENNS

Style E  
Triangle  
Negative Rake  
30° Lead



Neutral  
Toolholder Shown



Part Number	Gage	Stock	Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Component	
	Insert		N	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw
<b>G-MTENNS 8-2C</b>	TNMG-221	○	0.500	0.500	5	1.000	0.250	—	NL-23	CL-6	XNS-36	TK-00716	—	—
<b>G-MTENNS 10-2C</b>	TNMG-221	○	0.625	0.625	5	1.000	0.312	—	NL-23	CL-6	XNS-36	TK-00716	—	—
<b>G-MTENNS 10-3C</b>	TNMG-322	○	0.625	0.625	5	1.160	0.312	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
<b>G-MTENNS 12-3C</b>	TNMG-322	○	0.750	0.750	5	1.160	0.375	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
<b>G-MTENNS 16-3D</b>	TNMG-322	○	1.000	1.000	6	1.160	0.500	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
<b>G-MTENNS 85-3D</b>	TNMG-322	○	1.000	1.250	6	1.160	0.500	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
<b>G-MTENNS 12-4C</b>	TNMG-432	○	0.750	0.750	5	1.500	0.375	ITSN-433	NL-46	CL-9	XNS-59	TK-00725	S-46	—
<b>G-MTENNS 16-4D</b>	TNMG-432	●	1.000	1.000	6	1.500	0.500	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	—
<b>G-MTENNS 85-4D</b>	TNMG-432	○	1.000	1.250	6	1.500	0.500	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	—
<b>G-MTENNS 86-4D</b>	TNMG-432	○	1.000	1.500	6	1.500	0.500	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	—
<b>G-MTENNS 20-4D</b>	TNMG-432	○	1.250	1.250	6	1.500	0.625	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	—
<b>G-MTENNS 20-5D</b>	TNMG-543	●	1.250	1.250	6	1.640	0.625	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	—
<b>G-MTENNS 24-5D</b>	TNMG-543	○	1.500	1.500	6	1.640	0.750	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	—
<b>G-MTENNS 24-6D</b>	TNMG-663	○	1.500	1.500	6	1.950	0.750	TSN-637	NL-68L	CL-12	XNS-510	TK-00567	S-68	—

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

10 Business Days or Less

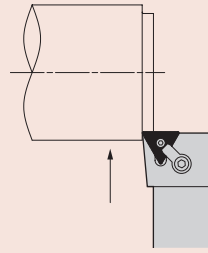
Stocked Standard

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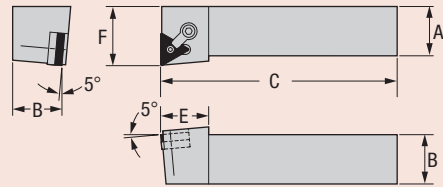


# G-MTFNR/L

Style F  
Triangle  
Negative Rake  
0° Lead



Right-Hand  
Toolholder Shown



TOOLHOLDERS

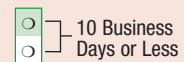
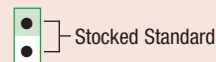
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MTFNR 8-2C	G-MTFNL 8-2C	TNMG-221	○	○	0.500	0.500	5	0.810	0.750	—	NL-23	CL-19	XNS-36	TK-00742	—	—
G-MTFNR 10-2C	G-MTFNL 10-2C	TNMG-221	○	○	0.625	0.625	5	0.810	0.875	—	NL-23	CL-19	XNS-36	TK-00742	—	—
G-MTFNR 10-3C	G-MTFNL 10-3C	TNMG-322	○	○	0.625	0.625	5	0.940	0.875	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTFNR 12-3C	G-MTFNL 12-3C	TNMG-322	○	○	0.750	0.750	5	0.940	1.000	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTFNR 16-3D	G-MTFNL 16-3D	TNMG-322	○	○	1.000	1.000	6	0.940	1.250	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTFNR 85-3D	G-MTFNL 85-3D	TNMG-322	○	○	1.000	1.250	6	0.940	1.250	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTFNR 20-3D	G-MTFNL 20-3D	TNMG-322	○	○	1.250	1.250	6	0.940	1.500	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTFNR 16-4D	G-MTFNL 16-4D	TNMG-432	●	●	1.000	1.000	6	1.220	1.250	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTFNR 85-4D	G-MTFNL 85-4D	TNMG-432	○	○	1.000	1.250	6	1.220	1.250	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTFNR 86-4D	G-MTFNL 86-4D	TNMG-432	○	○	1.000	1.500	6	1.220	1.250	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTFNR 20-4D	G-MTFNL 20-4D	TNMG-432	○	○	1.250	1.250	6	1.220	1.500	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTFNR 24-4D	G-MTFNL 24-4D	TNMG-432	○	○	1.500	1.500	6	1.220	2.000	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTFNR 16-5D	G-MTFNL 16-5D	TNMG-543	○	○	1.000	1.000	6	1.440	1.250	ITSN-533	NL-58	CL-12	XNS-510	TK-00569	S-58	ITSN-543
G-MTFNR 85-5D	G-MTFNL 85-5D	TNMG-543	○	○	1.000	1.250	6	1.440	1.250	ITSN-533	NL-58	CL-12	XNS-510	TK-00569	S-58	ITSN-543
G-MTFNR 86-5D	G-MTFNL 86-5D	TNMG-543	○	○	1.000	1.500	6	1.440	1.250	ITSN-533	NL-58	CL-12	XNS-510	TK-00569	S-58	ITSN-543
G-MTFNR 20-5D	G-MTFNL 20-5D	TNMG-543	○	○	1.250	1.250	6	1.440	1.500	ITSN-533	NL-58	CL-12	XNS-510	TK-00569	S-58	ITSN-543
G-MTFNR 24-5D	G-MTFNL 24-5D	TNMG-543	○	○	1.500	1.500	6	1.440	2.000	ITSN-533	NL-58	CL-12	XNS-510	TK-00569	S-58	ITSN-543
G-MTFNR 24-6D	G-MTFNL 24-6D	TNMG-663	●	●	1.500	1.500	6	1.500	2.000	TSN-637	NL-68L	CL-12	XNS-510	TK-00567	S-68	TSN-657

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

\*\* Cannot be used with lock pin.

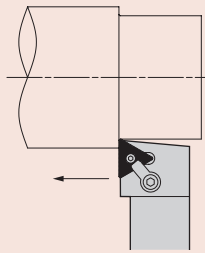
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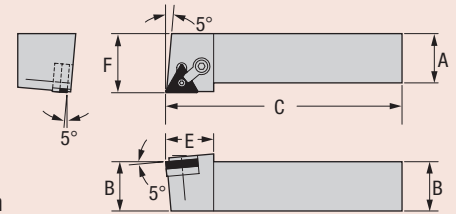


# G-MTGNR/L

Style G  
Triangle  
Negative Rake  
0° Lead



Right-Hand  
Toolholder Shown

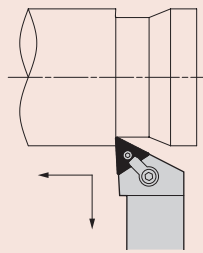


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MTGNR 8-2C	G-MTGNL 8-2C	TNMG-221	○	○	0.500	0.500	5	0.970	0.625	—	NL-23	CL-19	XNS-36	TK-00742	—	—
G-MTGNR 10-2C	G-MTGNL 10-2C	TNMG-221	○	○	0.625	0.625	5	0.970	0.750	—	NL-23	CL-19	XNS-36	TK-00742	—	—
G-MTGNR 10-3C	G-MTGNL 10-3C	TNMG-322	○	○	0.625	0.625	5	1.110	0.875	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTGNR 12-3C	G-MTGNL 12-3C	TNMG-322	○	○	0.750	0.750	5	1.110	1.000	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTGNR 16-3D	G-MTGNL 16-3D	TNMG-322	○	○	1.000	1.000	6	1.110	1.250	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTGNR 85-3D	G-MTGNL 85-3D	TNMG-322	○	○	1.000	1.250	6	1.110	1.250	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTGNR 20-3D	G-MTGNL 20-3D	TNMG-322	○	○	1.250	1.250	6	1.110	1.500	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTGNR 12-4C	G-MTGNL 12-4C	TNMG-432	○	○	0.750	0.750	5	1.220	1.000	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTGNR 16-4D	G-MTGNL 16-4D	TNMG-432	○	○	1.000	1.000	6	1.220	1.250	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTGNR 85-4D	G-MTGNL 85-4D	TNMG-432	○	○	1.000	1.250	6	1.220	1.250	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTGNR 86-4D	G-MTGNL 86-4D	TNMG-432	○	○	1.000	1.500	6	1.220	1.250	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTGNR 20-4D	G-MTGNL 20-4D	TNMG-432	○	○	1.250	1.250	6	1.220	1.500	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTGNR 24-4D	G-MTGNL 24-4D	TNMG-432	○	○	1.500	1.500	6	1.220	2.000	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTGNR 16-5D	G-MTGNL 16-5D	TNMG-543	○	○	1.000	1.000	6	1.440	1.250	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTGNR 85-5D	G-MTGNL 85-5D	TNMG-543	○	○	1.000	1.250	6	1.440	1.250	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTGNR 86-5D	G-MTGNL 86-5D	TNMG-543	○	○	1.000	1.500	6	1.440	1.250	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTGNR 20-5D	G-MTGNL 20-5D	TNMG-543	○	○	1.250	1.250	6	1.440	1.500	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTGNR 24-5D	G-MTGNL 24-5D	TNMG-543	○	○	1.500	1.500	6	1.440	2.000	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTGNR 24-6D	G-MTGNL 24-6D	TNMG-663	○	○	1.500	1.500	6	1.500	2.000	TSN-637	NL-68L	CL-12	XNS-510	TK-00567	S-68	TSN-657

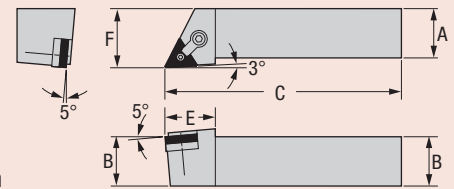
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.  
\*\* Cannot be used with lock pin.

# G-MTJNRS

Style J  
Triangle  
Negative Rake  
3° Reverse Lead



Right-Hand  
Toolholder Shown



Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MTJNRS 12-3C	G-MTJNLS 12-3C	TNMG-322	○	○	0.750	0.750	5	1.120	1.000	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTJNRS 16-3D	G-MTJNLS 16-3D	TNMG-322	○	○	1.000	1.000	6	1.120	1.250	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTJNRS 16-4D	G-MTJNLS 16-4D	TNMG-432	●	●	1.000	1.000	6	1.190	1.250	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	—
G-MTJNRS 85-4D	G-MTJNLS 85-4D	TNMG-432	○	○	1.000	1.250	6	1.190	1.250	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	—
G-MTJNRS 86-4D	G-MTJNLS 86-4D	TNMG-432	○	○	1.000	1.500	6	1.190	1.250	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	—
G-MTJNRS 20-4D	G-MTJNLS 20-4D	TNMG-432	○	○	1.250	1.250	6	1.190	1.500	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	—
G-MTJNRS 86-5D	G-MTJNLS 86-5D	TNMG-543	○	○	1.000	1.500	6	1.440	1.250	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	—
G-MTJNRS 20-5D	G-MTJNLS 20-5D	TNMG-543	●	●	1.250	1.250	6	1.440	1.500	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	—
G-MTJNRS 24-5D	G-MTJNLS 24-5D	TNMG-543	○	○	1.500	1.500	6	1.440	2.000	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	—
G-MTJNRS 24-6D	G-MTJNLS 24-6D	TNMG-663	○	○	1.500	1.500	6	1.670	2.000	TSN-637	NL-68L	CL-12	XNS-510	TK-00567	S-68	—

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

10 Business Days or Less

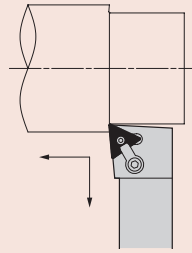
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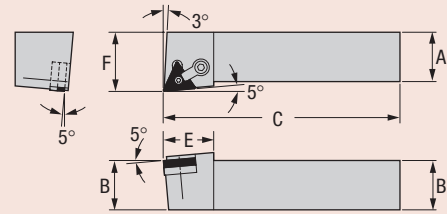


# G-MTLNR/L

Style L  
Triangle  
Negative Rake  
5° Reverse Lead



Right-Hand  
Toolholder Shown



TOOL HOLDERS

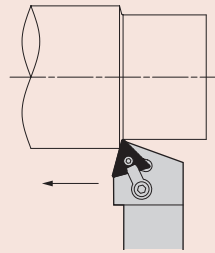
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MTLNR 16-4D	G-MTLNL 16-4D	TNMG-432	○	○	1.000	1.000	6	1.280	1.250	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTLNR 85-4D	G-MTLNL 85-4D	TNMG-432	○	○	1.000	1.250	6	1.280	1.250	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTLNR 20-4D	G-MTLNL 20-4D	TNMG-432	○	○	1.250	1.250	6	1.280	1.500	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTLNR 20-5D	G-MTLNL 20-5D	TNMG-543	○	○	1.250	1.250	6	1.410	1.500	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTLNR 24-5D	G-MTLNL 24-5D	TNMG-543	○	○	1.500	1.500	6	1.410	2.000	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTLNR 24-6D	G-MTLNL 24-6D	TNMG-663	○	○	1.500	1.500	6	1.530	2.000	TSN-637	NL-68L	CL-12	XNS-510	TK-00567	S-68	TSN-657

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

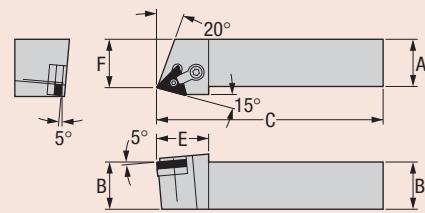
\*\* Cannot be used with lock pin.

# G-MTRNR/L

Style R  
Triangle  
Negative Rake  
15° Lead



Right-Hand  
Toolholder Shown



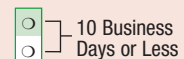
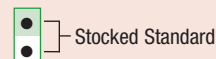
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw	Seat
G-MTRNR 8-2C	G-MTRNL 8-2C	TNMG-221	○	○	0.500	0.500	5	1.010	0.656	—	NL-23	CL-19	XNS-36	TK-00742	—	—
G-MTRNR 10-2C	G-MTRNL 10-2C	TNMG-221	○	○	0.625	0.625	5	1.010	0.781	—	NL-23	CL-19	XNS-36	TK-00742	—	—
G-MTRNR 10-3C	G-MTRNL 10-3C	TNMG-322	○	○	0.625	0.625	5	1.200	0.718	ITSN-333	NL-34L	CL-20	XNS-46	TK-00568	S-34	ITSN-323
G-MTRNR 12-3C	G-MTRNL 12-3C	TNMG-322	○	○	0.750	0.750	5	1.200	0.843	ITSN-333	NL-34L	CL-20	XNS-46	TK-00568	S-34	ITSN-323
G-MTRNR 16-3D	G-MTRNL 16-3D	TNMG-322	○	○	1.000	1.000	6	1.200	1.093	ITSN-333	NL-34L	CL-20	XNS-46	TK-00568	S-34	ITSN-323
G-MTRNR 85-3D	G-MTRNL 85-3D	TNMG-322	○	○	1.000	1.250	6	1.200	1.093	ITSN-333	NL-34L	CL-20	XNS-46	TK-00568	S-34	ITSN-323
G-MTRNR 16-4D	G-MTRNL 16-4D	TNMG-432	○	○	1.000	1.000	6	1.380	1.031	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTRNR 85-4D	G-MTRNL 85-4D	TNMG-432	○	○	1.000	1.250	6	1.380	1.031	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTRNR 20-4D	G-MTRNL 20-4D	TNMG-432	○	○	1.250	1.250	6	1.380	1.281	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTRNR 24-4D	G-MTRNL 24-4D	TNMG-432	○	○	1.500	1.500	6	1.380	1.781	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	TS-424**
G-MTRNR 16-5D	G-MTRNL 16-5D	TNMG-543	○	○	1.000	1.000	6	1.620	1.000	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTRNR 85-5D	G-MTRNL 85-5D	TNMG-543	○	○	1.000	1.250	6	1.620	1.000	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTRNR 86-5D	G-MTRNL 86-5D	TNMG-543	○	○	1.000	1.500	6	1.620	1.000	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTRNR 20-5D	G-MTRNL 20-5D	TNMG-543	○	○	1.250	1.250	6	1.620	1.250	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTRNR 24-5D	G-MTRNL 24-5D	TNMG-543	○	○	1.500	1.500	6	1.620	1.750	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	ITSN-543
G-MTRNR 24-6D	G-MTRNL 24-6D	TNMG-663	○	○	1.500	1.500	6	1.750	1.687	TSN-637	NL-68L	CL-12	XNS-510	TK-00567	S-68	TSN-657

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

\*\* Cannot be used with lock pin.

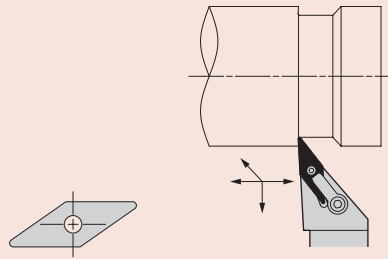
### Greenleaf Sales

Phone: 814-763-2915 • 800-458-1850 • Fax: 814-763-4423  
sales@greenleafcorporation.com • www.greenleafglobalsupport.com

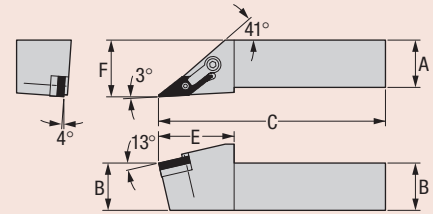


# G-MVJNR/L

Style J  
35° Diamond  
Negative Rake  
3° Reverse Lead



Right-Hand  
Toolholder Shown

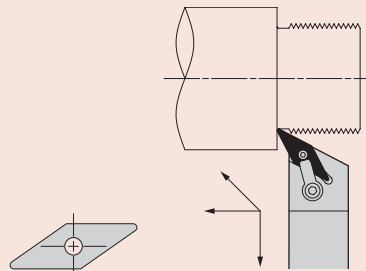


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Component
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw
G-MVJNR 12-3C	G-MVJNL 12-3C	VNMG-332	●	○	0.750	0.750	5	1.680	1.000	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVJNR 16-3D	G-MVJNL 16-3D	VNMG-332	●	●	1.000	1.000	6	1.680	1.250	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVJNR 85-3D	G-MVJNL 85-3D	VNMG-332	○	○	1.000	1.250	6	1.680	1.250	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVJNR 86-3D	G-MVJNL 86-3D	VNMG-332	○	○	1.000	1.500	6	1.680	1.250	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVJNR 20-3D	G-MVJNL 20-3D	VNMG-332	●	●	1.250	1.250	6	1.680	1.500	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVJNR 24-3D	G-MVJNL 24-3D	VNMG-332	○	○	1.500	1.500	6	1.680	2.000	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVJNR 16-4D	G-MVJNL 16-4D	VNMG-432	●	●	1.000	1.000	6	2.000	1.250	IVSN-433	NL-46	CL-30	XNS-510	TK-00571	S-46
G-MVJNR 86-4D	G-MVJNL 86-4D	VNMG-432	○	○	1.000	1.500	6	2.000	1.250	IVSN-433	NL-46	CL-30	XNS-510	TK-00571	S-46
G-MVJNR 20-4D	G-MVJNL 20-4D	VNMG-432	○	○	1.250	1.250	6	2.000	1.500	IVSN-433	NL-46	CL-30	XNS-510	TK-00571	S-46
G-MVJNR 24-4D	G-MVJNL 24-4D	VNMG-432	○	○	1.500	1.500	6	2.000	2.000	IVSN-433	NL-46	CL-30	XNS-510	TK-00571	S-46

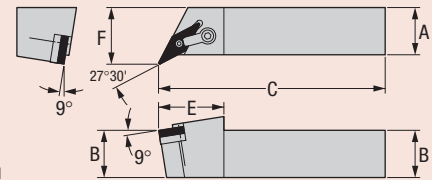
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# G-MVTNR/L

Style T  
35° Diamond  
Negative Rake  
27° 30' Lead



Right-Hand  
Toolholder Shown

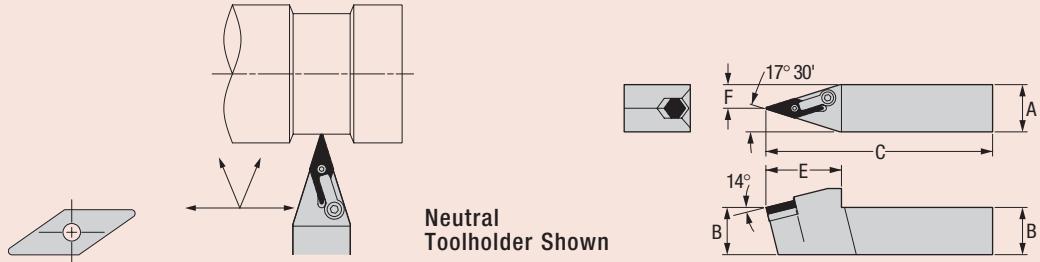


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Component
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat Screw
G-MVTNR 12-3C	G-MVTNL 12-3C	VNMG-332	○	○	0.750	0.750	5	1.730	1.000	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVTNR 16-3D	G-MVTNL 16-3D	VNMG-332	○	○	1.000	1.000	6	1.730	1.250	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVTNR 85-3D	G-MVTNL 85-3D	VNMG-332	○	○	1.000	1.250	6	1.730	1.250	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVTNR 86-3D	G-MVTNL 86-3D	VNMG-332	○	○	1.000	1.500	6	1.730	1.250	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVTNR 20-3D	G-MVTNL 20-3D	VNMG-332	○	○	1.250	1.250	6	1.730	1.500	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVTNR 24-3D	G-MVTNL 24-3D	VNMG-332	○	○	1.500	1.500	6	1.730	1.750	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34







\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# G-MVVNN

Style V  
35° Diamond  
Negative Rake  
17° 30' Lead



TOOL HOLDERS







Part Number	Gage	Stock	Dimensions (inches)						Standard Components				* Tune-Up Kit	Optional Component	
			Insert	N	A	B	C	E	F					Includes All Standard Components	
<b>Neutral</b>															
<b>G-MVVNN 12-3C</b>	VNMG-332	○	○	0.750	0.750	5	1.750	0.375	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34	
<b>G-MVVNN 16-3D</b>	VNMG-332	●	○	1.000	1.000	6	1.750	0.500	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34	
<b>G-MVVNN 85-3D</b>	VNMG-332	○	○	1.000	1.250	6	1.750	0.500	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34	
<b>G-MVVNN 86-3D</b>	VNMG-332	○	○	1.000	1.500	6	1.750	0.500	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34	
<b>G-MVVNN 20-3D</b>	VNMG-332	●	○	1.250	1.250	6	1.750	0.625	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34	
<b>G-MVVNN 24-3D</b>	VNMG-332	○	○	1.500	1.500	6	1.750	0.750	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34	
<b>G-MVVNN 16-4D</b>	VNMG-432	○	○	1.000	1.000	6	2.120	0.500	IVSN-433	NL-46	CL-30	XNS-510	TK-00571	S-46	
<b>G-MVVNN 20-4D</b>	VNMG-432	○	○	1.250	1.250	6	2.120	0.625	IVSN-433	NL-46	CL-30	XNS-510	TK-00571	S-46	
<b>G-MVVNN 24-4D</b>	VNMG-432	○	○	1.500	1.500	6	2.120	0.750	IVSN-433	NL-46	CL-30	XNS-510	TK-00571	S-46	

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# G-MWLNR/L

Style L  
Trigon  
Negative Rake  
5° Reverse Lead

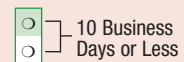
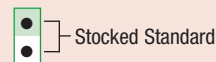


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Component
Right	Left		R	L	A	B	C	E	F					Includes All Standard Components	
<b>G-MWLNR 12-3C</b>	<b>G-MWLNL 12-3C</b>	WNMG-332	●	○	0.750	0.750	5	1.000	1.000	IWSN-323	NL-34L	CL-6	XNS-36	TK-00775	IWSN-332
<b>G-MWLNR 16-3D</b>	<b>G-MWLNL 16-3D</b>	WNMG-332	●	●	1.000	1.000	6	1.000	1.250	IWSN-323	NL-34L	CL-6	XNS-36	TK-00775	IWSN-332
<b>G-MWLNR 20-3D</b>	<b>G-MWLNL 20-3D</b>	WNMG-332	○	○	1.250	1.250	6	1.000	1.500	IWSN-323	NL-34L	CL-6	XNS-36	TK-00775	IWSN-332
<b>G-MWLNR 24-3D</b>	<b>G-MWLNL 24-3D</b>	WNMG-332	○	○	1.500	1.500	6	1.000	2.000	IWSN-323	NL-34L	CL-6	XNS-36	TK-00775	IWSN-332
<b>G-MWLNR 12-4C</b>	<b>G-MWLNL 12-4C</b>	WNMG-432	●	○	0.750	0.750	5	1.188	1.000	IWSN-433	NL-46	CL-20	XNS-48	TK-00759	—
<b>G-MWLNR 16-4D</b>	<b>G-MWLNL 16-4D</b>	WNMG-432	●	●	1.000	1.000	6	1.188	1.250	IWSN-433	NL-46	CL-20	XNS-48	TK-00759	—
<b>G-MWLNR 20-4D</b>	<b>G-MWLNL 20-4D</b>	WNMG-432	●	○	1.250	1.250	6	1.188	1.500	IWSN-433	NL-46	CL-20	XNS-48	TK-00759	—
<b>G-MWLNR 24-4D</b>	<b>G-MWLNL 24-4D</b>	WNMG-432	●	○	1.500	1.500	6	1.188	2.000	IWSN-433	NL-46	CL-20	XNS-48	TK-00759	—

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

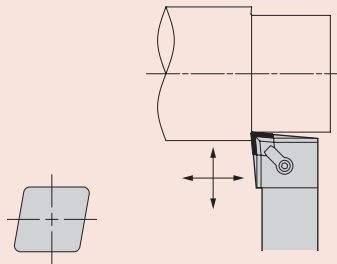
**Greenleaf Sales**

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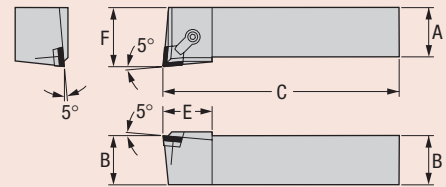


# G-CCLPR/L

Style L  
80° Diamond  
Positive Rake  
5° Reverse Lead



Right-Hand Toolholder Shown

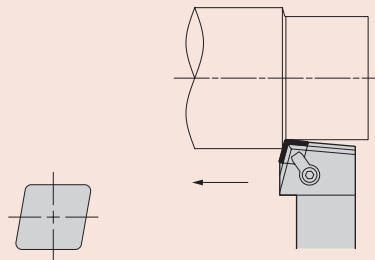


Part Number		Gage	Stock		Dimensions (inches)					Standard Components					* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Screw	Chip Breaker	Includes All Standard Components
G-CCLPR 12-4C	G-CCLPL 12-4C	CPGN-422	○	○	0.750	0.750	5	1.250	1.000	CSP-422	#4-40 x 3/8 FHCS	CL-20	XNS-47	CBDC-4L	TK-00531
G-CCLPR 16-4D	G-CCLPL 16-4D	CPGN-422	○	○	1.000	1.000	6	1.250	1.250	CSP-422	#4-40 x 3/8 FHCS	CL-20	XNS-47	CBDC-4L	TK-00531
G-CCLPR 85-4D	G-CCLPL 85-4D	CPGN-422	○	○	1.000	1.250	6	1.250	1.250	CSP-422	#4-40 x 3/8 FHCS	CL-20	XNS-47	CBDC-4L	TK-00531
G-CCLPR 20-4D	G-CCLPL 20-4D	CPGN-422	○	○	1.250	1.250	6	1.250	1.500	CSP-422	#4-40 x 3/8 FHCS	CL-20	XNS-47	CBDC-4L	TK-00531
G-CCLPR 24-4D	G-CCLPL 24-4D	CPGN-422	○	○	1.500	1.500	6	1.250	2.000	CSP-422	#4-40 x 3/8 FHCS	CL-20	XNS-47	CBDC-4L	TK-00531
G-CCLPR 16-6D	G-CCLPL 16-6D	CPGN-633	○	○	1.000	1.000	6	1.500	1.250	CSP-632	#5-40 x 3/8 FHCS	CL-30	XNS-59	CBDC-6G	TK-00532
G-CCLPR 85-6D	G-CCLPL 85-6D	CPGN-633	○	○	1.000	1.250	6	1.500	1.250	CSP-632	#5-40 x 3/8 FHCS	CL-30	XNS-59	CBDC-6G	TK-00532
G-CCLPR 86-6D	G-CCLPL 86-6D	CPGN-633	○	○	1.000	1.500	6	1.500	1.250	CSP-632	#5-40 x 3/8 FHCS	CL-30	XNS-59	CBDC-6G	TK-00532
G-CCLPR 20-6D	G-CCLPL 20-6D	CPGN-633	○	○	1.250	1.250	6	1.500	1.500	CSP-632	#5-40 x 3/8 FHCS	CL-30	XNS-59	CBDC-6G	TK-00532
G-CCLPR 24-6D	G-CCLPL 24-6D	CPGN-633	○	○	1.500	1.500	6	1.500	2.000	CSP-632	#5-40 x 3/8 FHCS	CL-30	XNS-59	CBDC-6G	TK-00532

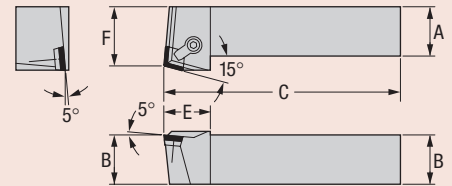
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# G-CCRPR/L

Style R  
80° Diamond  
(Using 100° Corner)  
Positive Rake, 15° Lead



Right-Hand Toolholder Shown



Part Number		Gage	Stock		Dimensions (inches)					Standard Components					* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Screw	Chip Breaker	Includes All Standard Components
G-CCRPR 12-4C	G-CCRPL 12-4C	CPGN-422	○	○	0.750	0.750	5	1.220	1.000	CSP-422	#4-40 x 3/8 FHCS	CL-9	XNS-59	CBDC-415L	TK-00720
G-CCRPR 16-4D	G-CCRPL 16-4D	CPGN-422	○	○	1.000	1.000	6	1.220	1.250	CSP-422	#4-40 x 3/8 FHCS	CL-9	XNS-59	CBDC-415L	TK-00720
G-CCRPR 85-4D	G-CCRPL 85-4D	CPGN-422	○	○	1.000	1.250	6	1.220	1.250	CSP-422	#4-40 x 3/8 FHCS	CL-9	XNS-59	CBDC-415L	TK-00720
G-CCRPR 20-4D	G-CCRPL 20-4D	CPGN-422	○	○	1.250	1.250	6	1.220	1.500	CSP-422	#4-40 x 3/8 FHCS	CL-9	XNS-59	CBDC-415L	TK-00720
G-CCRPR 24-4D	G-CCRPL 24-4D	CPGN-422	○	○	1.500	1.500	6	1.220	2.000	CSP-422	#4-40 x 3/8 FHCS	CL-9	XNS-59	CBDC-415L	TK-00720
G-CCRPR 16-6D	G-CCRPL 16-6D	CPGN-633	○	○	1.000	1.000	6	1.310	1.250	CSP-632	#5-40 x 3/8 FHCS	CL-12	XNS-510	CBDC-615G	TK-00533
G-CCRPR 85-6D	G-CCRPL 85-6D	CPGN-633	○	○	1.000	1.250	6	1.310	1.250	CSP-632	#5-40 x 3/8 FHCS	CL-12	XNS-510	CBDC-615G	TK-00533
G-CCRPR 86-6D	G-CCRPL 86-6D	CPGN-633	○	○	1.000	1.500	6	1.310	1.250	CSP-632	#5-40 x 3/8 FHCS	CL-12	XNS-510	CBDC-615G	TK-00533
G-CCRPR 20-6D	G-CCRPL 20-6D	CPGN-633	○	○	1.250	1.250	6	1.310	1.500	CSP-632	#5-40 x 3/8 FHCS	CL-12	XNS-510	CBDC-615G	TK-00533
G-CCRPR 24-6D	G-CCRPL 24-6D	CPGN-633	○	○	1.500	1.500	6	1.310	2.000	CSP-632	#5-40 x 3/8 FHCS	CL-12	XNS-510	CBDC-615G	TK-00533

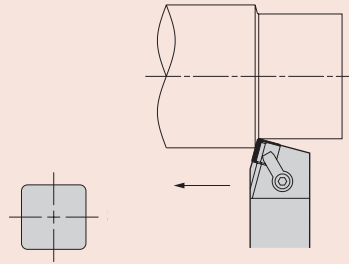
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

10 Business Days or Less

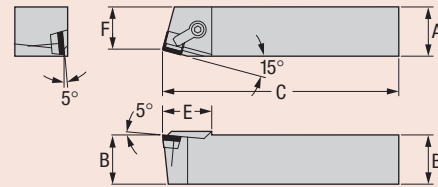
Stocked Standard

# G-CSBPR/L

Style B  
Square  
Positive Rake  
15° Lead



Right-Hand  
Toolholder Shown

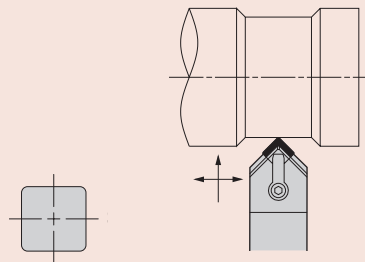


Part Number		Gage	Stock		Dimensions (inches)					Standard Components					* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Screw	Chip Breaker	Includes All Standard Components
G-CSBPR 12-4C	G-CSBPL 12-4C	SPGN-422	○	○	0.750	0.750	5	1.250	0.593	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-58	CBS-4G	TK-00712
G-CSBPR 16-4D	G-CSBPL 16-4D	SPGN-422	○	○	1.000	1.000	6	1.250	0.843	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-58	CBS-4G	TK-00712
G-CSBPR 20-4D	G-CSBPL 20-4D	SPGN-422	○	○	1.250	1.250	6	1.250	1.093	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBS-4G	TK-00753
G-CSBPR 24-4D	G-CSBPL 24-4D	SPGN-422	○	○	1.500	1.500	6	1.250	1.343	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBS-4G	TK-00753
G-CSBPR 16-6D	G-CSBPL 16-6D	SPGN-633	○	○	1.000	1.000	6	1.440	0.781	SP-60	#10-32 x 1/2 FHCS	CL-30	XNS-59	CBS-6G	TK-00726
G-CSBPR 20-6D	G-CSBPL 20-6D	SPGN-633	○	○	1.250	1.250	6	1.440	1.031	SP-60	#10-32 x 1/2 FHCS	CL-30	XNS-510	CBS-6G	TK-00534
G-CSBPR 24-6D	G-CSBPL 24-6D	SPGN-633	○	○	1.500	1.500	6	1.440	1.281	SP-60	#10-32 x 1/2 FHCS	CL-30	XNS-510	CBS-6G	TK-00534

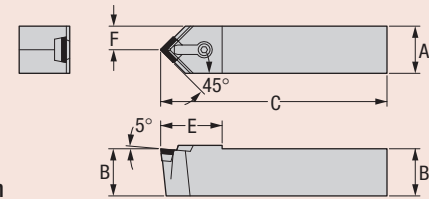
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# G-CSDPN

Style D  
Square  
Positive Rake  
45° Lead



Neutral  
Toolholder Shown

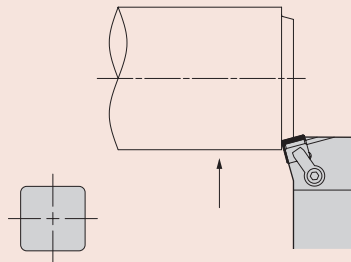


Part Number		Gage	Stock		Dimensions (inches)					Standard Components					* Tune-Up Kit
Neutral		Insert	N		A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Screw	Chip Breaker	Includes All Standard Components
G-CSDPN 12-4C		SPGN-422	○		0.750	0.750	5	1.620	0.375	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-59	CBS-4E	TK-00743
G-CSDPN 16-4D		SPGN-422	○		1.000	1.000	6	1.620	0.500	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBS-4E	TK-00536
G-CSDPN 20-4D		SPGN-422	○		1.250	1.250	6	1.620	0.625	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBS-4E	TK-00536
G-CSDPN 24-4D		SPGN-422	○		1.500	1.500	6	1.620	0.750	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBS-4E	TK-00536
G-CSDPN 16-6D		SPGN-633	○		1.000	1.000	6	1.750	0.500	SP-60	#10-32 x 1/2 FHCS	CL-30	XNS-510	CBS-6E	TK-00535
G-CSDPN 20-6D		SPGN-633	○		1.250	1.250	6	1.750	0.625	SP-60	#10-32 x 1/2 FHCS	CL-30	XNS-510	CBS-6E	TK-00535
G-CSDPN 24-6D		SPGN-633	○		1.500	1.500	6	1.750	0.750	SP-60	#10-32 x 1/2 FHCS	CL-30	XNS-510	CBS-6E	TK-00535

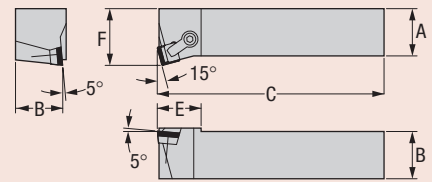
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# G-CSKPR/L

Style K  
Square  
Positive Rake  
15° Lead



Right-Hand  
Toolholder Shown



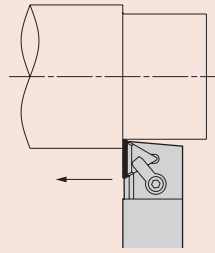
Part Number		Gage	Stock		Dimensions (inches)					Standard Components					* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Screw	Chip Breaker	Includes All Standard Components
G-CSKPR 12-4C	G-CSKPL 12-4C	SPGN-422	○	○	0.750	0.750	5	1.120	1.000	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-58	CBS-4G	TK-00712
G-CSKPR 16-4D	G-CSKPL 16-4D	SPGN-422	○	○	1.000	1.000	6	1.120	1.250	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-58	CBS-4G	TK-00712
G-CSKPR 85-4D	G-CSKPL 85-4D	SPGN-422	○	○	1.000	1.250	6	1.120	1.250	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBS-4G	TK-00753
G-CSKPR 20-4D	G-CSKPL 20-4D	SPGN-422	○	○	1.250	1.250	6	1.120	1.500	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBS-4G	TK-00753
G-CSKPR 24-4D	G-CSKPL 24-4D	SPGN-422	○	○	1.500	1.500	6	1.120	2.000	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBS-4G	TK-00753
G-CSKPR 16-6D	G-CSKPL 16-6D	SPGN 633	○	○	1.000	1.000	6	1.500	1.250	SP-60	#10-32 x 1/2 FHCS	CL-30	XNS-510	CBS-6G	TK-00534
G-CSKPR 85-6D	G-CSKPL 85-6D	SPGN 633	○	○	1.000	1.250	6	1.500	1.250	SP-60	#10-32 x 1/2 FHCS	CL-30	XNS-510	CBS-6G	TK-00534
G-CSKPR 86-6D	G-CSKPL 86-6D	SPGN 633	○	○	1.000	1.500	6	1.500	1.250	SP-60	#10-32 x 1/2 FHCS	CL-30	XNS-510	CBS-6G	TK-00534
G-CSKPR 20-6D	G-CSKPL 20-6D	SPGN 633	○	○	1.250	1.250	6	1.500	1.500	SP-60	#10-32 x 1/2 FHCS	CL-30	XNS-510	CBS-6G	TK-00534
G-CSKPR 24-6D	G-CSKPL 24-6D	SPGN 633	○	○	1.500	1.500	6	1.500	2.000	SP-60	#10-32 x 1/2 FHCS	CL-30	XNS-510	CBS-6G	TK-00534

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

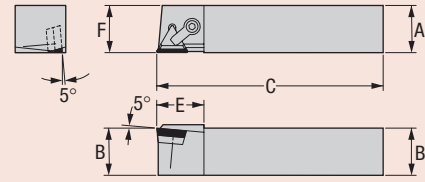


# G-CTAPR/L

Style A  
Triangle  
Positive Rake  
0° Lead



Right-Hand  
Toolholder Shown



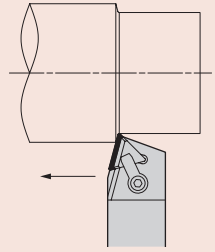
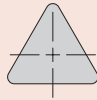
TOOLHOLDERS

Part Number		Gage	Stock		Dimensions (inches)					Standard Components					* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Screw	Chip Breaker	Includes All Standard Components
G-CTAPR 12-3C	G-CTAPL 12-3C	TPGN-322	○	○	0.750	0.750	5	1.000	0.750	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
G-CTAPR 16-3D	G-CTAPL 16-3D	TPGN-322	○	○	1.000	1.000	6	1.000	1.000	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
G-CTAPR 85-3D	G-CTAPL 85-3D	TPGN-322	○	○	1.000	1.250	6	1.000	1.000	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
G-CTAPR 16-4D	G-CTAPL 16-4D	TPGN-432	●	○	1.000	1.000	6	1.250	1.000	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-59	CBT-4G	TK-00537
G-CTAPR 85-4D	G-CTAPL 85-4D	TPGN-432	○	○	1.000	1.250	6	1.250	1.000	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
G-CTAPR 20-4D	G-CTAPL 20-4D	TPGN-432	○	○	1.250	1.250	6	1.250	1.250	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
G-CTAPR 24-4D	G-CTAPL 24-4D	TPGN-432	○	○	1.500	1.500	6	1.250	1.500	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
G-CTAPR 16-5D	G-CTAPL 16-5D	TPGN-543	○	○	1.000	1.000	6	1.380	1.000	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-59	CBT-5G	TK-00745
G-CTAPR 20-5D	G-CTAPL 20-5D	TPGN-543	○	○	1.250	1.250	6	1.380	1.250	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-510	CBT-5G	TK-00544
G-CTAPR 24-5D	G-CTAPL 24-5D	TPGN-543	○	○	1.500	1.500	6	1.380	1.500	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-510	CBT-5G	TK-00544
G-CTAPR 24-6D	G-CTAPL 24-6D	TPGN-666	○	○	1.500	1.500	6	1.500	1.500	SP-6	#10-32 x 1/2 FHCS	CL-12	XNS-510	CBT-6G	TK-00749

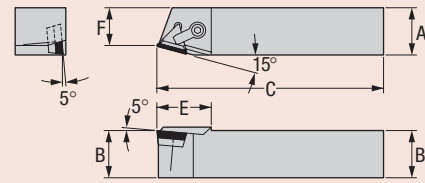
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# G-CTBPR/L

Style B  
Triangle  
Positive Rake  
15° Lead



Right-Hand  
Toolholder Shown

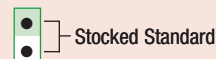


Part Number		Gage	Stock		Dimensions (inches)					Standard Components					* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Screw	Chip Breaker	Includes All Standard Components
G-CTBPR 12-3C	G-CTBPL 12-3C	TPGN-322	○	○	0.750	0.750	5	1.000	0.578	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
G-CTBPR 16-3D	G-CTBPL 16-3D	TPGN-322	○	○	1.000	1.000	6	1.000	0.828	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
G-CTBPR 85-3D	G-CTBPL 85-3D	TPGN-322	○	○	1.000	1.250	6	1.000	1.078	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
G-CTBPR 16-4D	G-CTBPL 16-4D	TPGN-432	○	○	1.000	1.000	6	1.250	0.765	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-59	CBT-4G	TK-00537
G-CTBPR 85-4D	G-CTBPL 85-4D	TPGN-432	○	○	1.000	1.250	6	1.250	0.765	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
G-CTBPR 20-4D	G-CTBPL 20-4D	TPGN-432	○	○	1.250	1.250	6	1.250	1.015	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
G-CTBPR 24-4D	G-CTBPL 24-4D	TPGN-432	○	○	1.500	1.500	6	1.250	1.265	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
G-CTBPR 16-5D	G-CTBPL 16-5D	TPGN-543	○	○	1.000	1.000	6	1.500	0.718	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-59	CBT-5G	TK-00745
G-CTBPR 85-5D	G-CTBPL 85-5D	TPGN-543	○	○	1.000	1.250	6	1.500	0.718	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-510	CBT-5G	TK-00544
G-CTBPR 86-5D	G-CTBPL 86-5D	TPGN-543	○	○	1.000	1.500	6	1.500	0.718	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-510	CBT-5G	TK-00544
G-CTBPR 20-5D	G-CTBPL 20-5D	TPGN-543	○	○	1.250	1.250	6	1.500	0.968	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-510	CBT-5G	TK-00544
G-CTBPR 24-5D	G-CTBPL 24-5D	TPGN-543	○	○	1.500	1.500	6	1.500	1.218	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-510	CBT-5G	TK-00544
G-CTBPR 24-6D	G-CTBPL 24-6D	TPGN-666	○	○	1.500	1.500	6	1.560	1.187	SP-6	#10-32 x 1/2 FHCS	CL-12	XNS-510	CBT-6G	TK-00749

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

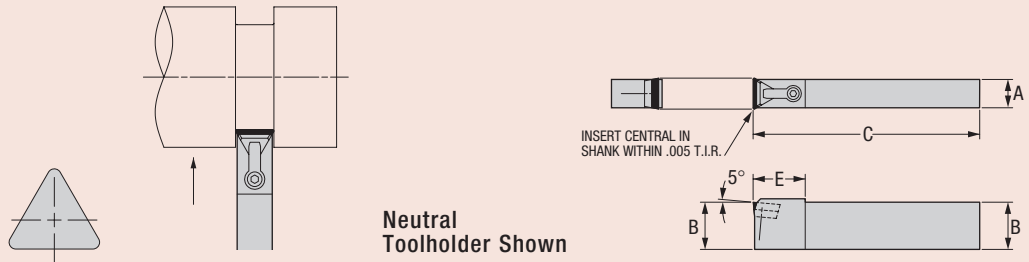
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# G-CTCPN

Style C  
Triangle  
Positive Rake  
0° Lead



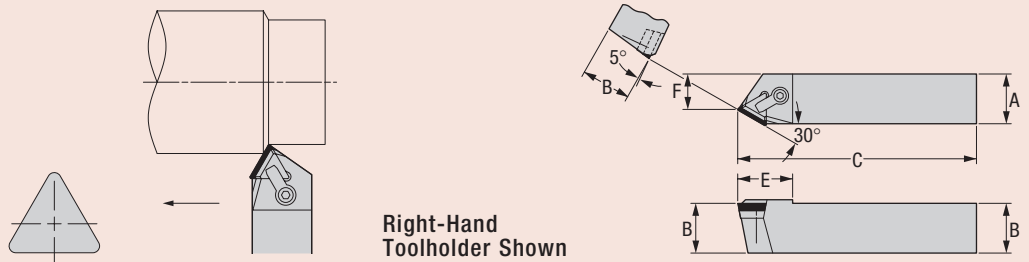
Neutral  
Toolholder Shown

Part Number	Gage 	Stock	Dimensions (inches)				Standard Components					* Tune-Up Kit		
			A	B	C	E	Seat	Seat Screw	Clamp	Clamp Screw	Chip Breaker			
<b>Neutral</b>	<b>Insert</b>	<b>N</b>												
<b>G-CTCPN 44-3D</b>	TPGN-322	○	0.500	1.000	6	1.250	TSP-321	#4-40 x 3/8 FHCS	CL-22	XNS-48	CBT-3G	TK-00540		
<b>G-CTCPN 64-4D</b>	TPGN-432	○	0.750	1.000	6	1.380	SP-4	#6-32 x 1/2 FHCS	CL-30	XNS-59	CBT-4G	TK-00541		
<b>G-CTCPN 65-4D</b>	TPGN-432	○	0.750	1.250	6	1.380	SP-4	#6-32 x 1/2 FHCS	CL-30	XNS-59	CBT-4G	TK-00541		
<b>G-CTCPN 66-4D</b>	TPGN-432	○	0.750	1.500	6	1.380	SP-4	#6-32 x 1/2 FHCS	CL-30	XNS-59	CBT-4G	TK-00541		
<b>G-CTCPN 76-5D</b>	TPGN-543	○	0.875	1.500	6	1.500	SP-5	#8-32 x 1/2 FHCS	CL-30	XNS-510	CBT-5G	TK-00542		

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# G-CTEOR/L

Style E  
Triangle  
Positive Rake  
30° Lead



Right-Hand  
Toolholder Shown

Part Number		Gage 	Stock	Dimensions (inches)						Standard Components					* Tune-Up Kit
Right	Left			R	L	A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Screw	
<b>G-CTEOR 10-3C</b>	<b>G-CTEOL 10-3C</b>	TPGN-322	○	○	0.625	0.625	5	1.060	0.375	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
<b>G-CTEOR 12-3C</b>	<b>G-CTEOL 12-3C</b>	TPGN-322	○	○	0.750	0.750	5	1.060	0.500	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
<b>G-CTEOR 16-3D</b>	<b>G-CTEOL 16-3D</b>	TPGN-322	○	○	1.000	1.000	6	1.060	0.750	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
<b>G-CTEOR 85-3D</b>	<b>G-CTEOL 85-3D</b>	TPGN-322	○	○	1.000	1.250	6	1.060	0.750	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
<b>G-CTEOR 16-4D</b>	<b>G-CTEOL 16-4D</b>	TPGN-432	○	○	1.000	1.000	6	1.380	0.640	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-59	CBT-4G	TK-00537
<b>G-CTEOR 85-4D</b>	<b>G-CTEOL 85-4D</b>	TPGN-432	○	○	1.000	1.250	6	1.380	0.640	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
<b>G-CTEOR 20-4D</b>	<b>G-CTEOL 20-4D</b>	TPGN-432	○	○	1.250	1.250	6	1.380	0.890	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
<b>G-CTEOR 24-4D</b>	<b>G-CTEOL 24-4D</b>	TPGN-432	○	○	1.500	1.500	6	1.380	1.140	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
<b>G-CTEOR 20-5D</b>	<b>G-CTEOL 20-5D</b>	TPGN-543	○	○	1.250	1.250	6	1.560	0.812	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-510	CBT-5G	TK-00544
<b>G-CTEOR 24-5D</b>	<b>G-CTEOL 24-5D</b>	TPGN-543	○	○	1.500	1.500	6	1.560	1.062	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-510	CBT-5G	TK-00544
<b>G-CTEOR 24-6D</b>	<b>G-CTEOL 24-6D</b>	TPGN-666	○	○	1.500	1.500	6	1.750	0.968	SP-6	#10-32 x 5/8 FHCS	CL-12	XNS-510	CBT-6G	TK-01795

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

10 Business Days or Less

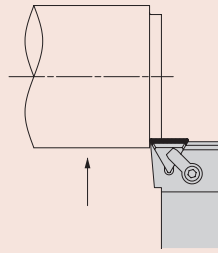
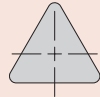
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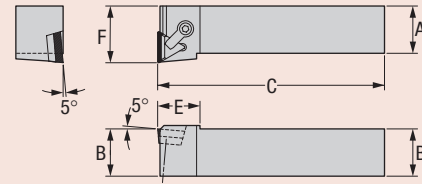


# G-CTFPR/L

Style F  
Triangle  
Positive Rake  
0° Lead



Right-Hand  
Toolholder Shown



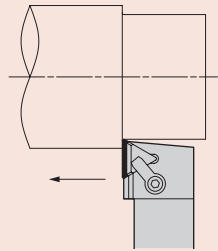
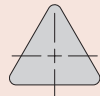
TOOLHOLDERS

Part Number		Gage	Stock		Dimensions (inches)					Standard Components					* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Screw	Chip Breaker	Includes All Standard Components
G-CTFPR 10-3C	G-CTFPL 10-3C	TPGN-322	○	○	0.625	0.625	5	1.000	0.875	TSP-321	#4-40 x 3/8 FHCS	CL-6	XNS-36	CBT-3G	TK-00543
G-CTFPR 12-3C	G-CTFPL 12-3C	TPGN-322	○	○	0.750	0.750	5	1.000	1.000	TSP-321	#4-40 x 3/8 FHCS	CL-6	XNS-36	CBT-3G	TK-00543
G-CTFPR 16-3D	G-CTFPL 16-3D	TPGN-322	○	○	1.000	1.000	6	1.000	1.250	TSP-321	#4-40 x 3/8 FHCS	CL-6	XNS-36	CBT-3G	TK-00543
G-CTFPR 85-3D	G-CTFPL 85-3D	TPGN-322	○	○	1.000	1.250	6	1.000	1.250	TSP-321	#4-40 x 3/8 FHCS	CL-6	XNS-36	CBT-3G	TK-00543
G-CTFPR 16-4D	G-CTFPL 16-4D	TPGN-432	○	○	1.000	1.000	6	1.120	1.250	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-59	CBT-4G	TK-00537
G-CTFPR 85-4D	G-CTFPL 85-4D	TPGN-432	○	○	1.000	1.250	6	1.120	1.250	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
G-CTFPR 20-4D	G-CTFPL 20-4D	TPGN-432	○	○	1.250	1.250	6	1.120	1.500	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
G-CTFPR 24-4D	G-CTFPL 24-4D	TPGN-432	○	○	1.500	1.500	6	1.120	2.000	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
G-CTFPR 16-5D	G-CTFPL 16-5D	TPGN-543	○	○	1.000	1.000	6	1.500	1.250	SP-5	#8-32 x 1/2 FHCS	CL-30	XNS-59	CBT-5G	TK-00918
G-CTFPR 85-5D	G-CTFPL 85-5D	TPGN-543	○	○	1.000	1.250	6	1.500	1.250	SP-5	#8-32 x 1/2 FHCS	CL-30	XNS-510	CBT-5G	TK-00542
G-CTFPR 86-5D	G-CTFPL 86-5D	TPGN-543	○	○	1.000	1.500	6	1.500	1.250	SP-5	#8-32 x 1/2 FHCS	CL-30	XNS-510	CBT-5G	TK-00542
G-CTFPR 20-5D	G-CTFPL 20-5D	TPGN-543	○	○	1.250	1.250	6	1.500	1.500	SP-5	#8-32 x 1/2 FHCS	CL-30	XNS-510	CBT-5G	TK-00542
G-CTFPR 24-5D	G-CTFPL 24-5D	TPGN-543	○	○	1.500	1.500	6	1.500	2.000	SP-5	#8-32 x 1/2 FHCS	CL-30	XNS-510	CBT-5G	TK-00542
G-CTFPR 24-6D	G-CTFPL 24-6D	TPGN-666	-	-	1.500	1.500	6	1.500	2.000	SP-6	#10-32 x 1/2 FHCS	CL-12	XNS-510	CBT-6G	TK-00749

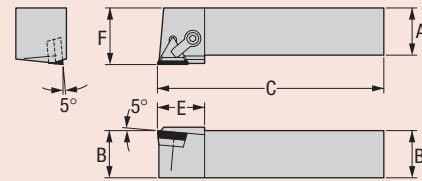
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# G-CTGPR/L

Style G  
Triangle  
Positive Rake  
0° Lead



Right-Hand  
Toolholder Shown

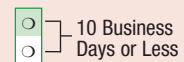
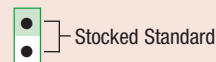


Part Number		Gage	Stock		Dimensions (inches)					Standard Components					* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Screw	Chip Breaker	Includes All Standard Components
G-CTGPR 10-3C	G-CTGPL 10-3C	TPGN-322	○	○	0.625	0.625	5	1.000	0.875	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
G-CTGPR 12-3C	G-CTGPL 12-3C	TPGN-322	○	○	0.750	0.750	5	1.000	1.000	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
G-CTGPR 16-3D	G-CTGPL 16-3D	TPGN-322	○	○	1.000	1.000	6	1.000	1.250	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
G-CTGPR 85-3D	G-CTGPL 85-3D	TPGN-322	○	○	1.000	1.250	6	1.000	1.250	TSP-321	#4-40 x 3/8 FHCS	CL-7	XNS-36	CBT-3G	TK-00538
G-CTGPR 16-4D	G-CTGPL 16-4D	TPGN-432	○	○	1.000	1.000	6	1.250	1.250	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-59	CBT-4G	TK-00537
G-CTGPR 85-4D	G-CTGPL 85-4D	TPGN-432	○	○	1.000	1.250	6	1.250	1.250	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
G-CTGPR 20-4D	G-CTGPL 20-4D	TPGN-432	○	○	1.250	1.250	6	1.250	1.500	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
G-CTGPR 24-4D	G-CTGPL 24-4D	TPGN-432	○	○	1.500	1.500	6	1.250	2.000	SP-4	#6-32 x 1/2 FHCS	CL-12	XNS-510	CBT-4G	TK-00539
G-CTGPR 16-5D	G-CTGPL 16-5D	TPGN-543	○	○	1.000	1.000	6	1.380	1.250	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-59	CBT-5G	TK-00745
G-CTGPR 85-5D	G-CTGPL 85-5D	TPGN-543	○	○	1.000	1.250	6	1.380	1.250	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-510	CBT-5G	TK-00544
G-CTGPR 86-5D	G-CTGPL 86-5D	TPGN-543	○	○	1.000	1.500	6	1.380	1.250	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-510	CBT-5G	TK-00544
G-CTGPR 20-5D	G-CTGPL 20-5D	TPGN-543	○	○	1.250	1.250	6	1.380	1.500	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-510	CBT-5G	TK-00544
G-CTGPR 24-5D	G-CTGPL 24-5D	TPGN-543	○	○	1.500	1.500	6	1.380	2.000	SP-5	#8-32 x 1/2 FHCS	CL-12	XNS-510	CBT-5G	TK-00544
G-CTGPR 24-6D	G-CTGPL 24-6D	TPGN-666	-	-	1.500	1.500	6	1.500	2.000	SP-6	#10-32 x 1/2 FHCS	CL-12	XNS-510	CBT-6G	TK-00749

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

### Greenleaf Sales

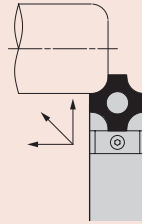
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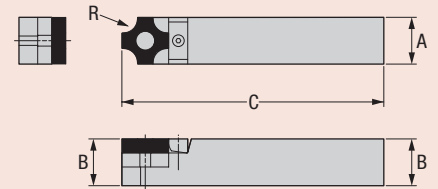


# GSRN

Style GSRN



Neutral Toolholder Shown



Part Number	Stock	Dimensions (inches)			Standard Components				Tune-Up Kit	Insert Options		
		A	B	C	Shim	Center Pin	Clamp	Clamp Screw		Includes All Standard Components	Insert	R
<b>Neutral</b>	<b>N</b>											
<b>GSRN-646</b>	●	0.750	1.000	6.000	SR6	30309	30308-2	30301-1	TK-01117	SNMA-64IR4	0.062	
<b>GSRN-656</b>	○	0.750	1.250	6.000	SR6	30309	30308-2	30301-1	TK-01117	SNMA-64IR6	0.093	
<b>GSRN-666</b>	●	0.750	1.500	7.000	SR6	30309	30308-2	30301-1	TK-01117	SNMA-64IR8	0.125	
										SNMA-64IR10	0.156	
<b>GSRN-168</b>	●	1.000	1.000	6.000	SR8	30327-1	30308-2	30301-1	TK-00572	SNMA-84IR12	0.187	
<b>GSRN-858</b>	○	1.000	1.250	7.000	SR8	30327-1	30308-2	30301-1	TK-00572	SNMA-84IR14	0.218	
<b>GSRN-868</b>	●	1.000	1.500	8.000	SR8	30327-1	30308-2	30301-1	TK-00572	SNMA-84IR16	0.250	
<b>GSRN-2010</b>	●	1.250	1.250	7.000	SR10	30454	30319-2	30320	TK-00573	SNMA-106IR20	0.312	
<b>GSRN-2410</b>	●	1.500	1.500	8.000	SR10	30454	30319-2	30320	TK-00573	SNMA-106IR24	0.375	
<b>GSRN-2412</b>	●	1.500	1.500	8.000	SR12	30454	30319-2	30320	TK-00574	SNMA-126IR28	0.437	
										SNMA-126IR32	0.500	

These toolholders are Greenleaf standard and do not conform to the ANSI identification system.

10 Business Days or Less

Stocked Standard

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## Advanced Ceramic Toolholders

Greenleaf toolholder systems for use with ceramic inserts are based upon industry standard hardware. However, geometry and pocket depth are designed to maximize ceramic performance. Negative tools have a 10° negative side rake rather than the 5° usually found in tools for carbide inserts. This will increase clearance and, in turn, tool life. The additional pocket depth allows for thicker inserts with shims available to adjust the thickness stack-up for thinner tools if necessary.

The standard clamp is the long series to secure the inserts without a hole which is a stronger set-up. (Short clamps are an optional item.) All tools are fully heat-treated alloy steel and are qualified to  $\pm .003$ " on the "F" and "C" dimensions.

Greenleaf has designated a "C" prefix for a ceramic insert toolholder and an "H" prefix for ceramic insert toolholder for hard material machining.

### Rough Stuff® Surface Treatment

Greatly improved insert-gripping power for greater accuracy, speed and pocket retention. Available on WG-300®, WG-600®, WG-700™, and GSN100™ ceramics.

U.S. Patent No. 6,712,564 B1

### Greenleaf Tune-Up Kits

A Tune-Up Kit consists of all the standard hardware to refurbish a particular toolholder, boring bar, or milling cutter. A toolholder will have a readily visible, laser-inscribed Tune-Up Kit number on it for ease in ordering. This number will prevent any confusion created by searching a catalog for hardware, and it will help reduce downtime.



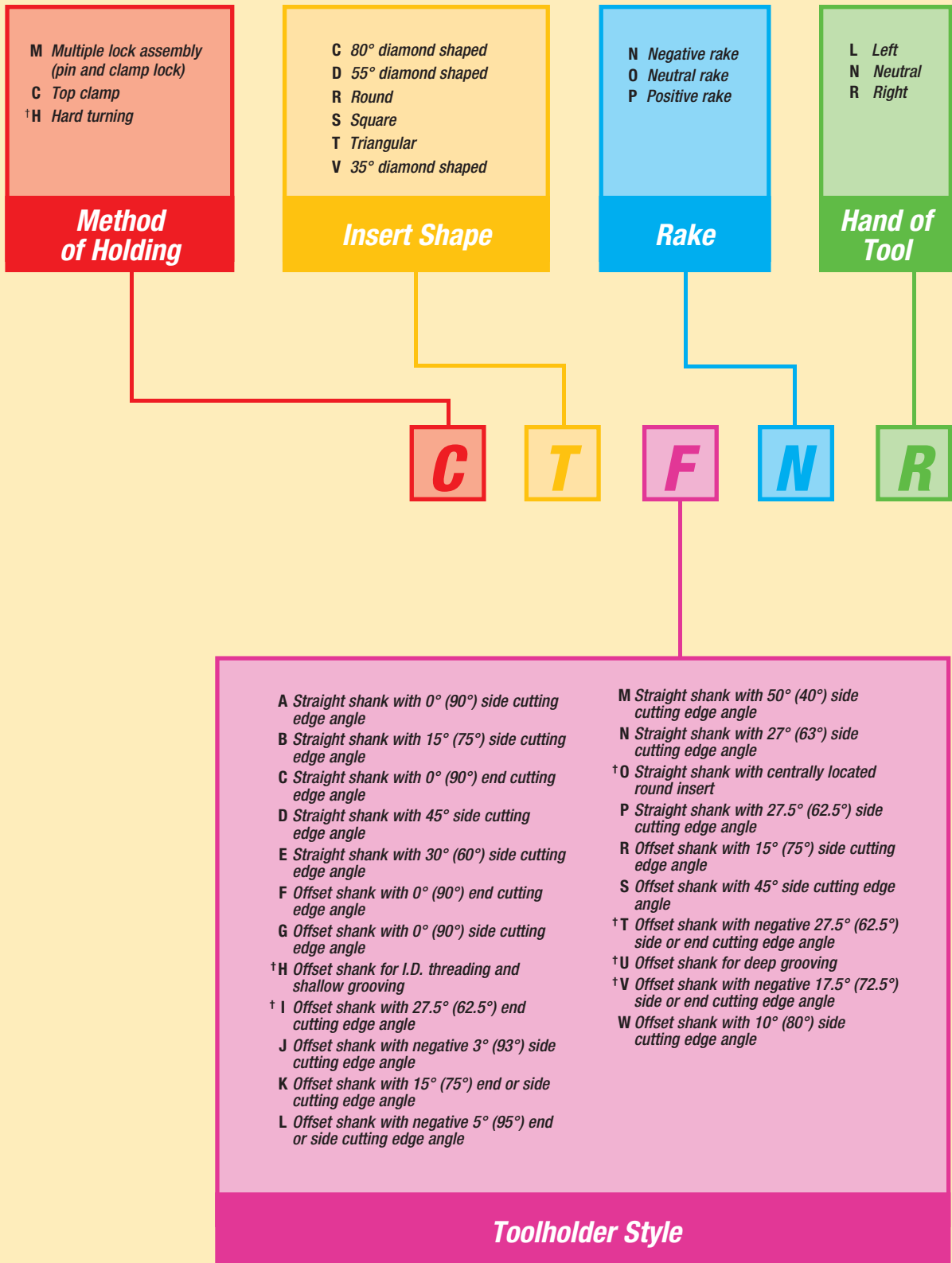
Greenleaf Corporation is continually upgrading its products. For the most current information, please visit our web site at:

[www.greenleafglobalsupport.com](http://www.greenleafglobalsupport.com)

### Greenleaf Sales

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## Advanced Ceramic Toolholder Identification System



**NOTE:**

The angles shown in parentheses are the angles as shown in the ANSI standard.

<sup>†</sup>Greenleaf standard.

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**S** Single-wall pocket construction. Full pocket construction when letter position is vacant.

### Pocket Style

Number of  $\frac{1}{16}$ ths of I.C.

### Insert Size I.C.

- A** American Tool Standard Wedge Angle
- B** Bullard Standard Wedge Angle
- G** Gidding & Lewis Standard Wedge Angle
- L** LeBlond Standard Wedge Angle
- M** Monarch Standard End Angle
- N** New Britain Machine Standard Wedge Angle
- S** Saginaw Machine Standard Wedge Angle

### Shank Modification (Standard Options)

**S**

=

**16**

**4**

**D**

**B**

For shanks  $\frac{5}{16}$ " square and over, number =  $\frac{1}{16}$ ths of width and height

For shanks under  $\frac{5}{16}$ " square, number =  $\frac{1}{16}$ ths of cross section

For rectangular holders, first digit = number of  $\frac{1}{16}$ ths of width

For rectangular holders, second digit = number of  $\frac{1}{4}$ ths of height

### Basic Toolholder Shank Size

- |   |  |
|---|--|
| <b>A</b> 4.000 length and width control                             | <b>R</b> 6.000 length and side control                             |
| <b>B</b> 4.500 length and width control                             | <b>S</b> 7.000 length and side control                             |
| <b>C</b> 5.000 length and width control                             | <b>T</b> 8.000 length and side control                             |
| <b>D</b> 6.000 length and width control                             | <b>†U</b> 5.500 length and side control                            |
| <b>E</b> 7.000 length and width control                             | <b>†V</b> 9.000 length and side control                            |
| <b>F</b> 8.000 length and width control                             | <b>W</b> Special length and standard side control (specify length) |
| <b>†G</b> 5.500 length and width control                            | <b>†X</b> 12.000 length and side control                           |
| <b>†H</b> 9.000 length and width control                            | <b>†Y</b> 14.000 length and side control                           |
| <b>J</b> Special length and standard width control (specify length) | <b>†Z</b> Qualified length control only (specify nominal length)   |
| <b>†K</b> 12.000 length and width control                           | e.g. MTJNRS—20—4Z (5.500)  |
| <b>†L</b> 14.000 length and width control                           |  |
| <b>M</b> 4.000 length and side control                              |  |
| <b>N</b> 4.500 length and side control                              |  |
| <b>P</b> 5.000 length and side control                              |  |

### Shank Qualifications

#### NOTE:

All toolholders are shipped qualified over insert gage radius to  $\pm.003$ " on C and F dimensions as standard. Some toolholders are qualifiable on length only (C dimension).

All toolholders to be qualified other than above should be designated with the appropriate letter under heading "Shank Qualifications."

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# Advanced Ceramic Toolholder Usage Reference Guide

Toolholder Style

Geometry

Toolholder Application

Insert Geometry

Insert

Tune-Up Kits

### C-MCKNR/L

Style K  
80° Diamond  
(Using 100° Corner)  
Negative Rake, 15° Lead

Part Number	Gage	Stock	Dimensions (inches)							Standard Components			*Tune-Up Kit			Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat	Clamp	Includes All Standard Components	Lock Pin	Clamp	Shim Seat	Shim Seat	
C-MCKNR-164C	C-MCKNL-164C	CHGN-432	1.000	1.000	5	1.188	1.25	C3N-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	C3N-433			
C-MCKNR-164	C-MCKNL-164	CHGN-432	1.000	1.000	6	1.188	1.25	C3N-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	C3N-433			
C-MCKNR-204	C-MCKNL-204	CHGN-432	1.250	1.250	6	1.188	1.50	C3N-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	C3N-433			
C-MCKNR-206	C-MCKNL-206	CHGN-643	1.250	1.250	6	1.438	1.50	C3N-643	S-68	CL-30	XNS-59	TK-00510	NL-46L	CL-12	C3N-633			
C-MCKNR-246	C-MCKNL-246	CHGN-643	1.500	1.500	6	1.438	2.00	C3N-643	S-68	CL-30	XNS-59	TK-00510	NL-46L	CL-12	C3N-633			

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

### C-MCRNR/L

Style R  
80° Diamond  
(Using 100° Corner)  
Negative Rake, 15° Lead

Part Number	Gage	Stock	Dimensions (inches)							Standard Components			*Tune-Up Kit			Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat	Clamp	Includes All Standard Components	Lock Pin	Clamp	Shim Seat	Shim Seat	
C-MCRNR-164C	C-MCRNL-164C	CHGN-432	1.000	1.000	5	1.250	1.25	C3N-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	C3N-433			
C-MCRNR-164	C-MCRNL-164	CHGN-432	1.000	1.000	6	1.250	1.25	C3N-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	C3N-433			
C-MCRNR-204	C-MCRNL-204	CHGN-432	1.250	1.250	6	1.250	1.50	C3N-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	C3N-433			
C-MCRNR-206	C-MCRNL-206	CHGN-643	1.250	1.250	6	1.484	1.50	C3N-643	S-68	CL-30	XNS-59	TK-00510	NL-46L	CL-12	C3N-633			
C-MCRNR-246	C-MCRNL-246	CHGN-643	1.500	1.500	6	1.484	2.00	C3N-643	S-68	CL-30	XNS-59	TK-00510	NL-46L	CL-12	C3N-633			

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

### C-MCLNR/L

Style L  
80° Diamond  
Negative Rake  
Reverse Lead

Part Number	Gage	Stock	Dimensions (inches)							Standard Components			*Tune-Up Kit			Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat	Clamp	Includes All Standard Components	Lock Pin	Clamp	Shim Seat	Shim Seat	
C-MCLNR-164C	C-MCLNL-164C	CHGN-432	1.000	1.000	5	1.188	1.25	C3N-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	C3N-433			
C-MCLNR-164	C-MCLNL-164	CHGN-432	1.000	1.000	6	1.188	1.25	C3N-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	C3N-433			
C-MCLNR-204	C-MCLNL-204	CHGN-432	1.250	1.250	6	1.188	1.50	C3N-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	C3N-433			
C-MCLNR-206	C-MCLNL-206	CHGN-643	1.250	1.250	6	1.500	1.50	C3N-643	S-68	CL-30	XNS-59	TK-00510	NL-46L	CL-12	C3N-633			
C-MCLNR-246	C-MCLNL-246	CHGN-643	1.500	1.500	6	1.500	2.00	C3N-643	S-68	CL-30	XNS-59	TK-00510	NL-46L	CL-12	C3N-633			

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

### C-MCSNR/L

Style S  
80° Diamond  
(Using 100° Corner)  
Negative Rake, 45° Lead

Part Number	Gage	Stock	Dimensions (inches)							Standard Components			*Tune-Up Kit			Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat	Clamp	Includes All Standard Components	Lock Pin	Clamp	Shim Seat	Shim Seat	
C-MCSNR-164C	C-MCSNL-164C	CHGN-432	1.000	1.000	5	1.250	0.800	C3N-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	C3N-433			
C-MCSNR-164	C-MCSNL-164	CHGN-432	1.000	1.000	6	1.250	0.800	C3N-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	C3N-433			
C-MCSNR-204	C-MCSNL-204	CHGN-432	1.250	1.250	6	1.250	1.150	C3N-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	C3N-433			
C-MCSNR-206	C-MCSNL-206	CHGN-643	1.250	1.250	6	1.484	0.900	C3N-643	S-68	CL-30	XNS-59	TK-00510	NL-46L	CL-12	C3N-633			
C-MCSNR-246	C-MCSNL-246	CHGN-643	1.500	1.500	6	1.484	1.400	C3N-643	S-68	CL-30	XNS-59	TK-00510	NL-46L	CL-12	C3N-633			

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

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CERAMIC TOOLHOLDERS

CERAMIC TOOLHOLDERS





**80°/100° Diamond – Negative**

**C-MCKNR/L**  
Style K  
80° Diamond  
(Using 100° Corner)  
Negative Rake  
15° Lead  
*page: T 106*

**C-MCLNR/L**  
Style L  
80° Diamond  
Negative Rake  
5° Reverse Lead  
*page: T 106*

**C-MCRNR/L**  
Style R  
80° Diamond  
(Using 100° Corner)  
Negative Rake  
15° Reverse  
*page: T 107*

**C-MCSNR/L**  
Style S  
80° Diamond  
(Using 100° Corner)  
Negative Rake  
45° Lead  
*page: T 107*

**55° Diamond – Negative**

**C-MDJNR/L**  
Style J  
55° Diamond  
Negative Rake  
3° Reverse Lead  
*page: T 108*

**C-MDPNN**  
Style P  
55° Diamond  
Negative Rake  
27°30' Lead  
*page: T 108*

**Round – Negative**

**C-MRGNR/L**  
Style G  
Round  
Negative Rake  
*page: T 109*

**C-MRDNN**  
Style D  
Round  
Negative Rake  
*page: T 109*

**Square – Negative**

**C-MSKNR/L**  
Style K  
Square  
Negative Rake  
15° Lead  
*page: T 110*

**C-MSRNR/L**  
Style R  
Square  
Negative Rake  
15° Lead  
*page: T 110*

**C-MSSNR/L**  
Style S  
Square  
Negative Rake  
45° Lead  
*page: T 111*

**Triangle – Negative**

**C-MTFNR/L**  
Style F  
Triangle  
Negative Rake  
0° Lead  
*page: T 112*

**C-MTGNR/L**  
Style G  
Triangle  
Negative Rake  
0° Lead  
*page: T 112*

**C-MTLNR/L**  
Style L  
Triangle  
Negative Rake  
5° Reverse Lead  
*page: T 113*

**Trigon – Negative**

**C-MWLNR/L**  
Style L  
Trigon  
Negative Rake  
5° Reverse Lead  
*page: T 113*

**Hard-Turning – Negative**

**H-MCLNR/L**  
Style L  
80° Diamond  
Negative Rake  
5° Reverse Lead  
*page: T 114*

**H-MRGNR/L**  
Style G  
Round  
Negative Rake  
*page: T 114*

**H-MSRNR/L**  
Style R  
Square  
Negative Rake  
15° Lead  
*page: T 115*

**H-MWLNR/L**  
Style L  
Trigon  
Negative Rake  
5° Reverse Lead  
*page: T 115*

**80°/100° Diamond – Positive**

**C-CCKPR/L**  
Style K  
80° Diamond  
(Using 100° Corner)  
Positive Rake  
15° Lead  
*page: T 116*

**C-CCLPR/L**  
Style L  
80° Diamond  
Positive Rake  
5° Reverse Lead  
*page: T 116*

**C-CCRPR/L**  
Style R  
80° Diamond  
(Using 100° Corner)  
Positive Rake  
15° Lead  
*page: T 116*

**80°/100° Diamond – Positive *continued***

**C-CCSPR/L**  
Style S  
80° Diamond  
(Using 100° Corner)  
Positive Rake  
45° Lead  
*page: T 117*

**Round – Positive**

**C-CRGPR/L**  
Style G  
Round  
Positive Rake  
*page: T 117*

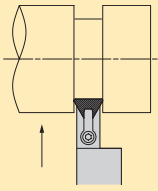
**Square – Positive**

**C-CSDPN**  
Style D  
Square  
Positive Rake  
45° Lead  
*page: T 118*

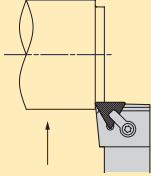
**C-CSKPR/L**  
Style K  
Square  
Positive Rake  
15° Lead  
*page: T 118*

**C-CSRPR/L**  
Style R  
Square  
Positive Rake  
15° Lead  
*page: T 119*

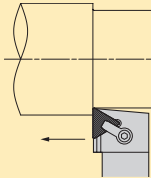
**C-CSSPR/L**  
Style S  
Square  
Positive Rake  
45° Lead  
*page: T 119*

**Triangle – Positive**


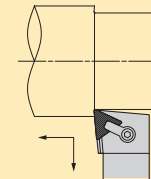
**C-CTCPR/L**  
 Style C  
 Triangle  
 Positive Rake  
 0° Lead  
*page: T 120*



**C-CTFPR/L**  
 Style F  
 Triangle  
 Positive Rake  
 0° Lead  
*page: T 120*



**C-CTGPR/L**  
 Style G  
 Triangle  
 Positive Rake  
 0° Lead  
*page: T 121*



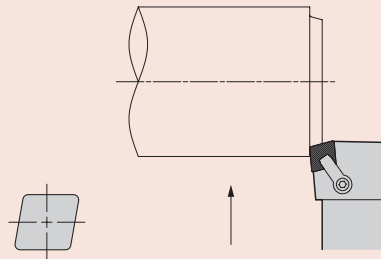
**C-CTLPR/L**  
 Style L  
 Triangle  
 Positive Rake  
 5° Reverse Lead  
*page: T 121*

80°

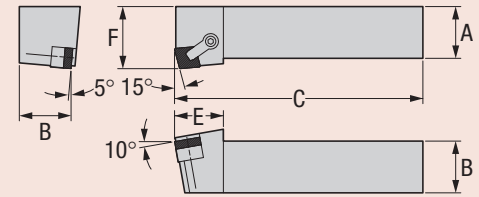


# C-MCKNR/L

Style K  
80° Diamond  
(Using 100° Corner)  
Negative Rake, 15° Lead



Right-Hand Toolholder Shown

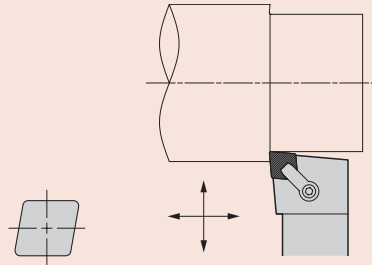


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp	5/16" Insert Shim Seat
C-MCKNR-164C	C-MCKNL-164C	CNGN-432	○	○	1.000	1.000	5	1.188	1.25	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCKNR-164	C-MCKNL-164	CNGN-432	○	○	1.000	1.000	6	1.188	1.25	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCKNR-204	C-MCKNL-204	CNGN-432	○	○	1.250	1.250	6	1.188	1.50	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCKNR-206	C-MCKNL-206	CNGN-643	○	○	1.250	1.250	6	1.438	1.50	CSN-643	S-68	CL-30	XNS-59	TK-00510	NL-68L	CL-12	CSN-633
C-MCKNR-246	C-MCKNL-246	CNGN-643	○	○	1.500	1.500	8	1.438	2.00	CSN-643	S-68	CL-30	XNS-59	TK-00510	NL-68L	CL-12	CSN-633

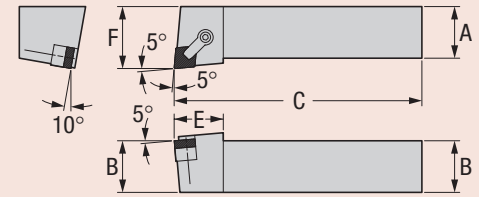
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-MCLNR/L

Style L  
80° Diamond  
Negative Rake  
5° Reverse Lead



Right-Hand Toolholder Shown



Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp	5/16" Insert Shim Seat
C-MCLNR-164C	C-MCLNL-164C	CNGN-432	○	○	1.000	1.000	5	1.188	1.25	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCLNR-164	C-MCLNL-164	CNGN-432	●	●	1.000	1.000	6	1.188	1.25	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCLNR-204	C-MCLNL-204	CNGN-432	●	●	1.250	1.250	6	1.188	1.50	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCLNR-206	C-MCLNL-206	CNGN-643	●	●	1.250	1.250	6	1.500	1.50	CSN-643	S-68	CL-30	XNS-59	TK-00510	NL-68L	CL-12	CSN-633
C-MCLNR-246	C-MCLNL-246	CNGN-643	●	○	1.500	1.500	8	1.500	2.00	CSN-643	S-68	CL-30	XNS-59	TK-00510	NL-68L	CL-12	CSN-633

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

CERAMIC TOOLHOLDERS

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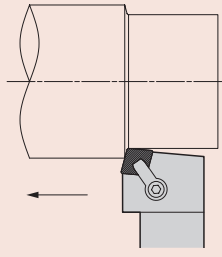
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● — Stocked Standard

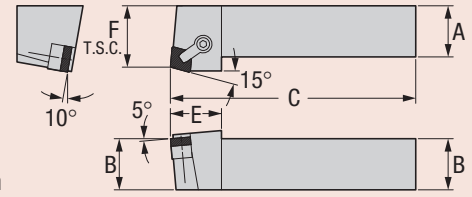
○ — 10 Business Days or Less

# C-MCRNR/L

Style R  
80° Diamond  
(Using 100° Corner)  
Negative Rake, 15° Lead



Right-Hand Toolholder Shown

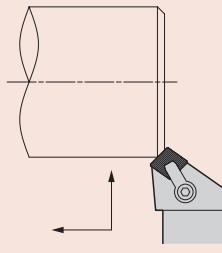


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp	5/16" Insert Shim Seat
C-MCRNR-164C	C-MCRNL-164C	CNGN-432	○	●	1.000	1.000	5	1.250	1.25	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCRNR-164	C-MCRNL-164	CNGN-432	●	●	1.000	1.000	6	1.250	1.25	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCRNR-204	C-MCRNL-204	CNGN-432	●	○	1.250	1.250	6	1.250	1.50	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCRNR-206	C-MCRNL-206	CNGN-643	○	○	1.250	1.250	6	1.484	1.50	CSN-643	S-68	CL-30	XNS-59	TK-00510	NL-68L	CL-12	CSN-633
C-MCRNR-246	C-MCRNL-246	CNGN-643	○	○	1.500	1.500	8	1.484	2.00	CSN-643	S-68	CL-30	XNS-59	TK-00510	NL-68L	CL-12	CSN-633

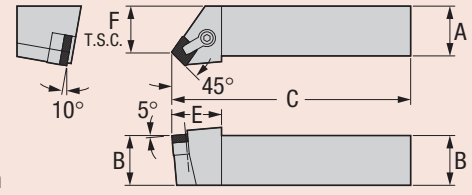
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-MCSNR/L

Style S  
80° Diamond  
(Using 100° Corner)  
Negative Rake, 45° Lead



Right-Hand Toolholder Shown



Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp	5/16" Insert Shim Seat
C-MCSNR-164C	C-MCSNL-164C	CNGN-432	○	○	1.000	1.000	5	1.250	0.908	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCSNR-164	C-MCSNL-164	CNGN-432	○	○	1.000	1.000	6	1.250	0.908	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCSNR-204	C-MCSNL-204	CNGN-432	●	●	1.250	1.250	6	1.250	1.158	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCSNR-206	C-MCSNL-206	CNGN-643	○	○	1.250	1.250	6	1.484	0.991	CSN-643	S-68	CL-30	XNS-59	TK-00510	NL-68L	CL-12	CSN-633
C-MCSNR-246	C-MCSNL-246	CNGN-643	○	○	1.500	1.500	8	1.484	1.491	CSN-643	S-68	CL-30	XNS-59	TK-00510	NL-68L	CL-12	CSN-633

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

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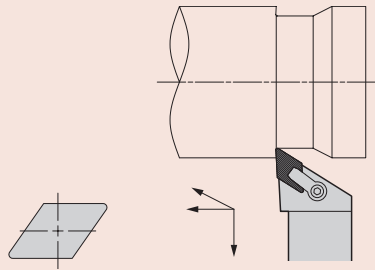
Stocked Standard

55°

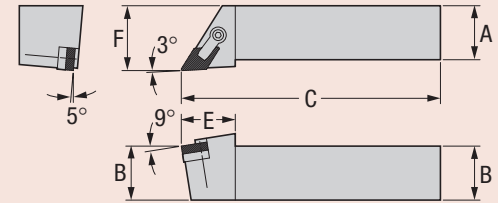


# C-MDJNR/L

Style J  
55° Diamond  
Negative Rake  
3° Reverse Lead



Right-Hand  
Toolholder Shown

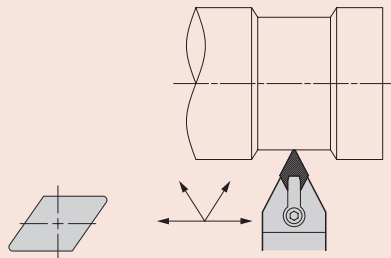


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp
C-MDJNR-163C	C-MDJNL-163C	DNGN-322	○	○	1.000	1.000	5	1.000	1.250	DSN-333	S-34	CL-7	XNS-36	TK-00511	NL-34L	CL-6
C-MDJNR-163	C-MDJNL-163	DNGN-322	○	○	1.000	1.000	6	1.000	1.250	DSN-333	S-34	CL-7	XNS-36	TK-00511	NL-34L	CL-6
C-MDJNR-203	C-MDJNL-203	DNGN-322	○	○	1.250	1.250	6	1.000	1.500	DSN-333	S-34	CL-7	XNS-36	TK-00511	NL-34L	CL-6
C-MDJNR-164C	C-MDJNL-164C	DNGN-432	○	●	1.000	1.000	5	1.250	1.250	DSN-433	S-46	CL-22	XNS-48	TK-00512	NL-46	CL-20
C-MDJNR-164	C-MDJNL-164	DNGN-432	●	●	1.000	1.000	6	1.250	1.250	DSN-433	S-46	CL-22	XNS-48	TK-00512	NL-46	CL-20
C-MDJNR-204	C-MDJNL-204	DNGN-432	○	○	1.250	1.250	6	1.250	1.500	DSN-433	S-46	CL-22	XNS-48	TK-00512	NL-46	CL-20
C-MDJNR-244	C-MDJNL-244	DNGN-432	○	○	1.500	1.500	8	1.250	2.000	DSN-433	S-46	CL-22	XNS-48	TK-00512	NL-46	CL-20

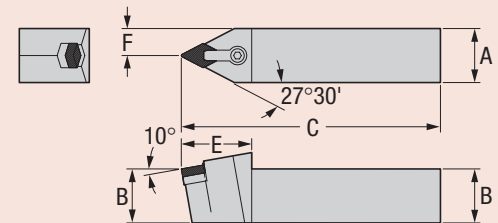
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-MDPNN

Style P  
55° Diamond  
Negative Rake  
27° 30' Lead



Neutral  
Toolholder Shown

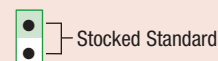


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components	
Neutral		Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp
C-MDPNN-163C		DNGN-322	○		1.000	1.000	5	1.500	0.500	DSN-333	S-34	CL-12	XNS-59	TK-00513	NL-34L	CL-9
C-MDPNN-163		DNGN-322	○		1.000	1.000	6	1.500	0.500	DSN-333	S-34	CL-12	XNS-59	TK-00513	NL-34L	CL-9
C-MDPNN-203		DNGN-322	○		1.250	1.250	6	1.500	0.625	DSN-333	S-34	CL-12	XNS-59	TK-00513	NL-34L	CL-9
C-MDPNN-164C		DNGN-432	○		1.000	1.000	5	1.625	0.500	DSN-433	S-46	CL-30	XNS-59	TK-00514	NL-46	CL-12
C-MDPNN-164		DNGN-432	●		1.000	1.000	6	1.625	0.500	DSN-433	S-46	CL-30	XNS-59	TK-00514	NL-46	CL-12
C-MDPNN-204		DNGN-432	○		1.250	1.250	6	1.625	0.625	DSN-433	S-46	CL-30	XNS-59	TK-00514	NL-46	CL-12
C-MDPNN-244		DNGN-432	○		1.500	1.500	8	1.625	0.750	DSN-433	S-46	CL-30	XNS-59	TK-00514	NL-46	CL-12

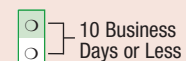
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

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Stocked Standard

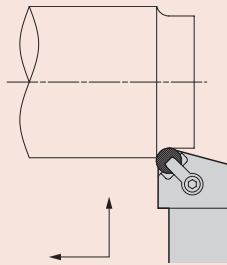
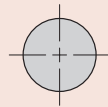


10 Business Days or Less

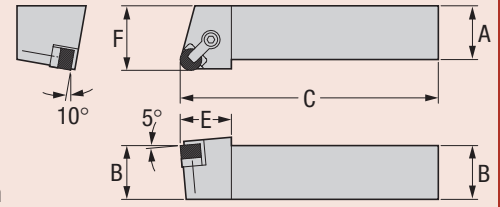


# C-MRGNR/L

Style G  
Round  
Negative Rake



Right-Hand Toolholder Shown

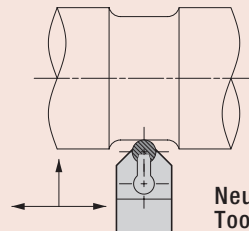
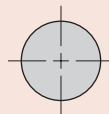


Part Number		Gage	Stock	Dimensions (inches)					Standard Components				* Tune-Up Kit Includes All Std. Components	Optional Components #1		Optional Components #2		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	Ins. Thk.	Shim Seat
C-MRGNR-163C	C-MRGNL-163C	RNGN-33	○	○	1.000	1.000	5	1.000	1.250	RSN-32	S-34	CL-7	XNS-36	TK-00515	NL-34L	CL-6	1/8"	RSN-33
C-MRGNR-163	C-MRGNL-163	RNGN-33	●	●	1.000	1.000	6	1.000	1.250	RSN-32	S-34	CL-7	XNS-36	TK-00515	NL-34L	CL-6	1/8"	RSN-33
C-MRGNR-203	C-MRGNL-203	RNGN-33	●	●	1.250	1.250	6	1.000	1.500	RSN-32	S-34	CL-7	XNS-36	TK-00515	NL-34L	CL-6	1/8"	RSN-33
C-MRGNR-164C	C-MRGNL-164C	RNGN-45	●	●	1.000	1.000	5	1.188	1.250	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3/16"	IRSN-45
C-MRGNR-164	C-MRGNL-164	RNGN-45	●	●	1.000	1.000	6	1.188	1.250	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3/16"	IRSN-45
C-MRGNR-204	C-MRGNL-204	RNGN-45	●	●	1.250	1.250	6	1.188	1.500	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3/16"	IRSN-45
C-MRGNR-244	C-MRGNL-244	RNGN-45	●	●	1.500	1.500	8	1.188	2.000	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3/16"	IRSN-45
C-MRGNR-165C	C-MRGNL-165C	RNGN-55	○	○	1.000	1.000	5	1.375	1.250	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	-	-
C-MRGNR-165	C-MRGNL-165	RNGN-55	○	○	1.000	1.000	6	1.375	1.250	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	-	-
C-MRGNR-205	C-MRGNL-205	RNGN-55	●	○	1.250	1.250	6	1.375	1.500	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	-	-
C-MRGNR-245	C-MRGNL-245	RNGN-55	○	○	1.500	1.500	8	1.375	2.000	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	-	-
C-MRGNR-166C	C-MRGNL-166C	RNGN-65	○	○	1.000	1.000	5	1.516	1.250	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	-	-
C-MRGNR-166	C-MRGNL-166	RNGN-65	●	○	1.000	1.000	6	1.516	1.250	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	-	-
C-MRGNR-206	C-MRGNL-206	RNGN-65	●	●	1.250	1.250	6	1.516	1.500	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	-	-
C-MRGNR-246	C-MRGNL-246	RNGN-65	●	●	1.500	1.500	8	1.516	2.000	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	-	-

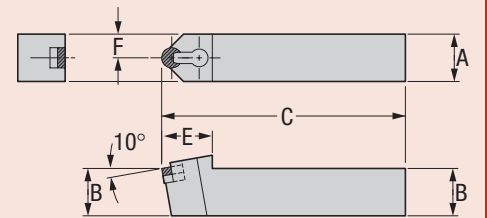
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-MRDNN

Style D  
Round  
Negative Rake



Neutral Toolholder Shown



Part Number		Gage	Stock	Dimensions (inches)					Standard Components				* Tune-Up Kit Includes All Standard Components	Optional Components #1		Optional Components #2	
Neutral	Insert	Insert		A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	Insert Thkness	Shim Seat
C-MRDNN-163C	RNGN-33	○	○	1.000	1.000	5	1.000	0.500	RSN-32	S-34	CL-7	XNS-36	TK-00515	NL-34L	CL-6	1/8"	RSN-33
C-MRDNN-163	RNGN-33	○	○	1.000	1.000	6	1.000	0.500	RSN-32	S-34	CL-7	XNS-36	TK-00515	NL-34L	CL-6	1/8"	RSN-33
C-MRDNN-203	RNGN-33	○	○	1.250	1.250	6	1.000	0.625	RSN-32	S-34	CL-7	XNS-36	TK-00515	NL-34L	CL-6	1/8"	RSN-33
C-MRDNN-164C	RNGN-45	○	○	1.000	1.000	5	1.375	0.500	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3/16"	IRSN-45
C-MRDNN-164	RNGN-45	●	○	1.000	1.000	6	1.375	0.500	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3/16"	IRSN-45
C-MRDNN-204	RNGN-45	●	○	1.250	1.250	6	1.375	0.625	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3/16"	IRSN-45
C-MRDNN-244	RNGN-45	●	○	1.500	1.500	8	1.375	0.750	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3/16"	IRSN-45
C-MRDNN-165C	RNGN-55	○	○	1.000	1.000	5	1.375	0.500	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	-	-
C-MRDNN-165	RNGN-55	○	○	1.000	1.000	6	1.375	0.500	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	-	-
C-MRDNN-205	RNGN-55	○	○	1.250	1.250	6	1.375	0.625	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	-	-
C-MRDNN-245	RNGN-55	○	○	1.500	1.500	8	1.375	0.750	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	-	-
C-MRDNN-166C	RNGN-65	○	○	1.000	1.000	5	1.562	0.500	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	-	-
C-MRDNN-166	RNGN-65	○	○	1.000	1.000	6	1.562	0.500	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	-	-
C-MRDNN-206	RNGN-65	○	○	1.250	1.250	6	1.562	0.625	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	-	-
C-MRDNN-246	RNGN-65	○	○	1.500	1.500	8	1.562	0.750	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	-	-

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

10 Business Days or Less

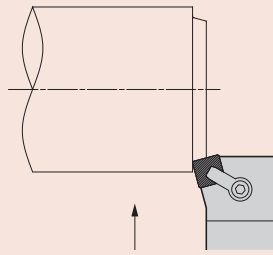
Stocked Standard

90°

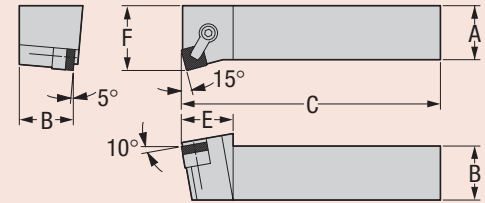


# C-MSKNR/L

Style K  
Square  
Negative Rake  
15° Lead



Right-Hand  
Toolholder Shown



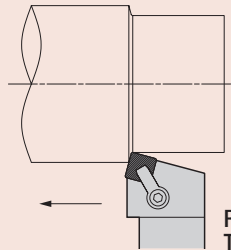
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp	5/16" Insert Shim Seat
C-MSKNR-164C	C-MSKNL-164C	SNGN-432	○	○	1.000	1.000	5	1.219	1.250	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSKNR-164	C-MSKNL-164	SNGN-432	○	○	1.000	1.000	6	1.219	1.250	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSKNR-204	C-MSKNL-204	SNGN-432	●	○	1.250	1.250	6	1.219	1.500	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSKNR-205	C-MSKNL-205	SNGN-543	○	○	1.250	1.250	6	1.438	1.500	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9	—
C-MSKNR-245	C-MSKNL-245	SNGN-543	○	○	1.500	1.500	8	1.438	2.000	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9	—
C-MSKNR-206	C-MSKNL-206	SNGN-643	●	●	1.250	1.250	6	1.547	1.500	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12	**ISSN-623
C-MSKNR-246	C-MSKNL-246	SNGN-643	○	○	1.500	1.500	8	1.547	2.000	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12	**ISSN-623

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

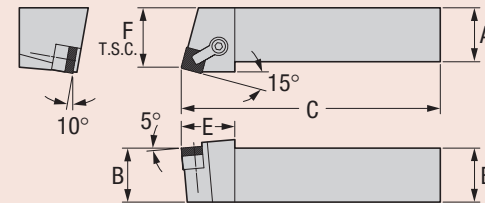
\*\* The lock pin option can NOT be used with this shim.

# C-MSRNR/L

Style R  
Square  
Negative Rake  
15° Lead



Right-Hand  
Toolholder Shown



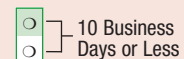
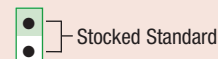
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp	5/16" Insert Shim Seat
C-MSRNR-164C	C-MSRNL-164C	SNGN-432	○	○	1.000	1.000	5	1.234	1.125	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSRNR-164	C-MSRNL-164	SNGN-432	●	○	1.000	1.000	6	1.234	1.125	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSRNR-204	C-MSRNL-204	SNGN-432	●	○	1.250	1.250	6	1.234	1.375	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSRNR-205	C-MSRNL-205	SNGN-543	○	○	1.250	1.250	6	1.469	1.343	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9	—
C-MSRNR-245	C-MSRNL-245	SNGN-543	○	○	1.500	1.500	8	1.469	1.843	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9	—
C-MSRNR-206	C-MSRNL-206	SNGN-643	●	●	1.250	1.250	6	1.500	1.312	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12	**ISSN-623
C-MSRNR-246	C-MSRNL-246	SNGN-643	●	●	1.500	1.500	8	1.500	1.812	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12	**ISSN-623

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

\*\* The lock pin option can NOT be used with this shim.

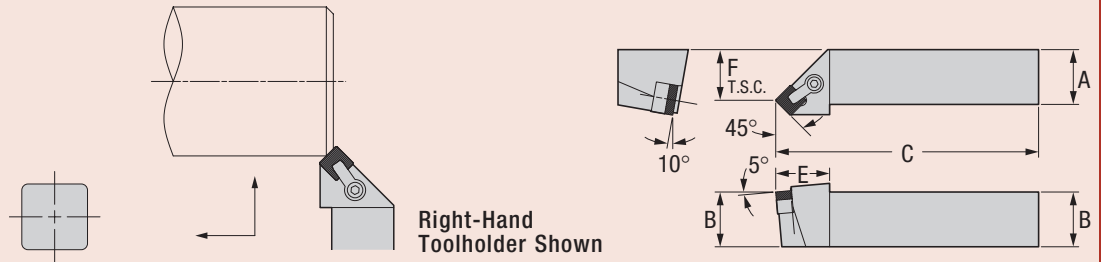
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# C-MSSNR/L

Style S  
Square  
Negative Rake  
45° Lead



Right-Hand  
Toolholder Shown

Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp	5/16" Insert Shim Seat
C-MSSNR-164C	C-MSSNL-164C	SNGN-432	○	○	1.000	1.000	5	1.234	0.906	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSSNR-164	C-MSSNL-164	SNGN-432	●	○	1.000	1.000	6	1.234	0.906	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSSNR-204	C-MSSNL-204	SNGN-432	●	○	1.250	1.250	6	1.234	1.156	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSSNR-205	C-MSSNL-205	SNGN-543	○	○	1.250	1.250	6	1.375	1.078	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9	—
C-MSSNR-245	C-MSSNL-245	SNGN-543	○	○	1.500	1.500	8	1.375	1.578	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9	—
C-MSSNR-206	C-MSSNL-206	SNGN-643	●	●	1.250	1.250	6	1.484	1.000	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12	**ISSN-623
C-MSSNR-246	C-MSSNL-246	SNGN-643	○	○	1.500	1.500	8	1.484	1.500	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12	**ISSN-623

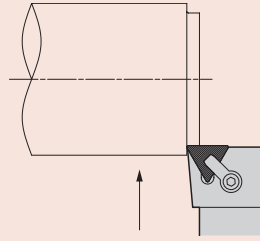
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.  
 \*\* The lock pin option can NOT be used with this shim.



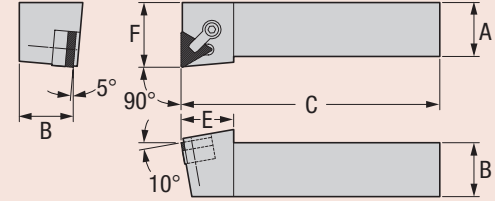


# C-MTFNR/L

Style F  
Triangle  
Negative Rake  
0° Lead



Right-Hand  
Toolholder Shown

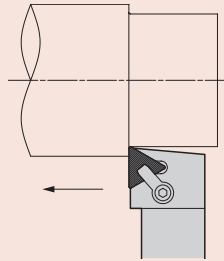


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp	5/16" Insert Shim Seat
C-MTFNR-163C	C-MTFNL-163C	TNGN-332	○	○	1.000	1.000	5	0.938	1.250	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	-
C-MTFNR-163	C-MTFNL-163	TNGN-332	○	○	1.000	1.000	6	0.938	1.250	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	-
C-MTFNR-203	C-MTFNL-203	TNGN-332	○	○	1.250	1.250	6	0.938	1.500	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	-
C-MTFNR-164C	C-MTFNL-164C	TNGN-432	○	○	1.000	1.000	5	1.219	1.250	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTFNR-164	C-MTFNL-164	TNGN-432	○	○	1.000	1.000	6	1.219	1.250	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTFNR-204	C-MTFNL-204	TNGN-432	○	●	1.250	1.250	6	1.219	1.500	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTFNR-244	C-MTFNL-244	TNGN-432	○	○	1.500	1.500	8	1.219	2.000	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433

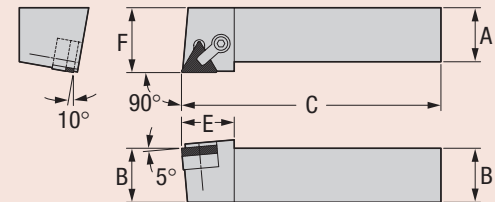
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-MTGNR/L

Style G  
Triangle  
Negative Rake  
0° Lead



Right-Hand  
Toolholder Shown

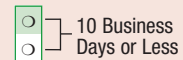
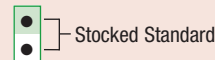


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp	5/16" Insert Shim Seat
C-MTGNR-163C	C-MTGNL-163C	TNGN-332	○	○	1.000	1.000	5	1.109	1.250	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	-
C-MTGNR-163	C-MTGNL-163	TNGN-332	○	○	1.000	1.000	6	1.109	1.250	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	-
C-MTGNR-203	C-MTGNL-203	TNGN-332	○	○	1.250	1.250	6	1.109	1.500	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	-
C-MTGNR-164C	C-MTGNL-164C	TNGN-432	○	○	1.000	1.000	5	1.188	1.250	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTGNR-164	C-MTGNL-164	TNGN-432	●	○	1.000	1.000	6	1.188	1.250	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTGNR-204	C-MTGNL-204	TNGN-432	○	○	1.250	1.250	6	1.188	1.500	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTGNR-244	C-MTGNL-244	TNGN-432	○	○	1.500	1.500	8	1.188	2.000	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

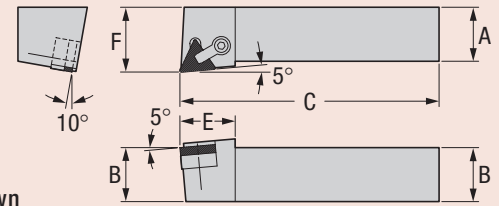
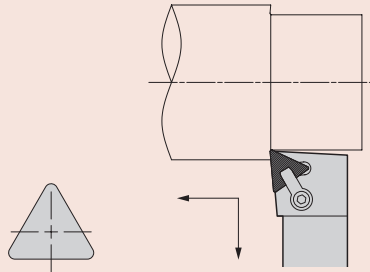
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sales@greenleafcorporation.com • www.greenleafglobalsupport.com



# C-MTLNR/L

Style L  
Triangle  
Negative Rake  
5° Reverse Lead



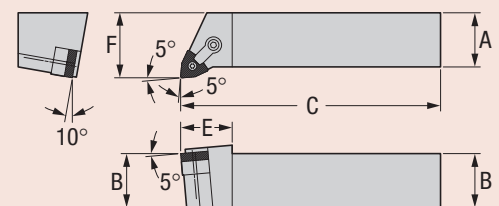
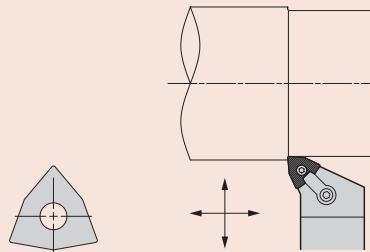
Right-Hand  
Toolholder Shown

Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp	5/16" Insert Shim Seat
C-MTLNR-163C	C-MTLNL-163C	TNGN-332	○	○	1.000	1.000	5	1.109	1.250	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	—
C-MTLNR-163	C-MTLNL-163	TNGN-332	○	○	1.000	1.000	6	1.109	1.250	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	—
C-MTLNR-203	C-MTLNL-203	TNGN-332	○	○	1.250	1.250	6	1.109	1.500	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	—
C-MTLNR-164C	C-MTLNL-164C	TNGN-432	○	○	1.000	1.000	5	1.188	1.250	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTLNR-164	C-MTLNL-164	TNGN-432	○	○	1.000	1.000	6	1.188	1.250	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTLNR-204	C-MTLNL-204	TNGN-432	○	○	1.250	1.250	6	1.188	1.500	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTLNR-244	C-MTLNL-244	TNGN-432	○	○	1.500	1.500	8	1.188	2.000	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-MWLNR/L

Style L  
Trigon  
Negative Rake  
5° Reverse Lead



Right-Hand  
Toolholder Shown

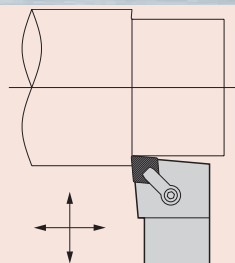
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components
C-MWLNR-123B	C-MWLNL-123B	WNGA-332	○	○	0.750	0.750	4.5	1.000	1.000	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
C-MWLNR-163	C-MWLNL-163	WNGA-332	○	○	1.000	1.000	6	1.000	1.250	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
C-MWLNR-203	C-MWLNL-203	WNGA-332	○	○	1.250	1.250	6	1.000	1.500	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
C-MWLNR-243	C-MWLNL-243	WNGA-332	○	○	1.500	1.500	8	1.000	2.000	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
C-MWLNR-124B	C-MWLNL-124B	WNGA-432	○	○	0.750	0.750	4.5	1.078	1.000	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766
C-MWLNR-164	C-MWLNL-164	WNGA-432	●	○	1.000	1.000	6	1.078	1.250	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766
C-MWLNR-204	C-MWLNL-204	WNGA-432	○	○	1.250	1.250	6	1.078	1.500	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766
C-MWLNR-244	C-MWLNL-244	WNGA-432	○	○	1.500	1.500	8	1.078	2.000	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

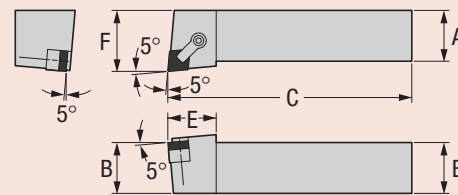


# H-MCLNR/L

Style L  
80° Diamond  
Negative Rake  
5° Reverse Lead



Right-Hand  
Toolholder Shown

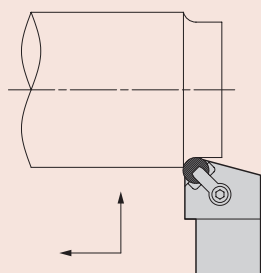


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp	5/16" Insert Shim Seat
H-MCLNR-164C	H-MCLNL-164C	CNGN-432	○	○	1.000	1.000	5	1.188	1.250	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
H-MCLNR-164	H-MCLNL-164	CNGN-432	●	○	1.000	1.000	6	1.188	1.250	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
H-MCLNR-204	H-MCLNL-204	CNGN-432	●	○	1.250	1.250	6	1.188	1.500	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433

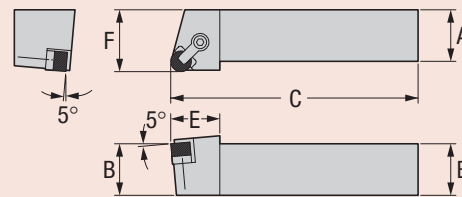
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# H-MRGNR/L

Style G  
Round  
Negative Rake



Right-Hand  
Toolholder Shown



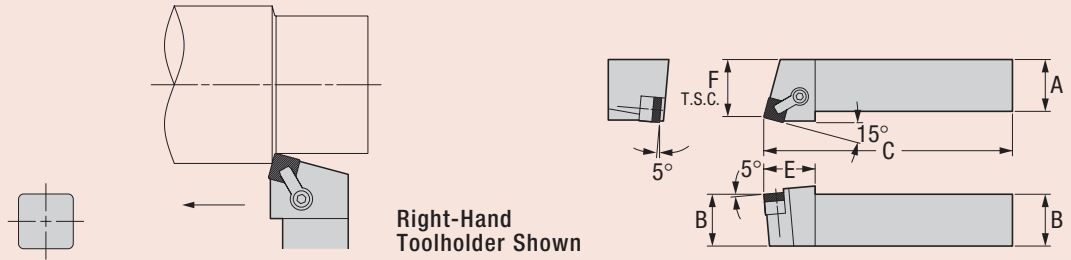
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp	3/16" Insert Shim Seat
H-MRGNR-164C	H-MRGNL-164C	RNGN-45	○	○	1.000	1.000	5	1.188	1.250	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	IRSN-45
H-MRGNR-164	H-MRGNL-164	RNGN-45	●	●	1.000	1.000	6	1.188	1.250	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	IRSN-45
H-MRGNR-204	H-MRGNL-204	RNGN-45	●	●	1.250	1.250	6	1.188	1.500	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	IRSN-45
H-MRGNR-244	H-MRGNL-244	RNGN-45	●	○	1.500	1.500	8	1.188	2.000	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	IRSN-45

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

*These toolholders are for hard turning  
with ceramic inserts  
using industry standard components.*

# H-MSRNR/L

Style R  
Square  
Negative Rake  
15° Lead

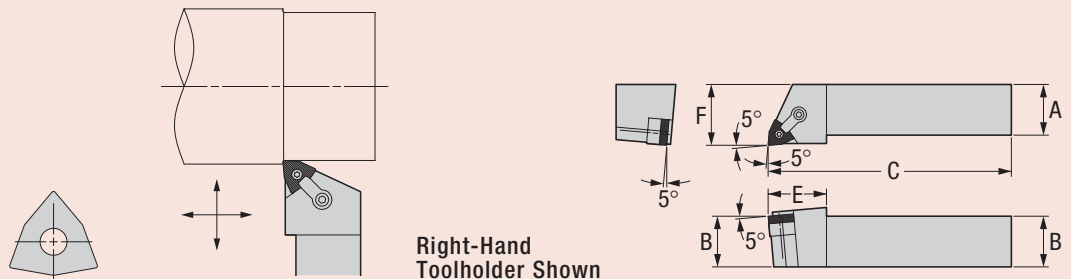


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp	5/16" Insert Shim Seat
H-MSRNR-164C	H-MSRNL-164C	SNGN-432	○	○	1.000	1.000	5	1.234	1.125	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
H-MSRNR-164	H-MSRNL-164	SNGN-432	○	○	1.000	1.000	6	1.234	1.125	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
H-MSRNR-204	H-MSRNL-204	SNGN-432	○	○	1.250	1.250	6	1.234	1.375	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# H-MWLNR/L

Style L  
Trigon  
Negative Rake  
5° Reverse Lead



Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
H-MWLNR-123B	H-MWLNL-123B	WNGA-332	○	○	0.750	0.750	4.5	1.000	1.000	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
H-MWLNR-163	H-MWLNL-163	WNGA-332	○	○	1.000	1.000	6	1.000	1.250	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
H-MWLNR-203	H-MWLNL-203	WNGA-332	○	○	1.250	1.250	6	1.000	1.500	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
H-MWLNR-243	H-MWLNL-243	WNGA-332	○	○	1.500	1.500	8	1.000	2.000	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
H-MWLNR-124B	H-MWLNL-124B	WNGA-432	○	○	0.750	0.750	4.5	1.078	1.000	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766
H-MWLNR-164	H-MWLNL-164	WNGA-432	○	○	1.000	1.000	6	1.078	1.250	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766
H-MWLNR-204	H-MWLNL-204	WNGA-432	○	○	1.250	1.250	6	1.078	1.500	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766
H-MWLNR-244	H-MWLNL-244	WNGA-432	○	○	1.500	1.500	8	1.078	2.000	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

**These toolholders are for hard turning with ceramic inserts using industry standard components.**

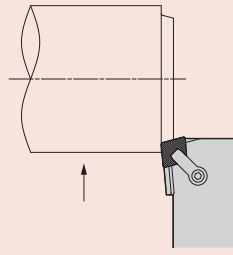
10 Business Days or Less

Stocked Standard

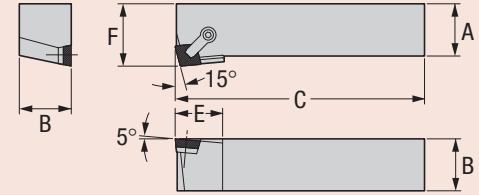
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# C-CCKPR/L

Style K  
80° Diamond (Using 100° Corner)  
Positive Rake  
15° Lead



Right-Hand  
Toolholder Shown

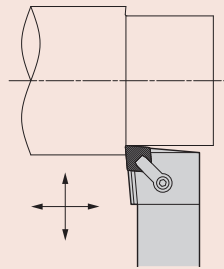


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
C-CCKPR-164C	C-CCKPL-164C	CPGN-432	○	○	1.000	1.000	5	1.188	1.250	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
C-CCKPR-164	C-CCKPL-164	CPGN-432	○	○	1.000	1.000	6	1.188	1.250	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
C-CCKPR-204	C-CCKPL-204	CPGN-432	○	○	1.250	1.250	6	1.188	1.500	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501

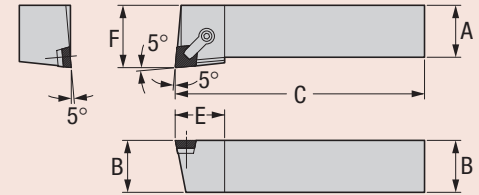
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-CCLPR/L

Style L  
80° Diamond  
Positive Rake  
5° Reverse Lead



Right-Hand  
Toolholder Shown

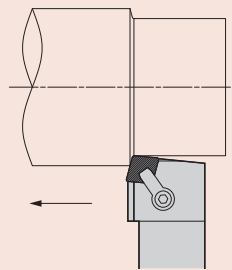


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
C-CCLPR-164C	C-CCLPL-164C	CPGN-432	○	○	1.000	1.000	5	1.188	1.250	SP-49	#4-40x 3/8 F.C.H.S.	CL-12	XNS-59	TK-00501
C-CCLPR-164	C-CCLPL-164	CPGN-432	○	○	1.000	1.000	6	1.188	1.250	SP-49	#4-40x 3/8 F.C.H.S.	CL-12	XNS-59	TK-00501
C-CCLPR-204	C-CCLPL-204	CPGN-432	○	○	1.250	1.250	6	1.188	1.500	SP-49	#4-40x 3/8 F.C.H.S.	CL-12	XNS-59	TK-00501

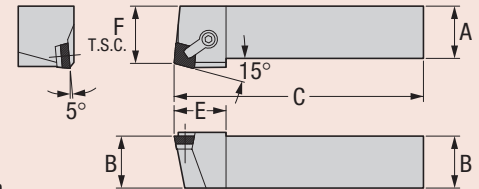
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-CCRPR/L

Style R  
80° Diamond (Using 100° Corner)  
Positive Rake  
15° Lead



Right-Hand  
Toolholder Shown



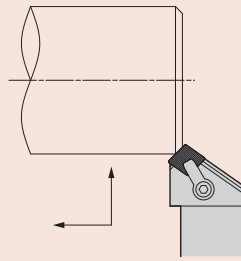
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
C-CCRPR-164C	C-CCRPL-164C	CPGN-432	○	○	1.000	1.000	5	1.250	1.250	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
C-CCRPR-164	C-CCRPL-164	CPGN-432	○	○	1.000	1.000	6	1.250	1.250	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
C-CCRPR-204	C-CCRPL-204	CPGN-432	○	○	1.250	1.250	6	1.250	1.500	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

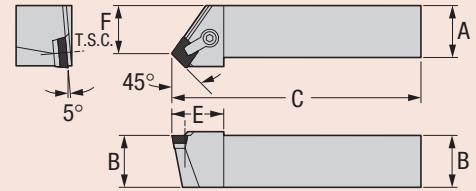


# C-CCSPR/L

Style S  
80° Diamond (Using 100° Corner)  
Positive Rake  
45° Lead



Right-Hand  
Toolholder Shown

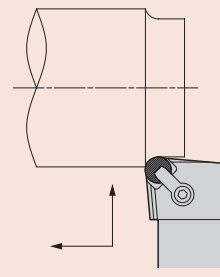


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
C-CCSPR-164C	C-CCSPL-164C	CPGN-432	○	○	1.000	1.000	5	1.250	1.250	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
C-CCSPR-164	C-CCSPL-164	CPGN-432	○	○	1.000	1.000	6	1.250	1.250	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
C-CCSPR-204	C-CCSPL-204	CPGN-432	○	○	1.250	1.250	6	1.250	1.500	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501

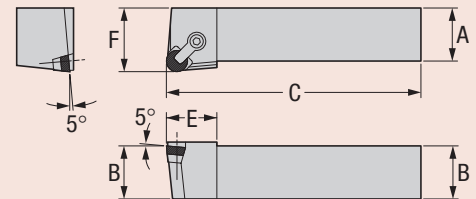
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-CRGPR/L

Style G  
Round  
Positive Rake



Right-Hand  
Toolholder Shown

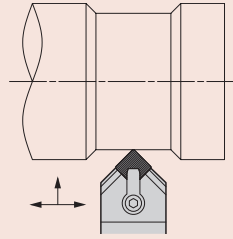


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
C-CRGPR-163C	C-CRGPL-163C	RPGN-32	○	○	1.000	1.000	5	1.000	1.250	SP-34	#2-56x 1/4 S.H.C.S.	CL-7	XNS-36	TK-00502
C-CRGPR-163	C-CRGPL-163	RPGN-32	○	○	1.000	1.000	6	1.000	1.250	SP-34	#2-56x 1/4 S.H.C.S.	CL-7	XNS-36	TK-00502
C-CRGPR-203	C-CRGPL-203	RPGN-32	○	○	1.250	1.250	6	1.000	1.500	SP-34	#2-56x 1/4 S.H.C.S.	CL-7	XNS-36	TK-00502
C-CRGPR-164C	C-CRGPL-164C	RPGN-43	○	○	1.000	1.000	5	1.188	1.250	SP-44	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00503
C-CRGPR-164	C-CRGPL-164	RPGN-43	●	●	1.000	1.000	6	1.188	1.250	SP-44	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00503
C-CRGPR-204	C-CRGPL-204	RPGN-43	●	●	1.250	1.250	6	1.188	1.500	SP-44	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00503
C-CRGPR-244	C-CRGPL-244	RPGN-43	●	○	1.500	1.500	8	1.188	2.000	SP-44	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00503

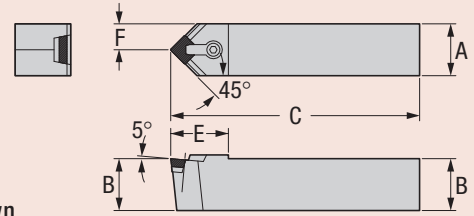
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-CSDPN

Style D  
Square  
Positive Rake  
45° Lead



Neutral  
Toolholder Shown

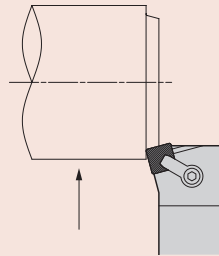


Part Number	Gage	Stock	Dimensions (inches)					Standard Components				* Tune-Up Kit
	Insert		A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
<b>C-CSDPN-164C</b>	SPGN-432	○	1.000	1.000	5	1.391	0.500	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
<b>C-CSDPN-164</b>	SPGN-432	○	1.000	1.000	6	1.391	0.500	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
<b>C-CSDPN-204</b>	SPGN-432	●	1.250	1.250	6	1.391	0.625	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504

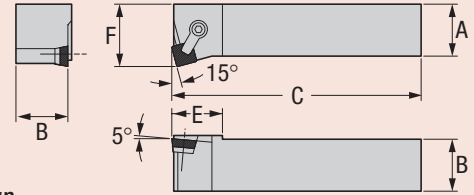
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-CSKPR/L

Style K  
Square  
Positive Rake  
15° Lead



Right-Hand  
Toolholder Shown



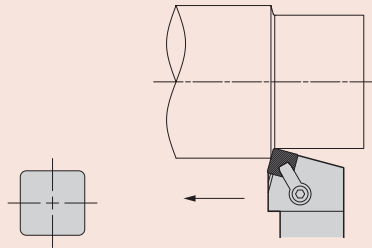
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
<b>C-CSKPR-164C</b>	<b>C-CSKPL-164C</b>	SPGN-432	○	○	1.000	1.000	5	1.219	1.250	SP-41	#4-40X 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
<b>C-CSKPR-164</b>	<b>C-CSKPL-164</b>	SPGN-432	○	○	1.000	1.000	6	1.219	1.250	SP-41	#4-40X 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
<b>C-CSKPR-204</b>	<b>C-CSKPL-204</b>	SPGN-432	○	○	1.250	1.250	6	1.219	1.500	SP-41	#4-40X 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

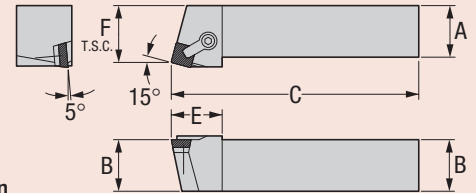
CERAMIC TOOLHOLDERS

# C-CSRPR/L

Style R  
Square  
Positive Rake  
15° Lead



Right-Hand  
Toolholder Shown

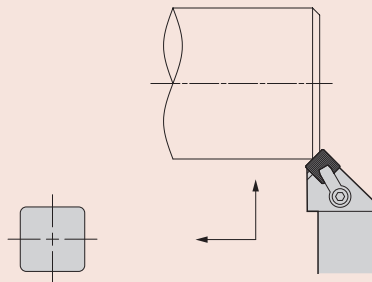


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
C-CSRPR-164C	C-CSRPL-164C	SPGN-432	○	○	1.000	1.000	5	1.234	1.125	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
C-CSRPR-164	C-CSRPL-164	SPGN-432	○	○	1.000	1.000	6	1.234	1.125	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
C-CSRPR-204	C-CSRPL-204	SPGN-432	○	○	1.250	1.250	6	1.234	1.375	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504

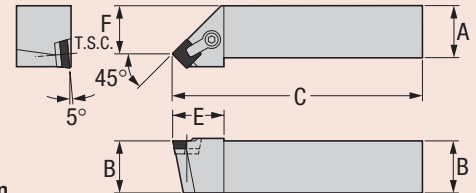
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-CSSPR/L

Style S  
Square  
Positive Rake  
45° Lead



Right-Hand  
Toolholder Shown



Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
C-CSSPR-164C	C-CSSPL-164C	SPGN-432	○	○	1.000	1.000	5	1.234	0.906	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
C-CSSPR-164	C-CSSPL-164	SPGN-432	○	○	1.000	1.000	6	1.234	0.906	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
C-CSSPR-204	C-CSSPL-204	SPGN-432	○	○	1.250	1.250	6	1.234	1.156	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504

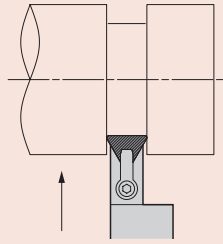
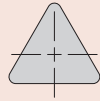
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.



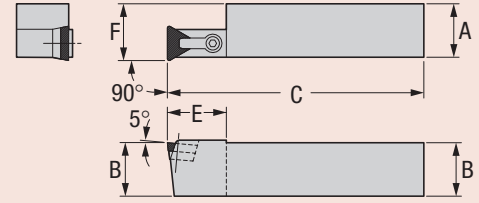


# C-CTCPR/L

Style C  
Triangle  
Positive Rake  
0° Lead



Right-Hand  
Toolholder Shown

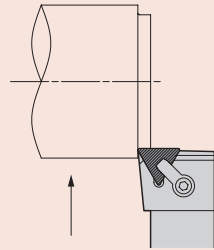
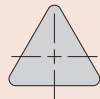


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
C-CTCPR-163C	C-CTCPL-163C	TPGN-322	○	○	1.000	1.000	5	1.125	1.047	SP3A	#4-40x 3/8 F.H.C.S.	CL-22	XNS-48	TK-00505
C-CTCPR-163	C-CTCPL-163	TPGN-322	○	○	1.000	1.000	6	1.125	1.047	SP3A	#4-40x 3/8 F.H.C.S.	CL-22	XNS-48	TK-00505
C-CTCPR-203	C-CTCPL-203	TPGN-322	○	○	1.250	1.250	6	1.125	1.297	SP3A	#4-40x 3/8 F.H.C.S.	CL-22	XNS-48	TK-00505
C-CTCPR-164C	C-CTCPL-164C	TPGN-432	○	○	1.000	1.000	5	1.375	1.078	SP-4	#6-32x 1/2 F.H.C.S.	CL-30	XNS-59	TK-00506
C-CTCPR-164	C-CTCPL-164	TPGN-432	○	○	1.000	1.000	6	1.375	1.078	SP-4	#6-32x 1/2 F.H.C.S.	CL-30	XNS-59	TK-00506
C-CTCPR-204	C-CTCPL-204	TPGN-432	○	○	1.250	1.250	6	1.375	1.328	SP-4	#6-32x 1/2 F.H.C.S.	CL-30	XNS-59	TK-00506
C-CTCPR-244	C-CTCPL-244	TPGN-432	○	○	1.500	1.500	8	1.375	1.578	SP-4	#6-32x 1/2 F.H.C.S.	CL-30	XNS-59	TK-00506

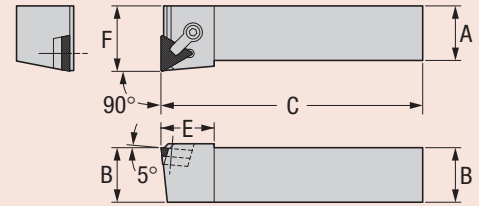
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-CTFPR/L

Style F  
Triangle  
Positive Rake  
0° Lead



Right-Hand  
Toolholder Shown



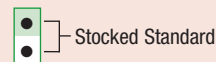
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
C-CTFPR-163C	C-CTFPL-163C	TPGN-322	○	○	1.000	1.000	5	0.938	1.250	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTFPR-163	C-CTFPL-163	TPGN-322	○	○	1.000	1.000	6	0.938	1.250	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTFPR-203	C-CTFPL-203	TPGN-322	○	○	1.250	1.250	6	0.938	1.500	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTFPR-164C	C-CTFPL-164C	TPGN-432	○	○	1.000	1.000	5	1.219	1.250	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTFPR-164	C-CTFPL-164	TPGN-432	○	○	1.000	1.000	6	1.219	1.250	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTFPR-204	C-CTFPL-204	TPGN-432	○	○	1.250	1.250	6	1.219	1.500	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTFPR-244	C-CTFPL-244	TPGN-432	○	○	1.500	1.500	8	1.219	2.000	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

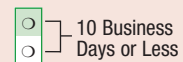
CERAMIC TOOLHOLDERS

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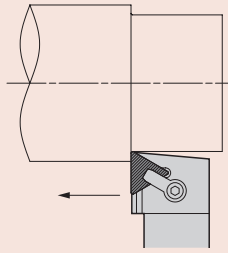
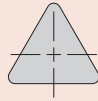
Stocked Standard



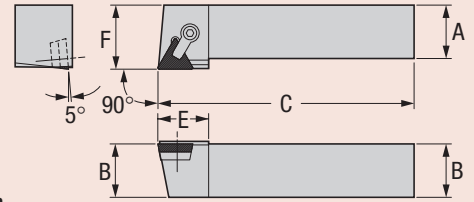
10 Business Days or Less

# C-CTGPR/L

Style G  
Triangle  
Positive Rake  
0° Lead



Right-Hand  
Toolholder Shown

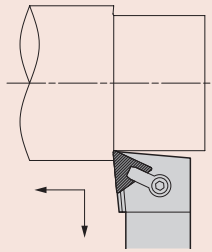


Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
C-CTGPR-163C	C-CTGPL-163C	TPGN-322	○	○	1.000	1.000	5	1.109	1.250	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTGPR-163	C-CTGPL-163	TPGN-322	○	○	1.000	1.000	6	1.109	1.250	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTGPR-203	C-CTGPL-203	TPGN-322	○	○	1.250	1.250	6	1.109	1.500	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTGPR-164C	C-CTGPL-164C	TPGN-432	○	○	1.000	1.000	5	1.188	1.250	SP-4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTGPR-164	C-CTGPL-164	TPGN-432	○	○	1.000	1.000	6	1.188	1.250	SP-4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTGPR-204	C-CTGPL-204	TPGN-432	○	○	1.250	1.250	6	1.188	1.500	SP-4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTGPR-244	C-CTGPL-244	TPGN-432	○	○	1.500	1.500	8	1.188	2.000	SP-4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508

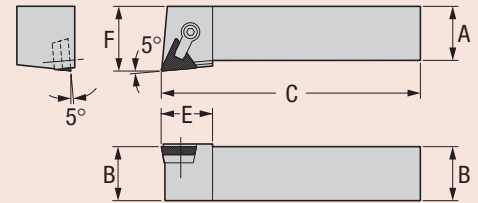
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.

# C-CTLPR/L

Style L  
Triangle  
Positive Rake  
5° Reverse Lead

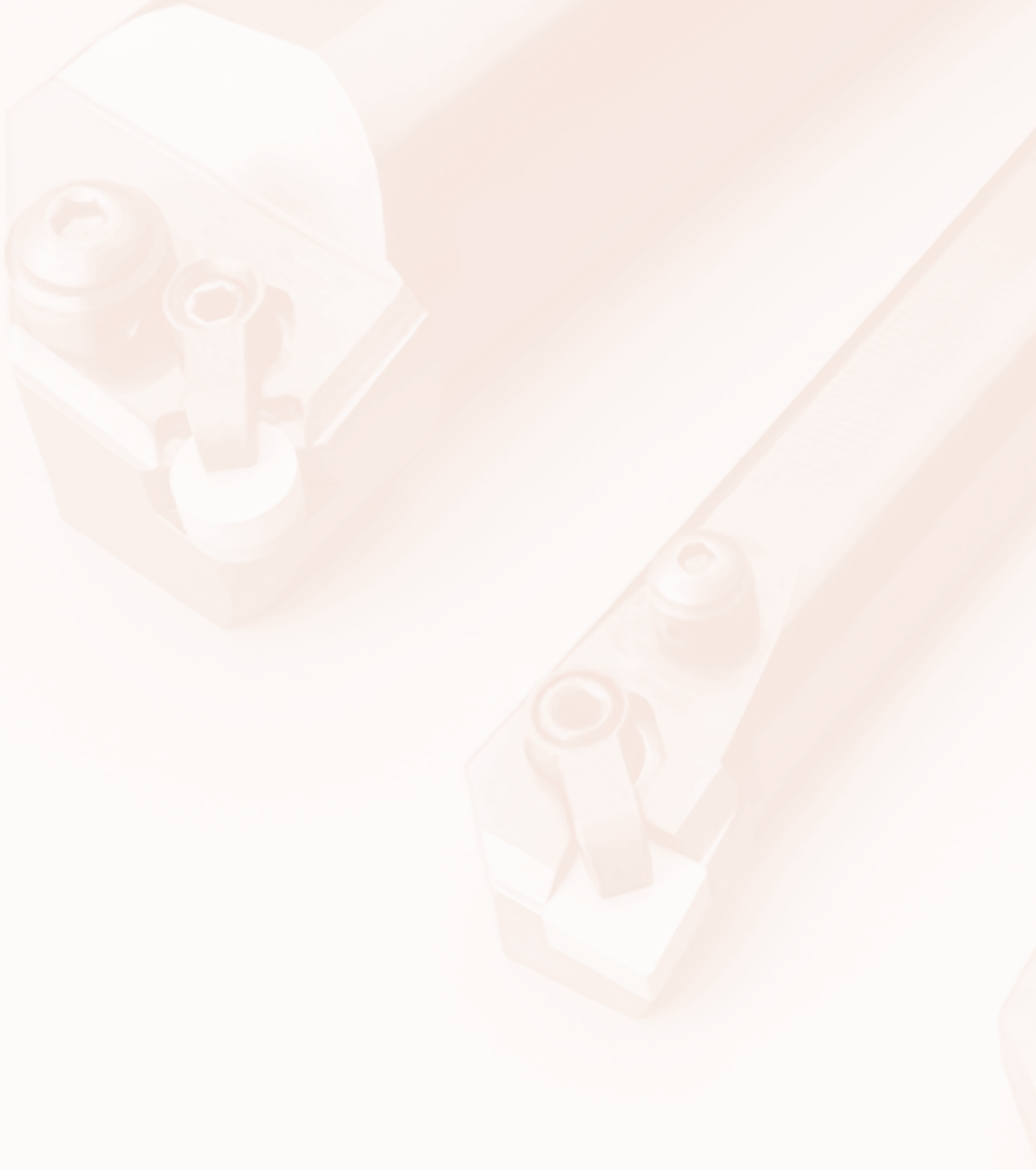


Right-Hand  
Toolholder Shown



Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
C-CTLPR-163C	C-CTLPL-163C	TPGN-322	○	○	1.000	1.000	5	1.109	1.250	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTLPR-163	C-CTLPL-163	TPGN-322	○	○	1.000	1.000	6	1.109	1.250	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTLPR-203	C-CTLPL-203	TPGN-322	○	○	1.250	1.250	6	1.109	1.500	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTLPR-164C	C-CTLPL-164C	TPGN-432	○	○	1.000	1.000	5	1.188	1.250	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTLPR-164	C-CTLPL-164	TPGN-432	○	○	1.000	1.000	6	1.188	1.250	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTLPR-204	C-CTLPL-204	TPGN-432	○	○	1.250	1.250	6	1.188	1.500	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTLPR-244	C-CTLPL-244	TPGN-432	○	○	1.500	1.500	8	1.188	2.000	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.



## Industry-Standard Boring Bars for Carbide Inserts

The boring bar systems and cartridges in this catalog are designed around industry standard hardware. This gives complete interchangeability with other tooling components and minimizes spare parts inventories.

Most bars incorporate “through the bar” coolant feed with directable outlet nozzle.

Greenleaf uses heat treated alloy steel to insure a consistent high quality product for maximum life performance.

Custom engineered tooling is a Greenleaf specialty and we will be pleased to quote your special requirements for boring. Additionally, Greenleaf has the capability to quote boring bars made of heavy metal shanks or “No-Chat” material.



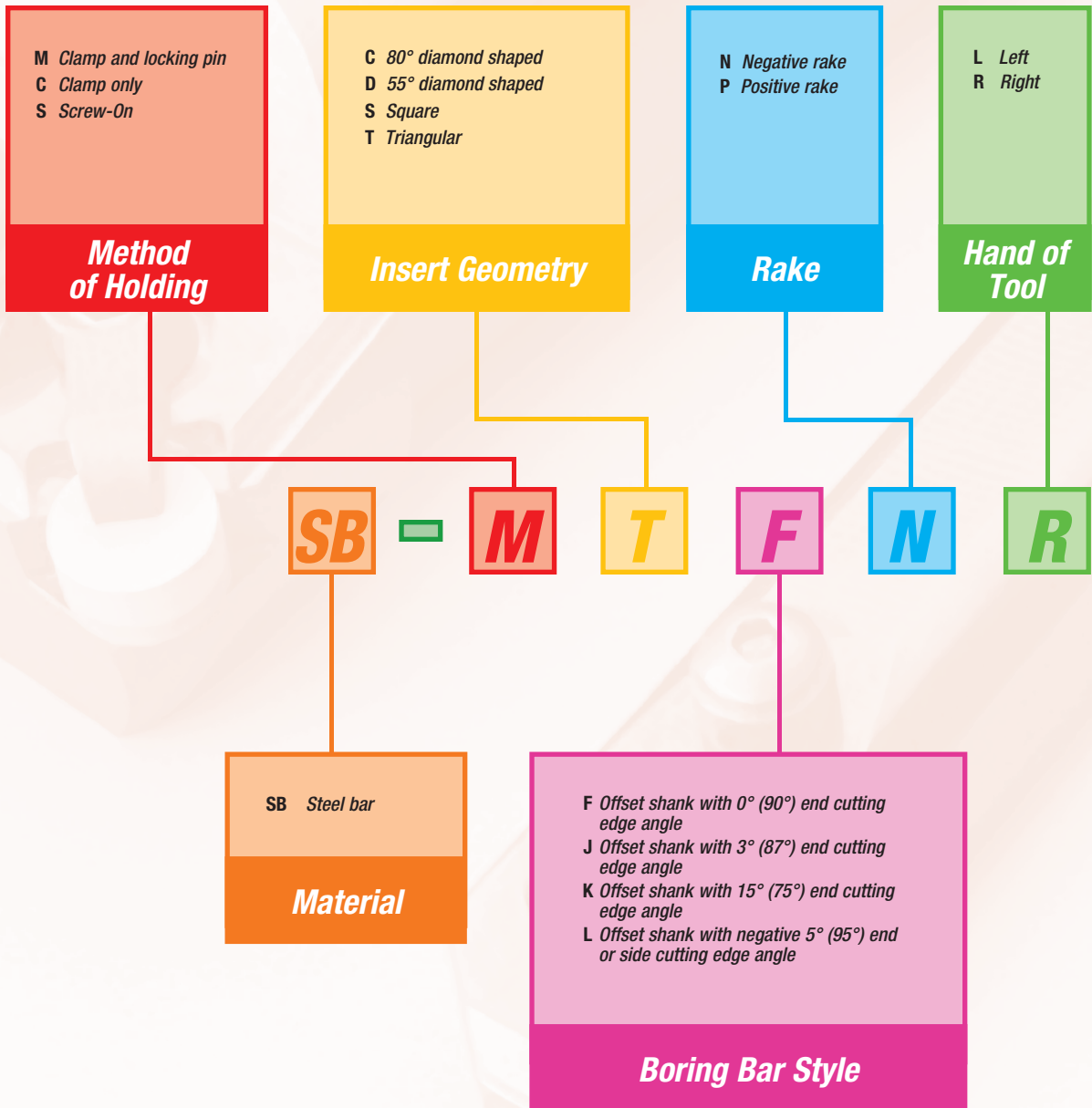
*Greenleaf Corporation is continually upgrading its products.  
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## Boring Bar Identification System



**NOTE:**

The angles shown in parentheses are the angles as shown in the ANSI standard.

*This position will indicate bar diameter in sixteenths of an inch.*

**Bar Diameter**

**16**

*Number of 1/8ths on 1/4" I.C. and over  
Number of 1/32nds on 1/4" I.C. and under*

**Insert Size I.C.**

**3**



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# Boring Bar Usage Reference Guide

Boring Bar Style

Boring Bar Geometry

Insert Type

Boring Bar Application

Part Number

### SB-MCKNR/L

Style K  
80° Diamond (Using 100° Corner)  
Negative Rake  
TK Lead

Part Number	Right	Left	Insert	Stock	Min. Bore	Max. Bore	Length	Clamp	Clamp Screw	Light	Includes All Standard Components	Tune-Up Kit	Optional Component	
SB-MCKNR-16-4	SB-MCKNL-16-4	CNGA-432	1	1	1.250	1.000	12.00	0.640	CL-20	XNS-47	—	NL-44	TK-00557	S-465
SB-MCKNR-20-4	SB-MCKNL-20-4	CNGA-432	1	1	1.488	1.25	13.75	0.765	CL-20	XNS-47	CSN61-433	NL-46A	TK-00638	S-465
SB-MCKNR-24-4	SB-MCKNL-24-4	CNGA-432	1	1	1.718	1.50	13.75	0.890	CL-20	XNS-47	CSN-432	NL-46	TK-00559	S-465
SB-MCKNR-28-4	SB-MCKNL-28-4	CNGA-432	1	1	1.908	1.75	13.75	1.015	CL-20	XNS-47	CSN-432	NL-46	TK-00559	S-465
SB-MCKNR-32-6	SB-MCKNL-32-6	CNGA-643	1	1	2.468	2.00	16.00	1.281	CL-12	XNS-510	CSN-633	NL-68	TK-00546	S-685
SB-MCKNR-36-6	SB-MCKNL-36-6	CNGA-643	1	1	2.718	2.25	16.00	1.406	CL-12	XNS-510	CSN-633	NL-68	TK-00546	S-685
SB-MCKNR-40-6	SB-MCKNL-40-6	CNGA-643	1	1	2.968	2.50	16.00	1.531	CL-12	XNS-510	CSN-633	NL-68	TK-00546	S-685

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

### SB-MDJNR/L

Style J  
55° Diamond  
Negative Rake  
3° Reverse Lead

Part Number	Right	Left	Insert	Stock	Min. Bore	Max. Bore	Length	Clamp	Clamp Screw	Light	Includes All Standard Components	Tune-Up Kit	Optional Component	
SB-MDJNR-20-4	SB-MDJNL-20-4	CNGA-432	1	1	2.000	1.50	13.75	1.000	CL-12	XNS-59	DSN-433	NL-46	TK-00560	S-465
SB-MDJNR-24-4	SB-MDJNL-24-4	CNGA-432	1	1	2.250	1.75	13.75	1.125	CL-12	XNS-59	DSN-433	NL-46	TK-00560	S-465
SB-MDJNR-28-5	SB-MDJNL-28-5	CNGA-543	1	1	2.500	1.75	13.75	1.250	CL-12	XNS-510	DSN-533	NL-58	TK-00722	S-585
SB-MDJNR-32-5	SB-MDJNL-32-5	CNGA-543	1	1	2.750	1.75	13.75	1.375	CL-12	XNS-510	DSN-533	NL-58	TK-00722	S-585
SB-MDJNR-36-5	SB-MDJNL-36-5	CNGA-543	1	1	3.000	2.00	16.00	1.500	CL-20	XNS-510	DSN-533	NL-58	TK-00722	S-585
SB-MDJNR-40-5	SB-MDJNL-40-5	CNGA-543	1	1	3.250	2.25	16.00	1.625	CL-20	XNS-510	DSN-533	NL-58	TK-00722	S-585

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

### SB-MCLNR/L

Style L  
80° Diamond  
Negative Rake  
5° Reverse Lead

Part Number	Right	Left	Insert	Stock	Min. Bore	Max. Bore	Length	Clamp	Clamp Screw	Light	Includes All Standard Components	Tune-Up Kit	Optional Component	
SB-MCLNR-16-4	SB-MCLNL-16-4	CNGA-432	1	1	1.250	1.000	12.00	0.640	CL-20	XNS-47	—	NL-44	TK-00557	S-465
SB-MCLNR-20-4	SB-MCLNL-20-4	CNGA-432	1	1	1.488	1.25	13.75	0.765	CL-20	XNS-47	CSN61-433	NL-46A	TK-00638	S-465
SB-MCLNR-24-4	SB-MCLNL-24-4	CNGA-432	1	1	1.718	1.50	13.75	0.890	CL-20	XNS-47	CSN-432	NL-46	TK-00559	S-465
SB-MCLNR-28-4	SB-MCLNL-28-4	CNGA-432	1	1	1.908	1.75	13.75	1.015	CL-20	XNS-47	CSN-432	NL-46	TK-00559	S-465
SB-MCLNR-32-6	SB-MCLNL-32-6	CNGA-643	1	1	2.468	2.00	16.00	1.281	CL-12	XNS-510	CSN-633	NL-68	TK-00546	S-685
SB-MCLNR-36-6	SB-MCLNL-36-6	CNGA-643	1	1	2.718	2.25	16.00	1.406	CL-12	XNS-510	CSN-633	NL-68	TK-00546	S-685
SB-MCLNR-40-6	SB-MCLNL-40-6	CNGA-643	1	1	2.968	2.50	16.00	1.531	CL-12	XNS-510	CSN-633	NL-68	TK-00546	S-685

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

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18 Business Days of Lead

Stocked Standard

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BORING BARS

BORING BARS

Insert Geometry

Optional Components

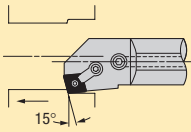
Dimensions

Standard Components

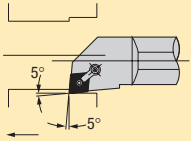
Stocking Program

Tune-Up Kits

### 80° Diamond – Negative

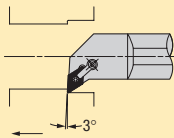


**SB-MCKNR/L**  
 Style K  
 80° Diamond  
 (Using 100° Corner)  
 Negative Rake  
 15° Lead  
*page: T 128*



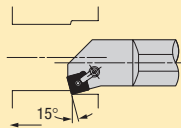
**SB-MCLNR/L**  
 Style L  
 80° Diamond  
 Negative Rake  
 5° Reverse Lead  
*page: T 128*

### 55° Diamond – Negative



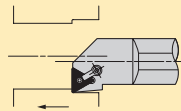
**SB-MDJNR/L**  
 Style J  
 55° Diamond  
 Negative Rake  
 3° Reverse Lead  
*page: T 129*

### Square – Negative

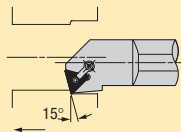


**SB-MSKNR/L**  
 Style K  
 Square  
 Negative Rake  
 15° Lead  
*page: T 130*

### Triangle – Negative

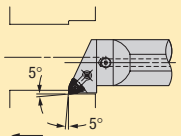


**SB-MTFNR/L**  
 Style F  
 Triangle  
 Negative Rake  
 0° Lead  
*page: T 131*



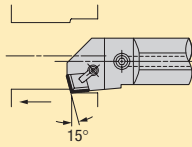
**SB-MTKNR/L**  
 Style K  
 Triangle  
 Negative Rake  
 15° Lead  
*page: T 131*

### Trigon – Negative

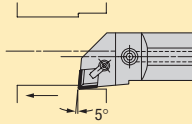


**SB-MWLNR/L**  
 Style L  
 80° Trigon  
 Negative Rake  
 5° Reverse Lead  
*page: T 132*

### 80° Diamond – Positive

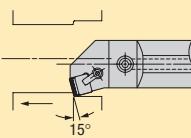


**SB-CCKPR/L**  
 Style K  
 80° Diamond  
 (Using 100° Corner)  
 Positive Rake  
 15° Lead  
*page: T 133*



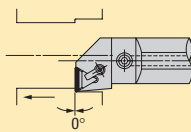
**SB-CCLPR/L**  
 Style L  
 80° Diamond  
 Positive Rake  
 5° Reverse Lead  
*page: T 133*

### Square – Positive

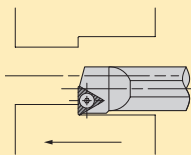


**SB-CSKPR/L**  
 Style K  
 Square  
 Positive Rake  
 15° Lead  
*page: T 134*

### Triangle – Positive

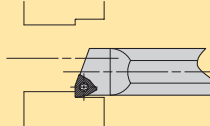


**SB-CTFPR/L**  
 Style F  
 Triangle  
 Positive Rake  
 0° Lead  
*page: T 135*

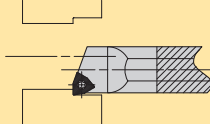


**S-STFNR/L**  
 Style F  
 Triangle  
 Positive Rake  
 0° Lead  
*page: T 135*

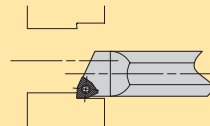
### Screw-On Trigon



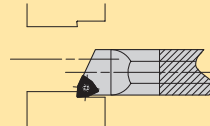
**C-SWFCR/L**  
 Style F  
 Screw-On Trigon  
 Solid Steel  
 0° Lead  
*page: T 136*



**S-SWFCR/L**  
 Style F  
 Screw-On Trigon  
 Heavy Metal  
 Fixed Steel Head  
 0° Lead  
*page: T 136*



**S-SWLCR/L**  
 Style L  
 Screw-On Trigon  
 Solid Steel  
 5° Reverse Lead  
*page: T 137*



**C-SWLCR/L**  
 Style L  
 Screw-On Trigon  
 Heavy Metal  
 Fixed Steel Head  
 5° Reverse Lead  
*page: T 137*

*These Boring Bars do not follow the Boring Bar Identification System.*

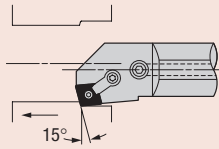


80°

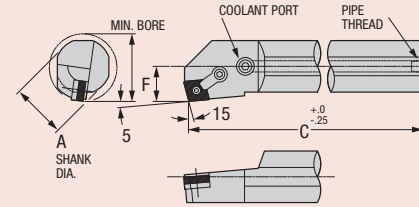


# SB-MCKNR/L

Style K  
80° Diamond (Using 100° Corner)  
Negative Rake  
15° Lead



Right-Hand Boring Bar Shown

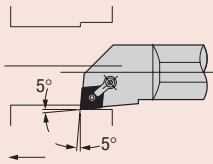


Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L		A	C	F	Clamp	Clamp Screw	Shim	Lock Pin	Includes All Standard Components	Shim Screw	Shim
SB-MCKNR-16-4	SB-MCKNL-16-4	CNGA-432	○	○	1.250	1.00	12.00	0.640	CL-20	XNS-47	—	NL-44	TK-00657	—	—
SB-MCKNR-20-4	SB-MCKNL-20-4	CNGA-432	○	○	1.468	1.25	13.75	0.765	CL-20	XNS-47	CSNB-433	NL-46A	TK-00658	S-46S	—
SB-MCKNR-24-4	SB-MCKNL-24-4	CNGA-432	○	○	1.718	1.50	13.75	0.890	CL-20	XNS-47	CSN-432	NL-46	TK-00659	S-46S	—
SB-MCKNR-28-4	SB-MCKNL-28-4	CNGA-432	○	○	1.968	1.75	13.75	1.015	CL-20	XNS-47	CSN-432	NL-46	TK-00659	S-46S	—
SB-MCKNR-32-6	SB-MCKNL-32-6	CNGA-643	○	○	2.468	2.00	16.00	1.281	CL-12	XNS-510	CSN-633	NL-68	TK-00546	S-68S	CSN-642
SB-MCKNR-36-6	SB-MCKNL-36-6	CNGA-643	○	○	2.718	2.25	16.00	1.406	CL-12	XNS-510	CSN-633	NL-68	TK-00546	S-68S	CSN-642
SB-MCKNR-40-6	SB-MCKNL-40-6	CNGA-643	●	○	2.968	2.50	16.00	1.531	CL-12	XNS-510	CSN-633	NL-68	TK-00546	S-68S	CSN-642

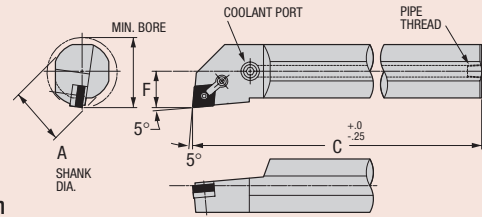
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# SB-MCLNR/L

Style L  
80° Diamond  
Negative Rake  
5° Reverse Lead



Right-Hand Boring Bar Shown



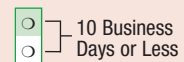
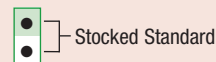
Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L		A	C	F	Clamp	Clamp Screw	Shim	Lock Pin	Includes All Standard Components	Shim Screw	Shim
SB-MCLNR-16-4	SB-MCLNL-16-4	CNGA-432	●	●	1.250	1.00	12.00	0.640	CL-20	XNS-47	—	NL-44	TK-00657	—	—
SB-MCLNR-20-4	SB-MCLNL-20-4	CNGA-432	●	●	1.468	1.25	13.75	0.765	CL-20	XNS-47	CSNB-433	NL-46A	TK-00658	S-46S	—
SB-MCLNR-24-4	SB-MCLNL-24-4	CNGA-432	●	●	1.718	1.50	13.75	0.890	CL-20	XNS-47	CSN-432	NL-46	TK-00659	S-46S	—
SB-MCLNR-28-4	SB-MCLNL-28-4	CNGA-432	●	○	1.968	1.75	13.75	1.015	CL-20	XNS-47	CSN-432	NL-46	TK-00659	S-46S	—
SB-MCLNR-32-6	SB-MCLNL-32-6	CNGA-643	○	○	2.468	2.00	16.00	1.281	CL-12	XNS-510	CSN-633	NL-68	TK-00546	S-68S	CSN-642
SB-MCLNR-36-6	SB-MCLNL-36-6	CNGA-643	○	○	2.718	2.25	16.00	1.406	CL-12	XNS-510	CSN-633	NL-68	TK-00546	S-68S	CSN-642
SB-MCLNR-40-6	SB-MCLNL-40-6	CNGA-643	●	○	2.968	2.50	16.00	1.531	CL-12	XNS-510	CSN-633	NL-68	TK-00546	S-68S	CSN-642

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

BORING BARS

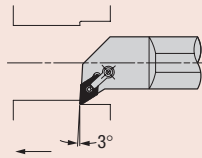
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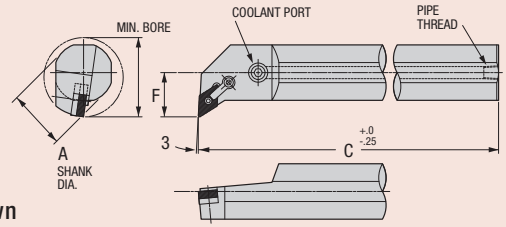


# SB-MDJNR/L

Style J  
55° Diamond  
Negative Rake  
3° Reverse Lead



Right-Hand Boring Bar Shown

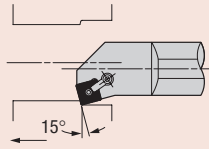


Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components				* Tune-Up Kit	Optional Component
Right	Left	Insert	R	L		A	C	F	Clamp	Clamp Screw	Shim	Lock Pin	Includes All Standard Components	Shim Screw
SB-MDJNR-20-4	SB-MDJNL-20-4	DNGA-432	○	○	2.000	1.25	13.75	1.000	CL-12	XNS-59	DSN-433	NL-46	TK-00660	S-46S
SB-MDJNR-24-4	SB-MDJNL-24-4	DNGA-432	●	○	2.250	1.50	13.75	1.125	CL-12	XNS-59	DSN-433	NL-46	TK-00660	S-46S
SB-MDJNR-28-4	SB-MDJNL-28-4	DNGA-432	○	○	2.500	1.75	13.75	1.250	CL-12	XNS-59	DSN-433	NL-46	TK-00660	S-46S
SB-MDJNR-28-5	SB-MDJNL-28-5	DNGA-543	●	●	2.750	1.75	13.75	1.375	CL-30	XNS-510	DSN-533	NL-58	TK-00722	S-58S
SB-MDJNR-32-5	SB-MDJNL-32-5	DNGA-543	○	○	3.000	2.00	16.00	1.500	CL-30	XNS-510	DSN-533	NL-58	TK-00722	S-58S
SB-MDJNR-36-5	SB-MDJNL-36-5	DNGA-543	○	○	3.250	2.25	16.00	1.625	CL-30	XNS-510	DSN-533	NL-58	TK-00722	S-58S
SB-MDJNR-40-5	SB-MDJNL-40-5	DNGA-543	○	○	3.500	2.50	16.00	1.750	CL-30	XNS-510	DSN-533	NL-58	TK-00722	S-58S

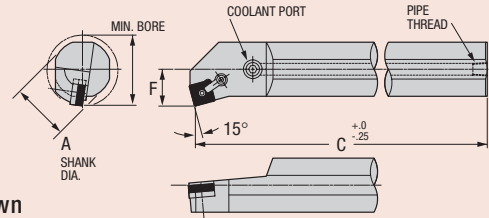
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# SB-MSKNR/L

Style K  
Square  
Negative Rake  
15° Lead



Right-Hand  
Boring Bar Shown

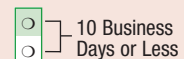
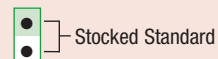


Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components				* Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L		A	C	F	Clamp	Clamp Screw	Shim	Lock Pin	Includes All Standard Components	Shim Screw	Shim
SB-MSKNR-16-4	SB-MSKNL-16-4	SNGA-432	○	○	1.250	1.00	12.00	0.640	CL-6	XNS-36	—	NL-44	TK-00661	—	—
SB-MSKNR-20-4	SB-MSKNL-20-4	SNGA-432	○	○	1.468	1.25	13.75	0.765	CL-9	XNS-59	ISSNB-433	NL-46	TK-00662	S-46S	—
SB-MSKNR-24-4	SB-MSKNL-24-4	SNGA-432	○	○	1.718	1.50	13.75	0.890	CL-9	XNS-59	ISSN-433	NL-46	TK-00558	S-46S	—
SB-MSKNR-28-4	SB-MSKNL-28-4	SNGA-432	○	○	1.968	1.75	13.75	1.015	CL-9	XNS-59	ISSN-433	NL-46	TK-00558	S-46S	—
SB-MSKNR-32-5	SB-MSKNL-32-5	SNGA-543	○	○	2.468	2.00	16.00	1.281	CL-12	XNS-510	SSN-533	NL-58	TK-00559	S-58S	ISSN-543
SB-MSKNR-36-5	SB-MSKNL-36-5	SNGA-543	○	○	2.718	2.25	16.00	1.406	CL-12	XNS-510	SSN-533	NL-58	TK-00559	S-58S	ISSN-543
SB-MSKNR-32-6	SB-MSKNL-32-6	SNGA-643	○	○	2.468	2.00	16.00	1.281	CL-12	XNS-510	ISSN-633	NL-68	TK-00560	S-68S	ISSN-643
SB-MSKNR-36-6	SB-MSKNL-36-6	SNGA-643	○	○	2.718	2.25	16.00	1.406	CL-12	XNS-510	ISSN-633	NL-68	TK-00560	S-68S	ISSN-643
SB-MSKNR-40-6	SB-MSKNL-40-6	SNGA-643	○	○	2.968	2.50	16.00	1.531	CL-12	XNS-510	ISSN-633	NL-68	TK-00560	S-68S	ISSN-643

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

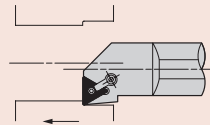
## Greenleaf Sales

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sales@greenleafcorporation.com • www.greenleafglobalsupport.com

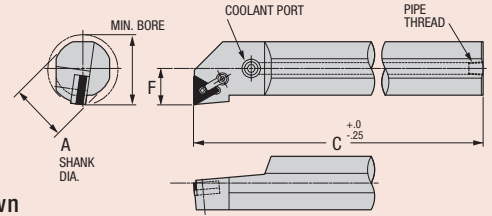


# SB-MTFNR/L

Style F  
Triangle  
Negative Rake  
0° Lead



Right-Hand  
Boring Bar Shown

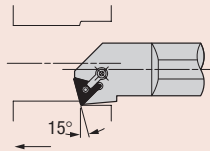


Part Number		Gage	Stock		Dimensions (inches)			Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	Min. Bore	A	C	F	Clamp	Clamp Screw	Shim	Lock Pin	Includes All Standard Components	Shim Screw	Shim
SB-MTFNR-16-3	SB-MTFNL-16-3	TNGA-332	●	○	1.250	1.00	12.00	0.640	CL-6	XNS-35	—	NL-33L	TK-00663	—	—
SB-MTFNR-20-3	SB-MTFNL-20-3	TNGA-332	○	○	1.468	1.25	13.75	0.765	CL-6	XNS-35	ITSN-322	NL-34L	TK-00664	S-34S	—
SB-MTFNR-24-3	SB-MTFNL-24-3	TNGA-332	○	○	1.718	1.50	13.75	0.890	CL-6	XNS-35	ITSN-322	NL-34L	TK-00664	S-34S	—
SB-MTFNR-28-3	SB-MTFNL-28-3	TNGA-332	○	○	1.968	1.75	13.75	1.015	CL-6	XNS-35	ITSN-322	NL-34L	TK-00664	S-34S	—
SB-MTFNR-28-4	SB-MTFNL-28-4	TNGA-432	●	●	1.968	1.50	13.75	1.031	CL-9	XNS-59	ITSN-432	NL-46	TK-00665	S-46S	TS-424
SB-MTFNR-24-4	SB-MTFNL-24-4	TNGA-432	○	○	2.218	1.75	13.75	1.156	CL-9	XNS-59	ITSN-432	NL-46	TK-00665	S-46S	TS-424
SB-MTFNR-32-5	SB-MTFNL-32-5	TNGA-543	○	●	2.468	2.00	16.00	1.281	CL-12	XNS-510	ITSN-533	NL-58	TK-00569	S-58S	—
SB-MTFNR-36-5	SB-MTFNL-36-5	TNGA-543	○	○	2.718	2.25	16.00	1.406	CL-12	XNS-510	ITSN-533	NL-58	TK-00569	S-58S	—
SB-MTFNR-40-5	SB-MTFNL-40-5	TNGA-543	○	●	2.968	2.50	16.00	1.531	CL-12	XNS-510	ITSN-533	NL-58	TK-00569	S-58S	—

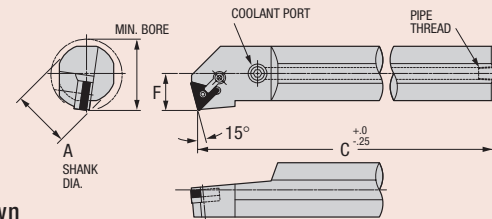
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# SB-MTKNR/L

Style K  
Triangle  
Negative Rake  
15° Lead



Right-Hand  
Boring Bar Shown



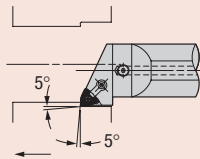
Part Number		Gage	Stock		Dimensions (inches)			Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	Min. Bore	A	C	F	Clamp	Clamp Screw	Shim	Lock Pin	Includes All Standard Components	Shim Screw	Shim
SB-MTKNR-16-3	SB-MTKNL-16-3	TNGA-332	○	○	1.250	1.00	12.00	0.640	CL-6	XNS-35	—	NL-33L	TK-00663	—	—
SB-MTKNR-20-3	SB-MTKNL-20-3	TNGA-332	○	○	1.468	1.25	13.75	0.765	CL-6	XNS-35	ITSN-322	NL-34L	TK-00664	S-34S	—
SB-MTKNR-24-3	SB-MTKNL-24-3	TNGA-332	○	○	1.718	1.50	13.75	0.890	CL-6	XNS-35	ITSN-322	NL-34L	TK-00664	S-34S	—
SB-MTKNR-28-3	SB-MTKNL-28-3	TNGA-332	○	○	1.968	1.75	13.75	1.015	CL-6	XNS-35	ITSN-322	NL-34L	TK-00664	S-34S	—
SB-MTKNR-24-4	SB-MTKNL-24-4	TNGA-432	●	●	1.968	1.50	13.75	1.031	CL-9	XNS-59	ITSN-432	NL-46	TK-00665	S-46S	TS-424
SB-MTKNR-28-4	SB-MTKNL-28-4	TNGA-432	○	○	2.218	1.75	13.75	1.156	CL-9	XNS-59	ITSN-432	NL-46	TK-00665	S-46S	TS-424
SB-MTKNR-32-5	SB-MTKNL-32-5	TNGA-543	○	○	2.468	2.00	16.00	1.281	CL-12	XNS-510	ITSN-533	NL-58	TK-00569	S-58S	—
SB-MTKNR-36-5	SB-MTKNL-36-5	TNGA-543	●	●	2.718	2.25	16.00	1.406	CL-12	XNS-510	ITSN-533	NL-58	TK-00569	S-58S	—
SB-MTKNR-40-5	SB-MTKNL-40-5	TNGA-543	○	○	2.968	2.50	16.00	1.531	CL-12	XNS-510	ITSN-533	NL-58	TK-00569	S-58S	—

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

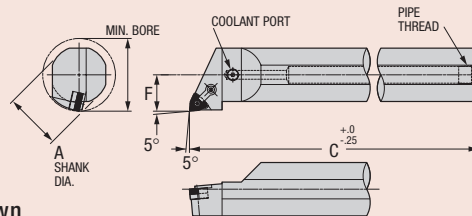


# SB-MWLNRL

Style L  
80° Trigon  
Negative Rake  
5° Reverse Lead



Right-Hand Boring Bar Shown



Part Number		Gage	Stock		Dimensions (inches)			Standard Components				* Tune-Up Kit	Optional Component	
Right	Left	Insert	R	L	Min. Bore	A	C	F	Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components	Seat
†SB-MWLNRL-12-3	†SB-MWLNLL-12-3	WNMA-332	●	○	0.930	0.75	10.00	0.500	–	NL-33L	CL-6	XNS-36	TK-00796	–
SB-MWLNRL-16-3	SB-MWLNLL-16-3	WNMA-332	●	○	1.200	1.00	12.00	0.640	–	NL-33L	CL-6	XNS-36	TK-00796	–
SB-MWLNRL-20-3	SB-MWLNLL-20-3	WNMA-332	○	○	1.470	1.25	13.75	0.765	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777	IWSN-332
SB-MWLNRL-24-3	SB-MWLNLL-24-3	WNMA-332	○	○	1.780	1.50	13.75	0.890	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777	IWSN-332
SB-MWLNRL-16-4	SB-MWLNLL-16-4	WNMA-432	○	○	1.280	1.00	12.00	0.640	–	NL-44	CL-20	XNS-47	TK-00657	–
SB-MWLNRL-20-4	SB-MWLNLL-20-4	WNMA-432	○	○	1.530	1.25	13.75	0.765	IWSN-433	NL-46	CL-20	XNS-48	TK-00759	–
SB-MWLNRL-24-4	SB-MWLNLL-24-4	WNMA-432	●	○	1.780	1.50	13.75	0.890	IWSN-433	NL-46	CL-20	XNS-48	TK-00759	–

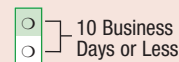
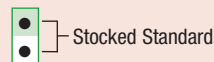
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

† Coolant port not available.

BORING BARS

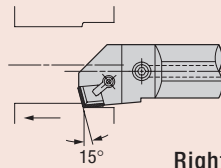
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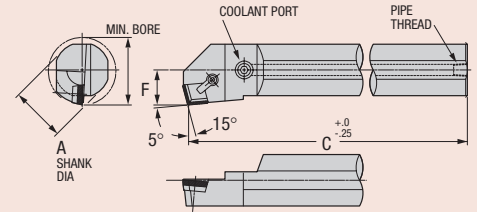


# SB-CCKPR/L

Style K  
80° Diamond  
(Using 100° Corner)  
Positive Rake, 15° Lead



Right-Hand Boring Bar Shown

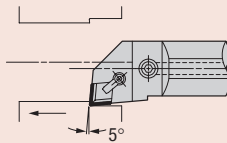


Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components					* Tune-Up Kit
Right	Left	Insert	R	L		A	C	F	Clamp	Clamp Screw	Shim	Shim Screw	Chip-breaker	Includes All Standard Components
SB-CCKPR-16-4	SB-CCKPL-16-4	CPGN-422	○	○	1.250	1.00	12.00	0.640	CL-7	XNS-35	-	-	CBDC-415L	TK-00820
SB-CCKPR-20-4	SB-CCKPL-20-4	CPGN-422	○	○	1.468	1.25	13.75	0.765	CL-20	XNS-47	CSP-422	#4-40 x 1/4 F.H.C.S.	CBDC-415L	TK-00921
SB-CCKPR-24-4	SB-CCKPL-24-4	CPGN-422	○	○	1.718	1.50	13.75	0.890	CL-20	XNS-47	CSP-422	#4-40 x 1/4 F.H.C.S.	CBDC-415L	TK-00921
SB-CCKPR-28-4	SB-CCKPL-28-4	CPGN-422	○	○	1.968	1.75	13.75	1.015	CL-20	XNS-47	CSP-422	#4-40 x 1/4 F.H.C.S.	CBDC-415L	TK-00921
SB-CCKPR-32-6	SB-CCKPL-32-6	CPGN-633	○	○	2.468	2.00	16.00	1.281	CL-30	XNS-59	CSP-632	#5-40 x 3/8 F.H.C.S.	CBDC-615G	TK-00920
SB-CCKPR-36-6	SB-CCKPL-36-6	CPGN-633	○	○	2.718	2.25	16.00	1.406	CL-30	XNS-59	CSP-632	#5-40 x 3/8 F.H.C.S.	CBDC-615G	TK-00920
SB-CCKPR-40-6	SB-CCKPL-40-6	CPGN-633	○	○	2.968	2.50	16.00	1.531	CL-30	XNS-59	CSP-632	#5-40 x 3/8 F.H.C.S.	CBDC-615G	TK-00920

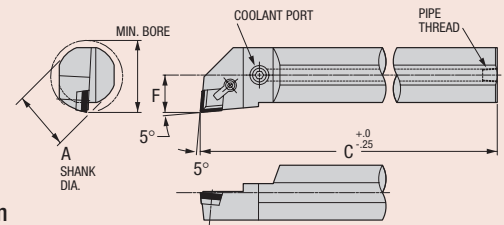
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# SB-CCLPR/L

Style L  
80° Diamond  
Positive Rake  
5° Reverse Lead



Right-Hand Boring Bar Shown



Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components					* Tune-Up Kit
Right	Left	Insert	R	L		A	C	F	Clamp	Clamp Screw	Shim	Shim Screw	Chip-breaker	Includes All Standard Components
SB-CCLPR-16-4	SB-CCLPL-16-4	CPGN-422	○	○	1.250	1.00	12.00	0.640	CL-7	XNS-35	-	-	CBDC-4L	TK-00705
SB-CCLPR-20-4	SB-CCLPL-20-4	CPGN-422	○	○	1.468	1.25	13.75	0.765	CL-20	XNS-47	CSP-422	#4-40 x 1/4 F.H.C.S.	CBDC-4L	TK-00746
SB-CCLPR-24-4	SB-CCLPL-24-4	CPGN-422	○	○	1.718	1.50	13.75	0.890	CL-20	XNS-47	CSP-422	#4-40 x 1/4 F.H.C.S.	CBDC-4L	TK-00746
SB-CCLPR-28-4	SB-CCLPL-28-4	CPGN-422	○	○	1.968	1.75	13.75	1.015	CL-20	XNS-47	CSP-422	#4-40 x 1/4 F.H.C.S.	CBDC-4L	TK-00746
SB-CCLPR-32-6	SB-CCLPL-32-6	CPGN-633	○	○	2.468	2.00	16.00	1.281	CL-30	XNS-59	CSP-632	#5-40 x 3/8 F.H.C.S.	CBDC-6G	TK-00532
SB-CCLPR-36-6	SB-CCLPL-36-6	CPGN-633	○	○	2.718	2.25	16.00	1.406	CL-30	XNS-59	CSP-632	#5-40 x 3/8 F.H.C.S.	CBDC-6G	TK-00532
SB-CCLPR-40-6	SB-CCLPL-40-6	CPGN-633	○	○	2.968	2.50	16.00	1.531	CL-30	XNS-59	CSP-632	#5-40 x 3/8 F.H.C.S.	CBDC-6G	TK-00532

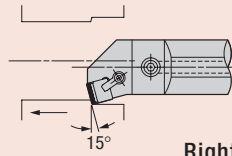
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

10 Business Days or Less

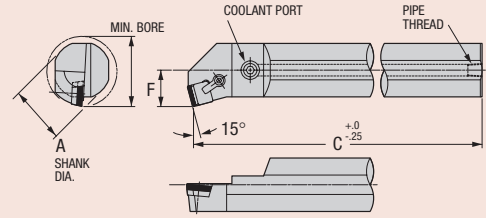
Stocked Standard

# SB-CSKPR/L

Style K  
Square  
Positive Rake  
15° Lead



Right-Hand Boring Bar Shown

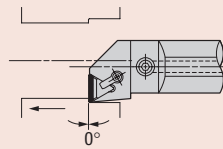
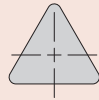


Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components					* Tune-Up Kit
Right	Left	Insert	R	L		A	C	F	Clamp	Clamp Screw	Shim	Shim Screw	Chip-breaker	Includes All Standard Components
SB-CSKPR-16-4	SB-CSKPL-16-4	SPGN-422	○	○	1.250	1.00	12.00	0.640	CL-7	XNS-35	-	-	CBS-4G	TK-00757
SB-CSKPR-20-4	SB-CSKPL-20-4	SPGN-422	○	○	1.468	1.25	13.75	0.765	CL-20	XNS-47	-	-	CBS-4G	TK-00776
SB-CSKPR-24-4	SB-CSKPL-24-4	SPGN-422	○	○	1.718	1.50	13.75	0.890	CL-20	XNS-47	SP-40	#6-32 x 1/2 F.H.C.S.	CBS-4G	TK-02168
SB-CSKPR-28-4	SB-CSKPL-28-4	SPGN-422	○	○	1.968	1.75	13.75	1.015	CL-20	XNS-47	SP-40	#6-32 x 1/2 F.H.C.S.	CBS-4G	TK-02168
SB-CSKPR-32-6	SB-CSKPL-32-6	SPGN-633	○	○	2.468	2.00	16.00	1.281	CL-30	XNS-59	SP-60	#8-32 x 1/2 F.H.C.S.	CBS-6G	TK-00825
SB-CSKPR-36-6	SB-CSKPL-36-6	SPGN-633	○	○	2.718	2.25	16.00	1.406	CL-30	XNS-59	SP-60	#8-32 x 1/2 F.H.C.S.	CBS-6G	TK-00825
SB-CSKPR-40-6	SB-CSKPL-40-6	SPGN-633	○	○	2.968	2.50	16.00	1.531	CL-30	XNS-59	SP-60	#8-32 x 1/2 F.H.C.S.	CBS-6G	TK-00825

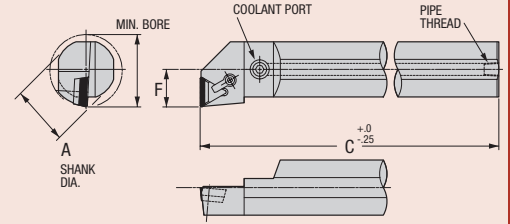
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# SB-CTFPR/L

Style F  
Triangle  
Positive Rake  
0° Lead



Right-Hand Boring Bar Shown

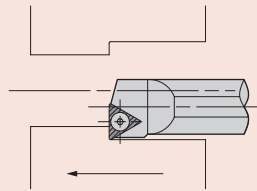
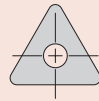


Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components					* Tune-Up Kit
Right	Left	Insert	R	L		A	C	F	Clamp	Clamp Screw	Shim	Shim Screw	Chip-breaker	Includes All Standard Components
SB-CTFPR-16-3	SB-CTFPL-16-3	TPGN-322	○	○	1.250	1.00	12.00	0.640	CL-7	XNS-35	-	-	CBT-3G	TK-00655
SB-CTFPR-20-3	SB-CTFPL-20-3	TPGN-322	○	○	1.468	1.25	13.75	0.765	CL-6	XNS-35	TSP-321	#4-40 x 3/8 F.H.C.S.	CBT-3G	TK-00653
SB-CTFPR-24-3	SB-CTFPL-24-3	TPGN-322	○	○	1.718	1.50	13.75	0.890	CL-6	XNS-35	TSP-321	#4-40 x 3/8 F.H.C.S.	CBT-3G	TK-00653
SB-CTFPR-28-3	SB-CTFPL-28-3	TPGN-322	○	○	1.968	1.75	13.75	1.015	CL-6	XNS-35	TSP-321	#4-40 x 3/8 F.H.C.S.	CBT-3G	TK-00653
SB-CTFPR-24-4	SB-CTFPL-24-4	TPGN-432	○	○	1.968	1.50	13.75	1.031	CL-12	XNS-58	SP-4	#6-32 x 1/2 F.H.C.S.	CBT-4G	TK-00654
SB-CTFPR-28-4	SB-CTFPL-28-4	TPGN-432	○	○	2.218	1.75	13.75	1.156	CL-12	XNS-58	SP-4	#6-32 x 1/2 F.H.C.S.	CBT-4G	TK-00654
SB-CTFPR-32-5	SB-CTFPL-32-5	TPGN-543	○	○	2.468	2.00	16.00	1.281	CL-12	XNS-510	SP-5	#8-32 x 1/2 F.H.C.S.	CBT-5G	TK-00656
SB-CTFPR-36-5	SB-CTFPL-36-5	TPGN-543	○	○	2.718	2.25	16.00	1.406	CL-12	XNS-510	SP-5	#8-32 x 1/2 F.H.C.S.	CBT-5G	TK-00656
SB-CTFPR-40-5	SB-CTFPL-40-5	TPGN-543	○	○	2.968	2.50	16.00	1.531	CL-12	XNS-510	SP-5	#8-32 x 1/2 F.H.C.S.	CBT-5G	TK-00656

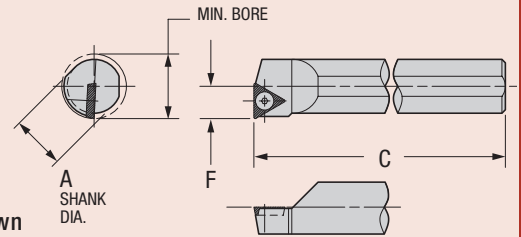
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# S-STFNR/L

Style F  
Triangle  
Positive Rake  
0° Lead



Right-Hand Boring Bar Shown



Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Component	* Tune-Up Kit
Right	Left	Insert	R	L		A	C	F	Insert Screw	Includes All Standard Components
S-STFNR-6-2	S-STFNL-6-2	TP41	○	○	0.500	0.375	6	0.250	#4-40 x 1/4 BHCS	TK-00922
S-STFNR-8-2	S-STFNL-8-2	TP41	○	○	0.625	0.500	8	0.312	#4-40 x 1/4 BHCS	TK-00922
S-STFNR-10-2	S-STFNL-10-2	TP41	○	○	0.750	0.625	10	0.375	#4-40 x 1/4 BHCS	TK-00922
S-STFNR-12-3	S-STFNL-12-3	TPGA-322	○	○	1.000	0.750	10	0.500	#6-32 x 3/8 BHCS	TK-00923

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

See page T 38 for carbide inserts.

10 Business Days or Less

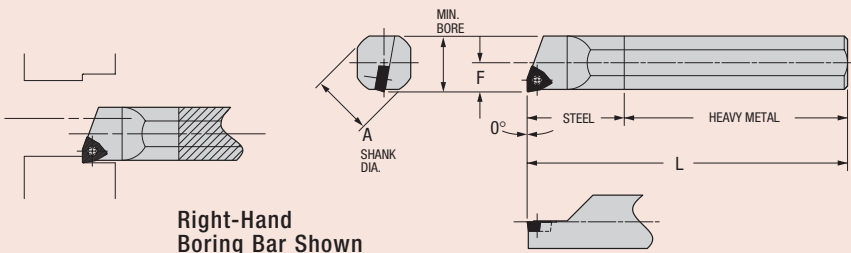
Stocked Standard





# C-SWFCR/L

Style F  
Screw-On Trigon  
Heavy Metal, Fixed Steel Head  
0° Lead



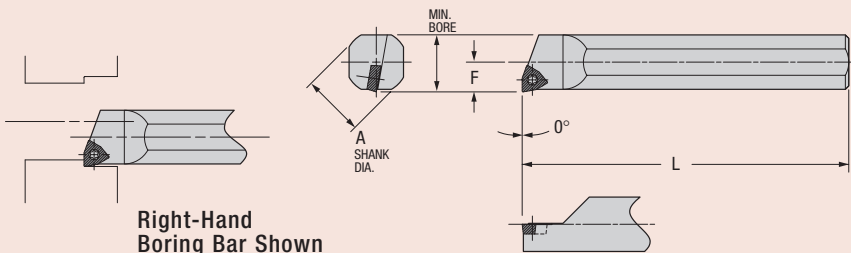
Right-Hand Boring Bar Shown

Part Number		Gage	Stock		Min. Bore Dia.	Dimensions (inches)			Standard Component	* Tune-Up Kit
Right	Left	Insert	R	L		A	F	L	Insert Screw	Includes All Standard Components
C06-SWFCR-2-060	C06-SWFCL-2-060	WCMT-21.51	○	○	0.438	0.375	0.219	6.0	PT-589T	TK-00804
C06-SWFCR-2-080	C06-SWFCL-2-080	WCMT-21.51	○	○	0.438	0.375	0.219	8.0	PT-589T	TK-00804
C08-SWFCR-2-060	C08-SWFCL-2-060	WCMT-21.51	○	○	0.563	0.500	0.281	6.0	PT-589T	TK-00804
C08-SWFCR-2-080	C08-SWFCL-2-080	WCMT-21.51	○	○	0.563	0.500	0.281	8.0	PT-589T	TK-00804
C10-SWFCR-3-060	C10-SWFCL-3-060	WCMT-32.51	○	○	0.719	0.625	0.359	6.0	PT-559T	TK-00807
C10-SWFCR-3-100	C10-SWFCL-3-100	WCMT-32.51	○	○	0.719	0.625	0.359	10.0	PT-559T	TK-00807
C12-SWFCR-3-060	C12-SWFCL-3-060	WCMT-32.51	○	○	0.844	0.750	0.422	6.0	PT-559T	TK-00807
C12-SWFCR-3-100	C12-SWFCL-3-100	WCMT-32.51	○	○	0.844	0.750	0.422	10.0	PT-559T	TK-00807
C16-SWFCR-3-060	C16-SWFCL-3-060	WCMT-32.51	○	○	1.094	1.000	0.547	6.0	PT-559T	TK-00807
C16-SWFCR-3-120	C16-SWFCL-3-120	WCMT-32.51	○	○	1.094	1.000	0.547	12.0	PT-559T	TK-00807

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# S-SWFCR/L

Style F  
Screw-On Trigon  
Solid Steel  
0° Lead



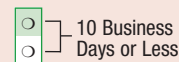
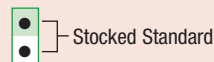
Right-Hand Boring Bar Shown

Part Number		Gage	Stock		Min. Bore Dia.	Dimensions (inches)			Standard Component	* Tune-Up Kit
Right	Left	Insert	R	L		A	F	L	Insert Screw	Includes All Standard Components
S06-SWFCR-2-050	S06-SWFCL-2-050	WCMT-21.51	○	○	0.438	0.375	0.219	5.0	PT-589T	TK-00804
S08-SWFCR-2-060	S08-SWFCL-2-060	WCMT-21.51	○	○	0.563	0.500	0.281	6.0	PT-589T	TK-00804
S08-SWFCR-3-025	S08-SWFCL-3-025	WCMT-32.51	○	○	0.625	0.500	0.312	2.5	PT-559T	TK-00807
S08-SWFCR-3-060	S08-SWFCL-3-060	WCMT-32.51	○	○	0.625	0.500	0.312	6.0	PT-559T	TK-00807
S10-SWFCR-3-040	S10-SWFCL-3-040	WCMT-32.51	○	○	0.719	0.625	0.359	4.0	PT-559T	TK-00807
S10-SWFCR-3-070	S10-SWFCL-3-070	WCMT-32.51	○	○	0.719	0.625	0.359	7.0	PT-559T	TK-00807
S12-SWFCR-3-040	S12-SWFCL-3-040	WCMT-32.51	○	○	0.844	0.750	0.422	4.0	PT-559T	TK-00807
S12-SWFCR-3-080	S12-SWFCL-3-080	WCMT-32.51	○	○	0.844	0.750	0.422	8.0	PT-559T	TK-00807
S16-SWFCR-3-050	S16-SWFCL-3-050	WCMT-32.51	○	○	1.094	1.000	0.547	5.0	PT-559T	TK-00807
S16-SWFCR-3-100	S16-SWFCL-3-100	WCMT-32.51	○	○	1.094	1.000	0.547	10.0	PT-559T	TK-00807
S20-SWFCR-3-120	S20-SWFCL-3-120	WCMT-32.51	○	○	1.344	1.250	0.672	12.0	PT-559T	TK-00807

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

### Greenleaf Sales

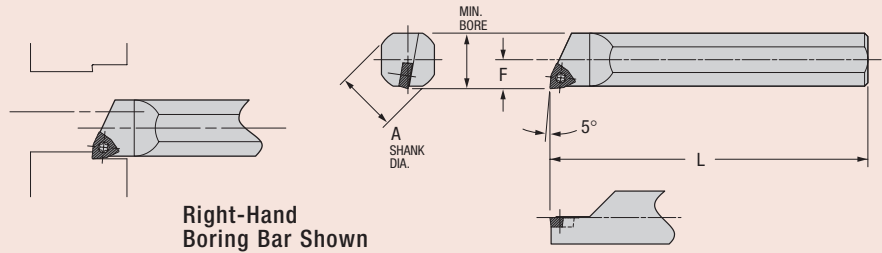
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BORING BARS

# S-SWLCR/L

Style L  
Screw-On Trigon  
Solid Steel  
5° Reverse Lead

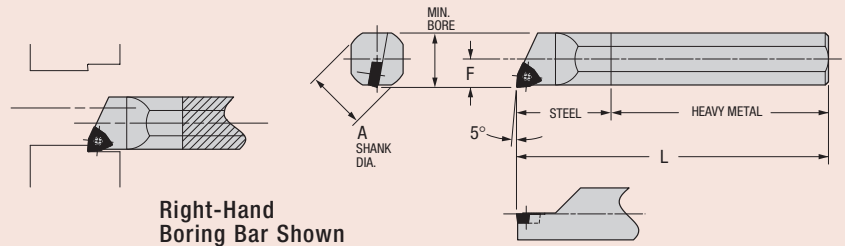


Part Number		Gage	Stock		Min. Bore Dia.	Dimensions (inches)			Standard Component	* Tune-Up Kit
Right	Left	Insert	R	L		A	F	L	Insert Screw	Includes All Standard Components
S06-SWLCR-2-050	S06-SWLCL-2-050	WCMT-21.51	○	○	0.438	0.375	0.219	5.0	PT-589T	TK-00804
S08-SWLCR-2-060	S08-SWLCL-2-060	WCMT-21.51	○	○	0.563	0.500	0.281	6.0	PT-589T	TK-00804
S08-SWLCR-3-025	S08-SWLCL-3-025	WCMT-32.51	●	○	0.625	0.500	0.312	2.5	PT-559T	TK-00807
S08-SWLCR-3-060	S08-SWLCL-3-060	WCMT-32.51	○	○	0.625	0.500	0.312	6.0	PT-559T	TK-00807
S10-SWLCR-3-040	S10-SWLCL-3-040	WCMT-32.51	○	○	0.719	0.625	0.359	4.0	PT-559T	TK-00807
S10-SWLCR-3-070	S10-SWLCL-3-070	WCMT-32.51	○	○	0.719	0.625	0.359	7.0	PT-559T	TK-00807
S12-SWLCR-3-040	S12-SWLCL-3-040	WCMT-32.51	○	○	0.844	0.750	0.422	4.0	PT-559T	TK-00807
S12-SWLCR-3-080	S12-SWLCL-3-080	WCMT-32.51	○	○	0.844	0.750	0.422	8.0	PT-559T	TK-00807
S16-SWLCR-3-050	S16-SWLCL-3-050	WCMT-32.51	○	○	1.094	1.000	0.547	5.0	PT-559T	TK-00807
S16-SWLCR-3-100	S16-SWLCL-3-100	WCMT-32.51	○	○	1.094	1.000	0.547	10.0	PT-559T	TK-00807
S20-SWLCR-3-120	S20-SWLCL-3-120	WCMT-32.51	○	○	1.344	1.250	0.672	12.0	PT-559T	TK-00807

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# C-SWLCR/L

Style L  
Screw-On Trigon  
Heavy Metal, Fixed Steel Head  
5° Reverse Lead

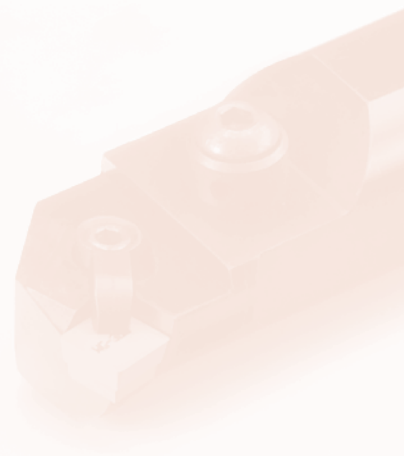
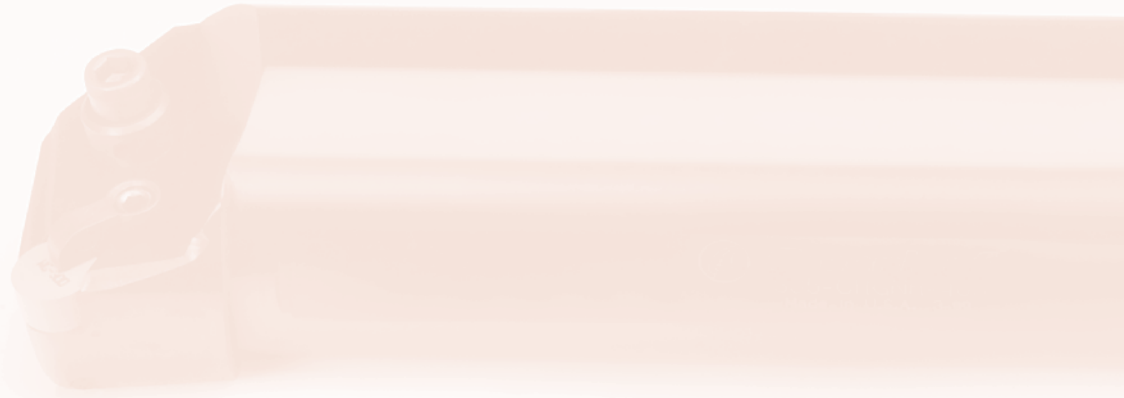


Part Number		Gage	Stock		Min. Bore Dia.	Dimensions (inches)			Standard Component	* Tune-Up Kit
Right	Left	Insert	R	L		A	F	L	Insert Screw	Includes All Standard Components
C06-SWLCR-2-060	C06-SWLCL-2-060	WCMT-21.51	○	○	0.438	0.375	0.219	6.0	PT-589T	TK-00804
C06-SWLCR-2-080	C06-SWLCL-2-080	WCMT-21.51	○	○	0.438	0.375	0.219	8.0	PT-589T	TK-00804
C08-SWLCR-2-060	C08-SWLCL-2-060	WCMT-21.51	○	○	0.563	0.500	0.281	6.0	PT-589T	TK-00804
C08-SWLCR-2-080	C08-SWLCL-2-080	WCMT-21.51	○	○	0.563	0.500	0.281	8.0	PT-589T	TK-00804
C10-SWLCR-3-060	C10-SWLCL-3-060	WCMT-32.51	○	○	0.719	0.625	0.359	6.0	PT-559T	TK-00807
C10-SWLCR-3-100	C10-SWLCL-3-100	WCMT-32.51	○	○	0.719	0.625	0.359	10.0	PT-559T	TK-00807
C12-SWLCR-3-060	C12-SWLCL-3-060	WCMT-32.51	○	○	0.844	0.750	0.422	6.0	PT-559T	TK-00807
C12-SWLCR-3-100	C12-SWLCL-3-100	WCMT-32.51	○	○	0.844	0.750	0.422	10.0	PT-559T	TK-00807
C16-SWLCR-3-060	C16-SWLCL-3-060	WCMT-32.51	○	○	1.094	1.000	0.547	6.0	PT-559T	TK-00807
C16-SWLCR-3-120	C16-SWLCL-3-120	WCMT-32.51	○	○	1.094	1.000	0.547	12.0	PT-559T	TK-00807

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

10 Business Days or Less

Stocked Standard

**Greenleaf Sales**

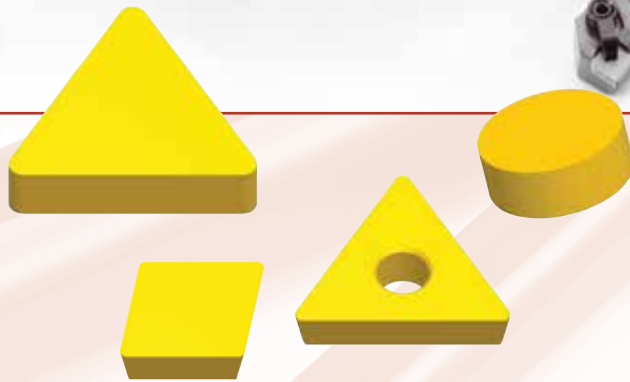
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## Boring Bars for Ceramic Inserts

This section contains boring bars using ceramic inserts that Greenleaf believes are most often used by industry.

In addition to tempered-steel bars, Greenleaf also can supply *Heavy Metal* or “*No Chat*” high-density steel bars that can reduce, and sometimes eliminate, “chatter” for those applications that require a longer reach.

Greenleaf’s boring bar capability includes numerous additional styles not shown in this catalog. Contact us if you do not see the bar you need. Our special design and build services can be counted on to meet your individual needs.

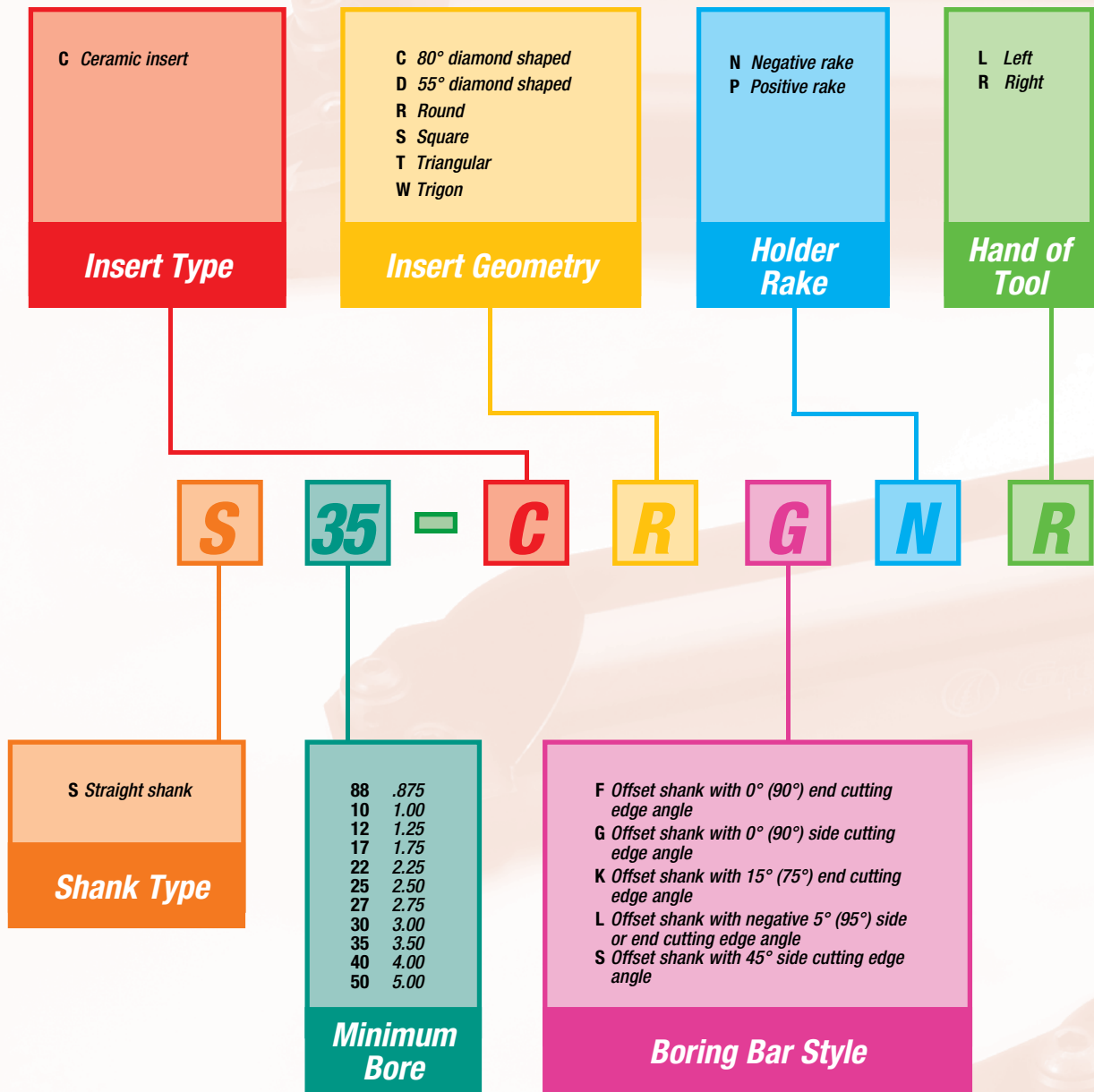


*Greenleaf Corporation is continually upgrading its products.  
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# Ceramic-Insert Boring Bar Identification System



**NOTE:**  
The angles shown in parentheses are the angles as shown in the ANSI standard.

*This position will indicate bar diameter in sixteenths of an inch.*

*Number of 1/8ths on 1/4" I.C. and over  
Number of 1/32nds on 1/4" I.C. and under*

**Bar Diameter**

**Insert Size I.C.**

**24**

**3**

Greenleaf Corporation  
\*S17-GSKPT-243  
Made in USA

# Ceramic-Insert Boring Bar Usage Reference Guide

Boring Bar Style

Boring Bar Geometry

Insert Type

Boring Bar Application

Part Number

### S-CCKNR/L

Style K  
80° Diamond  
(Using 100° Corner)  
Negative Rake, 15° Bead

Part Number		Insert	Min. Bore	A	C	F	Standard Components	Tune-Up Kit	Optional Components
S30-CCKNR-164	S30-CCKNL-164	CN2H-432	3.00	1.000	12.00	0.640	CL-12 XNS-59 TK-00719 NL-44 CL-9		
S40-CCKNR-244	S40-CCKNL-244	CN2H-432	4.00	1.500	13.75	0.890	CSN-433 S-46 CL-12 XNS-59 TK-00719 NL-46 CL-9		
S40-CCKNR-324	S40-CCKNL-324	CN2H-432	4.00	2.000	16.00	1.140	CSN-433 S-46 CL-12 XNS-59 TK-00719 NL-46 CL-9		
S50-CCKNR-326	S50-CCKNL-326	CN2H-643	5.00	2.000	16.00	1.281	CSN-633 S-48 CL-30 XNS-59 TK-00711 NL-68 CL-12		
S50-CCKNR-406	S50-CCKNL-406	CN2H-643	5.00	2.500	18.00	1.781	CSN-633 S-48 CL-30 XNS-59 TK-00711 NL-68 CL-12		

### S-CDLNR/L

Style L  
55° Diamond  
Negative Rake  
5° Reverse Lead

Part Number		Insert	Min. Bore	A	C	F	Standard Components	Tune-Up Kit	Optional Components
S30-CDLNR-243	S30-CDLNL-243	CN2H-322	3.00	1.500	13.75	1.000	DSN-333 S-34 CL-12 XNS-59 TK-00719 NL-34		
S35-CDLNR-323	S35-CDLNL-323	CN2H-322	3.50	2.000	16.00	1.250	DSN-333 S-34 CL-12 XNS-59 TK-00719 NL-34		
S40-CDLNR-324	S40-CDLNL-324	CN2H-432	4.00	2.000	16.00	1.250	DSN-433 S-46 CL-12 XNS-59 TK-00719 NL-46 CL-12		
S40-CDLNR-404	S40-CDLNL-404	CN2H-432	4.00	2.500	18.00	1.825	DSN-433 S-46 CL-12 XNS-59 TK-00719 NL-46 CL-12		

### S-CCLNR/L

Style L  
80° Diamond  
Negative Rake  
5° Reverse Lead

Part Number		Insert	Min. Bore	A	C	F	Standard Components	Tune-Up Kit	Optional Components
S30-CCLNR-164	S30-CCLNL-164	CN2H-432	3.00	1.000	12.00	0.640	CL-12 XNS-59 TK-00719 NL-44 CL-9		
S40-CCLNR-244	S40-CCLNL-244	CN2H-432	4.00	1.500	13.75	0.890	CSN-433 S-46 CL-12 XNS-59 TK-00719 NL-46 CL-9		
S40-CCLNR-324	S40-CCLNL-324	CN2H-432	4.00	2.000	16.00	1.140	CSN-433 S-46 CL-12 XNS-59 TK-00719 NL-46 CL-9		
S50-CCLNR-326	S50-CCLNL-326	CN2H-643	5.00	2.000	16.00	1.281	CSN-633 S-48 CL-30 XNS-59 TK-00711 NL-68 CL-12		
S50-CCLNR-406	S50-CCLNL-406	CN2H-643	5.00	2.500	18.00	1.781	CSN-633 S-48 CL-30 XNS-59 TK-00711 NL-68 CL-12		

### S-CRGNR/L

Style G  
Round  
Negative Rake

Part Number		Insert	Min. Bore	A	C	F	Standard Components	Tune-Up Kit	Optional Components
S30-CRGNR-243	S30-CRGNL-243	RCN2-33	3.00	1.500	13.75	1.015	CL-12 XNS-59 TK-00719 NL-44 CL-9		
S30-CRGNR-323	S30-CRGNL-323	RCN2-33	3.00	2.000	16.00	1.265	CL-12 XNS-59 TK-00719 NL-44 CL-9		
S30-CRGNR-404	S30-CRGNL-404	RCN2-43	3.50	2.000	16.00	1.281	RCN-43 S-46 CL-12 XNS-59 TK-00719 NL-46 CL-9		
S35-CRGNR-404	S35-CRGNL-404	RCN2-43	3.50	2.500	18.00	1.821	RCN-43 S-46 CL-12 XNS-59 TK-00719 NL-46 CL-9		
S40-CRGNR-404	S40-CRGNL-404	RCN2-43	4.00	2.000	16.00	1.281	RCN-43 S-46 CL-12 XNS-59 TK-00719 NL-46 CL-9		
S40-CRGNR-404	S40-CRGNL-404	RCN2-43	4.00	2.500	18.00	1.821	RCN-43 S-46 CL-12 XNS-59 TK-00719 NL-46 CL-9		
S35-CRGNR-325	S35-CRGNL-325	RCN2-55	3.50	2.000	16.00	1.281	CL-12 XNS-59 TK-00719 NL-46 CL-9		
S35-CRGNR-405	S35-CRGNL-405	RCN2-55	3.50	2.500	18.00	1.821	CL-12 XNS-59 TK-00719 NL-46 CL-9		
S40-CRGNR-405	S40-CRGNL-405	RCN2-55	4.00	2.000	16.00	1.281	RCN-55 S-48 CL-12 XNS-59 TK-00719 NL-46 CL-9		
S40-CRGNR-405	S40-CRGNL-405	RCN2-55	4.00	2.500	18.00	1.821	RCN-55 S-48 CL-12 XNS-59 TK-00719 NL-46 CL-9		

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CERAMIC BORING BARS

T 144

T 145

Insert Geometry

Optional Components

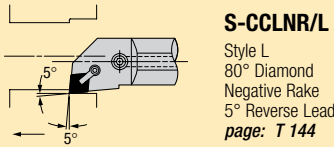
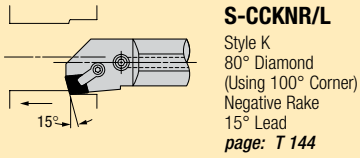
Dimensions

Standard Components

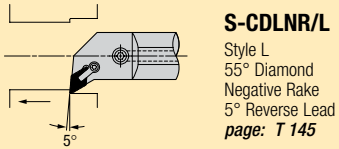
Stocking Program

Tune-Up Kits

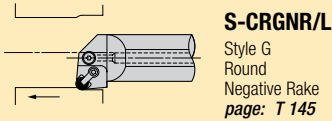
### 80°/100° Diamond – Negative



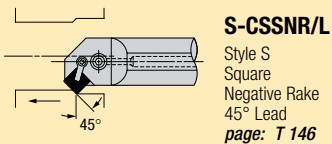
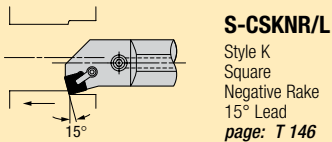
### 55° Diamond – Negative



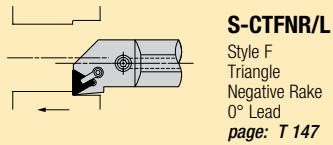
### Round – Negative



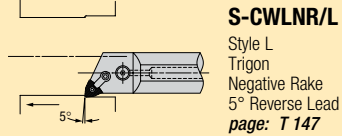
### Square – Negative



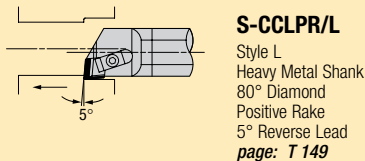
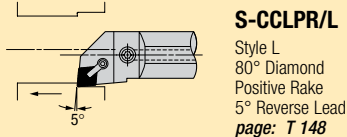
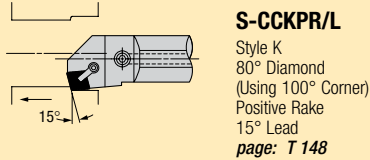
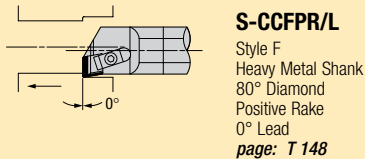
### Triangle – Negative



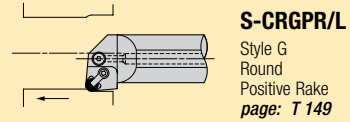
### Trigon – Negative



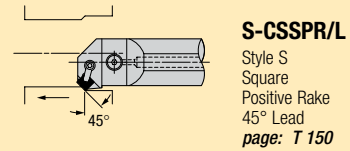
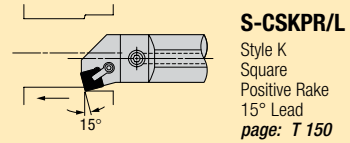
### 80° Diamond – Positive



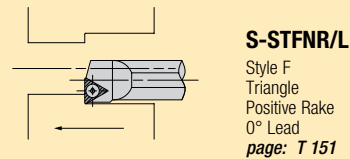
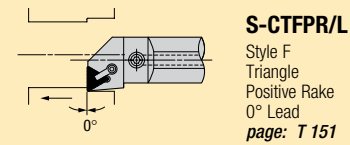
### Round – Positive



### Square – Positive



### Triangle – Positive



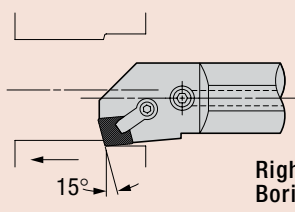
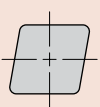


80°

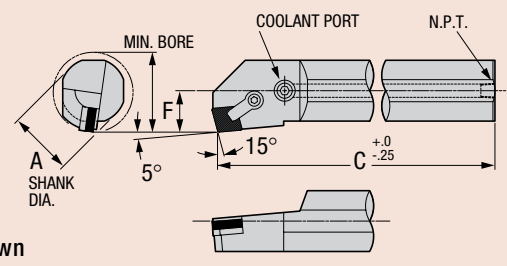


# S-CCKNR/L

Style K  
80° Diamond  
(Using 100° Corner)  
Negative Rake, 15° Lead



Right-Hand Boring Bar Shown

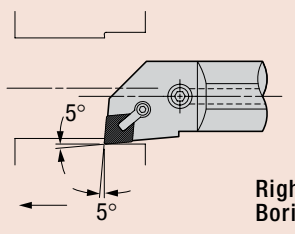
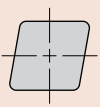


Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp
S30-CCKNR-164	S30-CCKNL-164	CNGN-432	○	○	3.00	1.000	12.00	0.640	-	-	CL-12	XNS-58	TK-00670	NL-44	CL-9
S40-CCKNR-244	S40-CCKNL-244	CNGN-432	○	○	4.00	1.500	13.75	0.890	CSN-433	S-46S	CL-12	XNS-59	TK-00677	NL-46	CL-9
S40-CCKNR-324	S40-CCKNL-324	CNGN-432	○	○	4.00	2.000	16.00	1.140	CSN-433	S-46	CL-12	XNS-59	TK-00678	NL-46	CL-9
S50-CCKNR-326	S50-CCKNL-326	CNGN-643	○	○	5.00	2.000	16.00	1.281	CSN-633	S-68	CL-30	XNS-59	TK-00711	NL-68	CL-12
S50-CCKNR-406	S50-CCKNL-406	CNGN-643	○	○	5.00	2.500	16.00	1.781	CSN-633	S-68	CL-30	XNS-59	TK-00711	NL-68	CL-12

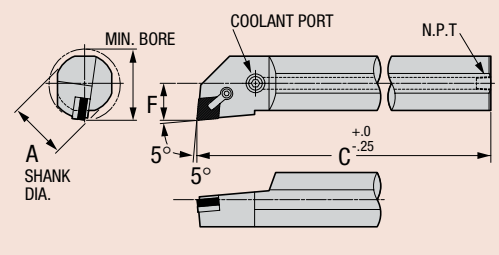
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# S-CCLNR/L

Style L  
80° Diamond  
Negative Rake  
5° Reverse Lead



Right-Hand Boring Bar Shown



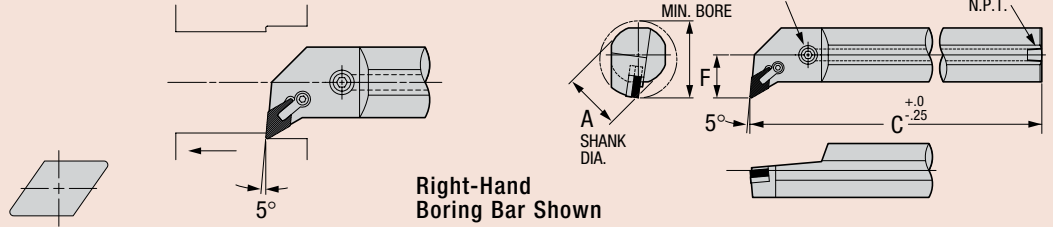
Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp
S30-CCLNR-164	S30-CCLNL-164	CNGN-432	●	○	3.00	1.000	12.00	0.640	-	-	CL-12	XNS-58	TK-00670	NL-44	CL-9
S40-CCLNR-244	S40-CCLNL-244	CNGN-432	●	●	4.00	1.500	13.75	0.890	CSN-433	S-46	CL-12	XNS-59	TK-00678	NL-46	CL-9
S40-CCLNR-324	S40-CCLNL-324	CNGN-432	○	●	4.00	2.000	16.00	1.140	CSN-433	S-46	CL-12	XNS-59	TK-00678	NL-46	CL-9
S50-CCLNR-326	S50-CCLNL-326	CNGN-643	○	○	5.00	2.000	16.00	1.281	CSN-633	S-68	CL-30	XNS-59	TK-00711	NL-68	CL-12
S50-CCLNR-406	S50-CCLNL-406	CNGN-643	○	○	5.00	2.500	16.00	1.781	CSN-633	S-68	CL-30	XNS-59	TK-00711	NL-68	CL-12

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

CERAMIC BORING BARS

# S-CDLNR/L

Style L  
55° Diamond  
Negative Rake  
5° Reverse Lead



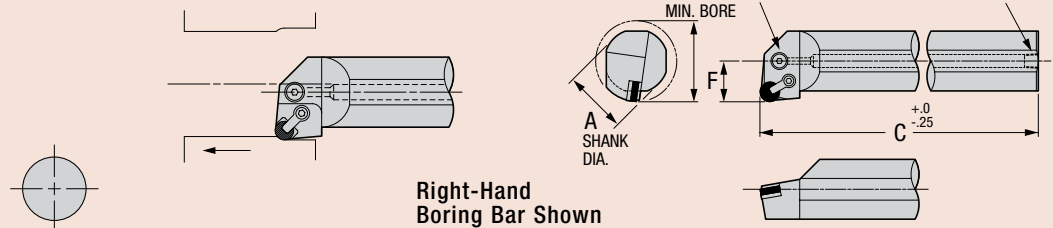
Right-Hand Boring Bar Shown

Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp
S35-CDLNR-243	S35-CDLNL-243	DNGN-322	○	○	3.50	1.500	13.75	1.000	DSN-333	S-34	CL-12	XNS-59	TK-00513	NL-34L	-
S35-CDLNR-323	S35-CDLNL-323	DNGN-322	○	○	3.50	2.000	16.00	1.250	DSN-333	S-34	CL-12	XNS-59	TK-00513	NL-34L	-
S40-CDLNR-324	S40-CDLNL-324	DNGN-432	○	○	4.00	2.000	16.00	1.375	DSN-433	S-46	CL-30	XNS-59	TK-00514	NL-46	CL-12
S40-CDLNR-404	S40-CDLNL-404	DNGN-432	○	○	4.00	2.500	16.00	1.625	DSN-433	S-46	CL-30	XNS-59	TK-00514	NL-46	CL-12

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# S-CRGNR/L

Style G  
Round  
Negative Rake



Right-Hand Boring Bar Shown

Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Clamp	Insert Thickness	Shim Seat
S30-CRGNR-243	S30-CRGNL-243	RNGN-33	●	●	3.00	1.500	13.75	1.015	-	-	CL-6	XNS-36	TK-00671	CL-6	-	-
S30-CRGNR-323	S30-CRGNL-323	RNGN-33	●	○	3.00	2.000	16.00	1.265	-	-	CL-6	XNS-36	TK-00671	CL-6	-	-
S35-CRGNR-324	S35-CRGNL-324	RNGN-43	●	●	3.50	2.000	16.00	1.281	IRSN-42	S-46	CL-12	XNS-59	TK-00674	CL-9	5/16	No shim
S35-CRGNR-404	S35-CRGNL-404	RNGN-43	●	●	3.50	2.500	16.00	1.531	IRSN-42	S-46	CL-12	XNS-59	TK-00674	CL-9	5/16	No shim
S50-CRGNR-324	S50-CRGNL-324	RNGN-45	●	●	5.00	2.000	16.00	1.281	IRSN-43	S-46	CL-12	XNS-59	TK-00516	CL-9	3/16	IRSN-45
S50-CRGNR-404	S50-CRGNL-404	RNGN-45	●	○	5.00	2.500	16.00	1.531	IRSN-43	S-46	CL-12	XNS-59	TK-00516	CL-9	1/4	IRSN-44
S35-CRGNR-325	S35-CRGNL-325	RNGN-55	○	○	3.50	2.000	16.00	1.281	-	-	CL-12	XNS-59	TK-00675	CL-9	3/16	RSN-52
S35-CRGNR-405	S35-CRGNL-405	RNGN-55	○	○	3.50	2.500	16.00	1.531	-	-	CL-12	XNS-59	TK-00675	CL-9	3/16	RSN-52
S50-CRGNR-325	S50-CRGNL-325	RNGN-55	○	○	5.00	2.000	16.00	1.281	RSN-53	S-58	CL-12	XNS-59	TK-00517	CL-9	3/16	RSN-55
S50-CRGNR-405	S50-CRGNL-405	RNGN-55	○	○	5.00	2.500	16.00	1.531	RSN-53	S-58	CL-12	XNS-59	TK-00517	CL-9	1/4	RSN-54
S35-CRGNR-326	S35-CRGNL-326	RNGN-65	○	○	3.50	2.000	16.00	1.281	-	-	CL-30	XNS-59	TK-00676	CL-12	3/16	RSN-62
S35-CRGNR-406	S35-CRGNL-406	RNGN-65	○	○	3.50	2.500	16.00	1.531	-	-	CL-30	XNS-59	TK-00676	CL-12	3/16	RSN-62
S50-CRGNR-326	S50-CRGNL-326	RNGN-65	○	○	5.00	2.000	16.00	1.281	RSN-63	S-68	CL-30	XNS-59	TK-00518	CL-12	3/16	RSN-65
S50-CRGNR-406	S50-CRGNL-406	RNGN-65	○	○	5.00	2.500	16.00	1.531	RSN-63	S-68	CL-30	XNS-59	TK-00518	CL-12	1/4	RSN-64

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

10 Business Days or Less

Stocked Standard

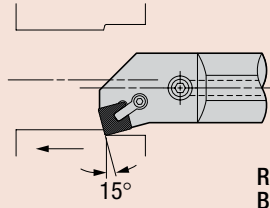
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90°

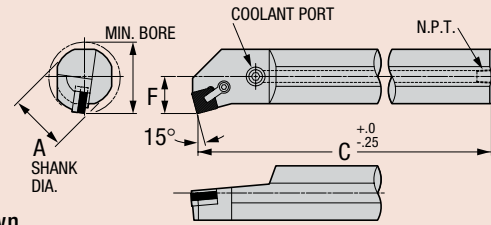


# S-CSKNR/L

Style K  
Square  
Negative Rake  
15° Lead



Right-Hand  
Boring Bar Shown

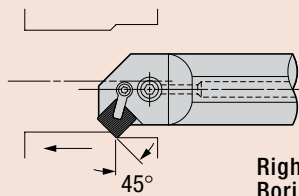


Part Number		Gage	Stock		Dimensions (inches)				Standard Components				*Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	Min. Bore	A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp
S30-CSKNR-164	S30-CSKNL-164	SNGN-432	○	○	3.00	1.000	12.00	0.640	—	—	CL-12	XNS-58	TK-00672	NL-44	CL-9
S40-CSKNR-244	S40-CSKNL-244	SNGN-432	○	○	4.00	1.500	13.75	0.890	ISSN-433	S-46	CL-12	XNS-59	TK-00723	NL-46	CL-9
S40-CSKNR-324	S40-CSKNL-324	SNGN-432	○	○	4.00	2.000	16.00	1.140	ISSN-433	S-46	CL-12	XNS-59	TK-00679	NL-46	CL-9
S50-CSKNR-325	S50-CSKNL-325	SNGN-543	○	○	5.00	2.000	16.00	1.281	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9
S50-CSKNR-405	S50-CSKNL-405	SNGN-543	○	○	5.00	2.500	16.00	1.531	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9
S50-CSKNR-326	S50-CSKNL-326	SNGN-643	○	○	5.00	2.000	16.00	1.281	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12
S50-CSKNR-406	S50-CSKNL-406	SNGN-643	○	○	5.00	2.500	16.00	1.531	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12

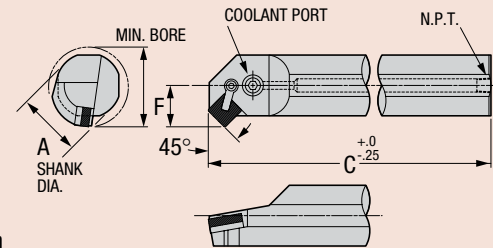
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# S-CSSNR/L

Style S  
Square  
Negative Rake  
45° Lead



Right-Hand  
Boring Bar Shown

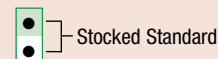


Part Number		Gage	Stock		Dimensions (inches)				Standard Components				*Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L	Min. Bore	A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp
S30-CSSNR-164	S30-CSSNL-164	SNGN-432	○	○	3.00	1.000	12.00	0.640	—	—	CL-12	XNS-59	TK-00675	NL-44	CL-9
S40-CSSNR-244	S40-CSSNL-244	SNGN-432	○	○	4.00	1.500	13.75	0.890	ISSN-433	S-46	CL-12	XNS-59	TK-00679	NL-46	CL-9
S40-CSSNR-324	S40-CSSNL-324	SNGN-432	○	○	4.00	2.000	16.00	1.140	ISSN-433	S-46	CL-12	XNS-59	TK-00679	NL-46	CL-9
S50-CSSNR-325	S50-CSSNL-325	SNGN-543	○	○	5.00	2.000	16.00	1.281	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9
S50-CSSNR-405	S50-CSSNL-405	SNGN-543	○	○	5.00	2.500	16.00	1.531	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9
S50-CSSNR-326	S50-CSSNL-326	SNGN-643	○	○	5.00	2.000	16.00	1.281	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12
S50-CSSNR-406	S50-CSSNL-406	SNGN-643	○	○	5.00	2.500	16.00	1.531	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12

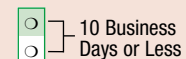
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

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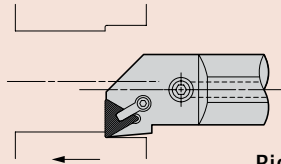
Stocked Standard



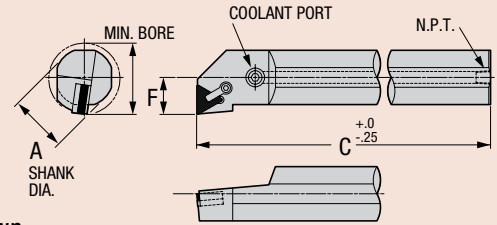
10 Business Days or Less

# S-CTFNR/L

Style F  
Triangle  
Negative Rake  
0° Lead



Right-Hand Boring Bar Shown

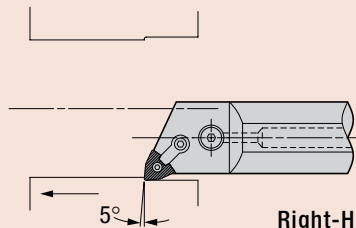


Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right	Left	Insert	R	L		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components	Lock Pin	Clamp
S30-CTFNR-163	S30-CTFNL-163	TNGN-332	○	○	3.00	1.000	12.00	0.640	-	-	CL-7	XNS-36	TK-00719	NL-33L	CL-6
S35-CTFNR-243	S35-CTFNL-243	TNGN-332	○	○	3.50	1.500	13.75	0.890	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6
S40-CTFNR-244	S40-CTFNL-244	TNGN-432	○	○	4.00	1.500	13.75	1.031	ITSN-432	S-46	CL-12	XNS-59	TK-00680	NL-46	CL-9
S40-CTFNR-324	S40-CTFNL-324	TNGN-432	○	○	4.00	2.000	16.00	1.281	ITSN-432	S-46	CL-12	XNS-59	TK-00680	NL-46	CL-9
S40-CTFNR-404	S40-CTFNL-404	TNGN-432	○	○	4.00	2.500	16.00	1.531	ITSN-432	S-46	CL-12	XNS-59	TK-00680	NL-46	CL-9

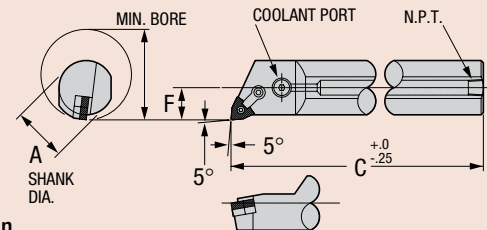
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# S-CWLNR/L

Style L  
Trigon  
Negative Rake  
5° Reverse Lead



Right-Hand Boring Bar Shown



Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit
Right	Left	Insert	R	L		A	C	F	Shim Seat	Lock Pin	Clamp	Clamp Screw	Includes All Standard Components
S30-CWLNR-163	S30-CWLNL-163	WNGA-332	○	○	3.00	1.000	12.00	0.640	-	NL-33L	CL-6	XNS-36	TK-00740
S35-CWLNR-243	S35-CWLNL-243	WNGA-332	○	○	3.50	1.500	13.75	0.890	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
S30-CWLNR-164	S30-CWLNL-164	WNGA-432	○	○	3.00	1.000	12.00	0.640	-	NL-44	CL-20	XNS-48	TK-00887
S40-CWLNR-244	S40-CWLNL-244	WNGA-432	○	○	4.00	1.500	13.75	0.890	IWSN-433	NL-46	CL-20	XNS-48	TK-00759
S40-CWLNR-324	S40-CWLNL-324	WNGA-432	○	○	4.00	2.000	16.00	1.281	IWSN-433	NL-46	CL-20	XNS-48	TK-00759

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

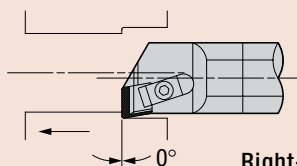
10 Business Days or Less

Stocked Standard

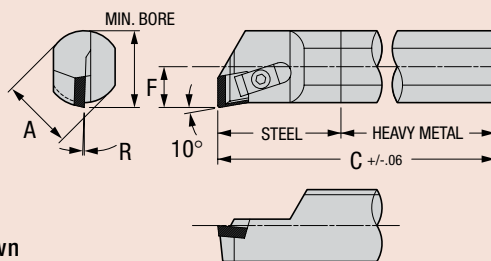
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# S-CCFPR/L

Style F  
Heavy Metal Shank  
80° Diamond  
Positive Rake, 0° Lead



Right-Hand Boring Bar Shown



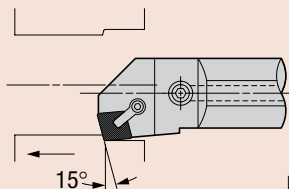
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	Min. Bore	A	C	F	R	Clamp	Clamp Screw	Chip-breaker	Chip-breaker	Eff. Width	Includes All Std. Components	† Chip-breaker	Eff. Width
S88-CCFPR-123	—	CPGN-321	○	○	0.875	0.750	10	0.437	3°	33704	#6-32 x 1/2 B.H.C.S.	307378-R	—	.093"	TK-00682	307377-R	0.062
—	S88-CCFPL-123	CPGN-321	○	○	0.875	0.750	10	0.437	3°	33704	#6-32 x 1/2 B.H.C.S.	—	307378-L	.093"	TK-00681	307377-L	0.062
S10-CCFPR-143	—	CPGN-321	○	○	1.000	0.875	10	0.500	2°	33704	#6-32 x 1/2 B.H.C.S.	307378-R	—	.093"	TK-00682	307379-R	0.125
—	S10-CCFPL-143	CPGN-321	○	○	1.000	0.875	10	0.500	2°	33704	#6-32 x 1/2 B.H.C.S.	—	307378-L	.093"	TK-00681	307379-L	0.125

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

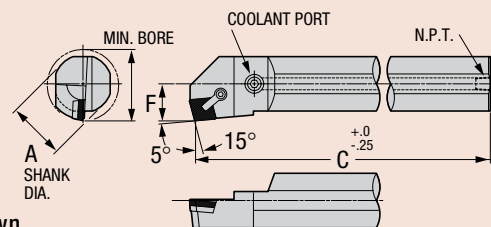
† Specify left or right chipbreaker when ordering. (example: 307377-R for right)

# S-CCKPR/L

Style K  
80° Diamond  
(Using 100° Corner)  
Positive Rake, 15° Lead



Right-Hand Boring Bar Shown

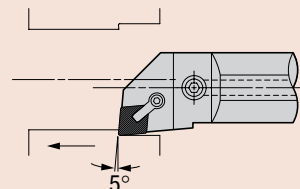


Part Number		Gage	Stock		Dimensions (inches)				Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	Min. Bore	A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
S12-CCKPR-164	S12-CCKPL-164	CPGN-432	○	○	1.250	1.000	12.00	0.640	—	—	CL-22	XNS-46	TK-00666
S17-CCKPR-244	S17-CCKPL-244	CPGN-432	○	○	1.718	1.500	13.75	0.890	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
S22-CCKPR-324	S22-CCKPL-324	CPGN-432	○	○	2.218	2.000	16.00	1.140	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
S27-CCKPR-404	S27-CCKPL-404	CPGN-432	○	○	2.718	2.500	16.00	1.390	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501

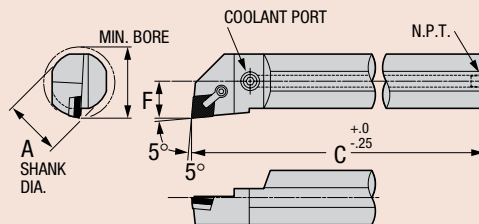
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# S-CCLPR/L

Style L  
80° Diamond  
Positive Rake  
5° Reverse Lead



Right-Hand Boring Bar Shown



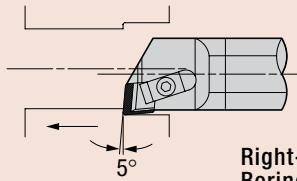
Part Number		Gage	Stock		Dimensions (inches)				Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	Min. Bore	A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
S12-CCLPR-164	S12-CCLPL-164	CPGN-432	●	○	1.250	1.000	12.00	0.640	—	—	CL-22	XNS-46	TK-00666
S17-CCLPR-244	S17-CCLPL-244	CPGN-432	○	○	1.718	1.500	13.75	0.890	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
S22-CCLPR-324	S22-CCLPL-324	CPGN-432	○	○	2.218	2.000	16.00	1.140	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00669
S27-CCLPR-404	S27-CCLPL-404	CPGN-432	○	○	2.718	2.500	16.00	1.390	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

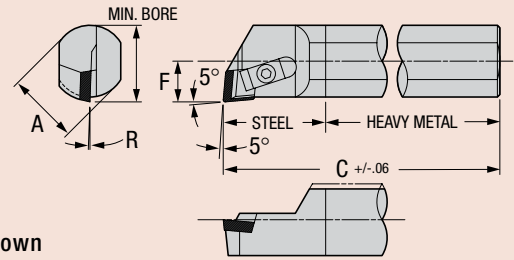


# S-CCLPR/L

Style L, Heavy Metal Shank  
80° Diamond  
Positive Rake  
5° Reverse Lead



Right-Hand Boring Bar Shown



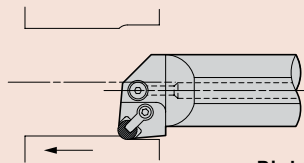
Part Number		Gage	Stock		Dimensions (inches)					Standard Components				* Tune-Up Kit	Optional Components		
Right	Left	Insert	R	L	Min. Bore	A	C	F	R	Clamp	Clamp Screw	Chip-breaker	Chip-breaker	Eff. Width	Includes All Std. Components	† Chip-breaker	Eff. Width
<b>S88-CCLPR-123</b>	—	CPGN-321	○	○	0.875	0.750	10	0.437	3°	33704	#6-32 x 1/2 B.H.C.S.	307378-R	—	.093"	TK-00682	307377-R	0.062
—	<b>S88-CCLPL-123</b>	CPGN-321	○	○	0.875	0.750	10	0.437	3°	33704	#6-32 x 1/2 B.H.C.S.	—	307378-L	.093"	TK-00681	307377-L	0.062
<b>S10-CCLPR-143</b>	—	CPGN-321	○	○	1.000	0.875	10	0.500	2°	33704	#6-32 x 1/2 B.H.C.S.	307378-R	—	.093"	TK-00682	307379-R	0.125
—	<b>S10-CCLPL-143</b>	CPGN-321	○	○	1.000	0.875	10	0.500	2°	33704	#6-32 x 1/2 B.H.C.S.	—	307378-L	.093"	TK-00681	307379-R	0.125

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

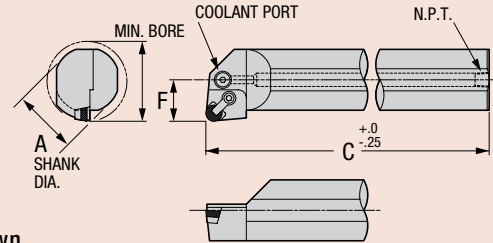
† Specify left or right chipbreaker when ordering. (example: 307377-R for right)

# S-CRGPR/L

Style G  
Round  
Positive Rake



Right-Hand Boring Bar Shown

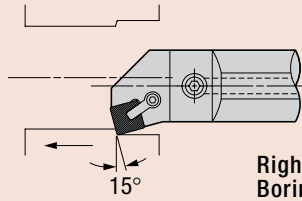


Part Number		Gage	Stock		Dimensions (inches)				Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L	Min. Bore	A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
<b>S12-CRGPR-163</b>	<b>S12-CRGPL-163</b>	RPGN-32	●	●	1.250	1.000	12.00	0.640	—	—	CL-7	XNS-36	TK-00667
<b>S17-CRGPR-243</b>	<b>S17-CRGPL-243</b>	RPGN-32	●	●	1.718	1.500	13.75	0.890	SP-34	#2-56x 1/4 S.H.C.S.	CL-7	XNS-36	TK-00502
<b>S22-CRGPR-323</b>	<b>S22-CRGPL-323</b>	RPGN-32	●	●	2.218	2.000	16.00	1.140	SP-34	#2-56x 1/4 S.H.C.S.	CL-7	XNS-36	TK-00502
<b>S25-CRGPR-324</b>	<b>S25-CRGPL-324</b>	RPGN-43	●	●	2.468	2.000	16.00	1.281	SP-44	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00503
<b>S30-CRGPR-404</b>	<b>S30-CRGPL-404</b>	RPGN-43	○	○	2.968	2.500	16.00	1.531	SP-44	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00503

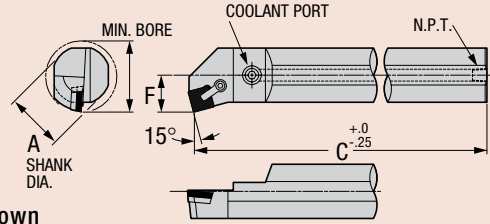
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# S-CSKPR/L

Style K  
Square  
Positive Rake  
15° Lead



Right-Hand Boring Bar Shown

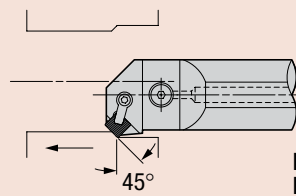


Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
S12-CSKPR-164	S12-CSKPL-164	SPGN-432	○	○	1.250	1.000	12.00	0.640	-	-	CL-7	XNS-36	TK-00667
S17-CSKPR-244	S17-CSKPL-244	SPGN-432	○	○	1.718	1.500	13.75	0.890	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
S22-CSKPR-324	S22-CSKPL-324	SPGN-432	○	○	2.218	2.000	16.00	1.140	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
S27-CSKPR-404	S27-CSKPL-404	SPGN-432	○	○	2.718	2.500	16.00	1.390	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504

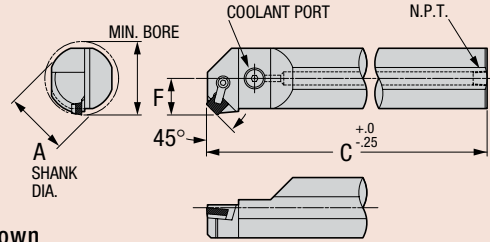
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# S-CSSPR/L

Style S  
Square  
Positive Rake  
45° Lead



Right-Hand Boring Bar Shown



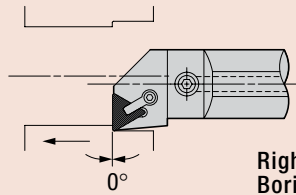
Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
S12-CSSPR-164	S12-CSSPL-164	SPGN-432	○	○	1.250	1.000	12.00	0.640	-	-	CL-7	XNS-36	TK-00667
S17-CSSPR-244	S17-CSSPL-244	SPGN-432	○	○	1.718	1.500	13.75	0.890	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-58	TK-03027
S22-CSSPR-324	S22-CSSPL-324	SPGN-432	○	○	2.218	2.000	16.00	1.140	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
S27-CSSPR-404	S27-CSSPL-404	SPGN-432	○	○	2.718	2.500	16.00	1.390	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

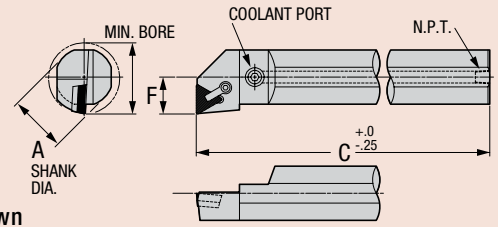
CERAMIC BORING BARS

# S-CTFPR/L

Style F  
Triangle  
Positive Rake  
0° Lead



Right-Hand Boring Bar Shown

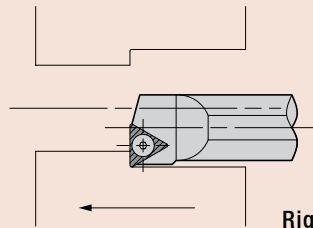


Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components				* Tune-Up Kit
Right	Left	Insert	R	L		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	Includes All Standard Components
S12-CTFPR-163	S12-CTFPL-163	TPGN-322	○	○	1.250	1.000	12.00	0.640	-	-	CL-7	XNS-35	TK-00668
S17-CTFPR-243	S17-CTFPL-243	TPGN-322	○	○	1.718	1.500	13.75	0.890	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
S20-CTFPR-244	S20-CTFPL-244	TPGN-432	○	○	1.968	1.500	13.75	1.031	SP-4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
S25-CTFPR-324	S25-CTFPL-324	TPGN-432	○	○	2.468	2.000	16.00	1.281	SP-4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
S30-CTFPR-404	S30-CTFPL-404	TPGN-432	○	○	2.968	2.500	16.00	1.531	SP-4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508

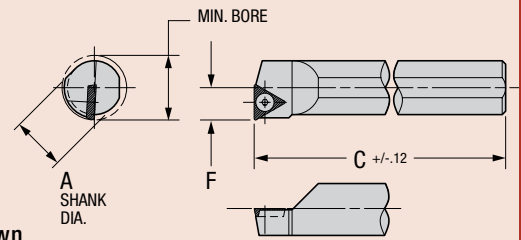
\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

# S-STFNR/L

Style F  
Triangle  
Positive Rake  
0° Lead



Right-Hand Boring Bar Shown



Part Number		Gage	Stock		Min. Bore	Dimensions (inches)			Standard Components	* Tune-Up Kit
Right	Left	Insert	R	L		A	C	F	Insert Screw	Includes All Standard Components
S-STFNR-6-2	S-STFNL-6-2	TP41	○	○	0.500	0.375	6	0.250	#4-40 x 1/4 BHCS	TK-00922
S-STFNR-8-2	S-STFNL-8-2	TP41	○	○	0.625	0.500	8	0.312	#4-40 x 1/4 BHCS	TK-00922
S-STFNR-10-2	S-STFNL-10-2	TP41	○	○	0.750	0.625	10	0.375	#4-40 x 1/4 BHCS	TK-00922
S-STFNR-12-3	S-STFNL-12-3	TPGA322	○	○	1.000	0.750	10	0.500	#6-32 x 3/8 BHCS	TK-00923

\* Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the boring bar.

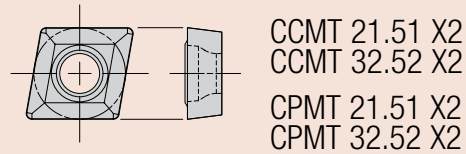
See page T 72 for ceramic inserts.

10 Business Days or Less

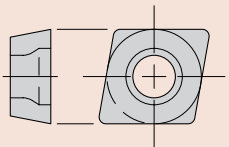
Stocked Standard



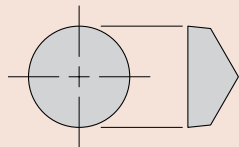
## Additional Greenleaf Turning Inserts



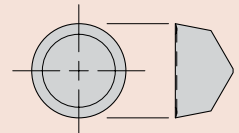
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CCMT 32.52 X2  
CPMT 21.51 X2  
CPMT 32.52 X2



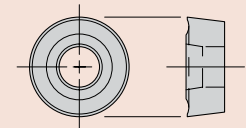
CPMW 050204  
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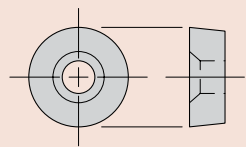
RCMX 24  
(309161)  
RCMX 105  
(303788)  
RCMX 106  
(312242)



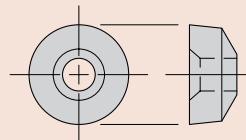
Ceramic  
with Chipform  
(425196)  
(425022)



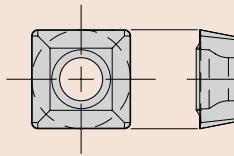
RCMM 43  
RCMM 64  
RCMM 86  
RCGT 43 GP  
(421930)  
(310520)



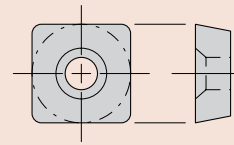
RD-8P  
RD-9P  
RD-10P  
RD-12P  
RD-16P



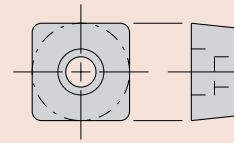
RD6-C  
RD8-C



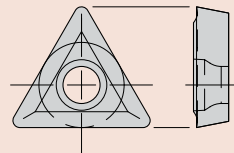
SCMT 32.52 X2  
SCMT 432 X2



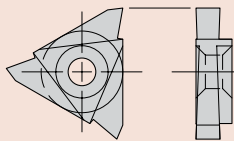
SD-7P  
SD-8P  
SD-12P



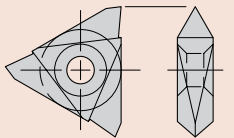
SDH-42



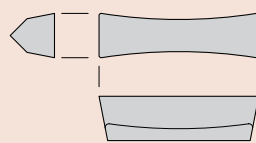
TCMT 21.51 X2  
TCMT 32.52 X2  
TPMT 21.51 X2  
TPMT 32.52 X2



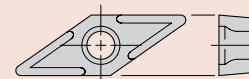
TPMA-  NG  
TNMA-  NG  
TNMC-  NG  
TPMC-  NG



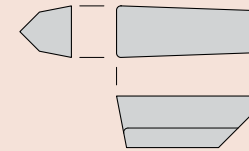
TPMA-  NV  
TNMA-  NV  
TNMC-  NV  
TPMC-  NV



VDB 188RA  
VDB 188A015  
VDB 218RA  
VDB 250 RB  
VDB 250B015  
ZT 1967  
(420555)

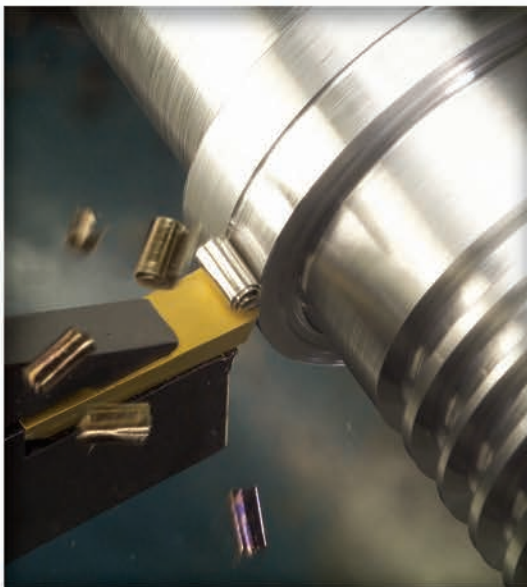
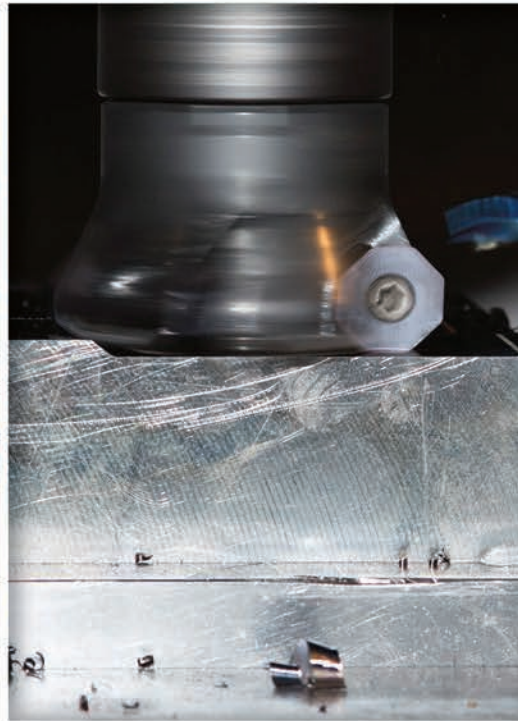
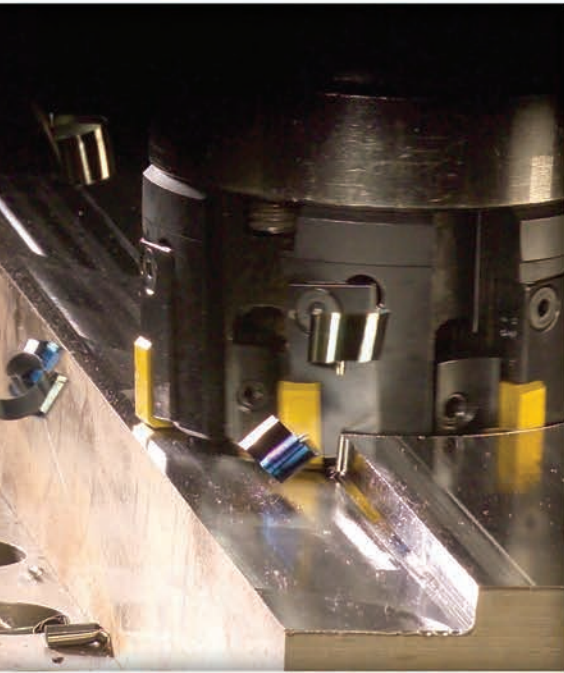


VBMT  
(420864)



WG  
Carbide





**MADE IN THE USA**

*Greenleaf Corporation  
is ISO 9001 Certified.*

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