Turning and Boring

Carbide Inserts ..... TB 02-40

Ceramic Inserts ..... TB 41-60

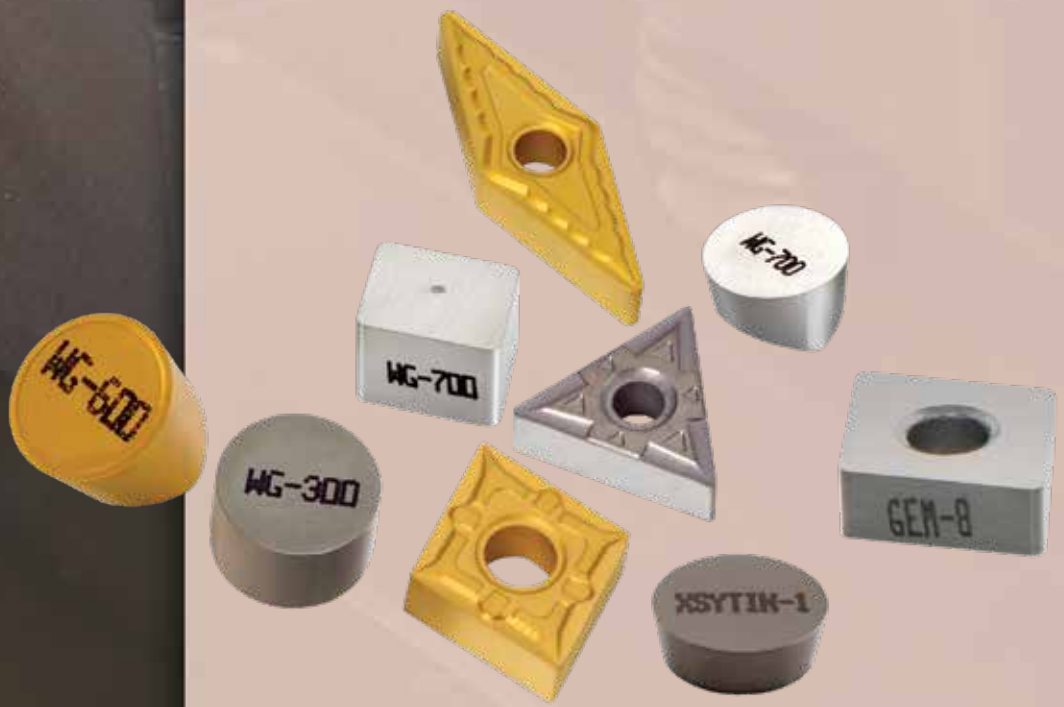
Industry-Standard Toolholders for Carbide Inserts ..... TB 61-82

Quick-Change Toolholders ..... TB 83-85

Toolholders for Ceramic Inserts ..... TB 86-107

Industry-Standard Boring Bars for Carbide Inserts ..... TB 108-123

Boring Bars for Ceramic Inserts ..... TB 124-137





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Advanced Carbide Inserts

Greenleaf offers a comprehensive line of carbide inserts in grades for all materials. Carbide inserts are available in ANSI standard geometries with multi-purpose chipbreakers for heavy roughing through finishing.





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Insert Grades

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.











CVD Coated

G5125+
A tough, Co-enriched, CVD-coated grade that is ideally suited for the roughing and semi-finishing of steels in turning. Intended applications range from clean and continuous to heavily interrupted cuts in steels of various hardness and composition, at medium to high speeds and moderate feed rates.

GA5023
A high-performance grade designed for the turning and milling of various grades of cast iron, GA5023 features an advanced MT-CVD coating specifically developed to withstand the abrasiveness of cast iron in machining. Applications range from roughing to finishing in most grades of cast iron, including gray, nodular, and others. The high wear resistance and toughness of GA5023 enable high-speed machining in a wide range of feed rates.

GA5025
A high-speed MT-CVD coated grade developed primarily for turning, GA5025 excels in light roughing and finishing applications of carbon and alloy steels, including select stainless steels. GA5025 is preferred when tool life and wear resistance are essential in steel turning.

GA5026
A high-performance grade specifically developed for finish-turning in nickel- and cobalt-based super-alloys, stainless steels, hardened steels, and refractory metals. The advanced MT-CVD coating over a micro-grain substrate offers outstanding wear resistance while maintaining exceptional resistance to notching and deformation common in turning of high-strength materials. GA5026 is best applied at high speeds and low feed rates.

CVD Coated *continued*

GA5035
A high-performance MT-CVD coated grade for turning all types of steels, GA5035 can be used for heavy roughing to finish-turning applications requiring resistance to heat deformation, thermal shock from interrupted cuts, and abrasion. GA5035 should be applied at high speeds and a moderate range of feeds. GA5035 is the primary choice for steel turning.

GA5125
A high-performance MT-CVD coated carbide used primarily for the milling and turning of manganese steel. GA5125 can also be applied in Cr-Mo steels, tool steels, and other alloyed steels in continuous and interrupted turning. GA5125 provides excellent resistance to abrasion, crater wear, thermal shock, deformation, and built-up edge. It performs best when applied at high speeds and moderate feed rates.

PVD Coated

G-915
A multi-layer PVD-coated grade, G-915 is exceptional for milling and interrupted turning of heat-resistant alloys, stainless steels, and low-carbon steels. The coating adds heat and abrasion resistance to the tough substrate. G-915 should be used at moderate speeds and moderate to high feeds. It is a versatile grade that performs well in a variety of materials and operations outside its primary application range, making it a great choice for general machining.

G-9120
This multi-layer PVD-coated carbide grade excels at milling and turning steel castings and forgings. G-9120 was engineered specifically to maximize productivity at moderate to heavy feed rates and high depths of cut, making it ideal for heavy-turning applications in steel.

PVD Coated *continued*

G-920
A PVD-coated grade for light-to-medium turning of heat-resistant alloys and some stainless steels. It is also an excellent grade for aluminum and refractory metals. Given its resistance to deformation and notching, G-920 should be applied at higher speeds and is well-suited for grooving and finish-turning of HRSA.

G-9230
A PVD-coated grade designed for the machining of heat-resistant alloys, titanium, and hardened and stainless steels. G-9230 works particularly well in stainless steel turning, interrupted turning of HRSA, and interrupted turning of titanium. G-9230 has superior wear resistance and toughness and is excellent for casting and forging scale conditions.

G-925
A high-performance multi-layer PVD-coated grade, G-925 is specifically designed for turning abrasive and difficult-to-machine materials. Typical applications include turning of HRSA, titanium and other refractory metals, stainless steels, and ductile cast irons. G-925 exhibits excellent resistance to notching and deformation. Apply at moderate to high speeds and moderate feeds.

G-9610
A PVD-coated grade, G-9610 is designed for turning titanium-based alloys. The high-tech, wear-resistant, chemically stable, and very smooth and lubricious coating protects the heat-resistant, sub-micron substrate and allows for higher speeds and extended tool life in continuous cuts in non-ferrous alloys.

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Uncoated

G-10

Used for roughing all cast irons in severe conditions, including broaching. The edge strength of G-10 makes it a great choice for roughing Ni-, Co-, and Ti-based alloys with positive rakes, and any machining of non-ferrous materials when toughness is of prime importance. Apply at moderate speeds and feeds.

G-02

An excellent general-purpose cast-iron grade, G-02 can be used for milling and turning cast iron at moderately high speeds and medium feeds. G-02 is also a good choice for machining aluminum with positive rakes and light roughing of some heat-resistant alloys and stainless steels.

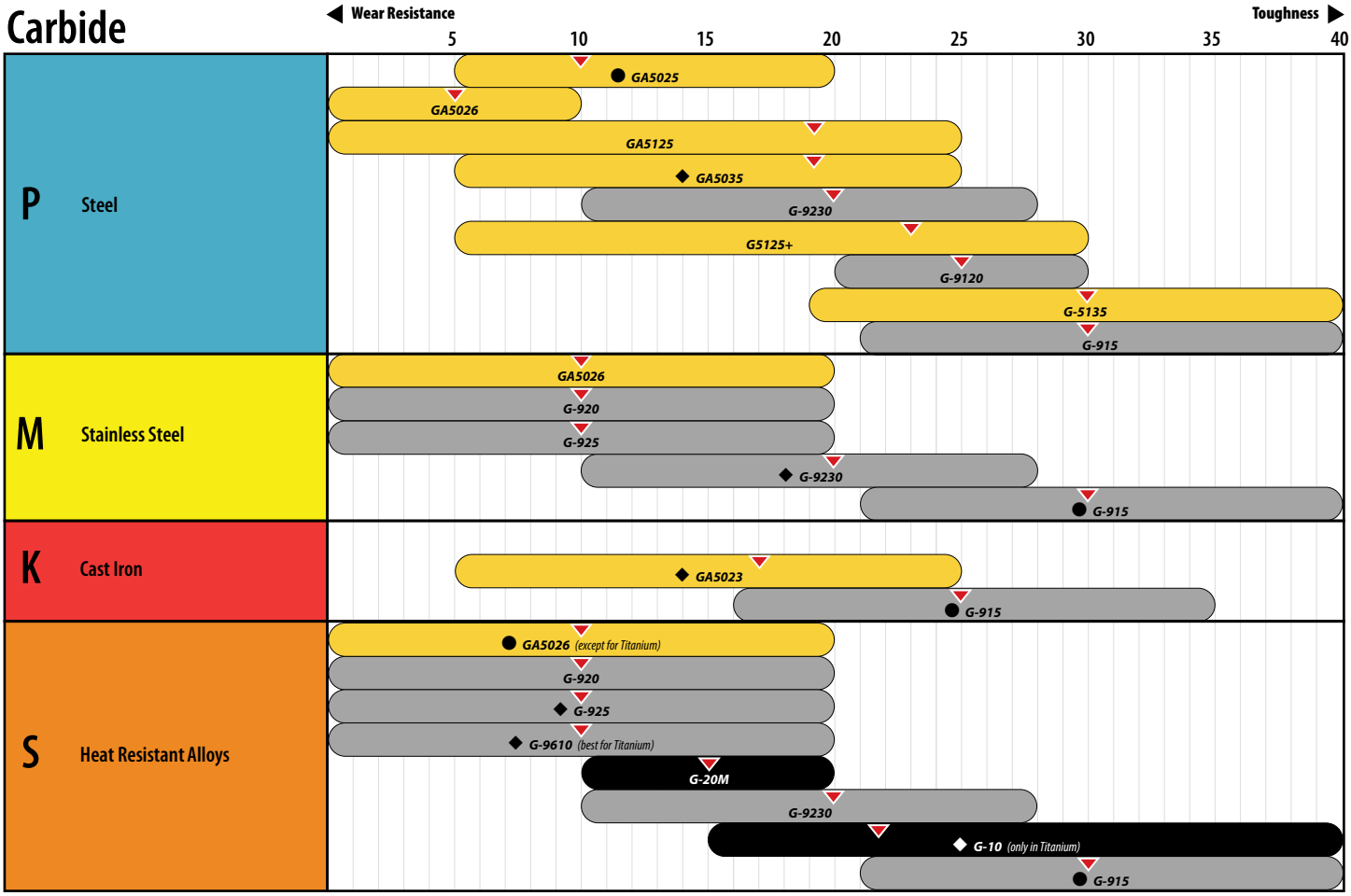
G-20M

A sub-micron C-2 carbide grade suited for use in light-to-medium turning of titanium and heat-resistant super alloys, G-20M has the strength and edge wear characteristics to resist notching when turning high-strength materials.edge wear characteristics to resist notching when turning high-strength materials.



Insert Grade Reference for Turning

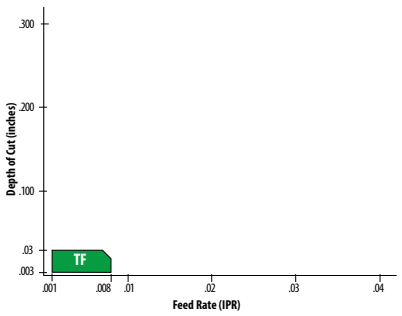
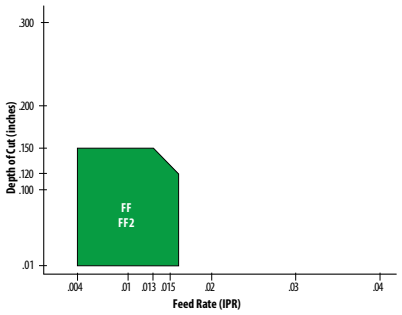
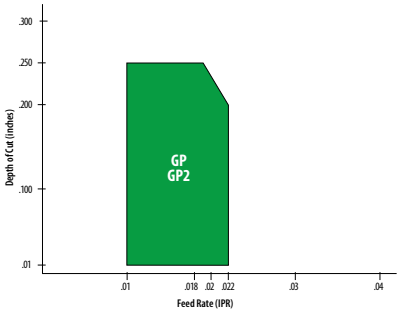
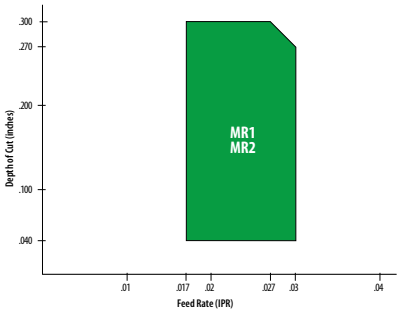
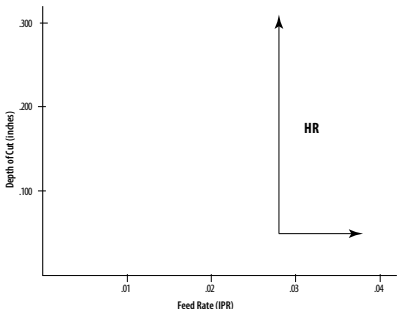
Carbide



CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated First Choice ◆ Second Choice ●

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Chipform Application Range

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

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

Tolerance Class [1]

	Roll Dim. B	I.C. A	Thickness T
A	0.0002 [2]	0.001	0.001
B	0.0002	0.001	0.005
C	0.0005	0.001	0.001
D	0.0005	0.001	0.005
E	0.001	0.001	0.001
F	0.0002 [2]	0.0005	0.001
G	0.001	0.001	0.005
H	0.0005	0.0005	0.001
J	0.0002 [2]	0.002-0.005	0.001
K	0.0005	0.002-0.005	0.001
L	0.001	0.002-0.005	0.001
M	0.002-0.010 [3]	0.002-0.004 [3]	0.005
U	0.005-0.012 [3]	0.005-0.010 [3]	0.005
N	0.002-0.010 [3]	0.002-0.004 [3]	0.001

Size (I.C.)

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

S P G A 6

Shape

- **V** 35° diamond
- **D** 55° diamond
- **K** 55° parallelogram
- **T** 60° triangle
- **E** 75° diamond
- **C** 80° diamond
- **W** 80° Trigon
- **B** 82° parallelogram
- **A** 85° parallelogram
- **M** 86° diamond
- **S** 90° square
- **L** 90° rectangle
- **P** 108° pentagon
- **H** 120° hexagon
- **O** 135° octagon
- **R** round

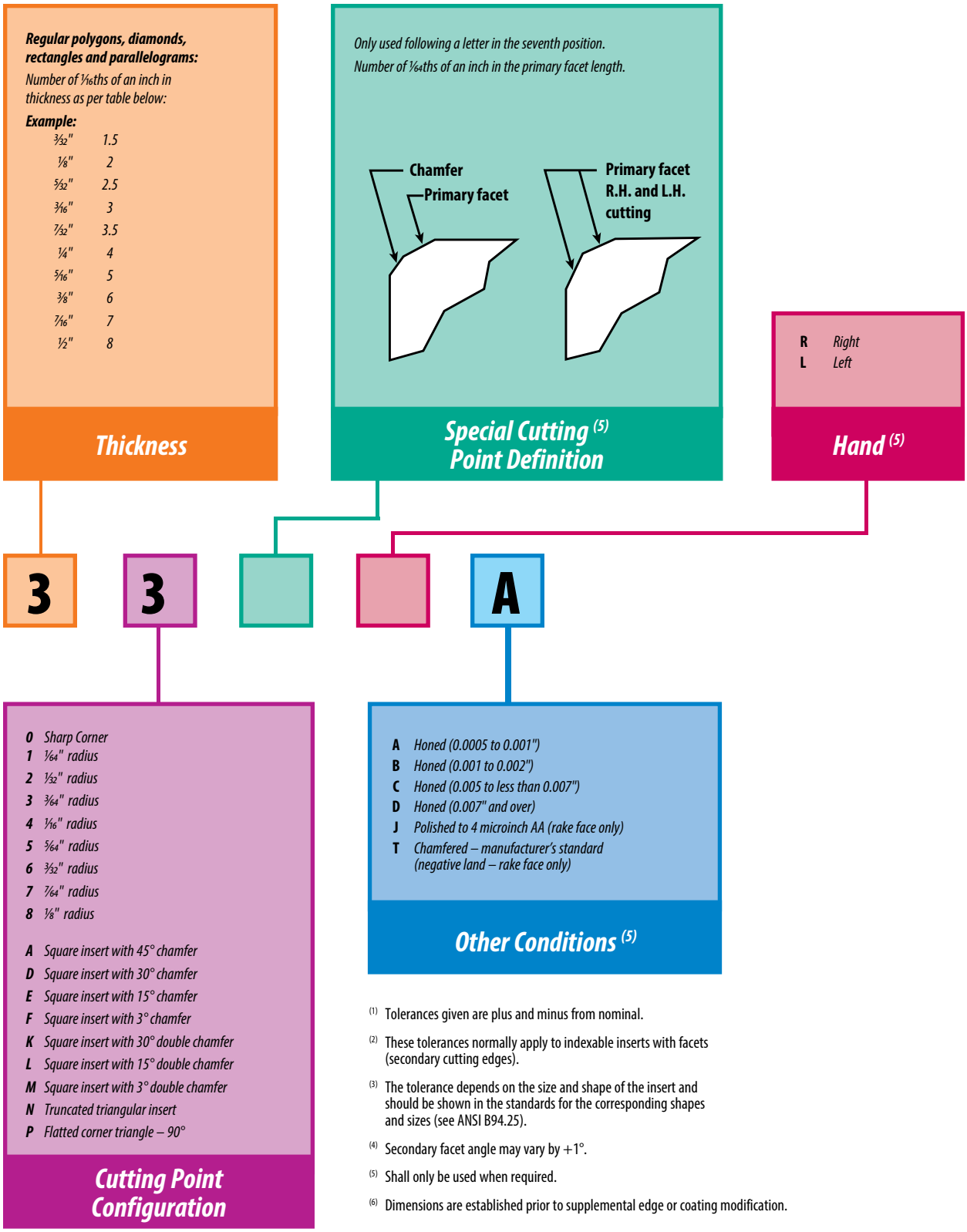
Clearances

- **N** 0°
- **A** 3°
- **B** 5°
- **C** 7°
- **P** 11°
- **D** 15°
- **E** 20°
- **F** 25°
- **G** 30°
- **H** 0°-11° [4]
- **J** 0°-14° [4]
- **K** 0°-17° [4]
- **L** 0°-20° [4]
- **M** 11°-14° [4]
- **R** 11°-17° [4]
- **S** 11°-20° [4]

Type

- **N** Without hole
- **R** Without hole with chip groove on one rake face
- **F** Without hole with chip grooves on two rake faces
- **A** With hole
- **B** With hole and one countersink (80°-90°)
- **C** With hole and two countersinks (80°-90°)
- **W** With hole and one countersink (40°-60°)
- **Q** With hole and two countersinks (40°-60°)
- **M** With hole and chip groove on one rake face
- **G** With hole and chip grooves on two rake faces
- **H** With hole, one countersink (80°-90°) and chip groove on one rake face
- **J** With hole, two countersinks (80°-90°) and chip grooves on two rake faces
- **T** With hole, one countersink (40°-60°) and chip groove on one rake face
- **U** With hole, two countersinks (40°-60°) and chip grooves on two rake faces

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(1) Tolerances given are plus and minus from nominal.

(2) These tolerances normally apply to indexable inserts with facets (secondary cutting edges).

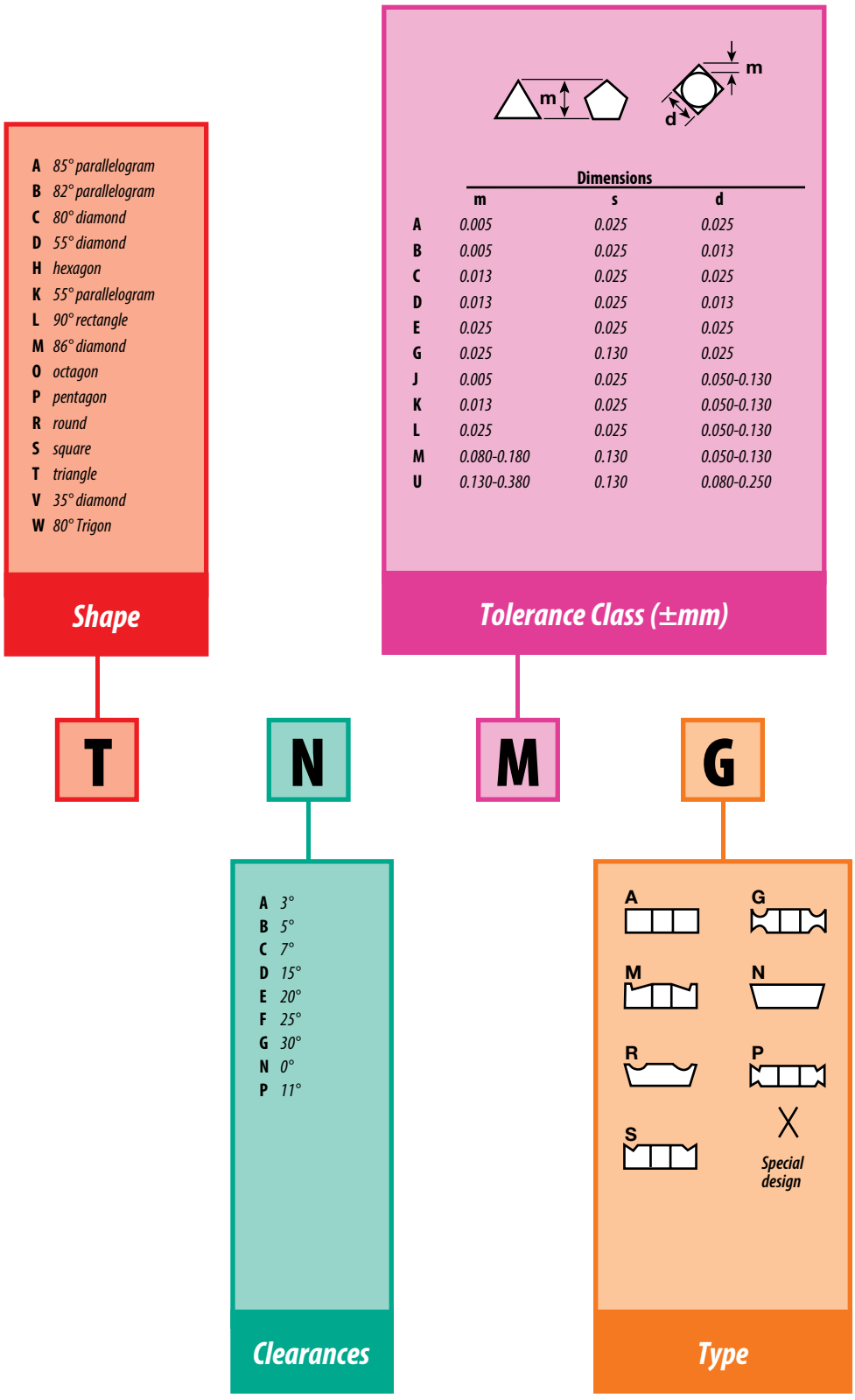
(3) The tolerance depends on the size and shape of the insert and should be shown in the standards for the corresponding shapes and sizes (see ANSI B94.25).

(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.

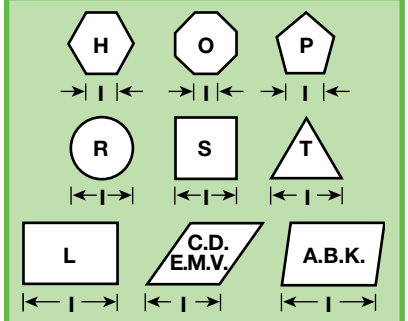
I.S.O. Identification for Turning and Boring Inserts



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Comparison cutting edge length in mm – IC in inches

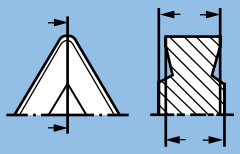
△	06	09	11	16	22	27	33	44
□ ○				09	12	15	19	25
55°					15	19		
80°					12	16	19	25
35°				16	22			
IC = d	5/32"	7/32"	1/4"	3/8"	1/2"	5/8"	3/4"	1"



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

Cutting Edge Length

22



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

04

Unhoned	F
Honed	E
Chamfered	T
Chamfered and Honed	S

Cutting Edge

E

08

Radius in terms of 0.1 mm	
00	Round insert sharp point
00	0.2
02	0.4
04	0.5
05	0.8
08	1.0
10	1.2
12	1.5
15	1.6
16	2.4
24	3.2
32	4.0
40	

Cutting Point Configuration

Pictorial Index

Negative Inserts



80° Diamond
Chip Control
page: T 14



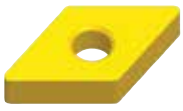
80° Diamond
Flat Top
page: T 15



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

Negative Inserts *continued*



80° Trigon
Chip Control
page: T 31



80° Trigon
Flat Top
page: T 32

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Positive Inserts



80° Diamond
Positive Flat Top
page: T33



Round
Positive Flat Top
page: T33



Round
Chip Control
page: T34



Round
Chip Control
page: T34



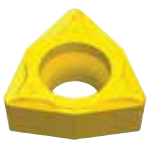
Square
Positive Flat Top
page: T35



Triangle
Positive Flat Top
page: T36-37



Triangle
Positive Flat Top
page: T38



80° Trigon
Chip Control: Screw-On
page: T39

Radius Forming Insert



SNMA-IR
Insert and Toolholder
page: T40

V-Bottom Round Inserts



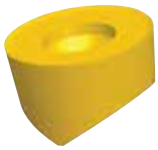
RCGN
Positive: Carbide
page: GP 14



RPGN
Positive: Ceramic
page: GP 15



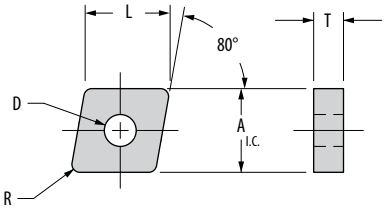
RCGR/RPGR
Positive Chipform
V-Bottom
page: GP 16



RCGT/RPGT
Positive Chipform
V-Bottom
page: GP 17

80° Diamond Inserts

Negative Chip Control (CNGG-CNMG-CNMM)



	Shape: 80° Diamond	Part Number ANSI	Steel P					Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S						Titanium S			Part Number ISO	Dimensions (inches)				
			GA5025	GA5035	GA5125	G-5125+	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-9610	G-20M	G-925	G-9610	G-10		$A_{I.C.}$	L	T	D	R
PRECISION FINISHING	TurboForm®	CNGG-430.3-TF						●	▲	●	◆			●	◆	●	▲			●	◆		CNGG-120401.3-TF	0.500	0.507	0.187	0.203	0.005
		CNGG-430.6-TF						●	▲	●	◆			●	◆	●	▲			●	◆		CNGG-120402.6-TF	0.500	0.507	0.187	0.203	0.010
		CNGG-431-TF						●	▲	●	◆			●	◆	●	▲			●	◆		CNGG-120404-TF	0.500	0.507	0.187	0.203	0.015
		CNGG-432-TF						●	▲	●	◆			●	◆	●	▲			●	◆		CNGG-120408-TF	0.500	0.507	0.187	0.203	0.031
		CNGG-433-TF						●	▲	●	◆			●	◆	●	▲			●	◆		CNGG-120412-TF	0.500	0.507	0.187	0.203	0.047
FINISHING	FF2	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
		CNMG-643-FF	▲	◆		●		●	▲		◆		◆	●	◆		▲			●	◆	▲	CNMG-190612-FF	0.750	0.761	0.250	0.312	0.047
GENERAL PURPOSE	GP2	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
MEDIUM ROUGHING	MR2	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
		CNMG-644-MR		◆	▲	▲	●		▲		◆	●	◆		◆		▲		●	●	▲	◆	CNMG-190616-MR	0.750	0.761	0.250	0.312	0.062
HEAVY ROUGHING	HR – single sided	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

First Choice ◆ Second Choice ● Alternative ▲

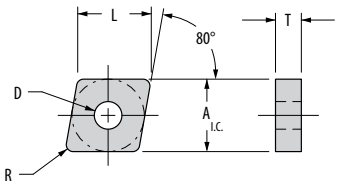
Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

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80° Diamond Inserts

Negative Flat Top (CNMA)



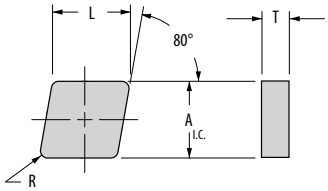
Shape: 80° Diamond	Part Number ANSI	Cast Iron K GA5023	Cast Iron K G-02	Part Number ISO	Dimensions (inches) $A_{I.C.}$	L	T	D	R
	CNMA-431	◆	▲	CNMA-120404	0.500	0.507	0.187	0.203	0.015
	CNMA-432	◆	▲	CNMA-120408	0.500	0.507	0.187	0.203	0.031
	CNMA-433	◆	▲	CNMA-120412	0.500	0.507	0.187	0.203	0.047
	CNMA-434	◆	▲	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 First Choice ◆ Second Choice ● Alternative ▲ *Grade descriptions — pages T 4*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

80° Diamond Inserts

Negative Flat Top (CNGN)



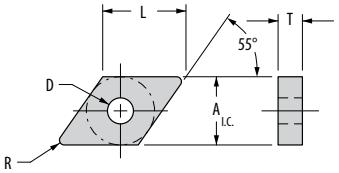
Shape: 80° Diamond	Part Number ANSI	Cast Iron K GA5023	Cast Iron K G-02	Part Number ISO	Dimensions (inches) $A_{I.C.}$	L	T	R
	CNGN-422	◆	▲	CNGN-120308	0.500	0.507	0.125	0.031
	CNGN-432	◆	▲	CNGN-120408	0.500	0.507	0.187	0.031
	CNGN-632	◆	▲	CNGN-190408	0.750	0.761	0.187	0.031
	CNGN-633	◆	▲	CNGN-190412	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 First Choice ◆ Second Choice ● Alternative ▲ *Grade descriptions — pages T 4*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

55° Diamond Inserts

Negative Chip Control (DNGG-DNMG)



	Shape: 55° Diamond	Part Number ANSI	Steel P					Stainless Steel M						Cast Iron K	Heat-Resistant Super Alloys S						Titanium S			Part Number ISO	Dimensions (inches)				
			GA5025	GA5035	GA5125	G-5125+	G-9120	GA5026	G-5125+	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-9610	G-20M	G-925	G-9610	G-10		$A_{I.C.}$	L	T	D	R
PRECISION FINISHING	TurboForm®	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	FF2	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	GP2	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	MR2	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

First Choice ◆ Second Choice ● Alternative ▲

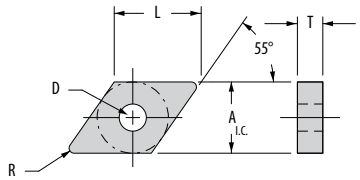
Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

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55° Diamond Inserts

Negative Flat Top (DNMA)



Shape: 55° Diamond	Part Number ANSI	Cast Iron K GA5023	Cast Iron K G-02	Part Number ISO	Dimensions (inches) $A_{I.C.}$	L	T	D	R
	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

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated

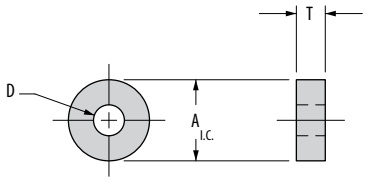
First Choice ◆ Second Choice ● Alternative ▲

Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

Round Inserts

Negative Chip Control (RNGG-RNMG-RNMM)



	Shape: Round	Part Number ANSI	Steel P					Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S						Titanium S			Part Number ISO	Dimensions (inches)		
			GA5025	GA5035	GA5125	G-5125+	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-9610	G-20M	G-925	G-9610	G-10		$A_{I.C.}$	T	D
PRECISION FINISHING	TurboForm® 	RNGG-43-TF						●	▲		◆			●	◆		▲			●	◆		RNGG-120400-TF	0.500	0.187	0.203
GENERAL PURPOSE	GP2 	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	MR2 	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	HR – single sided 	RNMM-84 MR	●	◆	▲			●	▲		◆		◆	●	◆		▲						RNMM-250600-MR	1.000	0.250	0.359

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated

First Choice ◆ Second Choice ● Alternative ▲

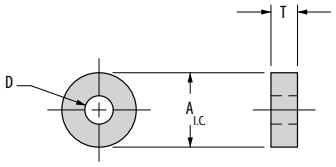
Grade descriptions — pages T 4

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Round Inserts

Negative Flat Top (RNMA)



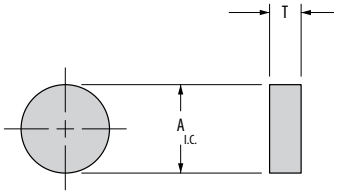
Shape: Round	Part Number ANSI	Cast Iron K GA5023	Cast Iron K G-02	Part Number ISO	Dimensions (inches) $A_{I.C.}$	T	D
	RNMA-32	◆	▲	RNMA-090300	0.375	0.125	0.150
	RNMA-33	◆	▲	RNMA-090400	0.375	0.187	0.150
	RNMA-43	◆	▲	RNMA-120400	0.500	0.187	0.203
	RNMA-54	◆	▲	RNMA-150600	0.625	0.250	0.250
	RNMA-64	◆	▲	RNMA-190600	0.750	0.250	0.312
	RNMA-86	◆	▲	RNMA-250900	1.000	0.375	0.359
	RNMA-106	◆	▲	RNMA-310900	1.250	0.375	0.500

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated First Choice ◆ Second Choice ● Alternative ▲ *Grade descriptions — pages T 4*

For additional grades, please contact Greenleaf Technical Service.

Round Inserts

Negative Flat Top (RNGN)



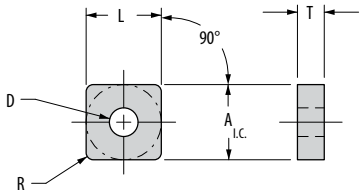
Shape: Round	Part Number ANSI	Cast Iron K GA5023	Cast Iron K G-02	Part Number ISO	Dimensions (inches) $A_{I.C.}$	T
	RNGN-32	◆	▲	RNGN-090300	0.375	0.125
	RNGN-42	◆	▲	RNGN-120300	0.500	0.125
	RNGN-43	◆	▲	RNGN-120400	0.500	0.187
	RNGN-45	◆	▲	RNGN-120700	0.500	0.312
	RNGN-53	◆	▲	RNGN-150400	0.625	0.187
	RNGN-63	◆	▲	RNGN-190400	0.750	0.187
	RNGN-84	◆	▲	RNGN-250600	1.000	0.250

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated First Choice ◆ Second Choice ● Alternative ▲ *Grade descriptions — pages T 4*

For additional grades, please contact Greenleaf Technical Service.

Square Inserts

Negative Chip Control (SNMG-SNMM)



	Shape: Square	Part Number ANSI	Steel P					Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S						Titanium S			Part Number ISO	Dimensions (inches)				
			GA5025	GA5035	GA5125	G-5125+	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-9610	G-20M	G-925	G-9610	G-10		$A_{I.C.}$	L	T	D	R
FINISHING	FF2 	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
GENERAL PURPOSE	GP2 	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
MEDIUM ROUGHING	MR2 	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
HEAVY ROUGHING	HR – single sided 	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

First Choice ◆ Second Choice ● Alternative ▲

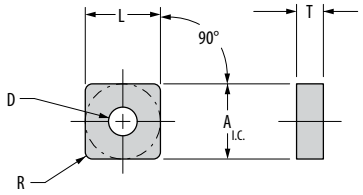
Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

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Square Inserts

Negative Flat Top (SNMA)



Shape: Square	Part Number ANSI	Cast Iron K GA5023	Cast Iron K G-02	Part Number ISO	Dimensions (inches) $A_{I.C.}$	L	T	D	R
	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: MT-CVD Coated | PVD Coated | Uncoated

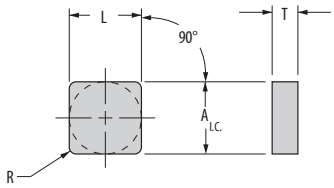
First Choice ◆ Second Choice ● Alternative ▲

Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

Square Inserts

Negative Flat Top (SNGN)



Shape: Square	Part Number ANSI	Cast Iron K GA5023	Cast Iron K G-02	Part Number ISO	Dimensions (inches) $A_{I.C.}$	L	T	R
	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

First Choice ◆ Second Choice ● Alternative ▲

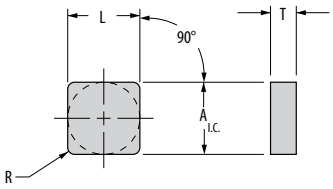
Grade descriptions — pages T 4

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Square Inserts

Negative Flat Top (SNUN)



Shape: Square	Part Number ANSI	Cast Iron K GA5023	Cast Iron K G-02	Part Number ISO	Dimensions (inches) $A_{I.C.}$	L	T	R
	SNUN-322	◆	▲	SNUN-090308	0.375	0.375	0.125	0.031
	SNUN-323	◆	▲	SNUN-090312	0.375	0.375	0.125	0.047
	SNUN-422	◆	▲	SNUN-120308	0.500	0.500	0.125	0.031
	SNUN-423	◆	▲	SNUN-120312	0.500	0.500	0.125	0.047
	SNUN-424	◆	▲	SNUN-120316	0.500	0.500	0.125	0.062
	SNUN-432	◆	▲	SNUN-120408	0.500	0.500	0.187	0.031
	SNUN-433	◆	▲	SNUN-120412	0.500	0.500	0.187	0.047
	SNUN-434	◆	▲	SNUN-120416	0.500	0.500	0.187	0.062
	SNUN-533	◆	▲	SNUN-150412	0.625	0.625	0.187	0.047
	SNUN-632	◆	▲	SNUN-190408	0.750	0.750	0.187	0.031
	SNUN-633	◆	▲	SNUN-190412	0.750	0.750	0.187	0.047
	SNUN-634	◆	▲	SNUN-190416	0.750	0.750	0.187	0.062
	SNUN-844	◆	▲	SNUN-250616	1.000	1.000	0.250	0.062
	SNUN-848	◆	▲	SNUN-250632	1.000	1.000	0.250	0.125
	SNUN-854	◆	▲	SNUN-250716	1.000	1.000	0.312	0.062
	SNUN-1066	◆	▲	SNUN-310924	1.250	1.250	0.375	0.094
	SNUN-1068	◆	▲	SNUN-310932	1.250	1.250	0.375	0.125
	SNUN-1288	◆	▲	SNUN-381232	1.500	1.500	0.500	0.125

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated

First Choice ◆ Second Choice ● Alternative ▲

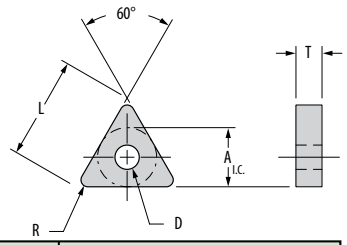
Grade descriptions — pages T 4

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Triangle Inserts

Negative Chip Control (TNGG-TNMG-TNMM)



	Shape: Triangle	Part Number ANSI	Steel P					Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S						Titanium S			Part Number ISO	Dimensions (inches)				
			GA5025	GA5035	GA5125	G-5125+	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-9610	G-20M	G-925	G-9610	G-10		$A_{I.C.}$	L	T	D	R
PRECISION FINISHING	TurboForm®	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	FF2	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	GP2	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

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated

First Choice ◆ Second Choice ● Alternative ▲

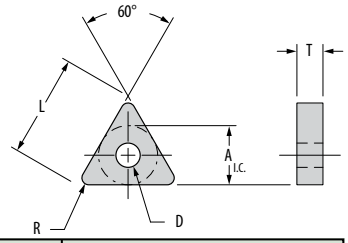
Grade descriptions — pages T 4

Continued on next page.

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

Triangle Inserts

Negative Chip Control (TNGG-TNMG-TNMM) Continued



	Shape: Triangle	Part Number ANSI	Steel P					Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S						Titanium S			Part Number ISO	Dimensions (inches)				
			GA5025	GA5035	GA5125	G-5125+	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-9610	G-20M	G-925	G-9610	G-10		$A_{I.C.}$	L	T	D	R
MEDIUM ROUGHING	MR2 	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
HEAVY ROUGHING	HR – single sided 	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

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated

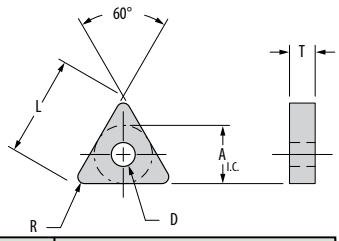
First Choice ◆ Second Choice ● Alternative ▲

Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

Triangle Inserts

Negative Flat Top (TNMA)



Shape: Triangle	Part Number ANSI	Cast Iron K GA5023	Cast Iron K G-02	Part Number ISO	Dimensions (inches) $A_{I.C.}$	L	T	D	R
	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: MT-CVD Coated | PVD Coated | Uncoated

First Choice ◆ Second Choice ● Alternative ▲

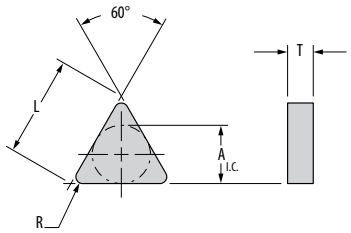
Grade descriptions — pages T 4

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Triangle Inserts

Negative Flat Top (TNGN)



Shape: Triangle	Part Number ANSI	Cast Iron K GA5023	Cast Iron K G-02	Part Number ISO	Dimensions (inches) $A_{I.C.}$	L	T	R
	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

First Choice ◆ Second Choice ● Alternative ▲

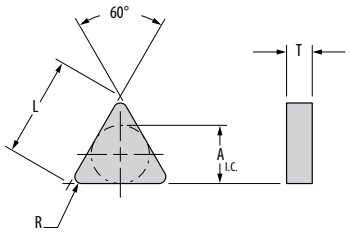
Grade descriptions — pages T 4

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Triangle Inserts

Negative Flat Top (TNUN)



Shape: Triangle	Part Number ANSI	Cast Iron K GA5023	Cast Iron K G-02	Part Number ISO	Dimensions (inches) $A_{I.C.}$	L	T	R
	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: MT-CVD Coated | PVD Coated | Uncoated

First Choice ◆ Second Choice ● Alternative ▲

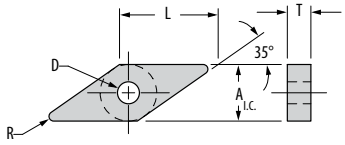
Grade descriptions — pages T 4

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35° Diamond Inserts

Negative Chip Control (VNGG-VNMG)



	Shape: 35° Diamond	Part Number ANSI	Steel P					Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S						Titanium S			Part Number ISO	Dimensions (inches)				
			GA5025	GA5035	GA5125	G-5125+	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-9610	G-20M	G-925	G-9610	G-10		$A_{I.C.}$	L	T	D	R
PRECISION FINISHING	TurboForm®	VNGG-330.3-TF						●	▲	●	◆			●	◆		▲			●	◆		VNGG-160401.3-TF	0.375	0.654	0.187	0.150	0.005
		VNGG-330.6-TF						●	▲	●	◆			●	◆		▲			●	◆		VNGG-160402.6-TF	0.375	0.654	0.187	0.150	0.010
		VNGG-331-TF						●	▲	●	◆			●	◆		▲			●	◆		VNGG-160404-TF	0.375	0.654	0.187	0.150	0.015
		VNGG-332-TF						●	▲	●	◆			●	◆		▲			●	◆		VNGG-160408-TF	0.375	0.654	0.187	0.150	0.031
		VNGG-333-TF						●	▲	●	◆			●	◆		▲			●	◆		VNGG-160412-TF	0.375	0.654	0.187	0.150	0.047
FINISHING	FF2	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
GENERAL PURPOSE	GP2	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

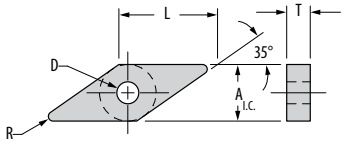
First Choice ◆ Second Choice ● Alternative ▲

Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

35° Diamond Inserts

Negative Flat Top (VNMA)



Shape: 35° Diamond	Part Number ANSI	Cast Iron K GA5023	Cast Iron K G-02	Part Number ISO	Dimensions (inches) $A_{I.C.}$	L	T	D	R
	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

First Choice ◆ Second Choice ● Alternative ▲

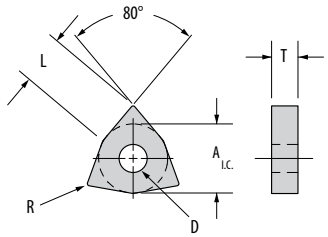
Grade descriptions — pages T 4

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80° Trigon Inserts

Negative Chip Control (WNMG)



	Shape: 80° Trigon	Part Number ANSI	Steel					Stainless Steel					Cast Iron	Heat-Resistant Super Alloys						Titanium			Part Number ISO	Dimensions (inches)				
			P					M					K	S						S				$A_{I.C.}$	L	T	D	R
			GA5025	GA5035	GA5125	G-5125+	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-9610	G-20M	G-925	G-9610	G-10						
PRECISION FINISHING	FF 	WNMG-331-FF2	▲	◆				●	▲		◆		◆	●	◆		▲			●	◆	▲	WNMG-060404-FF2	0.375	0.257	0.187	0.150	0.015
		WNMG-332-FF2	▲	◆				●	▲		◆		◆	●	◆		▲			●	◆	▲	WNMG-060408-FF2	0.375	0.257	0.187	0.150	0.031
		WNMG-431-FF2	▲	◆				●	▲		◆		◆	●	◆		▲			●	◆	▲	WNMG-080404-FF2	0.500	0.342	0.187	0.203	0.015
		WNMG-432-FF2	▲	◆				●	▲		◆		◆	●	◆		▲			●	◆	▲	WNMG-080408-FF2	0.500	0.342	0.187	0.203	0.031
FINISHING	GP2 	WNMG-331-GP2	●	◆	▲			●	▲		◆		◆	●	◆		▲			▲	●	◆	WNMG-060404-GP2	0.375	0.257	0.187	0.150	0.015
		WNMG-332-GP2	●	◆	▲			●	▲		◆		◆	●	◆		▲			▲	●	◆	WNMG-060408-GP2	0.375	0.257	0.187	0.150	0.031
		WNMG-431-GP2	●	◆	▲			●	▲		◆		◆	●	◆		▲			▲	●	◆	WNMG-080404-GP2	0.500	0.342	0.187	0.203	0.015
		WNMG-432-GP2	●	◆	▲			●	▲		◆		◆	●	◆		▲			▲	●	◆	WNMG-080408-GP2	0.500	0.342	0.187	0.203	0.031
		WNMG-433-GP2	●	◆	▲			●	▲		◆		◆	●	◆		▲			▲	●	◆	WNMG-080412-GP2	0.500	0.342	0.187	0.203	0.047
		WNMG-434-GP2	●	◆	▲			●	▲		◆		◆	●	◆		▲			▲	●	◆	WNMG-080416-GP2	0.500	0.342	0.187	0.203	0.062
GENERAL PURPOSE	MR2 	WNMG-432-MR2		◆	▲		●		▲		◆	●	◆		◆		▲	●		●	▲	◆	WNMG-080408-MR2	0.500	0.342	0.187	0.203	0.031
		WNMG-433-MR2		◆	▲		●		▲		◆	●	◆		◆		▲	●		●	▲	◆	WNMG-080412-MR2	0.500	0.342	0.187	0.203	0.047

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated

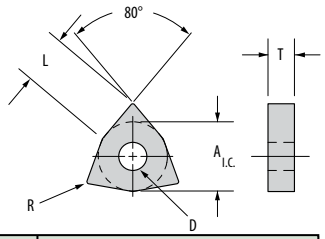
First Choice ◆ Second Choice ● Alternative ▲

Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

80° Trigon Inserts

Negative Flat Top (WNMA)



Shape: 80° Trigon	Part Number ANSI	Cast Iron K GA5023	Cast Iron K G-02	Part Number ISO	Dimensions (inches) $A_{I.C.}$	L	T	D	R
	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

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated

First Choice ◆ Second Choice ● Alternative ▲

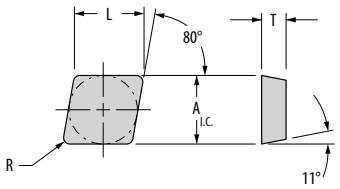
Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

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80° Diamond Inserts

Positive Flat Top (CPGN)



Shape: 80° Diamond	Part Number ANSI	Steel P				Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S					Part Number ISO	Dimensions (inches)			
		GA5025	GA5035	GA5125	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-20M		$A_{I.C.}$	L	T	R
	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

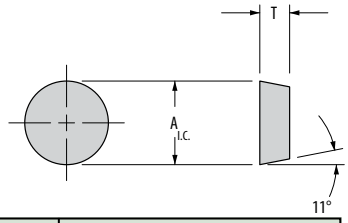
First Choice ◆ Second Choice ● Alternative ▲

Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

Round Inserts

Positive Flat Top (RPGN)



Shape: Round	Part Number ANSI	Steel P				Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S					Part Number ISO	Dimensions (inches)	
		GA5025	GA5035	GA5125	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-20M		$A_{I.C.}$	T
	RPGN-32	●	◆	▲		●	▲		◆		◆	●	◆		▲		RPGN-090300	0.375	0.125
	RPGN-43	●	◆	▲		●	▲		◆		◆	●	◆		▲		RPGN-120400	0.500	0.187

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated

First Choice ◆ Second Choice ● Alternative ▲

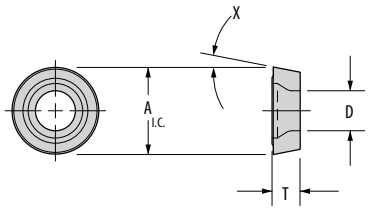
Grade descriptions — pages T 4

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Round Inserts

Positive Chip Control (RCGT-RPGT-RCMT)



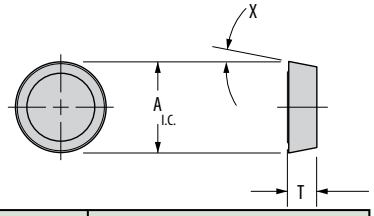
Shape: Round	Part Number ANSI	Steel P					Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S						Titanium S			Part Number ISO	Dimensions (inches)			
		GA5025	GA5035	GA5125	G-5125+	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-9610	G-20M	G-925	G-9610	G-10		$A_{I.C.}$	T	D	X
TurboForm® 	RCGT-22-TF						●	▲		◆			●	◆		▲			●	◆		RCGT-060300-TF	0.250	0.125	0.134	7°
	RCGT-32.5-TF						●	▲		◆			●	◆		▲			●	◆		RCGT-09T300-TF	0.375	0.156	0.173	7°
	RCGT-43-TF						●	▲		◆			●	◆		▲			●	◆		RCGT-120400-TF	0.500	0.187	0.217	7°
	RPGT-22-TF						●	▲		◆			●	◆		▲			●	◆		RPGT-060300-TF	0.250	0.125	0.134	11°
	RPGT-32.5-TF						●	▲		◆			●	◆		▲			●	◆		RPGT-09T300-TF	0.375	0.156	0.173	11°
	RPGT-43-TF						●	▲		◆			●	◆		▲			●	◆		RPGT-120400-TF	0.500	0.187	0.217	11°
	RCMT-10T3-TF						●	▲		◆			●	◆		▲			●	◆		RCMT-10T3-TF	0.394	0.156	0.173	7°
	RCMT-1204-TF						●	▲		◆			●	◆		▲			●	◆		RCMT-1204-TF	0.472	0.187	0.173	7°
	RCMT-1606-TF						●	▲		◆			●	◆		▲			●	◆		RCMT-1606-TF	0.630	0.250	0.217	7°
	RCMT-10T3-MR						●	▲		◆			●	◆		▲			◆			RCMT-10T3-MR	0.394	0.156	0.173	7°
	RCMT-1204-MR						●	▲		◆			●	◆		▲			◆			RCMT-1204-MR	0.472	0.187	0.173	7°
	RCMT-1606-MR						●	▲		◆			●	◆		▲			◆			RCMT-1606-MR	0.630	0.250	0.217	7°

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated — First Choice ◆ Second Choice ● Alternative ▲ — *Grade descriptions — pages T 4*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

Round Inserts

Positive Chip Control (RCGR-RPGR)



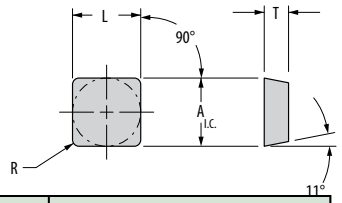
Shape: Round	Part Number ANSI	Steel P					Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S						Titanium S			Part Number ISO	Dimensions (inches)		
		GA5025	GA5035	GA5125	G-5125+	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-9610	G-20M	G-925	G-9610	G-10		$A_{I.C.}$	T	X
TurboForm® 	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 — First Choice ◆ Second Choice ● Alternative ▲ — *Grade descriptions — pages T 4*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

Square Inserts

Positive Flat Top (SPGN-SPUN)



Shape: Square	Part Number ANSI	Steel P				Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S					Part Number ISO	Dimensions (inches)			
		GA5025	GA5035	GA5125	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-20M		$A_{I.C.}$	L	T	R
	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

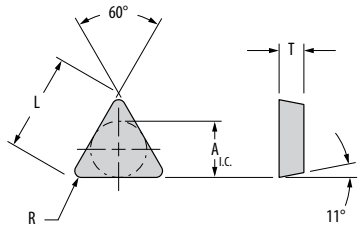
First Choice ◆ Second Choice ● Alternative ▲

Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

Triangle Inserts

Positive Flat Top (TPGN)



Shape: Triangle	Part Number ANSI	Steel P				Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S					Part Number ISO	Dimensions (inches)			
		GA-5025	GA-5035	GA-5125	G-9120	GA-5026	G-925	G-920	G-9230	G-915	GA-5023	GA-5026	G-925	G-920	G-9230	G-20M		$A_{I.C.}$	T	D	R
	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

First Choice ◆ Second Choice ● Alternative ▲

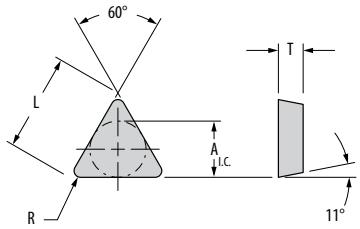
Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

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Triangle Inserts

Positive Flat Top (TPUN)



Shape: Triangle	Part Number ANSI	Steel P				Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S					Part Number ISO	Dimensions (inches)			
		GA-5025	GA-5035	GA-5125	G-9120	GA-5026	G-925	G-920	G-9230	G-915	GA-5023	GA-5026	G-925	G-920	G-9230	G-20M		$A_{I.C.}$	L	T	R
	TPUN-321	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-160304	0.375	0.650	0.125	0.015
	TPUN-322	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-160308	0.375	0.650	0.125	0.031
	TPUN-323	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-160312	0.375	0.650	0.125	0.047
	TPUN-431	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-220404	0.500	0.866	0.187	0.015
	TPUN-432	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-220408	0.500	0.866	0.187	0.031
	TPUN-433	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-220412	0.500	0.866	0.187	0.047
	TPUN-434	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-220416	0.500	0.866	0.187	0.062
	TPUN-542	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-270608	0.625	1.083	0.250	0.031
	TPUN-543	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-270612	0.625	1.083	0.250	0.047
	TPUN-544	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-270616	0.625	1.083	0.250	0.062
	TPUN-552	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-270708	0.625	1.083	0.312	0.031
	TPUN-553	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-270712	0.625	1.083	0.312	0.047
	TPUN-554	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-270716	0.625	1.083	0.312	0.062
	TPUN-556	●	◆	▲		●	▲		◆		◆	●	◆		▲		TPUN-270724	0.625	1.083	0.312	0.094
	TPUN-664		◆	▲	●		▲		◆	●	◆		◆		▲	●	TPUN-330916	0.750	1.299	0.375	0.062
	TPUN-666		◆	▲	●		▲		◆	●	◆		◆		▲	●	TPUN-330924	0.750	1.299	0.375	0.094

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated

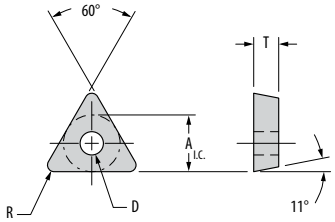
First Choice ◆ Second Choice ● Alternative ▲

Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

Triangle Inserts

Positive Flat Top (TP-TPGA)



Shape: Triangle	Part Number ANSI	Steel P				Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S					Part Number ISO	Dimensions (inches)			
		GA5025	GA5035	GA5125	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-20M		$A_{I.C.}$	T	D	X
	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

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated

First Choice ◆ Second Choice ● Alternative ▲

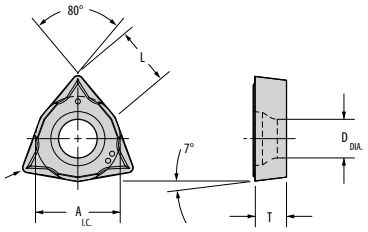
Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

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80° Trigon Inserts

Chip Control: Screw On (WCMT)



Shape: 80° Trigon	Part Number ANSI	Steel P				Stainless Steel M					Cast Iron K	Heat-Resistant Super Alloys S					Part Number ISO	Dimensions (inches)				
		GA5025	GA5035	GA5125	G-9120	GA5026	G-925	G-920	G-9230	G-915	GA5023	GA5026	G-925	G-920	G-9230	G-20M		$A_{I.C.}$	L	T	D	R
	WCMT-21.5.5-X3	●	◆	▲		●	▲		◆		◆	●	◆		▲		WCMT-060202-X3	0.250	0.171	0.093	0.110	0.008
	WCMT-21.51-X3	●	◆	▲		●	▲		◆		◆	●	◆		▲		WCMT-060204-X3	0.250	0.171	0.093	0.110	0.015
	WCMT-32.51-X3	●	◆	▲		●	▲		◆		◆	●	◆		▲		WCMT-09T304-X3	0.375	0.256	0.156	0.173	0.015
	WCMT-32.52-X3	●	◆	▲		●	▲		◆		◆	●	◆		▲		WCMT-09T308-X3	0.375	0.256	0.156	0.173	0.031

CARBIDE COATINGS: MT-CVD Coated | PVD Coated | Uncoated

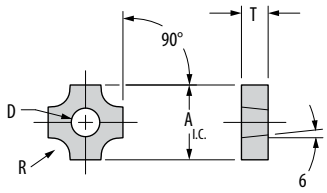
First Choice ◆ Second Choice ● Alternative ▲

Grade descriptions — pages T 4

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

Radius Forming Inserts

Flat Top (SNMA)

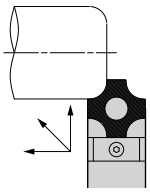


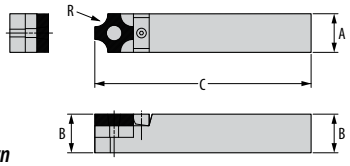
Shape: Square	Part Number ANSI	G-02	G-60	GA5035	Part Number ISO	Dimensions (inches) $A_{I.C.}$	L	T	R
	SNMA-64IR4		●	◆	SNMA-64IR4	0.750	0.250	0.312	0.062
	SNMA-64IR6		●	◆	SNMA-64IR6	0.750	0.250	0.312	0.093
	SNMA-64IR8		●	◆	SNMA-64IR8	0.750	0.250	0.312	0.125
	SNMA-64IR10		●	◆	SNMA-64IR10	0.750	0.250	0.312	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 First Choice ◆ Second Choice ● Alternative ▲ *Grade descriptions — pages T 4*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

Style GSRN





Neutral Toolholder Shown

Part Number Neutral	Dimensions (inches) A	B	C	Standard Components Shim	Center Pin	Clamp	Clamp Screw	Tune-Up Kit	Insert Options Insert	R
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	30545	30319-2	30320	TK-00574	SNMA-126IR28	0.437
									SNMA-126IR32	0.500

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

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Ceramic Inserts

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





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Insert Grades

Ceramic

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



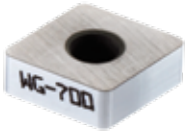
WG-300®

A SiC whisker-reinforced Al_2O_3 ceramic that is very effective at machining nickel- and cobalt-based super alloys, alloyed cast iron, and hardened steels at metal removal rates up to 10 times higher than carbide. Excellent chemical stability and wear resistance at very high cutting speeds make WG-300® the first choice worldwide for grooving and turning difficult materials.



WG-600®

A coated SiC whisker-reinforced Al_2O_3 ceramic that offers higher tool life and speed capabilities than uncoated whisker-reinforced ceramics due to the additional barrier to heat and mechanical abrasion. Application areas for WG-600® include rough and finish turning of alloys in the M, K, S, and H ISO material classes, as well as milling of hardened steels and select stainless steels. WG-600® is particularly well-suited for finish-turning and grooving of Heat-Resistant Super Alloys and is unmatched in both turning and milling of steels with a hardness above 60 HRc.



WG-700™

A SiC whisker-reinforced Al_2O_3 ceramic featuring improved toughness and a unique low-friction coating. WG-700™ is ideal for turning, grooving, and profiling nickel- and cobalt-based super alloys that other ceramics may struggle in. WG-700™ exhibits exceptional tool life and productivity in next-generation formulations or novel heat treatments of Heat-Resistant Super Alloys, and long-reach or thin-walled applications with lower rigidity.



XSYTIN®-1

A phase-toughened ceramic grade capable of sustaining extreme cutting forces. The unprecedented strength, impact toughness, and resistance to thermal shock of XSYTIN®-1 make it ideal for use in interrupted cuts, forging scale removal, and milling. In continuous cuts, the strength of XSYTIN®-1 allows the use of significantly higher feed rates or depths of cut. In machining environments with severe interruptions and scale, the edge strength of XSYTIN®-1 allows the use of very light edge preparations, minimizing the force of impact and making for a much smoother cut.



GSN100™

An engineered blend of hot-pressed silicon nitride and proprietary toughening agents that excels in the machining of cast iron. GSN100™ delivers superior wear and toughness for turning, grooving, and milling applications. It is available in all standard geometries and engineered specials.



GEM-8™

An Al_2O_3 + TiC composite ceramic exhibiting excellent hardness and strength at elevated temperatures. GEM-8™ offers a high degree of predictability in roll turning and continuous cuts in ferrous alloys.



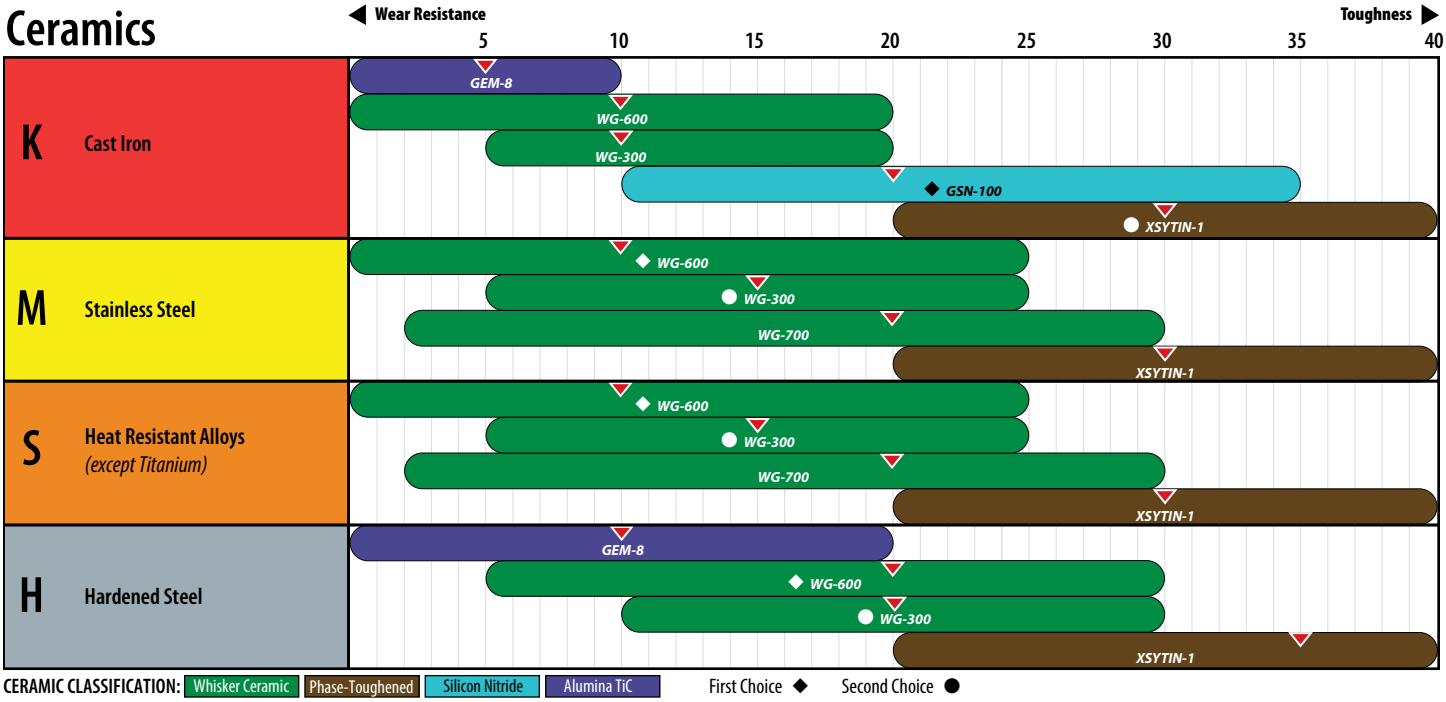




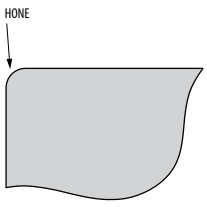


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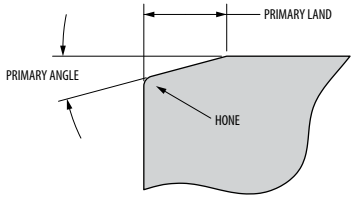
Insert Grade Reference for Turning



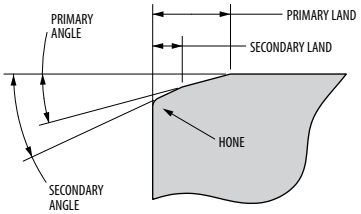
Edge Preparations



HONE



PRIMARY ANGLE



SECONDARY ANGLE

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

See pages ATI 22-23 for other Greenleaf edge preps or call Greenleaf Technical Service for application concerns.

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

Tolerance Class [1]

	Roll Dim. B	I.C. A	Thickness T
A	0.0002 [2]	0.001	0.001
B	0.0002	0.001	0.005
C	0.0005	0.001	0.001
D	0.0005	0.001	0.005
E	0.001	0.001	0.001
F	0.0002 [2]	0.0005	0.001
G	0.001	0.001	0.005
H	0.0005	0.0005	0.001
J	0.0002 [2]	0.002-0.005	0.001
K	0.0005	0.002-0.005	0.001
L	0.001	0.002-0.005	0.001
M	0.002-0.010 [3]	0.002-0.004 [3]	0.005
U	0.005-0.012 [3]	0.005-0.010 [3]	0.005
N	0.002-0.010 [3]	0.002-0.004 [3]	0.001

Size (I.C.)

Regular polygons and diamonds

Number of ⅛ths 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
¼" I.C.	2
5/16" I.C.	2.5
⅜" I.C.	3
½" I.C.	4
⅝" I.C.	5
¾" I.C.	6
⅞" I.C.	7
1" I.C.	8
1-¼" I.C.	10

Rectangles and parallelograms

Use two digits to size

1st digit: Number of ⅛ths of an inch in width

2nd digit: Number of ¼ths of an inch in length

S P G A 6

Shape

- **V** 35° diamond
- **D** 55° diamond
- **K** 55° parallelogram
- **T** 60° triangle
- **E** 75° diamond
- **C** 80° diamond
- **W** 80° Trigon
- **B** 82° parallelogram
- **A** 85° parallelogram
- **M** 86° diamond
- **S** 90° square
- **L** 90° rectangle
- **P** 108° pentagon
- **H** 120° hexagon
- **O** 135° octagon
- **R** round

Clearances

- **N** 0°
- **A** 3°
- **B** 5°
- **C** 7°
- **P** 11°
- **D** 15°
- **E** 20°
- **F** 25°
- **G** 30°
- **H** 0°-11° [4]
- **J** 0°-14° [4]
- **K** 0°-17° [4]
- **L** 0°-20° [4]
- **M** 11°-14° [4]
- **R** 11°-17° [4]
- **S** 11°-20° [4]

Type

- **N** Without hole
- **R** Without hole with chip groove on one rake face
- **F** Without hole with chip grooves on two rake faces
- **A** With hole
- **B** With hole and one countersink (80°-90°)
- **C** With hole and two countersinks (80°-90°)
- **W** With hole and one countersink (40°-60°)
- **Q** With hole and two countersinks (40°-60°)
- **M** With hole and chip groove on one rake face
- **G** With hole and chip grooves on two rake faces
- **H** With hole, one countersink (80°-90°) and chip groove on one rake face
- **J** With hole, two countersinks (80°-90°) and chip grooves on two rake faces
- **T** With hole, one countersink (40°-60°) and chip groove on one rake face
- **U** With hole, two countersinks (40°-60°) and chip grooves on two rake faces

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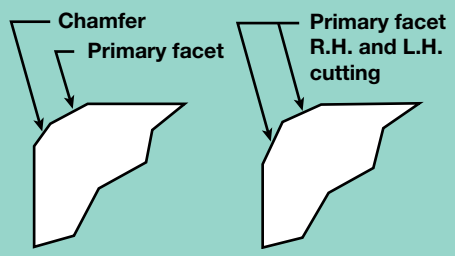
Regular polygons, diamonds, rectangles and parallelograms:
Number of 1/16ths of an inch in thickness as per table below:

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 (5)

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 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).

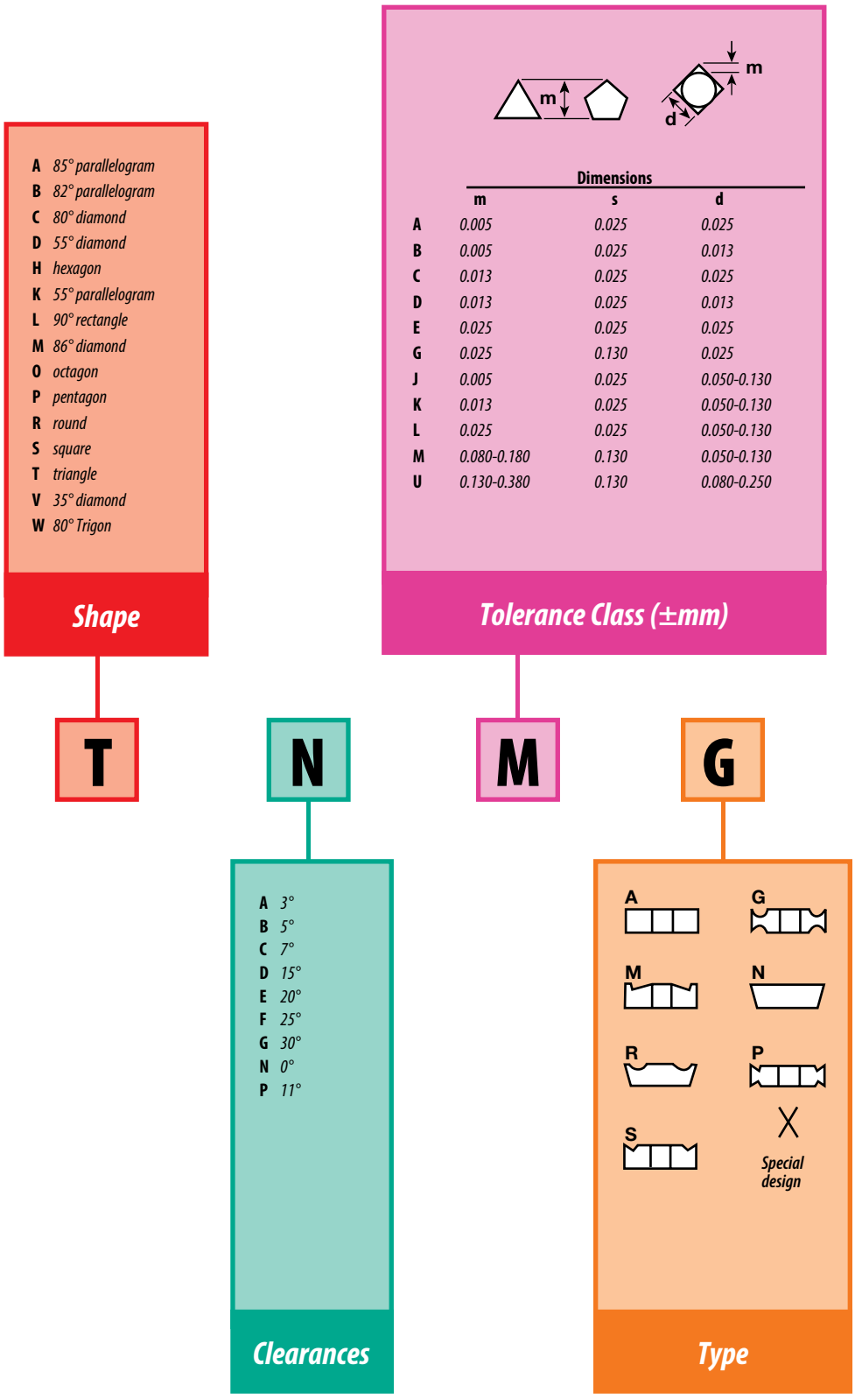
(3) The tolerance depends on the size and shape of the insert and should be shown in the standards for the corresponding shapes and sizes (see ANSI B94.25).

(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.

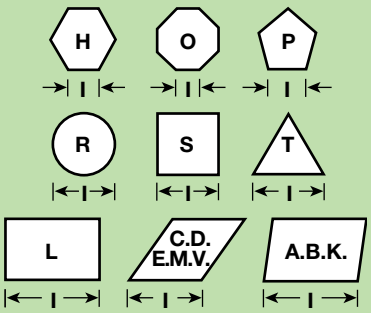
I.S.O. Identification for Turning and Boring Inserts



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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"



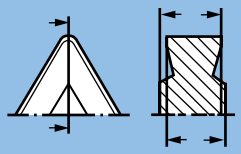
Integers to be preceded by a 0.
Example: 9,52 mm indicated by 09.

Cutting Edge Length

Unhoned	F
Honed	E
Chamfered	T
Chamfered and Honed	S

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

Radius in terms of 0.1 mm

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

Cutting Point Configuration

Pictorial Index

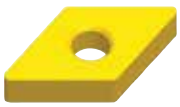
Negative Inserts



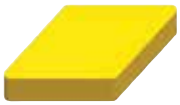
80° Diamond
page: T49



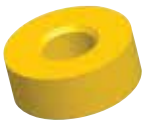
80° Diamond
page: T49



55° Diamond
page: T50



55° Diamond
page: T50



Round
page: T51



Round
page: T51



Square
page: T52



Square
page: T53



Triangle
page: T54

Negative Inserts *continued*



Triangle
page: T54



35° Diamond
page: T55



Trigon
page: T56

Positive Inserts



80° Diamond
Positive Flat Top
page: T57



Round
Positive Flat Top
page: T58



Square
Positive Flat Top
page: T59



Triangle
Positive Flat Top
page: T60



Triangle
page: T60

V-Bottom Round Inserts



RCGN
Positive: Ceramic
page: GP 14



RPGN
Positive: Ceramic
page: GP 15

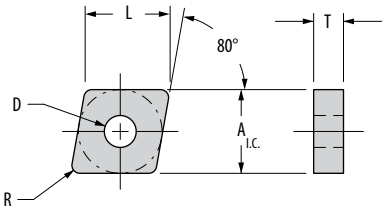


RCGR/RPGR
Positive Chipform
V-Bottom
page: GP 16

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80° Diamond Inserts

Negative (CNGA)



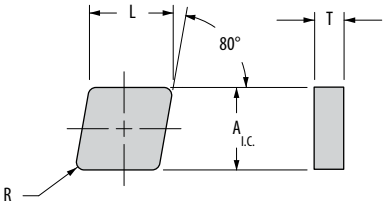
Shape: 80° Diamond	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)				
		M	K			S				H									
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	D	R
	CNGA-431	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-120404	0.500	0.508	0.187	0.203	0.015
	CNGA-432	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-120408	0.500	0.508	0.187	0.203	0.031
	CNGA-433	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-120412	0.500	0.508	0.187	0.203	0.047
	CNGA-434	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-120416	0.500	0.508	0.187	0.203	0.062
	CNGA-453	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-120712	0.500	0.508	0.312	0.203	0.047
	CNGA-454	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-120716	0.500	0.508	0.312	0.203	0.062
	CNGA-542	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-160608	0.625	0.635	0.250	0.250	0.031
	CNGA-543	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-160612	0.625	0.635	0.250	0.250	0.047
	CNGA-544	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-160616	0.625	0.635	0.250	0.250	0.062
	CNGA-643	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-190612	0.750	0.762	0.250	0.312	0.047
	CNGA-644	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-190616	0.750	0.762	0.250	0.312	0.062
	CNGA-652	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-190708	0.750	0.762	0.312	0.312	0.031
	CNGA-653	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-190712	0.750	0.762	0.312	0.312	0.047
	CNGA-654	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGA-190716	0.750	0.762	0.312	0.312	0.062

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖ *Grade descriptions — pages T 42*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.
See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

80° Diamond Inserts

Negative (CNGN)



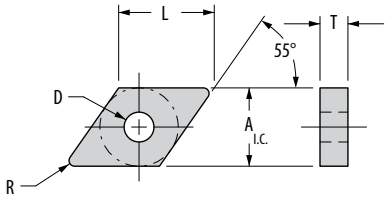
Shape: 80° Diamond	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)			
		M	K			S				H								
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	R
	CNGN-431	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-120404	0.500	0.508	0.187	0.015
	CNGN-432	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-120408	0.500	0.508	0.187	0.031
	CNGN-433	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-120412	0.500	0.508	0.187	0.047
	CNGN-434	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-120416	0.500	0.508	0.187	0.062
	CNGN-451	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-120704	0.500	0.508	0.312	0.015
	CNGN-452	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-120708	0.500	0.508	0.312	0.031
	CNGN-453	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-120712	0.500	0.508	0.312	0.047
	CNGN-454	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-120716	0.500	0.508	0.312	0.062
	CNGN-542	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-160608	0.625	0.635	0.250	0.031
	CNGN-543	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-160612	0.625	0.635	0.250	0.047
	CNGN-642	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-190608	0.750	0.762	0.250	0.031
	CNGN-643	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-190612	0.750	0.762	0.250	0.047
	CNGN-644	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-190616	0.750	0.762	0.250	0.062
	CNGN-658	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CNGN-190732	0.750	0.762	0.312	0.125

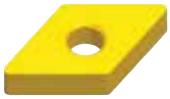
CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖ *Grade descriptions — pages T 42*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.
See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

55° Diamond Inserts

Negative (DNGA)



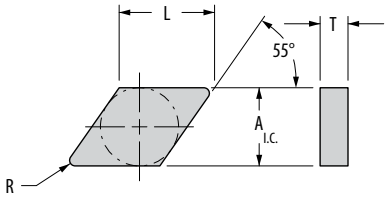
Shape: 55° Diamond	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)				
		M	K			S				H									
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	D	R
	DNGA-322	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGA-110308	0.375	0.458	0.125	0.150	0.031
	DNGA-323	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGA-110312	0.375	0.458	0.125	0.150	0.047
	DNGA-324	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGA-110316	0.375	0.458	0.125	0.150	0.062
	DNGA-332	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGA-110408	0.375	0.458	0.187	0.150	0.031
	DNGA-431	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGA-150404	0.500	0.610	0.187	0.203	0.015
	DNGA-432	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGA-150408	0.500	0.610	0.187	0.203	0.031
	DNGA-433	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGA-150412	0.500	0.610	0.187	0.203	0.047
	DNGA-434	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGA-150416	0.500	0.610	0.187	0.203	0.062
	DNGA-443	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGA-150612	0.500	0.610	0.250	0.203	0.047
	DNGA-543	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGA-190612	0.625	0.763	0.250	0.250	0.047

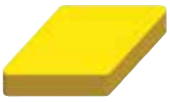
CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖ *Grade descriptions — pages T 42*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.
See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

55° Diamond Inserts

Negative (DNGN)



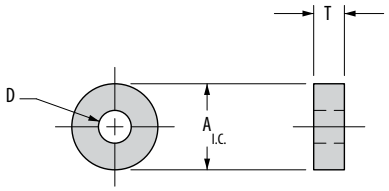
Shape: 55° Diamond	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)			
		M	K			S				H								
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	R
	DNGN-322	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGN-110308	0.375	0.458	0.125	0.031
	DNGN-323	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGN-110312	0.375	0.458	0.125	0.047
	DNGN-324	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGN-110316	0.375	0.458	0.125	0.062
	DNGN-432	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGN-150408	0.500	0.610	0.187	0.031
	DNGN-433	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGN-150412	0.500	0.610	0.187	0.047
	DNGN-434	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	DNGN-150416	0.500	0.610	0.187	0.062

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖ *Grade descriptions — pages T 42*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.
See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

Round Inserts

Negative (RNGA)



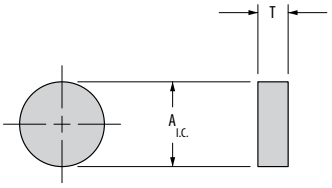
Shape: Round	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)		
		M	K			S				H							
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	T	D
	RNGA-32	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGA-090300	0.375	0.125	0.150
	RNGA-33	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGA-090400	0.375	0.187	0.150
	RNGA-43	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGA-120400	0.500	0.187	0.203
	RNGA-45	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGA-120700	0.500	0.312	0.203
	RNGA-55	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGA-150700	0.625	0.312	0.250
	RNGA-65	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGA-190700	0.750	0.312	0.312
	RNGA-85	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGA-250700	1.000	0.312	0.359

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖ *Grade descriptions — pages T 42*

See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

Round Inserts

Negative (RNGN)



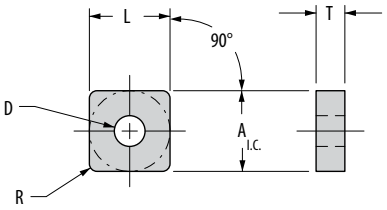
Shape: Round	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)	
		M	K			S				H						
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	T
	RNGN-32	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGN-090300	0.375	0.125
	RNGN-33	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGN-090400	0.375	0.187
	RNGN-42	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGN-120300	0.500	0.125
	RNGN-43	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGN-120400	0.500	0.187
	RNGN-45	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGN-120700	0.500	0.312
	RNGN-55	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGN-150700	0.625	0.312
	RNGN-64	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGN-190600	0.750	0.250
	RNGN-65	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGN-190700	0.750	0.312
	RNGN-84	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGN-250600	1.000	0.250
	RNGN-85	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGN-250700	1.000	0.312
	RNGN-86	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGN-250900	1.000	0.375
	RNGN-106	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RNGN-310900	1.250	0.375

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖ *Grade descriptions — pages T 42*

See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

Square Inserts

Negative (SNGA)



Shape: Square	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)				
		M	K			S				H									
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	D	R
	SNGA-432	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGA-120408	0.500	0.500	0.187	0.203	0.031
	SNGA-433	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGA-120412	0.500	0.500	0.187	0.203	0.047
	SNGA-434	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGA-120416	0.500	0.500	0.187	0.203	0.062
	SNGA-452	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGA-120708	0.500	0.500	0.312	0.203	0.031
	SNGA-453	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGA-120712	0.500	0.500	0.312	0.203	0.047
	SNGA-454	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGA-120716	0.500	0.500	0.312	0.203	0.062
	SNGA-542	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGA-150608	0.625	0.625	0.250	0.250	0.031
	SNGA-543	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGA-150612	0.625	0.625	0.250	0.250	0.047
	SNGA-544	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGA-150616	0.625	0.625	0.250	0.250	0.062
	SNGA-642	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGA-190608	0.750	0.750	0.250	0.312	0.031
	SNGA-643	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGA-190612	0.750	0.750	0.250	0.312	0.047
	SNGA-644	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGA-190616	0.750	0.750	0.250	0.312	0.062

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖ *Grade descriptions — pages T 42*

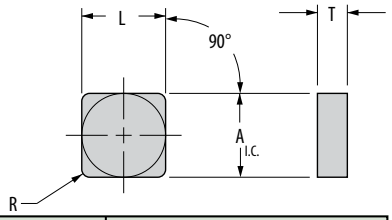
For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

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Square Inserts

Negative (SNGN)



Shape: Square	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)			
		M	K			S				H								
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	R
	SNGN-322	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-090308	0.375	0.375	0.125	0.031
	SNGN-333	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-090412	0.375	0.375	0.187	0.047
	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-452	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-120708	0.500	0.500	0.312	0.031
	SNGN-453	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-120712	0.500	0.500	0.312	0.047
	SNGN-454	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-120716	0.500	0.500	0.312	0.062
	SNGN-542	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-150608	0.625	0.625	0.250	0.031
	SNGN-543	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-150612	0.625	0.625	0.250	0.047
	SNGN-544	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-150616	0.625	0.625	0.250	0.062
	SNGN-6416	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-190663	0.750	0.750	0.250	0.250
	SNGN-642	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-190608	0.750	0.750	0.250	0.031
	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-652	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-190708	0.750	0.750	0.312	0.031
	SNGN-653	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-190712	0.750	0.750	0.312	0.047
	SNGN-654	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-190716	0.750	0.750	0.312	0.062
	SNGN-655	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-190720	0.750	0.750	0.312	0.078
	SNGN-656	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-190723	0.750	0.750	0.312	0.094
	SNGN-866	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SNGN-250924	1.000	1.000	0.375	0.094

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC

First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖

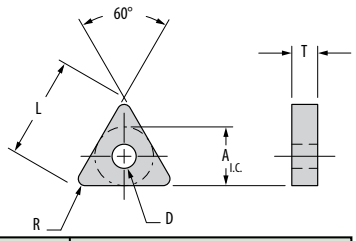
Grade descriptions — pages T 42

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

Triangle Inserts

Negative (TNGA)



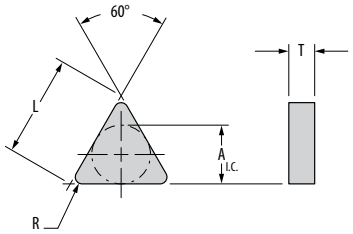
Shape: Triangle	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)				
		M	K			S				H									
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	D	R
	TNGA-331	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGA-160404	0.375	0.650	0.187	0.150	0.015
	TNGA-332	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGA-160408	0.375	0.650	0.187	0.150	0.031
	TNGA-333	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGA-160412	0.375	0.650	0.187	0.150	0.047
	TNGA-334	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGA-160416	0.375	0.650	0.187	0.150	0.062
	TNGA-432	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGA-220408	0.500	0.866	0.187	0.203	0.031
	TNGA-433	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGA-220412	0.500	0.866	0.187	0.203	0.047
	TNGA-434	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGA-220416	0.500	0.866	0.187	0.203	0.062
	TNGA-454	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGA-220716	0.500	0.866	0.312	0.203	0.062

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖ *Grade descriptions — pages T 42*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.
See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

Triangle Inserts

Negative (TNGN)



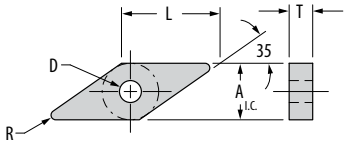
Shape: Triangle	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)			
		M	K			S				H								
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	R
	TNGN-222	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGN-110308	0.250	0.433	0.125	0.031
	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-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-452	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGN-220708	0.500	0.866	0.312	0.031
	TNGN-453	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGN-220712	0.500	0.866	0.312	0.047
	TNGN-454	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGN-220716	0.500	0.866	0.312	0.062
	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-548	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGN-270632	0.625	1.083	0.250	0.125
	TNGN-666	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGN-330924	0.750	1.299	0.375	0.094
	TNGN-868	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TNGN-440932	1.000	1.732	0.375	0.125

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖ *Grade descriptions — pages T 42*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.
See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

35° Diamond Inserts

Negative (VNGA)



Shape: 35° Diamond	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)				
		M	K			S				H									
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	D	R
	VNGA-332	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	VNGA-160408	0.375	0.654	0.187	0.150	0.031
	VNGA-333	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	VNGA-160412	0.375	0.654	0.187	0.150	0.047
	VNGA-432	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	VNGA-220408	0.500	0.872	0.187	0.203	0.031
	VNGA-436	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	VNGA-220424	0.500	0.872	0.187	0.203	0.094

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC

First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖

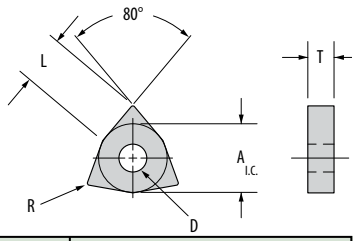
***Grade descriptions** — pages T 42*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

Trigon Inserts

Negative (WNGA)



Shape: Trigon	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)				
		M	K			S				H									
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	D	R
	WNGA-331	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	WNGA-060404	0.375	0.257	0.187	0.152	0.015
	WNGA-332	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	WNGA-060408	0.375	0.257	0.187	0.152	0.031
	WNGA-333	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	WNGA-060412	0.375	0.257	0.187	0.152	0.047
	WNGA-431	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	WNGA-080404	0.500	0.342	0.187	0.203	0.015
	WNGA-432	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	WNGA-080408	0.500	0.342	0.187	0.203	0.031
	WNGA-433	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	WNGA-080412	0.500	0.342	0.187	0.203	0.047

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC

First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖

Grade descriptions — pages T 42

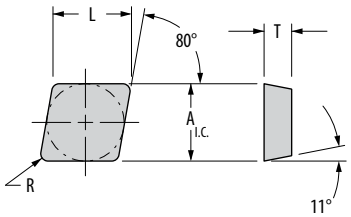
For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

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80° Diamond Inserts

Positive (CPGN)



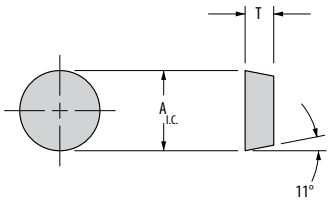
Shape: 80° Diamond	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)			
		M	K			S				H								
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	R
	CPGN-321	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CPGN-090304	0.375	0.380	0.125	0.015
	CPGN-322	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CPGN-090308	0.375	0.380	0.125	0.031
	CPGN-323	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CPGN-090312	0.375	0.380	0.125	0.047
	CPGN-422	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CPGN-120308	0.500	0.508	0.125	0.031
	CPGN-424	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CPGN-120316	0.500	0.508	0.125	0.062
	CPGN-432	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CPGN-120408	0.500	0.508	0.187	0.031
	CPGN-433	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CPGN-120412	0.500	0.508	0.187	0.047
	CPGN-434	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	CPGN-120416	0.500	0.508	0.187	0.062

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖ *Grade descriptions — pages T 42*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.
See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

Round Inserts

Positive Flat Top (RPGN)



Shape: Round	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)	
		M	K			S				H						
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	T
	RPGN-32	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RPGN-090300	0.375	0.125
	RPGN-43	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	RPGN-120400	0.500	0.187

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC

First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖

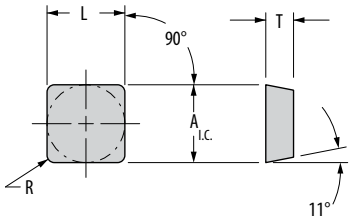
Grade descriptions — pages T 42

See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

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Square Inserts

Positive Flat Top (SPGN)



Shape: Square	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)			
		M	K			S				H								
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	R
	SPGN-322	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SPGN-090308	0.375	0.375	0.125	0.031
	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-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-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-642	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	SPGN-190608	0.750	0.750	0.250	0.031

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC

First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖

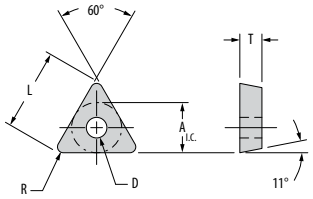
Grade descriptions — pages T 42

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.

See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

Triangle Inserts

Positive Flat Top (TP)



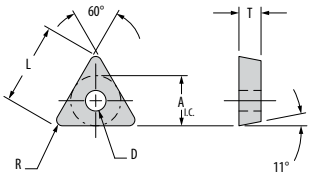
Shape: Triangle	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)				
		M	K			S				H									
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	D	R
	TP-41	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TP-41	0.250	0.433	0.093	0.137	0.015
	TP-42	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TP-42	0.250	0.433	0.093	0.137	0.031
	TP-62	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TP-62	0.375	0.650	0.125	0.163	0.031
	TP-64	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TP-64	0.375	0.650	0.125	0.163	0.062
	TP-82	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TP-82	0.500	0.866	0.187	0.203	0.031

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC — First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖ — *Grade descriptions — pages T 42*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.
See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

Triangle Inserts

Positive Flat Top (TPGA)



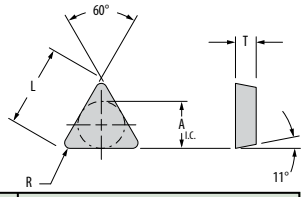
Shape: Triangle	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)				
		M	K			S				H									
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	D	R
	TPGA-321	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TPGA-160304	0.375	0.650	0.125	0.150	0.015
	TPGA-322	◆	▲	◆	●	●	◆	▲	❖	●	◆	❖	▲	TPGA-160308	0.375	0.650	0.125	0.150	0.031

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC — First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖ — *Grade descriptions — pages T 42*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.
See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

Triangle Inserts

Positive Flat Top (TPGN)



Shape: Triangle	Part Number ANSI	S Steel	Cast Iron			Heat-Resistant Super Alloys				Hardened Steel				Part Number ISO	Dimensions (inches)			
		M	K			S				H								
		WG-600	WG-600	GSN100	XSYTIN-1	WG-300	WG-600	WG-700	XSYTIN-1	WG-300	WG-600	XSYTIN-1	GEM-8		$A_{I.C.}$	L	T	R
	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-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-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

CERAMIC CLASSIFICATION: Whisker Ceramic | Phase-Toughened | Silicon Nitride | Alumina TiC — First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ❖ — *Grade descriptions — pages T 42*

For additional nose radii and available edge preps, please contact Greenleaf Technical Service.
See pages ATI 22-23 for information on edge preps. For availability and any application concerns, please contact Greenleaf Technical Service.

Industry-Standard Toolholders for Carbide Inserts

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

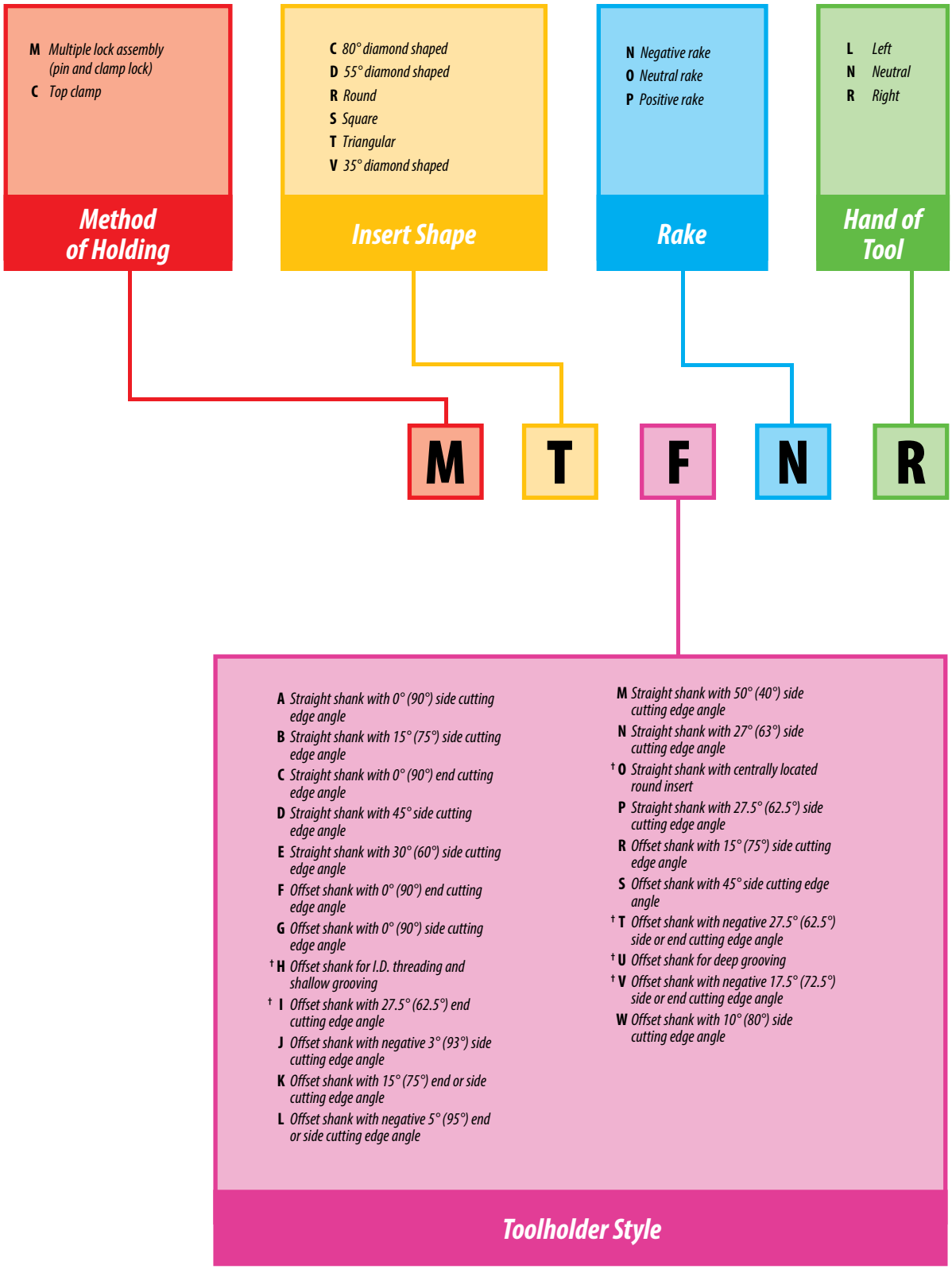


Greenleaf Tune-Up Kits

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.



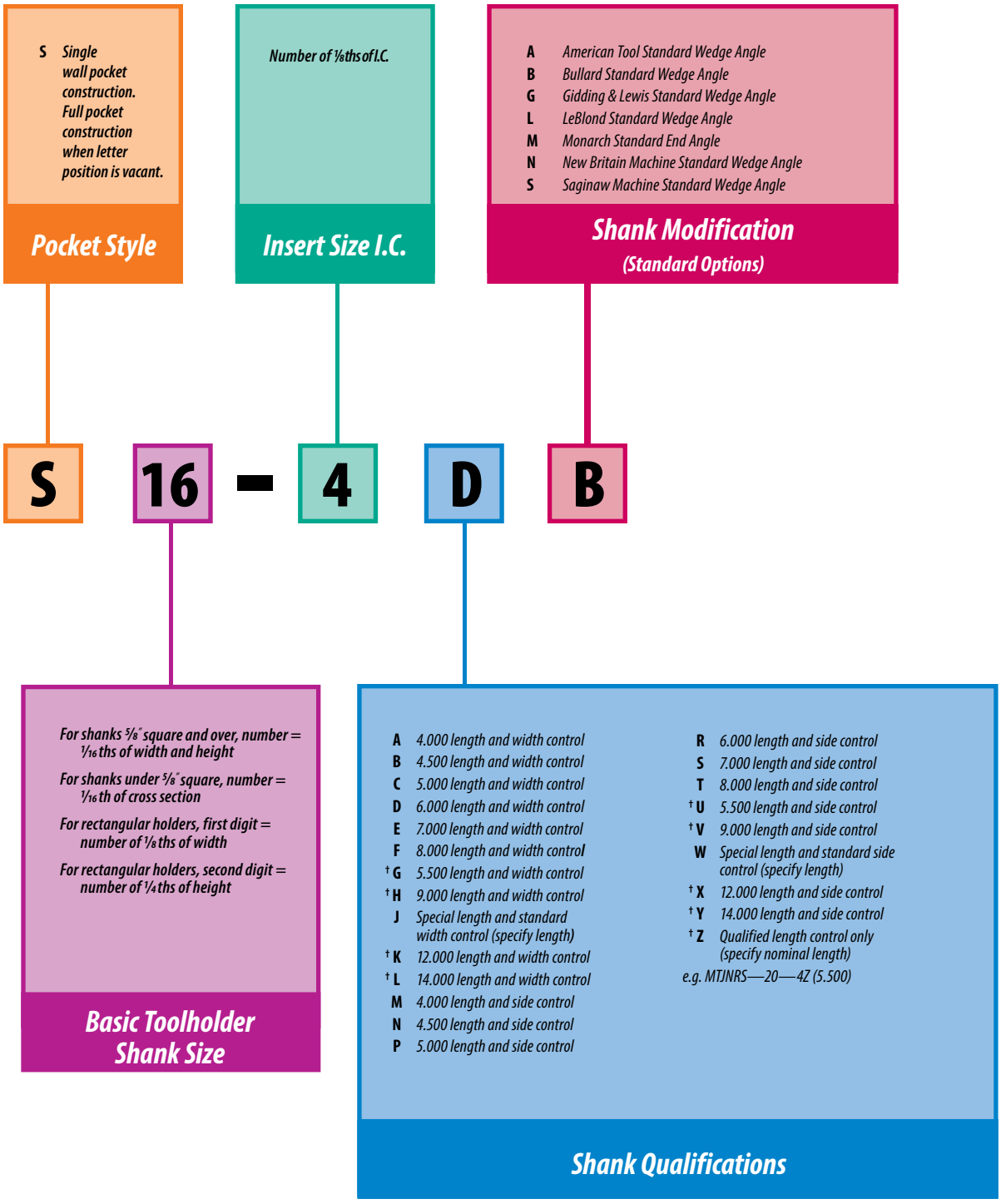
Industry-Standard Toolholder Identification System



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

†Greenleaf standard.

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

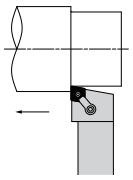
All toolholders to be qualified other than above should be designated with the appropriate letter under heading "Shank Qualifications."

†Greenleaf standard.

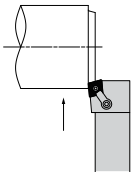
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Pictorial Index

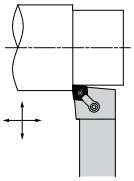
80° Diamond – Negative



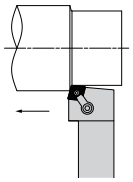
G-MCGNR/L
Style G
80° Diamond
Negative Rake
0° Lead
page: T66



G-MCKNR/L
Style K
80° Diamond
(Using 100° Corner)
Negative Rake
15° Lead
page: T66

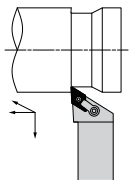


G-MCLNR/L
Style L
80° Diamond
Negative Rake
5° Reverse Lead
page: T67

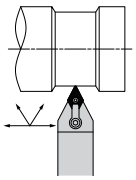


G-MCRNR/L
Style R
80° Diamond
(Using 100° Corner)
Negative Rake
15° Lead
page: T67

55° Diamond – Negative

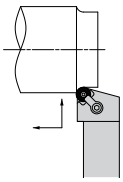


G-MDJNR/L
Style J
55° Diamond
Negative Rake
3° Reverse Lead
page: T68



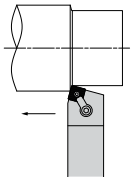
G-MDPNN
Style P
55° Diamond
Negative Rake
27° 30' Lead
page: T68

Round – Negative

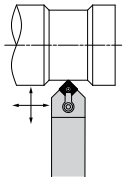


G-MRGNR/L
Style G
Round
Negative Rake
page: T69

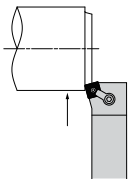
Square – Negative



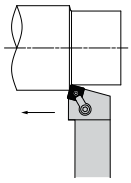
G-MSBNR/L
Style B
Square
Negative Rake
15° Lead
page: T70



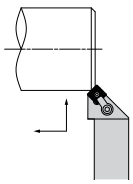
G-MSDNN
Style D
Square
Negative Rake
45° Lead
page: T71



G-MSKNR/L
Style K
Square
Negative Rake
15° Lead
page: T71

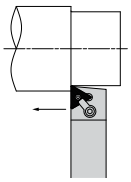


G-MSRNR/L
Style R
Square
Negative Rake
15° Lead
page: T72

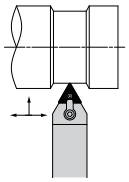


G-MSSNR/L
Style S
Square
Negative Rake
45° Lead
page: T72

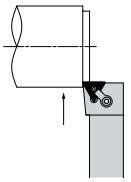
Triangle – Negative



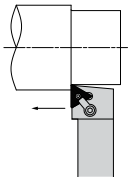
G-MTANR/L
Style A
Triangle
Negative Rake
0° Lead
page: T73



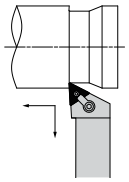
G-MTENNS
Style E
Triangle
Negative Rake
30° Lead
page: T73



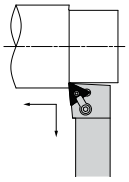
G-MTFNR/L
Style F
Triangle
Negative Rake
0° Lead
page: T74



G-MTGNR/L
Style G
Triangle
Negative Rake
0° Lead
page: T75



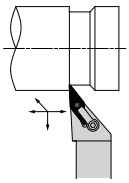
G-MTJNRS
Style J
Triangle
Negative Rake
3° Reverse Lead
page: T75



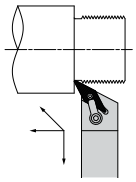
G-MTLNR/L
Style L
Triangle
Negative Rake
5° Reverse Lead
page: T76

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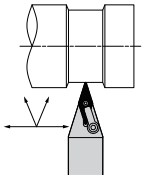
35° Diamond – Negative



G-MVJNR/L
Style J
35° Diamond
Negative Rake
3° Reverse Lead
page: T77

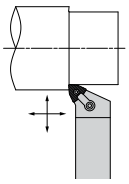


G-MVTNR/L
Style T
35° Diamond
Negative Rake
27° 30' Lead
page: T77



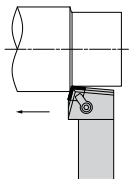
G-MVVNN
Style V
35° Diamond
Negative Rake
1°30' Reverse Lead
page: T78

Trigon – Negative



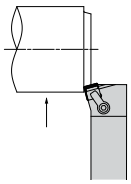
G-MWLNR/L
Style L
Trigon
Negative Rake
5° Reverse Lead
page: T78

80° Diamond – Positive



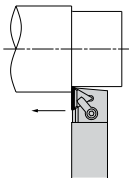
G-CCRPR/L
Style R
80° Diamond
(Using 100° Corner)
Positive Rake
15° Lead
page: T79

Square – Positive

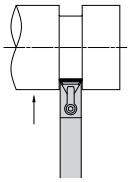


G-CSKPR/L
Style K
Square
Positive Rake
15° Lead
page: T80

Triangle – Positive

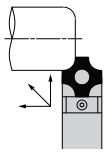


G-CTAPR/L
Style A
Triangle
Positive Rake
0° Lead
page: T81



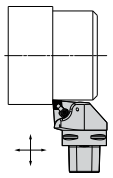
G-CTCPN
Style C
Triangle
Positive Rake
0° Lead
page: T81

Radius Forming

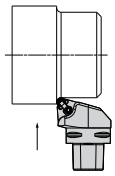


GSRN
Style GSRN
page: T82

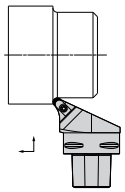
Quick-Change Toolholders



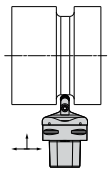
MCLNR/L
80° Diamond
Negative Rake
5° Reverse Lead
C6 & C8 Tool Heads
page: T84



MRGNR/L
Round Negative Rake
C6 & C8 Tool Heads
page: T84



CRGPR/L
45° Grooving/Profiling
Replaceable Nest
page: T85

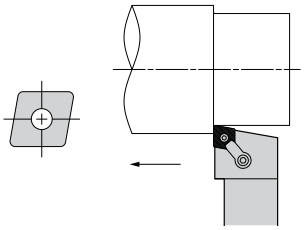


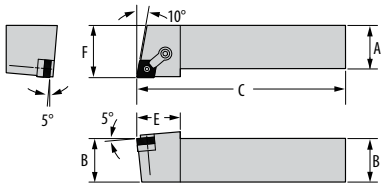
CRDPN
Neutral
Replaceable Nest
page: T85

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G-MCGNR/L

Style G / 80° Diamond / Negative Rake / 0° Lead





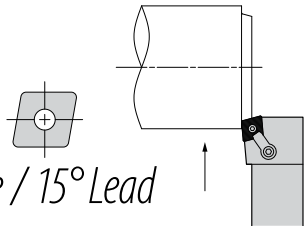
Right-Hand Toolholder Shown

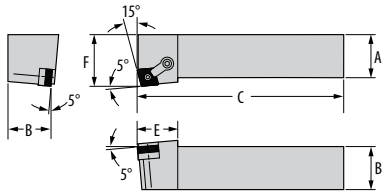
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Seat
G-MCGNR-12-4C	G-MCGNL-12-4C	CNMG-432	0.750	0.750	5.000	1.250	1.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	–
G-MCGNR-16-4D	G-MCGNL-16-4D	CNMG-432	1.000	1.000	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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.*

G-MCKNR/L

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





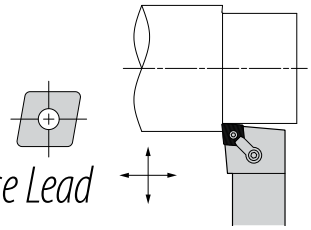
Neutral Toolholder Shown

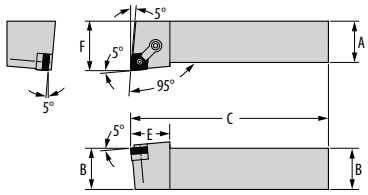
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Seat
G-MCKNR-12-4C	G-MCKNL-12-4C	CNMG-432	0.750	0.750	5.000	1.190	1.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	–
G-MCKNR-16-4D	G-MCKNL-16-4D	CNMG-432	1.000	1.000	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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





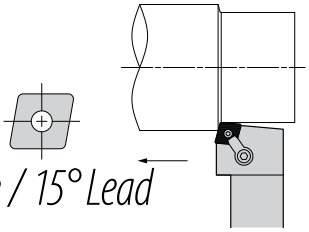
Right-Hand Toolholder Shown

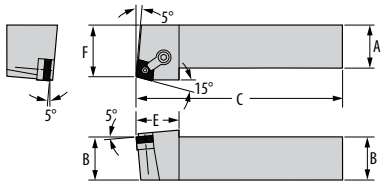
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Seat
G-MCLNR-12-4C	G-MCLNL-12-4C	CNMG-432	0.750	0.750	5.000	1.190	1.000	CSN-433	NL-46	CL-20	XNS-48	TK-00545	S-46	–
G-MCLNR-16-4D	G-MCLNL-16-4D	CNMG-432	1.000	1.000	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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-MCRNR/L

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





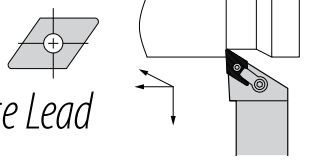
Right-Hand Toolholder Shown

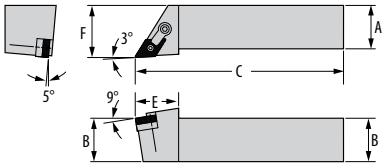
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Seat
G-MCRNR-12-4C	G-MCRNL-12-4C	CNMG-432	0.750	0.750	5.000	1.250	1.000	CSN-433	NL-46	CL-9	XNS-59	TK-00549	S-46	–
G-MCRNR-16-4D	G-MCRNL-16-4D	CNMG-432	1.000	1.000	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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.*

G-MDJNR/L

Style J / 55° Diamond / Negative Rake / 3° Reverse Lead





Right-Hand Toolholder Shown

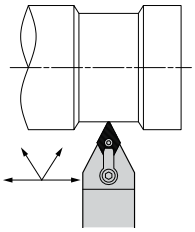
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Seat
G-MDJNR-12-4C	G-MDJNL-12-4C	DNMG-432	0.750	0.750	5.000	1.380	1.000	DSN-433	NL-46	CL-20	XNS-48	TK-00551	S-46	DSN-423**
G-MDJNR-16-4D	G-MDJNL-16-4D	DNMG-432	1.000	1.000	6.000	1.250	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	6.000	1.250	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	6.000	1.250	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	6.000	1.250	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	1.470	2.000	DSN-533	NL-58	CL-12	XNS-510	TK-00552	S-58	DSN-543

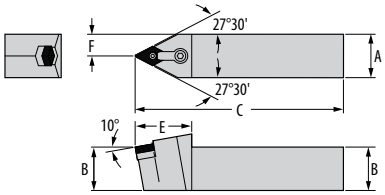
** Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.*

*** Cannot be used with lock pin.*

G-MDPNN

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





Neutral Toolholder Shown

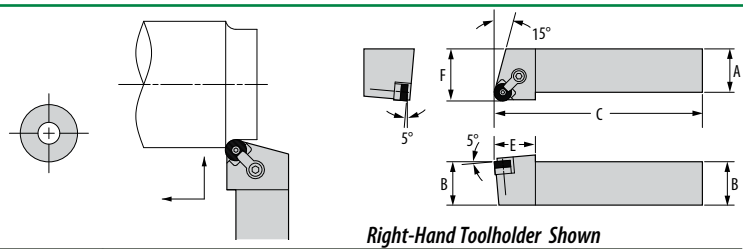
Part Number	Gage	Dimensions (inches)					Standard Components				*Tune-Up	Optional Components	
Neutral	Inserts	B	C	E	F		Seat	Lock Pin	Clamp	Kit Clamp Screw		Seat Screw	Seat
G-MDPNN-12-4C	DNMG-432	0.750	0.750	5.000	1.620	0.375	DSN-433	NL-46	CL-12	XNS-510	TK-00553	S-46	DSN-423**
G-MDPNN-16-4D	DNMG-432	1.000	1.000	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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-MRGNR/L

Style G / Round / Negative Rake



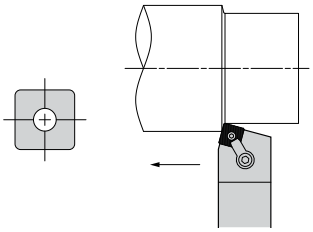
Right-Hand Toolholder Shown

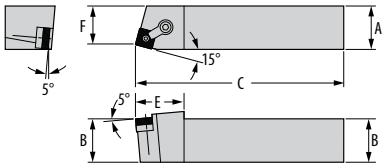
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Seat
G-MRGNR-12-3C	G-MRGNL-12-3C	RNMG-32	0.750	0.750	5.000	1.000	1.000	–	NL-33	CL-6	XNS-36	R TK-00740	–	–
G-MRGNR-12-4C	G-MRGNL-12-4C	RNMG-43	0.750	0.750	5.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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.*

G-MSBNR/L

Style B / Square / Negative Rake / 15° Lead





Right-Hand Toolholder Shown

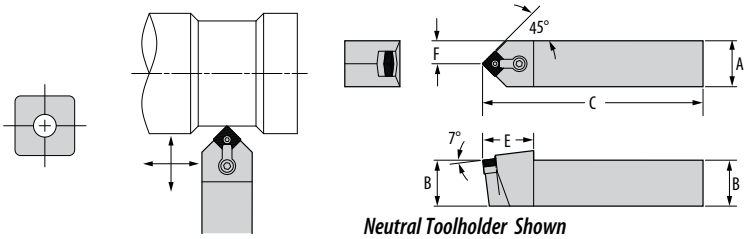
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Seat
G-MSBNR-8-3C	G-MSBNL 8-3C	SNMG-322	0.500	0.500	5.000	1.060	0.500	ISSN-322	NL-34	CL-6	XNS-36	TK-00561	S-34	–
G-MSBNR-10-3C	G-MSBNL-10-3C	SNMG-322	0.625	0.625	5.000	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	5.000	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	6.000	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	5.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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.*

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G-MSDNN

Style D / Square / Negative Rake / 45° Lead



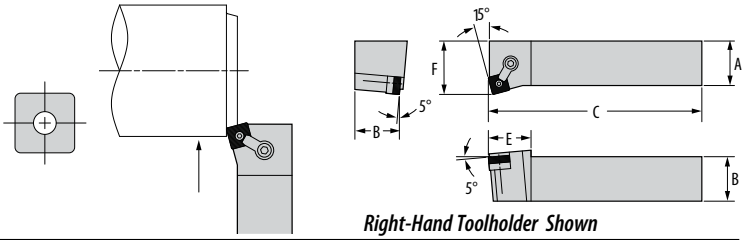
Neutral Toolholder Shown

Part Number	Gage Inserts	Dimensions (inches) A	B	C	E	F	Standard Components Seat	Lock Pin	Clamp	Clamp Screw	*Tune-Up Kit	Optional Components Seat Screw	Seat
G-MSDNN-8-3C	SNMG-322	0.500	0.500	5.000	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	5.000	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	5.000	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	5.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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



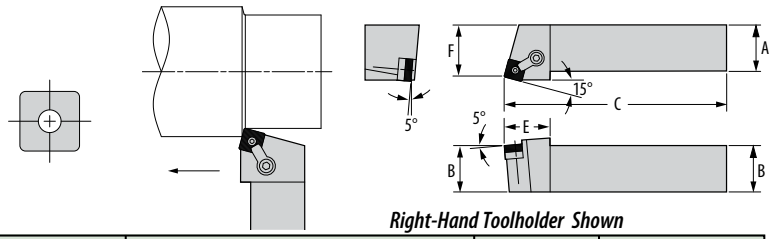
Right-Hand Toolholder Shown

Part Number Right Hand	Left Hand	Gage Inserts	Dimensions (inches) A	B	C	E	F	Standard Components Seat	Lock Pin	Clamp	Clamp Screw	*Tune-Up Kit	Optional Components Seat Screw	Seat
G-MSKNR-8-3C	G-MSKNL-8-3C	SNMG-322	0.500	0.500	5.000	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	5.000	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	5.000	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	6.000	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	5.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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.*

G-MSRNR/L

Style R / Square / Negative Rake / 15° Lead



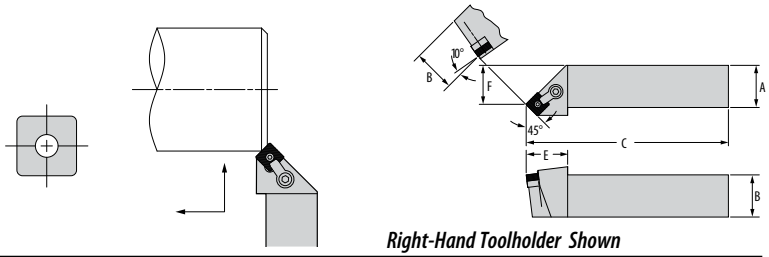
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Filler
G-MSRNR-8-3C	G-MSRNL-8-3C	SNMG-322	0.500	0.500	5.000	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	5.000	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	5.000	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	5.000	1.240	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	6.000	1.240	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	6.000	1.240	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	6.000	1.240	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	6.000	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	6.000	1.470	1.093	SSN-533	NL-58	CL-12	XNS-510	TK-00559	S-58	ISSN-543
G-MSRN-20-5D	G-MSRNL-20-5D	SNMG-543	1.250	1.250	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	1.630	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



Right-Hand Toolholder Shown

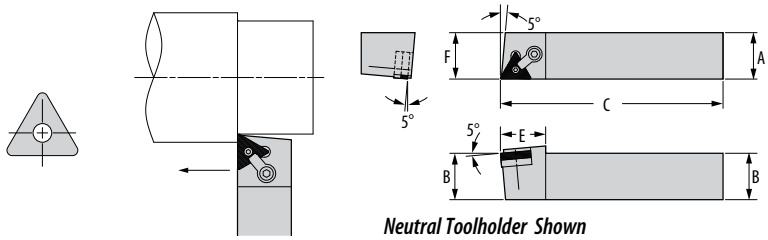
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Filler
G-MSSNR-12-4C	G-MSSNL-12-4C	SNMG-432	0.750	0.750	5.000	1.230	0.656	ISSN-433	NL-46	CL-9	XNS-59	TK-00558	S-46	ISSN-443
G-MSSNR-16-4D	G-MSSNL-16-4D	SNMG-432	1.000	1.000	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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.*

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

G-MTANR/L

Style A / Triangle / Negative Rake / 0° Lead



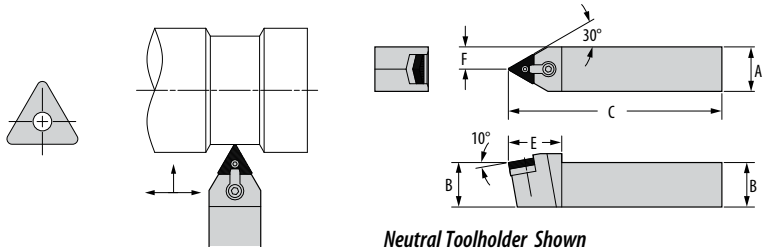
Neutral Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Filler
G-MTANR-8-2C	G-MTANL-8-2C	TNMG-221	0.500	0.500	5.000	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	5.000	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	5.000	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	5.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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-MTENNS

Style E / Triangle / Negative Rake / 30° Lead



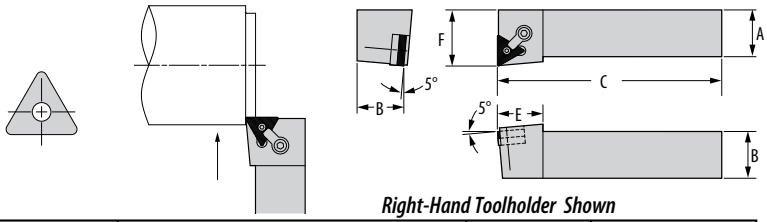
Neutral Toolholder Shown

Part Number	Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Filler
G-MTENNS-8-2C	TNMG-221	0.500	0.500	5.000	1.000	0.250	–	NL-23	CL-6	XNS-36	TK-00716	–	–
G-MTENNS-10-2C	TNMG-221	0.625	0.625	5.000	1.000	0.312	–	NL-23	CL-6	XNS-36	TK-00716	–	–
G-MTENNS-10-3C	TNMG-322	0.625	0.625	5.000	1.160	0.312	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTENNS-12-3C	TNMG-322	0.750	0.750	5.000	1.160	0.375	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTENNS-16-3D	TNMG-322	1.000	1.000	6.000	1.160	0.500	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTENNS-85-3D	TNMG-322	1.000	1.250	6.000	1.160	0.500	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTENNS-12-4C	TNMG-432	0.750	0.750	5.000	1.500	0.375	ITSN-433	NL-46	CL-9	XNS-59	TK-00725	S-46	–
G-MTENNS-16-4D	TNMG-432	1.000	1.000	6.000	1.500	0.500	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	–
G-MTENNS-85-4D	TNMG-432	1.000	1.250	6.000	1.500	0.500	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	–
G-MTENNS-86-4D	TNMG-432	1.000	1.500	6.000	1.500	0.500	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	–
G-MTENNS-20-4D	TNMG-432	1.250	1.250	6.000	1.500	0.625	ITSN-433	NL-46	CL-9	XNS-510	TK-00565	S-46	–
G-MTENNS-20-5D	TNMG-543	1.250	1.250	6.000	1.640	0.625	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	–
G-MTENNS-24-5D	TNMG-543	1.500	1.500	6.000	1.640	0.750	ITSN-533	NL-58	CL-9	XNS-510	TK-00566	S-58	–
G-MTENNS-24-6D	TNMG-663	1.500	1.500	6.000	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.*

G-MTFNR/L

Style F / Triangle / Negative Rake / 0° Lead



Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Filler
G-MTFNR-8-2C	G-MTFNL-8-2C	TNMG-221	0.500	0.500	5.000	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	5.000	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	5.000	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	5.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	1.500	2.000	TSN-637	NL-68L	CL-12	XNS-510	TK-00567	S-68	TSN-657

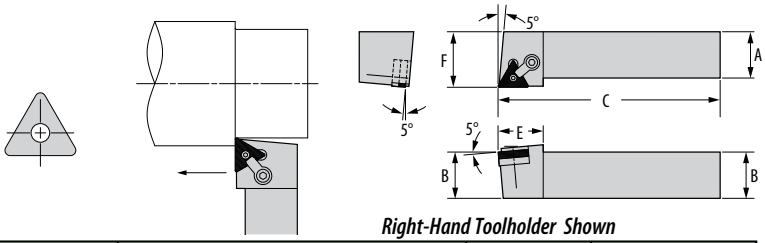
* *Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.*

** *Cannot be used with lock pin.*

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G-MTGNR/L

Style G / Triangle / Negative Rake / 0° Lead



Right-Hand Toolholder Shown

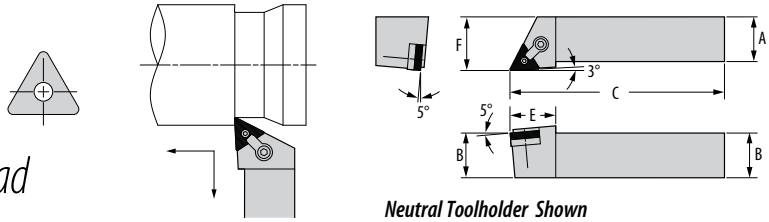
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Filler
G-MTGNR-8-2C	G-MTGNL-8-2C	TNMG-221	0.500	0.500	5.000	0.970	0.625	–	NL-23	CL-19	XNS-36	TK-00742	–	–
G-MTGNR-10-2C	G-MTGNL-10-2C	TNMG-221	0.625	0.625	5.000	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	5.000	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	5.000	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	6.000	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	6.000	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	6.000	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	5.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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



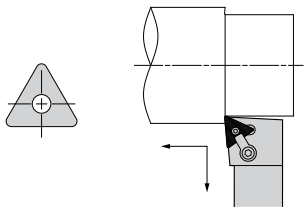
Neutral Toolholder Shown

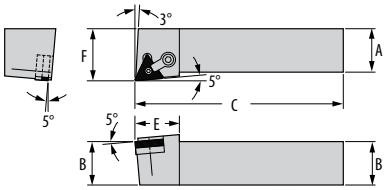
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Filler
G-MTJNRS-12-3C	G-MTJNLS-12-3C	TNMG-322	0.750	0.750	5.000	1.120	1.000	ITSN-333	NL-34L	CL-6	XNS-36	TK-00564	S-34	ITSN-323
G-MTJNRS-16-3D	G-MTJNLS-16-3D	TNMG-322	1.000	1.000	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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.*

G-MTLNR/L

Style L / Triangle / Negative Rake / 5° Lead





Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw	Filler
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

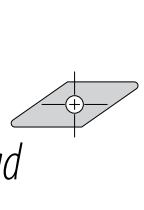
** Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.*

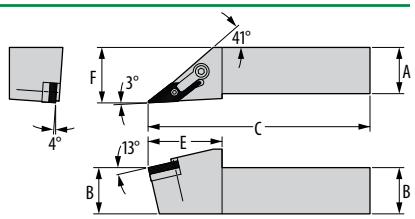
*** Cannot be used with lock pin.*

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G-MVJNR/L

Style J / 35° Diamond / Negative Rake / 3° Lead





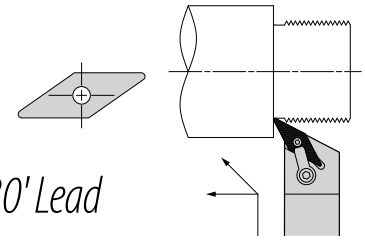
Right-Hand Toolholder Shown

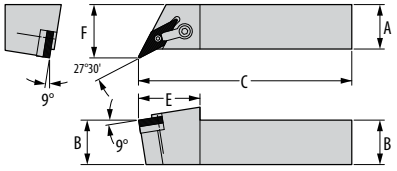
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Component
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw
G-MVJNR-12-3C	G-MVJNL-12-3C	VNMG-332	0.750	0.750	5.000	1.680	1.000	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVJNR-16-3D	G-MVJNL-16-3D	VNMG-332	1.000	1.000	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	2.000	1.250	IVSN-433	NL-46	CL-30	XNS-510	TK-00570	S-46
G-MVJNR-20-4D	G-MVJNL-20-4D	VNMG-432	1.250	1.250	6.000	2.000	1.500	IVSN-433	NL-46	CL-30	XNS-510	TK-00569	S-46
G-MVJNR-24-4D	G-MVJNL-24-4D	VNMG-432	1.500	1.500	6.000	2.000	2.000	IVSN-433	NL-46	CL-30	XNS-510	TK-00568	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





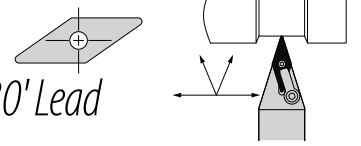
Right-Hand Toolholder Shown

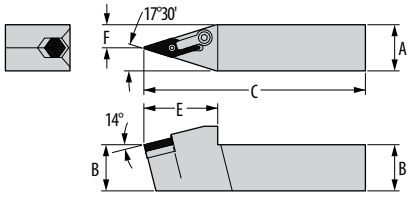
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Component
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat Screw
G-MVTNR-12-3C	G-MVTNL-12-3C	VNMG-332	0.750	0.750	5.000	1.730	1.000	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVTNR-16-3D	G-MVTNL-16-3D	VNMG-332	1.000	1.000	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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





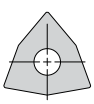
Neutral Toolholder Shown

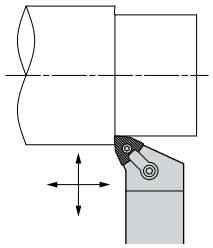
Part Number	Gage Inserts	Dimensions (inches) A	B	C	E	F	Standard Components Seat	Lock Pin	Clamp	Clamp Screw	*Tune-Up Kit	Optional Component Seat Screw
G-MVVNN-12-3C	VNMG-332	0.750	0.750	5.000	1.750	0.375	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVVNN-16-3D	VNMG-332	1.000	1.000	6.000	1.750	0.500	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVVNN-85-3D	VNMG-332	1.000	1.250	6.000	1.750	0.500	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVVNN-86-3D	VNMG-332	1.000	1.500	6.000	1.750	0.500	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVVNN-20-3D	VNMG-332	1.250	1.250	6.000	1.750	0.625	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVVNN-24-3D	VNMG-332	1.500	1.500	6.000	1.750	0.750	IVSN-322	NL-34L	CL-30	XNS-510	TK-00570	S-34
G-MVVNN-16-4D	VNMG-432	1.000	1.000	6.000	2.120	0.500	IVSN-433	NL-46	CL-30	XNS-510	TK-00571	S-46
G-MVVNN-20-4D	VNMG-432	1.250	1.250	6.000	2.120	0.625	IVSN-433	NL-46	CL-30	XNS-510	TK-00571	S-46
G-MVVNN-24-4D	VNMG-432	1.500	1.500	6.000	2.120	0.750	IVSN-433	NL-46	CL-30	XNS-510	TK-00571	S-46

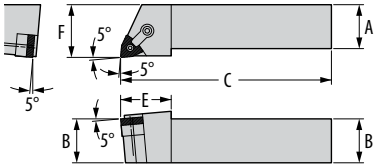
** Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.*

G-MWLNR/L

Style L / Trigon / Negative Rake / 5° Reverse Lead







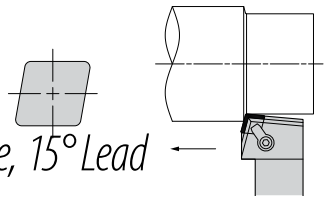
Right-Hand Toolholder Shown

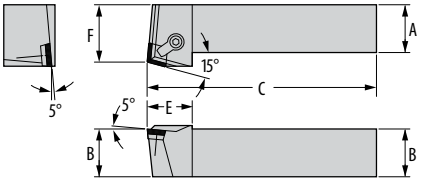
Part Number Right Hand	Part Number Left Hand	Gage Inserts	Dimensions (inches) A	B	C	E	F	Standard Components Seat	Lock Pin	Clamp	Clamp Screw	*Tune-Up Kit	Optional Component Seat Screw
G-MWLNR-12-3C	G-MWLNL-12-3C	WNMG-332	0.750	0.750	5.000	1.000	1.000	IWSN-323	NL-34L	CL-6	XNS-36	TK-00775	IWSN-332
G-MWLNR-16-3D	G-MWLNL-16-3D	WNMG-332	1.000	1.000	6.000	1.000	1.250	IWSN-323	NL-34L	CL-6	XNS-36	TK-00775	IWSN-332
G-MWLNR-20-3D	G-MWLNL-20-3D	WNMG-332	1.250	1.250	6.000	1.000	1.500	IWSN-323	NL-34L	CL-6	XNS-36	TK-00775	IWSN-332
G-MWLNR-24-3D	G-MWLNL-24-3D	WNMG-332	1.500	1.500	6.000	1.000	2.000	IWSN-323	NL-34L	CL-6	XNS-36	TK-00775	IWSN-332
G-MWLNR-12-4C	G-MWLNL-12-4C	WNMG-432	0.750	0.750	5.000	1.188	1.000	IWSN-433	NL-46	CL-20	XNS-48	TK-00759	–
G-MWLNR-16-4D	G-MWLNL-16-4D	WNMG-432	1.000	1.000	6.000	1.188	1.250	IWSN-433	NL-46	CL-20	XNS-48	TK-00759	–
G-MWLNR-20-4D	G-MWLNL-20-4D	WNMG-432	1.250	1.250	6.000	1.188	1.500	IWSN-433	NL-46	CL-20	XNS-48	TK-00759	–
G-MWLNR-24-4D	G-MWLNL-24-4D	WNMG-432	1.500	1.500	6.000	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.*

G-CCRPR/L

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





Right-Hand Toolholder Shown

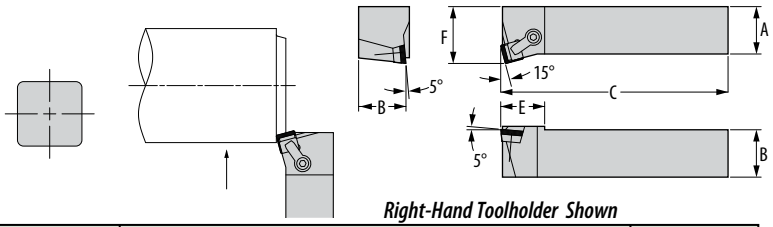
Part Number		Gage	Dimensions (inches)					Standard Components					*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Screw	Chip Breaker	Includes all Standard Components
G-CCRPR-12-4C	G-CCRPL-12-4C	CPGN-422	0.750	0.750	5.000	1.220	1.000	CSP-422	#4-40 x 3/8 FHCS	CL-9	XNS-59	CBDC-415L	TK-00720
G-CCRPR-16-4D	G-CCRPL-16-4D	CPGN-422	1.000	1.000	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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.*

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G-CSKPR/L

Style K / Square / Positive Rake / 15° Lead



Right-Hand Toolholder Shown

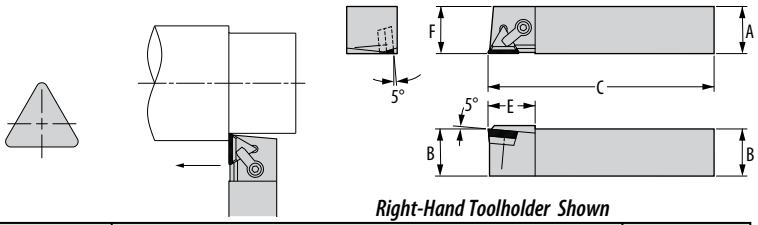
Part Number		Gage	Dimensions (inches)					Standard Components					*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Screw	Chip Breaker	Includes all Standard Components
G-CSKPR-12-4C	G-CSKPL-12-4C	SPGN-422	0.750	0.750	5.000	1.120	1.000	SP-40	#6-32 x 1/2 FHCS	CL-12	XNS-58	CBS-4G	TK-00712
G-CSKPR-16-4D	G-CSKPL-16-4D	SPGN-422	1.000	1.000	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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.*

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G-CTAPR/L

Style A / Triangle / Positive Rake / 0° Lead



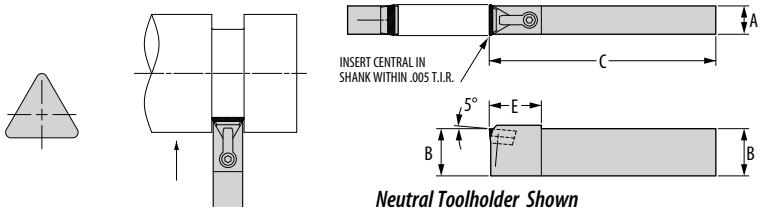
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components					*Tune-Up Kit
Right Hand	Left Hand	Inserts	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	5.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	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	6.000	1.500	1.500	SP-6	#10-32 x 1/2 FHCS	CL-12	XNS-510	CBT-6G	TK-007459

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

G-CTCPN

Style C / Triangle / Positive Rake / 0° Lead



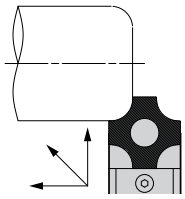
Neutral Toolholder Shown

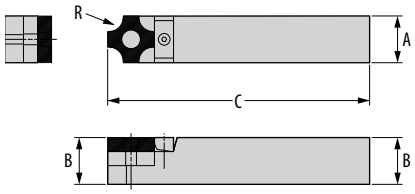
Part Number	Gage	Dimensions (inches)				Standard Components					*Tune-Up Kit
Neutral	Inserts	A	B	C	E	Seat	Seat Screw	Clamp	Clamp Screw	Chip Breaker	Includes all Standard Components
G-CTCPN-44-3D	TPGN-322	0.500	1.000	6.000	1.250	TSP-321	#4-40 x 3/8 FHCS	CL-22	XNS-48	CBT-3G	TK-00540
G-CTCPN-64-4D	TPGN-432	0.750	1.000	6.000	1.380	SP-4	#6-32 x 1/2 FHCS	CL-30	XNS-59	CBT-4G	TK-00541
G-CTCPN-65-4D	TPGN-432	0.750	1.250	6.000	1.380	SP-4	#6-32 x 1/2 FHCS	CL-30	XNS-59	CBT-4G	TK-00541
G-CTCPN-66-4D	TPGN-432	0.750	1.500	6.000	1.380	SP-4	#6-32 x 1/2 FHCS	CL-30	XNS-59	CBT-4G	TK-00541
G-CTCPN-76-5D	TPGN-543	0.875	1.500	6.000	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.*

GSRN

Style GSRN





Neutral Toolholder Shown

Part Number	Dimensions (inches)			Standard Components				*Tune-Up Kit	Insert Options	
Neutral	A	B	C	Shim	Center Pin	Clamp	Clamp Screw	Includes all Standard Components	Inserts	R
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

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

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Quick-Change Toolholders

The Greenleaf Quick-Change Toolholders conform to ISO 26623, utilize standard components, and are designed to maximize tool life in carbide and ceramic turning applications.

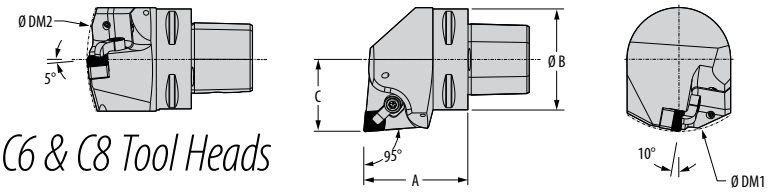
Greenleaf's special design capabilities offer customers unique solutions to further increase productivity.





MCLNR/L

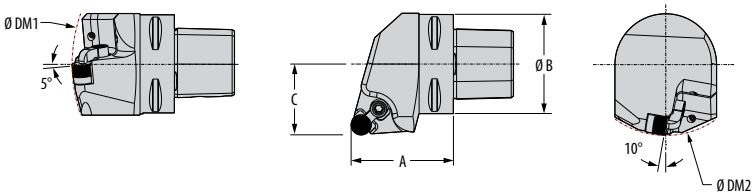
80° Diamond Negative Rake / 5º Reverse Lead / C6 & C8 Tool Heads



Part Number		Gage	Dimensions (inches)					Standard Components					Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	DM1	DM2	Shim Seat	Seat Screw	Clamp	Clamp Screw	Coolant Nozzle	Lock Pin	Clamp	5/16" Insert Shim Seat
GC6-MCLNR-45065-12	GC6-MCLNL-45065-12	CNGN-432	2.56	2.48	1.77	4.33	7.68	CSN-453	S-46M	CLM-12	STCM-4	5691 026-03	NLM-46L	CLM9	CSN-433
GC8-MCLNR-55080-12	GC8-MCLNL-55080-12	CNGN-432	3.15	3.15	2.17	9.25	11.81	CSN-453	S-46M	CLM-12	STCM-4	5691 026-03	NLM-46L	CLM9	CSN-433

MRGNR/L

Round Negative Rake / C6 & C8 Tool Heads

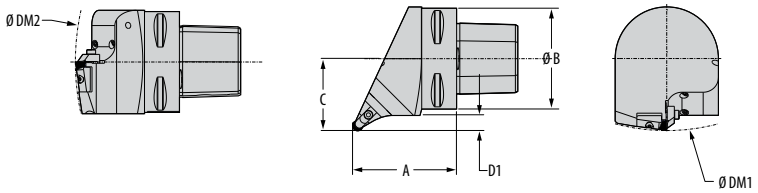


Part Number		Gage	Dimensions (inches)					Standard Components					Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	DM1	DM2	Shim Seat	Seat Screw	Clamp	Clamp Screw	Coolant Nozzle	Lock Pin	Clamp	3/16" Insert Shim Seat
GC6-MRGNR-45065-12	GC6-MRGNL-45065-12	RNGN-45	2.56	2.48	1.77	4.33	7.68	IRSN-43	S-46M	CLM-12	STCM-4	5691 026-03	NLM-46L	CLM9	IRSN-45
GC8-MRGNR-55080-12	GC8-MRGNL-55080-12	RNGN-45	3.15	3.15	2.17	9.25	11.81	IRSN-43	S-46M	CLM-12	STCM-4	5691 026-03	NLM-46L	CLM9	IRSN-45

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CRGPR/L

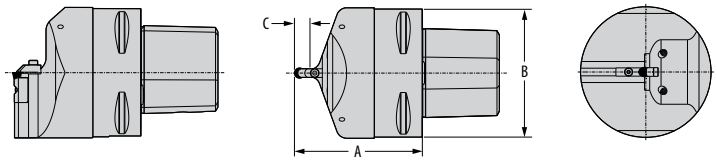
45° Grooving/Profiling / Replaceable Nest



Part Number		Gage Insert	Dimensions (inches)						Standard Components				
Right Hand	Left Hand		A	B	C	D	DM1	DM2	Nest	Nest Screw	Clamp	Clamp Screw	Coolant Nozzle
GC6-CRGPR-45065-06V	GC6-CRGPL-45065-06V	RPGN-2V	2.56	2.48	0.18	0.38	9.84	11.81	411108	M2.5-.45 x 10mm BHCS	308618	M3-0.5 x 12mm SHCS	5691 026-03
GC8-CRGPR-55080-06V	GC8-CRGPL-55080-06V	RCGN-2V	3.15	3.15	0.38	0.38	11.81	13.78	411108	M2.5-.45 x 10mm BHCS	308618	M3-0.5 x 12mm SHCS	5691 026-03
GC6-CRGPR-45065-09V	GC6-CRGPL-45065-09V	RPGN-3V	2.56	2.48	0.56	0.38	9.84	11.81	414009	M3-0.5 x 12mm TBHCS	308063	M5-.8 x 12mm TSHCS	5691 026-03
GC8-CRGPR-55080-09V	GC8-CRGPL-55080-09V	RCGN-3V	3.15	3.15	0.56	0.38	11.81	13.78	414009	M3-0.5 x 12mm TBHCS	308063	M5-.8 x 12mm TSHCS	5691 026-03
GC6-CRGPR-45065-12V	GC6-CRGPL-45065-12V	RPGN-4V	2.56	2.48	0.75	0.38	9.84	11.81	414008	M5-.8 x 16mm TBHCS	308136	434258 (M6-1.0 x 19mm TSHCS)	5691 026-03
GC8-CRGPR-55080-12V	GC8-CRGPR-55080-12V	RCGN-4V	3.15	3.15	0.75	0.38	11.81	13.78	414008	M5-.8 x 16mm TBHCS	308136	434258 (M6-1.0 x 19mm TSHCS)	5691 026-03

CRDPN

Neutral / Replaceable Nest.



Part Number	Gage Insert	Dimensions (inches)			Standard Components				
		A	B	C	Nest	Nest Screw	Clamp	Clamp Screw	Coolant Nozzle
GC6-CRDPN-03065-06V	RPGN-2V	2.56	2.48	0.38	410631	M2.5-.45 x 10mm BHCS	308618	M3-0.5 x 12mm SHCS	5691 026-03
GC8-CRDPN-03080-06V	RCGN-2V	3.15	3.15	0.38	410631	M2.5-.45 x 10mm BHCS	308618	M3-0.5 x 12mm SHCS	5691 026-03
GC6-CRDPN-05065-09V	RPGN-3V	2.56	2.48	0.56	413970	M3-0.5 x 12mm TBHCS	308063	M5-.8 x 12mm TSHCS	5691 026-03
GC8-CRDPN-05080-09V	RCGN-3V	3.15	3.15	0.56	413970	M3-0.5 x 12mm TBHCS	308063	M5-.8 x 12mm TSHCS	5691 026-03
GC6-CRDPN-06065-12V	RPGN-4V	2.56	2.48	0.75	414007	M5-.8 x 16mm TBHCS	308136	434258 (M6-1.0 x 19mm TSHCS)	5691 026-03
GC8-CRDPN-06080-12V	RCGN-4V	3.15	3.15	0.75	414007	M5-.8 x 16mm TBHCS	308136	434258 (M6-1.0 x 19mm TSHCS)	5691 026-03

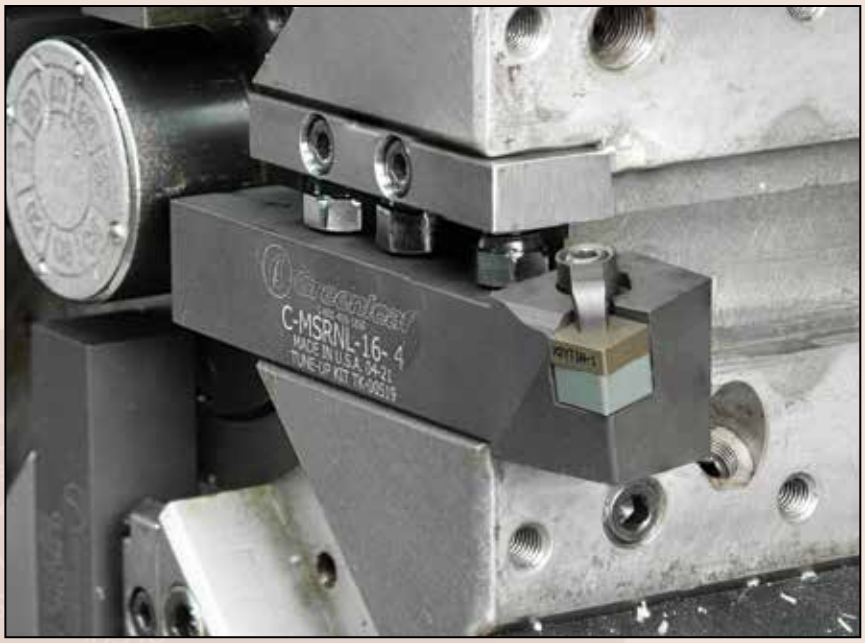
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Toolholders for Ceramic Inserts

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 setup. Short clamps are an optional item.

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

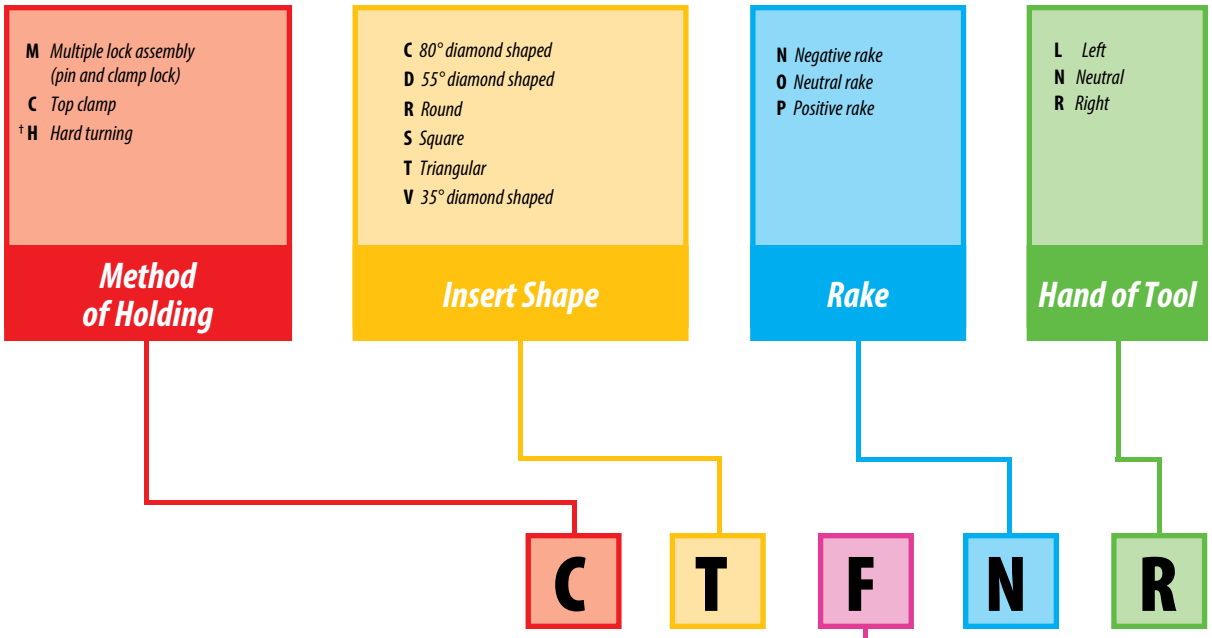


Greenleaf Tune-Up Kits

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.



Advanced Ceramic Toolholder Identification System



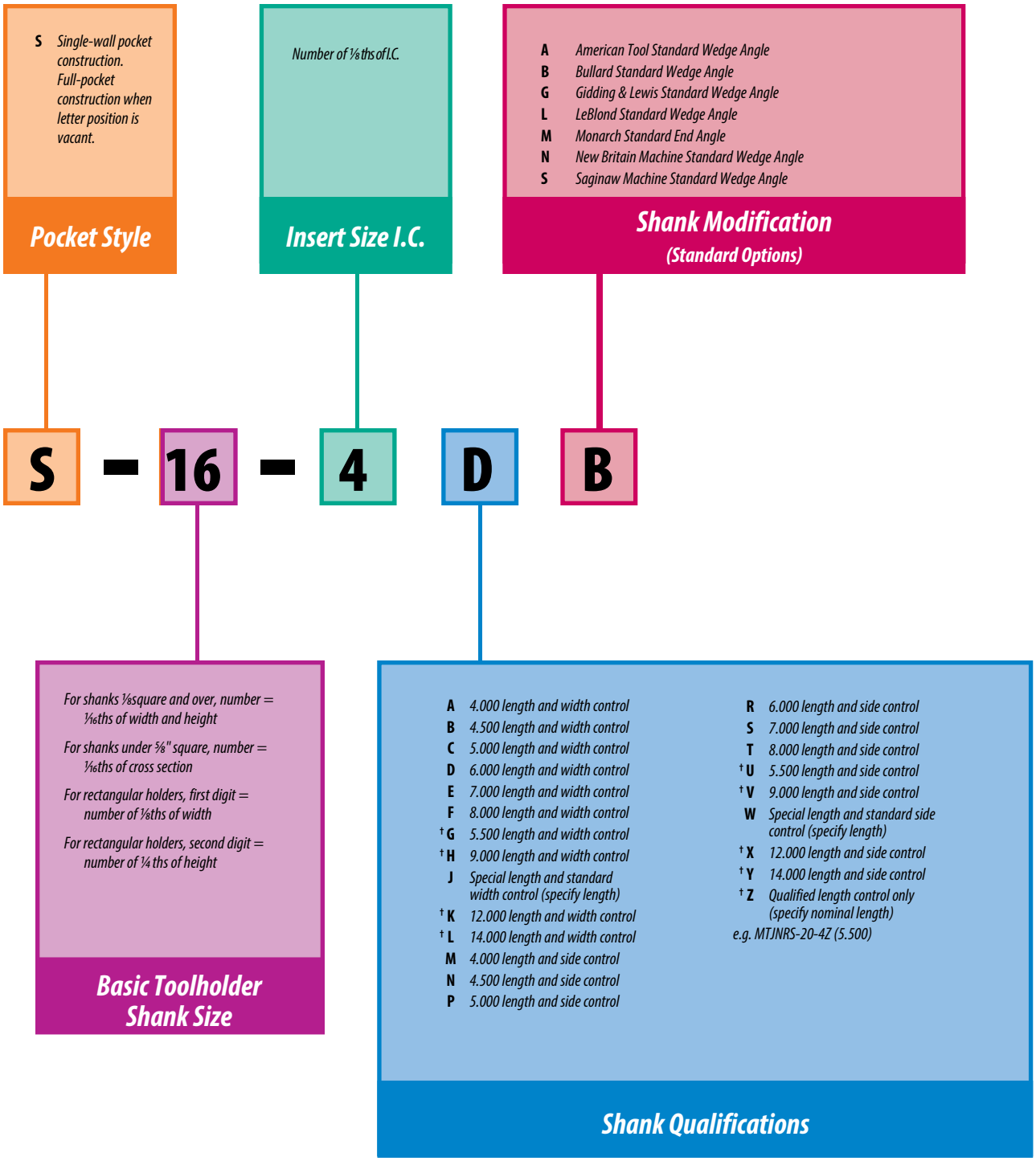
Toolholder Style

- **A** *Straight shank with 0° (90°) side cutting edge angle*
- **B** *Straight shank with 15° (75°) side cutting edge angle*
- **C** *Straight shank with 0° (90°) end cutting edge angle*
- **D** *Straight shank with 45° side cutting edge angle*
- **E** *Straight shank with 30° (60°) side cutting edge angle*
- **F** *Offset shank with 0° (90°) end cutting edge angle*
- **G** *Offset shank with 0° (90°) side cutting edge angle*
- **H** *Offset shank for I.D. threading and shallow grooving*
- **I** *Offset shank with 27.5° (62.5°) end cutting edge angle*
- **J** *Offset shank with negative 3° (93°) side cutting edge angle*
- **K** *Offset shank with 15° (75°) end or side cutting edge angle*
- **L** *Offset shank with negative 5° (95°) end or side cutting edge angle*
- **M** *Straight shank with 50° (40°) side cutting edge angle*
- **N** *Straight shank with 27° (63°) side cutting edge angle*
- **O** *Straight shank with centrally located round insert*
- **P** *Straight shank with 27.5° (62.5°) side cutting edge angle*
- **R** *Offset shank with 15° (75°) side cutting edge angle*
- **S** *Offset shank with 45° side cutting edge angle*
- **T** *Offset shank with negative 27.5° (62.5°) side or end cutting edge angle*
- **U** *Offset shank for deep grooving*
- **V** *Offset shank with negative 17.5° (72.5°) side or end cutting edge angle*
- **W** *Offset shank with 10° (80°) side cutting edge angle*

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

† Greenleaf standard.

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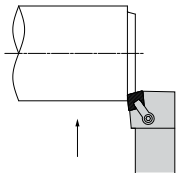
NOTE:
All toolholders are shipped qualified over insert gage radius to ±.003" on C and F dimensions as standard. Some toolholders are qualifiable on length only (C dimension).

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

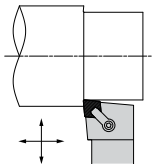
† Greenleaf standard.

Pictorial Index

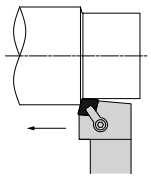
80° Diamond – Negative



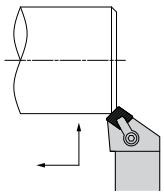
C-MCKNR/L
Style K
80° Diamond
(Using 100° Corner)
Negative Rake
15° Lead
page: T 92



C-MCLNR/L
Style L
80° Diamond
Negative Rake
5° Reverse Lead
page: T 92

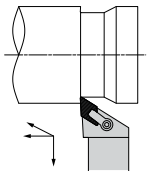


C-MCRNR/L
Style R
80° Diamond
(Using 100° Corner)
Negative Rake
15° Reverse Lead
page: T 93

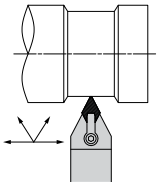


C-MCSNR/L
Style S
80° Diamond
(Using 100° Corner)
Negative Rake
45° Lead
page: T 93

55° Diamond – Negative

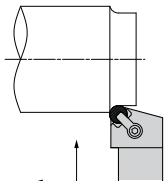


C-MDJNR/L
Style J
55° Diamond
Negative Rake
3° Reverse Lead
page: T 94

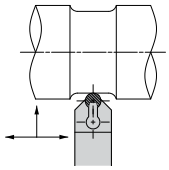


C-MDPNN
Style P
55° Diamond
Negative Rake
27°30' Lead
page: T 94

Round – Negative

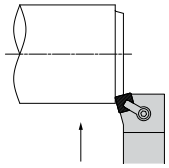


C-MRGNR/L
Style G
Round
Negative Rake
page: T 95

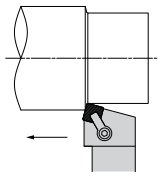


C-MRDNN
Style D
Round
Negative Rake
page: T 95

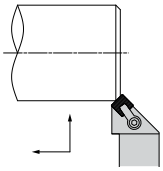
Square – Negative



C-MSKNR/L
Style K
Square
Negative Rake
15° Lead
page: T 96

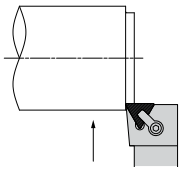


C-MSRNR/L
Style R
Square
Negative Rake
15° Lead
page: T 96

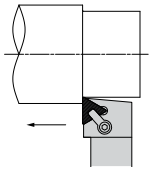


C-MSSNR/L
Style S
Square
Negative Rake
45° Lead
page: T 97

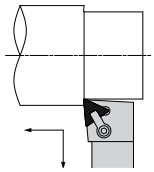
Triangle – Negative



C-MTFNR/L
Style F
Triangle
Negative Rake
0° Lead
page: T 98

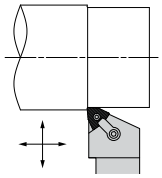


C-MTGNR/L
Style G
Triangle
Negative Rake
0° Lead
page: T 98



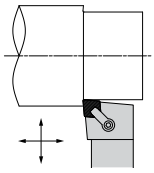
C-MTLNR/L
Style L
Triangle
Negative Rake
5° Reverse Lead
page: T 99

Trigon – Negative

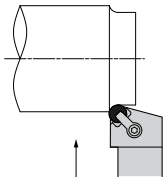


C-MWLNR/L
Style L
Trigon
Negative Rake
5° Reverse Lead
page: T 99

Hard-Turning – Negative



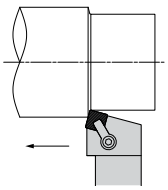
H-MCLNR/L
Style L
80° Diamond
Negative Rake
5° Reverse Lead
page: T 100



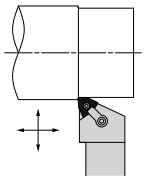
H-MRGNR/L
Style G
Round
Negative Rake
page: T 100

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Hard-Turning – Negative *continued*

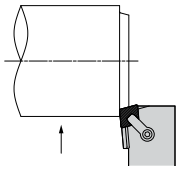


H-MSRNR/L
Style R
Square
Negative Rake
15° Lead
page: T 101

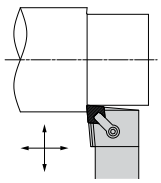


H-MWLNR/L
Style L
Trigon
Negative Rake
5° Reverse Lead
page: T 101

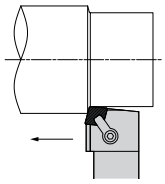
80°/100° Diamond – Positive



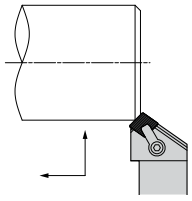
C-CCKPR/L
Style K
80° Diamond
(Using 100° Corner)
Positive Rake
15° Lead
page: T 102



C-CCLPR/L
Style L
80° Diamond
Positive Rake
5° Reverse Lead
page: T 102

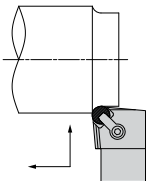


C-CCRPR/L
Style R
80° Diamond
(Using 100° Corner)
Positive Rake
15° Lead
page: T 102



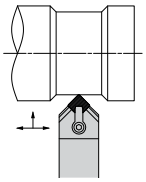
C-CCSPR/L
Style S
80° Diamond
(Using 100° Corner)
Positive Rake
45° Lead
page: T 103

Round – Positive

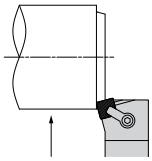


C-CRGPR/L
Style G
Round
Positive Rake
page: T 103

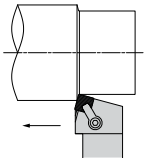
Square – Positive



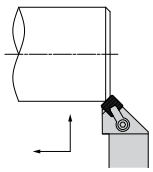
C-CSDPN
Style D
Square
Positive Rake
45° Lead
page: T 104



C-CSKPR/L
Style K
Square
Positive Rake
15° Lead
page: T 104

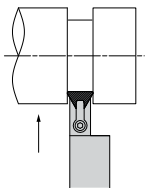


C-CSRPR/L
Style R
Square
Positive Rake
15° Lead
page: T 105



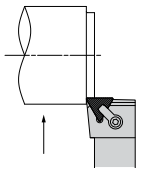
C-CSSPR/L
Style S
Square
Positive Rake
45° Lead
page: T 105

Triangle – Positive

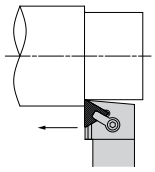


C-CTCPR/L
Style C
Triangle
Positive Rake
0° Lead
page: T 106

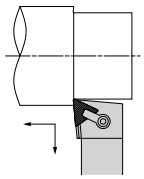
Triangle – Positive *continued*



C-CTFPR/L
Style F
Triangle
Positive Rake
0° Lead
page: T 106

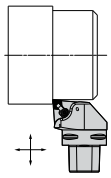


C-CTGPR/L
Style G
Triangle
Positive Rake
0° Lead
page: T 107

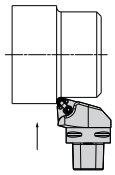


C-CTLPR/L
Style F
Triangle
Positive Rake
5° Reverse Lead
page: T 107

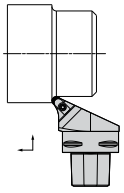
Quick-Change Toolholders



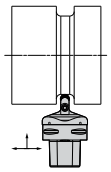
MCLNR/L
80° Diamond
Negative Rake
5° Reverse Lead
C6 & C8 Tool Heads
page: T 84



MRGNR/L
Round Negative Rake
C6 & C8 Tool Heads
page: T 84



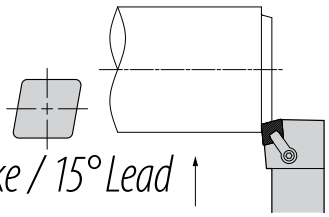
CRGPR/L
45° Grooving/Profiling
Replaceable Nest
page: T 85

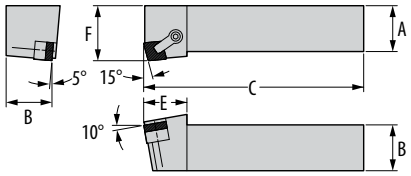


CRDPN
Neutral
Replaceable Nest
page: T 85

C-MCKNR/L

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





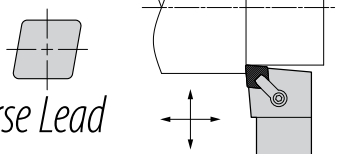
Right-Hand Toolholder Shown

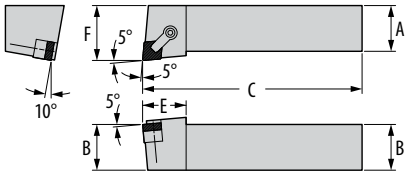
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	5/16" Insert Shim Seat
C-MCKNR-16-4C	C-MCKNL-16-4C	CNGN-432	1.000	1.000	5.000	1.190	1.250	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCKNR-16-4	C-MCKNL-16-4	CNGN-432	1.000	1.000	6.000	1.190	1.250	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCKNR-20-4	C-MCKNL-20-4	CNGN-432	1.250	1.250	6.000	1.190	1.500	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCKNR-20-6	C-MCKNL-20-6	CNGN-643	1.250	1.250	6.000	1.438	1.500	CSN-643	S-68	CL-30	XNS-59	TK-00510	NL-68L	CL-12	CSN-633
C-MCKNR-24-6	C-MCKNL-24-6	CNGN-643	1.500	1.500	8.000	1.438	2.000	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 Toolhodler Shown

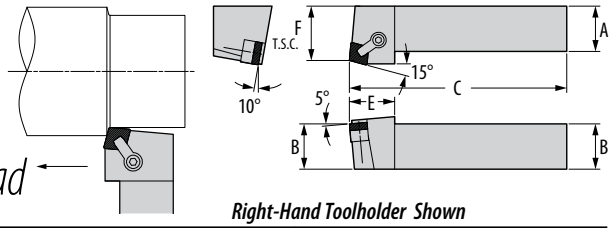
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	5/16" Insert Shim Seat
C-MCLNR-16-4C	C-MCLNL-16-4C	CNGN-432	1.000	1.000	5.000	1.190	1.250	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCLNR-16-4	C-MCLNL-16-4	CNGN-432	1.000	1.000	6.000	1.190	1.250	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCLNR-20-4	C-MCLNL-20-4	CNGN-432	1.250	1.250	6.000	1.190	1.500	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCLNR-20-6	C-MCLNL-20-6	CNGN-643	1.250	1.250	6.000	1.500	1.500	CSN-643	S-68	CL-30	XNS-59	TK-00510	NL-68L	CL-12	CSN-633
C-MCLNR-24-6	C-MCLNL-24-6	CNGN-643	1.500	1.500	8.000	1.500	2.000	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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C-MCRNR/L

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



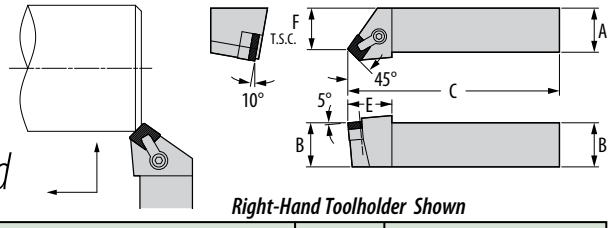
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	5/16" Insert Shim Seat
C-MCKNR-16-4C	C-MCKNL-16-4C	CNGN-432	1.000	1.000	5.000	1.190	1.250	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCKNR-16-4	C-MCKNL-16-4	CNGN-432	1.000	1.000	6.000	1.190	1.250	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCKNR-20-4	C-MCKNL-20-4	CNGN-432	1.250	1.250	6.000	1.190	1.500	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCKNR-20-6	C-MCKNL-20-6	CNGN-643	1.250	1.250	6.000	1.438	1.500	CSN-643	S-68	CL-30	XNS-59	TK-00510	NL-68L	CL-12	CSN-633
C-MCKNR-24-6	C-MCKNL-24-6	CNGN-643	1.500	1.500	8.000	1.438	2.000	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



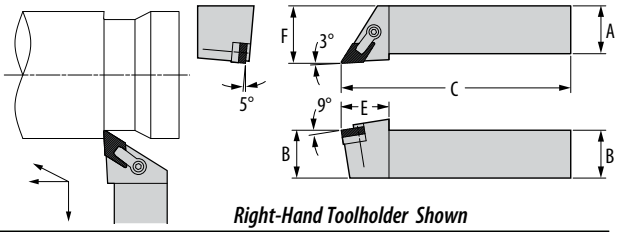
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	5/16" Insert Shim Seat
C-MCLNR-16-4C	C-MCLNL-16-4C	CNGN-432	1.000	1.000	5.000	1.190	1.250	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCLNR-16-4	C-MCLNL-16-4	CNGN-432	1.000	1.000	6.000	1.190	1.250	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCLNR-20-4	C-MCLNL-20-4	CNGN-432	1.250	1.250	6.000	1.190	1.500	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
C-MCLNR-20-6	C-MCLNL-20-6	CNGN-643	1.250	1.250	6.000	1.500	1.500	CSN-643	S-68	CL-30	XNS-59	TK-00510	NL-68L	CL-12	CSN-633
C-MCLNR-24-6	C-MCLNL-24-6	CNGN-643	1.500	1.500	8.000	1.500	2.000	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-MDJNR/L

Style J / 55° Diamond / Negative Rake / 3° Reverse Lead



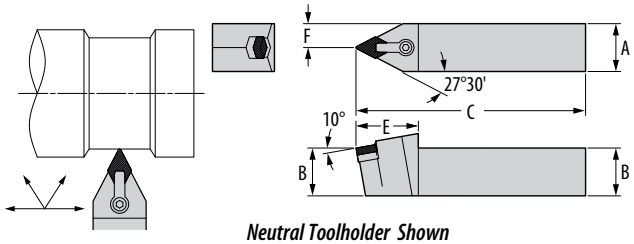
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp
C-MDJNR-16-3C	C-MDJNL-16-3C	DNGN-322	1.000	1.000	5.000	1.000	1.250	DSN-333	S-34	CL-7	XNS-36	TK-00511	NL-34L	CL-6
C-MDJNR-16-3	C-MDJNL-16-3	DNGN-322	1.000	1.000	6.000	1.000	1.250	DSN-333	S-34	CL-7	XNS-36	TK-00511	NL-34L	CL-6
C-MDJNR-20-3	C-MDJNL-20-3	DNGN-322	1.250	1.250	6.000	1.000	1.500	DSN-333	S-34	CL-7	XNS-36	TK-00511	NL-34L	CL-6
C-MDJNR-16-4C	C-MDJNL-16-4C	DNGN-432	1.000	1.000	5.000	1.250	1.250	DSN-433	S-46	CL-22	XNS-48	TK-00512	NL-46	CL-20
C-MDJNR-16-4	C-MDJNL-16-4	DNGN-432	1.000	1.000	6.000	1.250	1.250	DSN-433	S-46	CL-22	XNS-48	TK-00512	NL-46	CL-20
C-MDJNR-20-4	C-MDJNL-20-4	DNGN-432	1.250	1.250	6.000	1.250	1.500	DSN-433	S-46	CL-22	XNS-48	TK-00512	NL-46	CL-20
C-MDJNR-24-4	C-MDJNL-24-4	DNGN-432	1.500	1.500	8.000	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

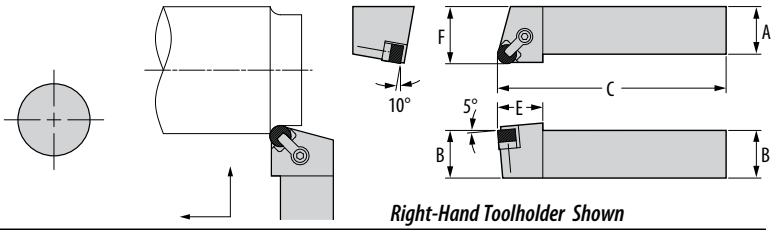
Part Number	Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components	
Neutral	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp
C-MDPNN-16-3C	DNGN-322	1.000	1.000	5.000	1.500	0.500	DSN-333	S-34	CL-12	XNS-59	TK-00513	NL-34L	CL-9
C-MDPNN-16-3	DNGN-322	1.000	1.000	6.000	1.500	0.500	DSN-333	S-34	CL-12	XNS-59	TK-00513	NL-34L	CL-9
C-MDPNN-20-3	DNGN-322	1.250	1.250	6.000	1.500	0.625	DSN-333	S-34	CL-12	XNS-59	TK-00513	NL-34L	CL-9
C-MDPNN-16-4C	DNGN-432	1.000	1.000	5.000	1.625	0.500	DSN-433	S-46	CL-30	XNS-59	TK-00514	NL-46	CL-12
C-MDPNN-16-4	DNGN-432	1.000	1.000	6.000	1.625	0.500	DSN-433	S-46	CL-30	XNS-59	TK-00514	NL-46	CL-12
C-MDPNN-20-4	DNGN-432	1.250	1.250	6.000	1.625	0.625	DSN-433	S-46	CL-30	XNS-59	TK-00514	NL-46	CL-12
C-MDPNN-24-4	DNGN-432	1.500	1.500	8.000	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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C-MRGNR/L

Style G / Round / Negative Rake



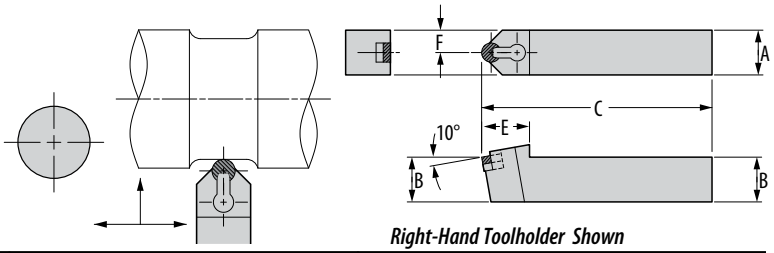
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Opt. Components #1		Opt. Components #2	
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	Insert Thickness	Shim Seat
C-MRGNR-16-3C	C-MRGNL-16-3C	RNGN-33	1.000	1.000	5.000	1.000	1.250	RSN-32	S-34	CL-7	XNS-36	TK-00515	NL-34L	CL-6	1 / 8 ″	RSN-33
C-MRGNR-16-3	C-MRGNL-16-3	RNGN-33	1.000	1.000	6.000	1.000	1.250	RSN-32	S-34	CL-7	XNS-36	TK-00515	NL-34L	CL-6	1 / 8 ″	RSN-33
C-MRGNR-20-3	C-MRGNL-20-3	RNGN-33	1.250	1.250	6.000	1.000	1.500	RSN-32	S-34	CL-7	XNS-36	TK-00515	NL-34L	CL-6	1 / 8 ″	RSN-33
C-MRGNR-16-4C	C-MRGNL-16-4C	RNGN-45	1.000	1.000	5.000	1.190	1.250	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3 / 16 ″	IRSN-45
C-MRGNR-16-4	C-MRGNL-16-4	RNGN-45	1.000	1.000	6.000	1.190	1.250	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3 / 16 ″	IRSN-45
C-MRGNR-20-4	C-MRGNL-20-4	RNGN-45	1.250	1.250	6.000	1.190	1.500	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3 / 16 ″	IRSN-45
C-MRGNR-24-4	C-MRGNL-24-4	RNGN-45	1.500	1.500	8.000	1.190	2.000	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3 / 16 ″	IRSN-45
C-MRGNR-16-5C	C-MRGNL-16-5C	RNGN-55	1.000	1.000	5.000	1.380	1.250	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	–	–
C-MRGNR-16-5	C-MRGNL-16-5	RNGN-55	1.000	1.000	6.000	1.380	1.250	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	–	–
C-MRGNR-20-5	C-MRGNL-20-5	RNGN-55	1.250	1.250	6.000	1.380	1.500	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	–	–
C-MRGNR-24-5	C-MRGNL-24-5	RNGN-55	1.500	1.500	8.000	1.380	2.000	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	–	–
C-MRGNR-16-6C	C-MRGNL-16-6C	RNGN-65	1.000	1.000	5.000	1.500	1.250	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	–	–
C-MRGNR-16-6	C-MRGNL-16-6	RNGN-65	1.000	1.000	6.000	1.500	1.250	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	–	–
C-MRGNR-20-6	C-MRGNL-20-6	RNGN-65	1.250	1.250	6.000	1.500	1.500	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	–	–
C-MRGNR-24-6	C-MRGNL-24-6	RNGN-65	1.500	1.500	8.000	1.500	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



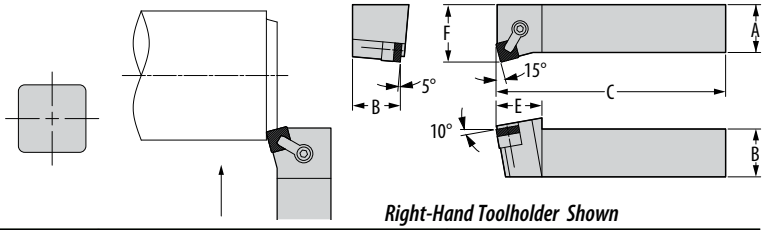
Right-Hand Toolholder Shown

Part Number	Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Opt. Components #1		Opt. Components #2	
Neutral	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	Insert Thickness	Shim Seat
C-MRDNN-16-3C	RNGN-33	1.000	1.000	5.000	1.000	0.500	RSN-32	S-34	CL-7	XNS-36	TK-00515	NL-34L	CL-6	1/8″	RSN-33
C-MRDNN-16-3	RNGN-33	1.000	1.000	6.000	1.000	0.500	RSN-32	S-34	CL-7	XNS-36	TK-00515	NL-34L	CL-6	1/8″	RSN-33
C-MRDNN-20-3	RNGN-33	1.250	1.250	6.000	1.000	0.625	RSN-32	S-34	CL-7	XNS-36	TK-00515	NL-34L	CL-6	1/8″	RSN-33
C-MRDNN-16-4C	RNGN-45	1.000	1.000	5.000	1.375	0.500	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3/16″	IRSN-45
C-MRDNN-16-4	RNGN-45	1.000	1.000	6.000	1.375	0.500	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3/16″	IRSN-45
C-MRDNN-20-4	RNGN-45	1.250	1.250	6.000	1.375	0.625	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3/16″	IRSN-45
C-MRDNN-24-4	RNGN-45	1.500	1.500	8.000	1.375	0.750	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	3/16″	IRSN-45
C-MRDNN-16-5C	RNGN-55	1.000	1.000	5.000	1.375	0.500	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	–	–
C-MRDNN-16-5	RNGN-55	1.000	1.000	6.000	1.375	0.500	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	–	–
C-MRDNN-20-5	RNGN-55	1.250	1.250	6.000	1.375	0.625	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	–	–
C-MRDNN-24-5	RNGN-55	1.500	1.500	8.000	1.375	0.750	RSN-53	S-58	CL-12	XNS-59	TK-00517	NSP-5	CL-9	–	–
C-MRDNN-16-6C	RNGN-65	1.000	1.000	5.000	1.562	0.500	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	–	–
C-MRDNN-16-6	RNGN-65	1.000	1.000	6.000	1.562	0.500	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	–	–
C-MRDNN-20-6	RNGN-65	1.250	1.250	6.000	1.562	0.625	RSN-63	S-68	CL-30	XNS-59	TK-00518	NL-68L	CL-12	–	–
C-MRDNN-24-6	RNGN-65	1.500	1.500	8.000	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.*

C-MSKNR/L

Style K / Square / Negative Rake / 15° Lead



Right-Hand Toolholder Shown

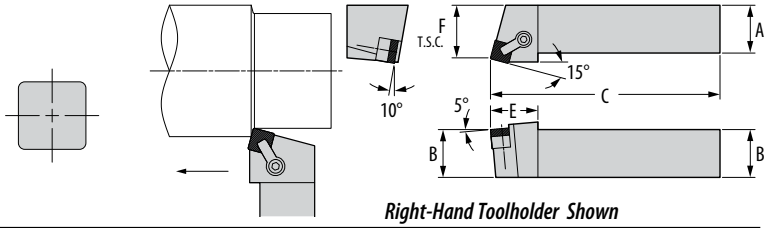
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	5/16" Insert Shim Seat
C-MSKNR-16-4C	C-MSKNL-16-4C	SNGN-432	1.000	1.000	5.000	1.219	1.250	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSKNR-16-4	C-MSKNL-16-4	SNGN-432	1.000	1.000	6.000	1.219	1.250	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSKNR-20-4	C-MSKNL-20-4	SNGN-432	1.250	1.250	6.000	1.219	1.500	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSKNR-20-5	C-MSKNL-20-5	SNGN-543	1.250	1.250	6.000	1.438	1.500	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9	–
C-MSKNR-24-5	C-MSKNL-24-5	SNGN-543	1.500	1.500	8.000	1.438	2.000	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9	–
C-MSKNR-20-6	C-MSKNL-20-6	SNGN-643	1.250	1.250	6.000	1.547	1.500	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12	**ISSN-623
C-MSKNR-24-6	C-MSKNL-24-6	SNGN-643	1.500	1.500	8.000	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	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	5/16" Insert Shim Seat
C-MSRNR-16-4C	C-MSRNL-16-4C	SNGN-432	1.000	1.000	5.000	1.234	1.125	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSRNR-16-4	C-MSRNL-16-4	SNGN-432	1.000	1.000	6.000	1.234	1.125	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSRNR-20-4	C-MSRNL-20-4	SNGN-432	1.250	1.250	6.000	1.234	1.375	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSRNR-20-5	C-MSRNL-20-5	SNGN-543	1.250	1.250	6.000	1.469	1.343	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9	–
C-MSRNR-24-5	C-MSRNL-24-5	SNGN-543	1.500	1.500	8.000	1.469	1.843	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9	–
C-MSRNR-20-6	C-MSRNL-20-6	SNGN-643	1.250	1.250	6.000	1.500	1.312	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12	**ISSN-623
C-MSRNR-24-6	C-MSRNL-24-6	SNGN-643	1.500	1.500	8.000	1.500	1.812	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12	**ISSN-623

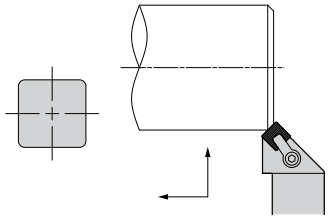
* *Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.*

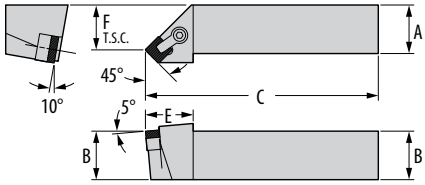
** *The lock pin option can NOT be used with this shim.*

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C-MSSNR/L

Style S / Square / Negative Rake / 45° Lead





Right-Hand Toolholder Shown

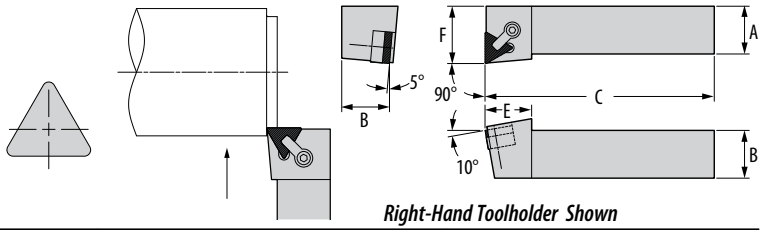
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	5/16" Insert Shim Seat
C-MSKNR-16-4C	C-MSKNL-16-4C	SNGN-432	1.000	1.000	5.000	1.219	1.250	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSKNR-16-4	C-MSKNL-16-4	SNGN-432	1.000	1.000	6.000	1.219	1.250	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSKNR-20-4	C-MSKNL-20-4	SNGN-432	1.250	1.250	6.000	1.219	1.500	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
C-MSKNR-20-5	C-MSKNL-20-5	SNGN-543	1.250	1.250	6.000	1.438	1.500	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9	–
C-MSKNR-24-5	C-MSKNL-24-5	SNGN-543	1.500	1.500	8.000	1.438	2.000	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9	–
C-MSKNR-20-6	C-MSKNL-20-6	SNGN-643	1.250	1.250	6.000	1.547	1.500	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12	**ISSN-623
C-MSKNR-24-6	C-MSKNL-24-6	SNGN-643	1.500	1.500	8.000	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-MTFNR/L

Style F / Triangle / Negative Rake / 0° Lead



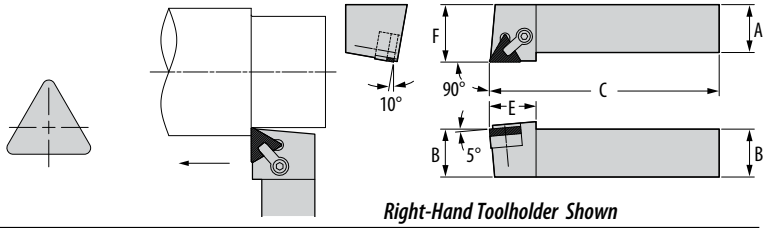
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	5/16" Insert Shim Seat
C-MTFNR-16-3C	C-MTFNL-16-3C	TNGN-332	1.000	1.000	5.000	0.938	1.250	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	–
C-MTFNR-16-3	C-MTFNL-16-3	TNGN-332	1.000	1.000	6.000	0.938	1.250	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	–
C-MTFNR-20-3	C-MTFNL-20-3	TNGN-332	1.250	1.250	6.000	0.938	1.500	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	–
C-MTFNR-16-4C	C-MTFNL-16-4C	TNGN-432	1.000	1.000	5.000	1.219	1.250	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTFNR-16-4	C-MTFNL-16-4	TNGN-432	1.000	1.000	6.000	1.219	1.250	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTFNR-20-4	C-MTFNL-20-4	TNGN-432	1.250	1.250	6.000	1.219	1.500	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTFNR-24-4	C-MTFNL-24-4	TNGN-432	1.500	1.500	8.000	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

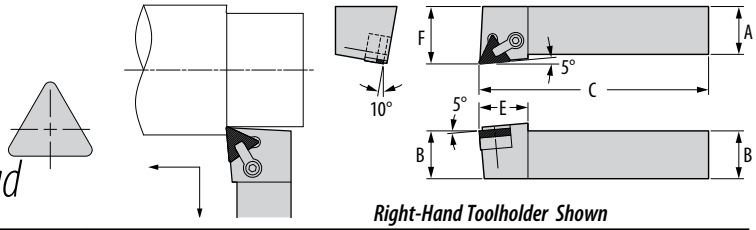
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	5/16" Insert Shim Seat
C-MTGNR-16-3C	C-MTGNL-16-3C	TNGN-332	1.000	1.000	5.000	1.109	1.250	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	–
C-MTGNR-16-3	C-MTGNL-16-3	TNGN-332	1.000	1.000	6.000	1.109	1.250	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	–
C-MTGNR-20-3	C-MTGNL-20-3	TNGN-332	1.250	1.250	6.000	1.109	1.500	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	–
C-MTGNR-16-4C	C-MTGNL-16-4C	TNGN-432	1.000	1.000	5.000	1.188	1.250	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTGNR-16-4	C-MTGNL-16-4	TNGN-432	1.000	1.000	6.000	1.188	1.250	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTGNR-20-4	C-MTGNL-20-4	TNGN-432	1.250	1.250	6.000	1.188	1.500	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTGNR-24-4	C-MTGNL-24-4	TNGN-432	1.500	1.500	8.000	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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C-MTLNR/L

Style L / Triangle / Negative Rake / 5° Reverse Lead



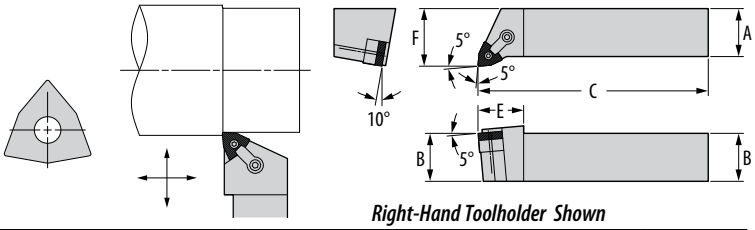
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	5/16" Insert Shim Seat
C-MTLNR-16-3C	C-MTLNL-16-3C	TNGN-332	1.000	1.000	5.000	1.109	1.250	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	–
C-MTLNR-16-3	C-MTLNL-16-3	TNGN-332	1.000	1.000	6.000	1.109	1.250	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	–
C-MTLNR-20-3	C-MTLNL-20-3	TNGN-332	1.250	1.250	6.000	1.109	1.500	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6	–
C-MTLNR-16-4C	C-MTLNL-16-4C	TNGN-432	1.000	1.000	5.000	1.188	1.250	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTLNR-16-4	C-MTLNL-16-4	TNGN-432	1.000	1.000	6.000	1.188	1.250	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTLNR-20-4	C-MTLNL-20-4	TNGN-432	1.250	1.250	6.000	1.188	1.500	ITSN-453	S-46	CL-12	XNS-59	TK-00523	NL-46L	CL-9	ITSN-433
C-MTLNR-24-4	C-MTLNL-24-4	TNGN-432	1.500	1.500	8.000	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



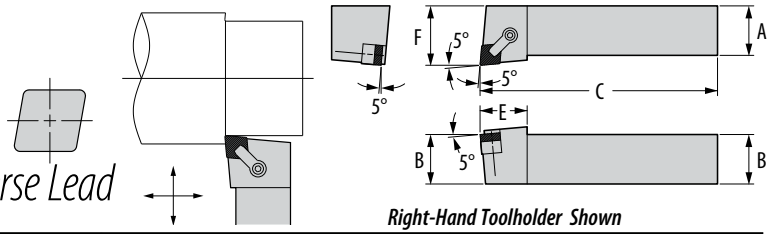
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-MWLNR-12-3B	C-MWLNL-12-3B	WNGA-332	0.750	0.750	4.500	1.000	1.000	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
C-MWLNR-16-3	C-MWLNL-16-3	WNGA-332	1.000	1.000	6.000	1.000	1.250	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
C-MWLNR-20-3	C-MWLNL-20-3	WNGA-332	1.250	1.250	6.000	1.000	1.500	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
C-MWLNR-24-3	C-MWLNL-24-3	WNGA-332	1.500	1.500	8.000	1.000	2.000	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
C-MWLNR-12-4B	C-MWLNL-12-4B	WNGA-432	0.750	0.750	4.500	1.078	1.000	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766
C-MWLNR-16-4	C-MWLNL-16-4	WNGA-432	1.000	1.000	6.000	1.078	1.250	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766
C-MWLNR-20-4	C-MWLNL-20-4	WNGA-432	1.250	1.250	6.000	1.078	1.500	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766
C-MWLNR-24-4	C-MWLNL-24-4	WNGA-432	1.500	1.500	8.000	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



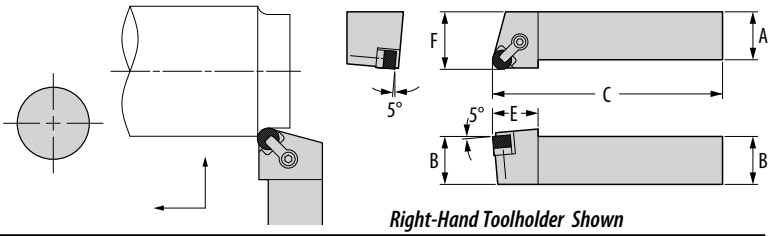
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	5/16" Insert Shim Seat
H-MCLNR-16-4C	H-MCLNL-16-4C	CNGN-432	1.000	1.000	5.000	1.190	1.250	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
H-MCLNR-16-4	H-MCLNL-16-4	CNGN-432	1.000	1.000	6.000	1.190	1.250	CSN-453	S-46	CL-12	XNS-59	TK-00509	NL-46L	CL-9	CSN-433
H-MCLNR-20-4	H-MCLNL-20-4	CNGN-432	1.250	1.250	6.000	1.190	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	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	3/16" Insert Shim Seat
H-MRGNR-16-4C	H-MRGNL-16-4C	RNGN-45	1.000	1.000	5.000	1.190	1.250	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	IRSN-45
H-MRGNR-16-4	H-MRGNL-16-4	RNGN-45	1.000	1.000	6.000	1.190	1.250	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	IRSN-45
H-MRGNR-20-4	H-MRGNL-20-4	RNGN-45	1.250	1.250	6.000	1.190	1.500	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	IRSN-45
H-MRGNR-24-4	H-MRGNL-24-4	RNGN-45	1.500	1.500	8.000	1.190	2.000	IRSN-43	S-46	CL-12	XNS-59	TK-00516	NL-46L	CL-9	IRSN-45

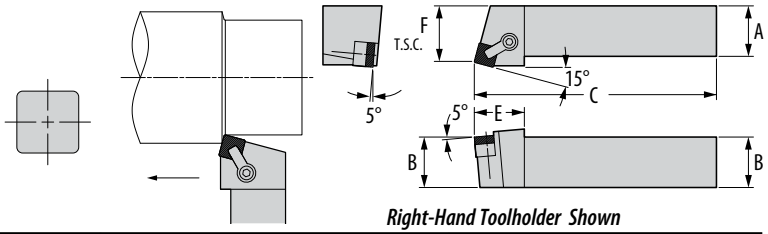
* *Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.*

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

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H-MSRNR/L

Style R / Square / Negative Rake / 15° Lead



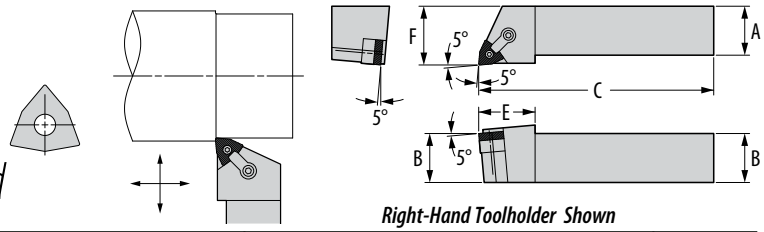
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp	5/16" Insert Shim Seat
H-MSRNR-16-4C	H-MSRNL-16-4C	SNGN-432	1.000	1.000	5.000	1.234	1.125	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
H-MSRNR-16-4	H-MSRNL-16-4	SNGN-432	1.000	1.000	6.000	1.234	1.125	ISSN-453	S-46	CL-12	XNS-59	TK-00519	NL-46L	CL-9	ISSN-433
H-MSRNR-20-4	H-MSRNL-20-4	SNGN-432	1.250	1.250	6.000	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



Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
H-MWLNR-12-3B	H-MWLNL-12-3B	WNGA-332	0.750	0.750	4.500	1.000	1.000	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
H-MWLNR-16-3	H-MWLNL-16-3	WNGA-332	1.000	1.000	6.000	1.000	1.250	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
H-MWLNR-20-3	H-MWLNL-20-3	WNGA-332	1.250	1.250	6.000	1.000	1.500	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
H-MWLNR-24-3	H-MWLNL-24-3	WNGA-332	1.500	1.500	8.000	1.000	2.000	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
H-MWLNR-12-4B	H-MWLNL-12-4B	WNGA-432	0.750	0.750	4.500	1.078	1.000	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766
H-MWLNR-16-4	H-MWLNL-16-4	WNGA-432	1.000	1.000	6.000	1.078	1.250	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766
H-MWLNR-20-4	H-MWLNL-20-4	WNGA-432	1.250	1.250	6.000	1.078	1.500	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766
H-MWLNR-24-4	H-MWLNL-24-4	WNGA-432	1.500	1.500	8.000	1.078	2.000	IWSN-453	NL-46L	CL-20	XNS-48	TK-00766

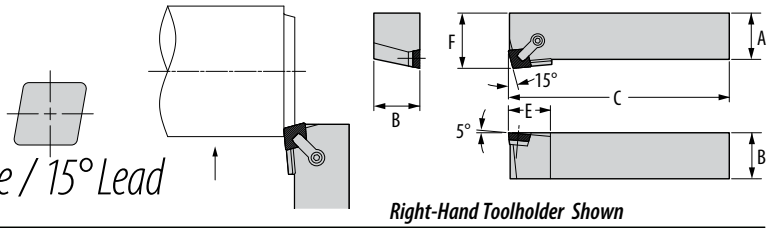
** Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.*

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

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C-CCKPR/L

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



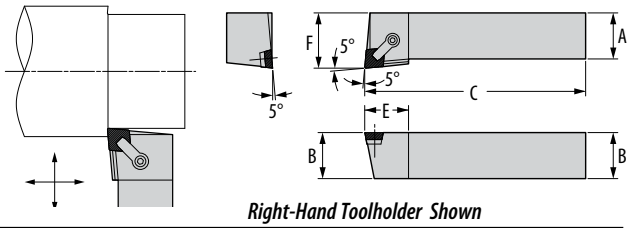
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-CCKPR-16-4C	C-CCKPL-16-4C	CPGN-432	1.000	1.000	5.000	1.188	1.250	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
C-CCKPR-16-4	C-CCKPL-16-4	CPGN-432	1.000	1.000	6.000	1.188	1.250	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
C-CCKPR-20-4	C-CCKPL-20-4	CPGN-432	1.250	1.250	6.000	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



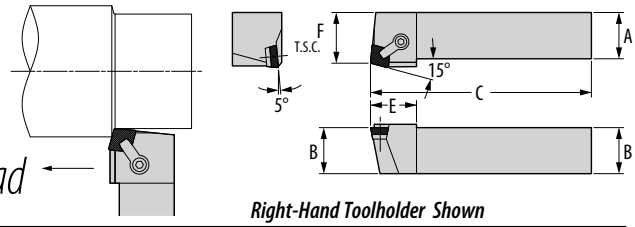
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-CCLPR-16-4C	C-CCLPL-16-4C	CPGN-432	1.000	1.000	5.000	1.188	1.250	SP-49	#4-40x 3/8 F.C.H.S.	CL-12	XNS-59	TK-00501
C-CCLPR-16-4	C-CCLPL-16-4	CPGN-432	1.000	1.000	6.000	1.188	1.250	SP-49	#4-40x 3/8 F.C.H.S.	CL-12	XNS-59	TK-00501
C-CCLPR-20-4	C-CCLPL-20-4	CPGN-432	1.250	1.250	6.000	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

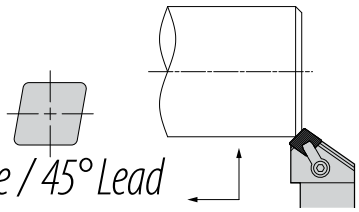
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-CCRPR-16-4C	C-CCRPL-16-4C	CPGN-432	1.000	1.000	5.000	1.250	1.250	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
C-CCRPR-16-4	C-CCRPL-16-4	CPGN-432	1.000	1.000	6.000	1.250	1.250	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
C-CCRPR-20-4	C-CCRPL-20-4	CPGN-432	1.250	1.250	6.000	1.250	1.500	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501

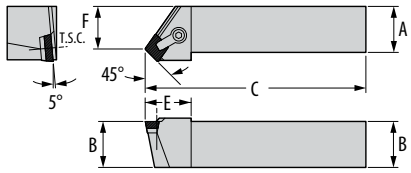
** Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.*

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C-CCSPR/L

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





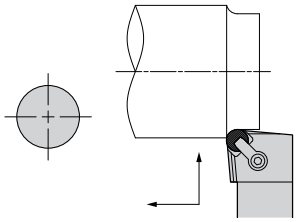
Right-Hand Toolholder Shown

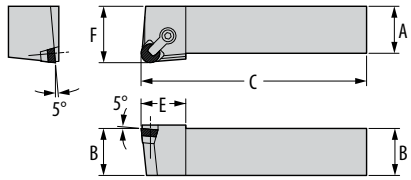
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-CCSPR-16-4C	C-CCSPL-16-4C	CPGN-432	1.000	1.000	5.000	1.250	1.250	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
C-CCSPR-16-4	C-CCSPL-16-4	CPGN-432	1.000	1.000	6.000	1.250	1.250	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
C-CCSPR-20-4	C-CCSPL-20-4	CPGN-432	1.250	1.250	6.000	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





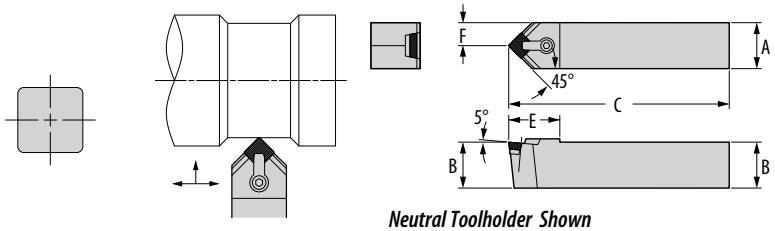
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-CRGPR-16-3C	C-CRGPL-16-3C	RPGN-32	1.000	1.000	5.000	1.000	1.250	SP-34	#2-56x 1/4 S.H.C.S.	CL-7	XNS-36	TK-00502
C-CRGPR-16-3	C-CRGPL-16-3	RPGN-32	1.000	1.000	6.000	1.000	1.250	SP-34	#2-56x 1/4 S.H.C.S.	CL-7	XNS-36	TK-00502
C-CRGPR-20-3	C-CRGPL-20-3	RPGN-32	1.250	1.250	6.000	1.000	1.500	SP-34	#2-56x 1/4 S.H.C.S.	CL-7	XNS-36	TK-00502
C-CRGPR-16-4C	C-CRGPL-16-4C	RPGN-43	1.000	1.000	5.000	1.188	1.250	SP-44	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00503
C-CRGPR-16-4	C-CRGPL-16-4	RPGN-43	1.000	1.000	6.000	1.188	1.250	SP-44	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00503
C-CRGPR-20-4	C-CRGPL-20-4	RPGN-43	1.250	1.250	6.000	1.188	1.500	SP-44	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00503
C-CRGPR-24-4	C-CRGPL-24-4	RPGN-43	1.500	1.500	8.000	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



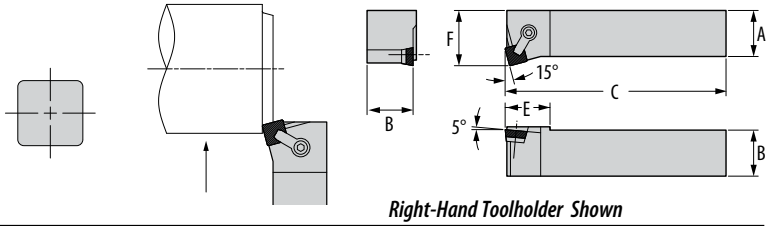
Neutral Toolholder Shown

Part Number	Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Neutral	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-CSDPN-16-4C	SPGN-432	1.000	1.000	5.000	1.391	0.500	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
C-CSDPN-16-4	SPGN-432	1.000	1.000	6.000	1.391	0.500	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
C-CSDPN-20-4	SPGN-432	1.250	1.250	6.000	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

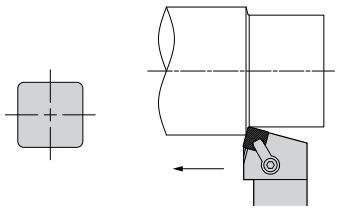
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-CSKPR-16-4C	C-CSKPL-16-4C	SPGN-432	1.000	1.000	5.000	1.219	1.250	SP-41	#4-40X 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
C-CSKPR-16-4	C-CSKPL-16-4	SPGN-432	1.000	1.000	6.000	1.219	1.250	SP-41	#4-40X 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
C-CSKPR-20-4	C-CSKPL-20-4	SPGN-432	1.250	1.250	6.000	1.219	1.500	SP-41	#4-40X 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504

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C-CSRPR/L

Style R / Square / Positive Rake / 15° Lead



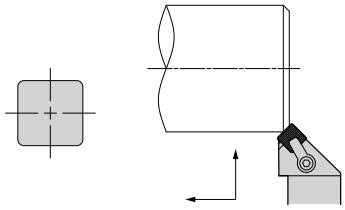
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-CSRPR-16-4C	C-CSRPL-16-4C	SPGN-432	1.000	1.000	5.000	1.234	1.125	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
C-CSRPR-16-4	C-CSRPL-16-4	SPGN-432	1.000	1.000	6.000	1.234	1.125	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
C-CSRPR-20-4	C-CSRPL-20-4	SPGN-432	1.250	1.250	6.000	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



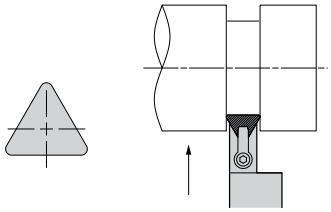
Right-Hand Toolholder Shown

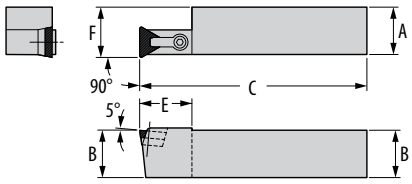
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-CSSPR-16-4C	C-CSSPL-16-4C	SPGN-432	1.000	1.000	5.000	1.234	0.906	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
C-CSSPR-16-4	C-CSSPL-16-4	SPGN-432	1.000	1.000	6.000	1.234	0.906	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
C-CSSPR-20-4	C-CSSPL-20-4	SPGN-432	1.250	1.250	6.000	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





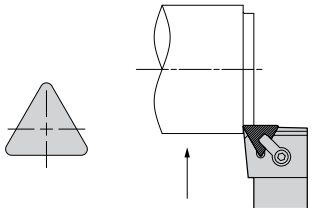
Right-Hand Toolholder Shown

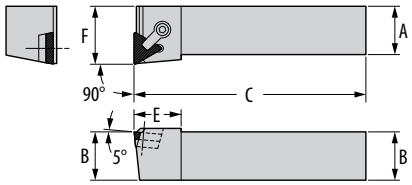
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-CTCPR-16-3C	C-CTCPL-16-3C	TPGN-322	1.000	1.000	5.000	1.125	1.047	SP3A	#4-40x 3/8 F.H.C.S.	CL-22	XNS-48	TK-00505
C-CTCPR-16-3	C-CTCPL-16-3	TPGN-322	1.000	1.000	6.000	1.125	1.047	SP3A	#4-40x 3/8 F.H.C.S.	CL-22	XNS-48	TK-00505
C-CTCPR-20-3	C-CTCPL-20-3	TPGN-322	1.250	1.250	6.000	1.125	1.297	SP3A	#4-40x 3/8 F.H.C.S.	CL-22	XNS-48	TK-00505
C-CTCPR-16-4C	C-CTCPL-16-4C	TPGN-432	1.000	1.000	5.000	1.375	1.078	SP-4	#6-32x 1/2 F.H.C.S.	CL-30	XNS-59	TK-00506
C-CTCPR-16-4	C-CTCPL-16-4	TPGN-432	1.000	1.000	6.000	1.375	1.078	SP-4	#6-32x 1/2 F.H.C.S.	CL-30	XNS-59	TK-00506
C-CTCPR-20-4	C-CTCPL-20-4	TPGN-432	1.250	1.250	6.000	1.375	1.328	SP-4	#6-32x 1/2 F.H.C.S.	CL-30	XNS-59	TK-00506
C-CTCPR-24-4	C-CTCPL-24-4	TPGN-432	1.500	1.500	8.000	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

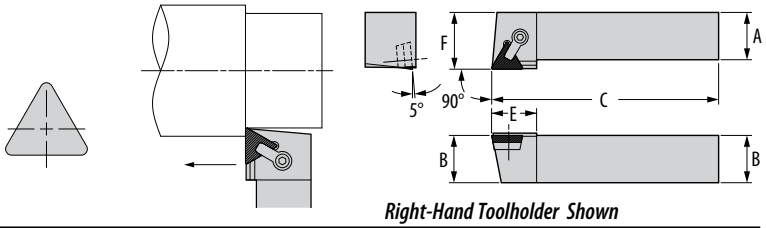
Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-CTFPR-16-3C	C-CTFPL-16-3C	TPGN-322	1.000	1.000	5.000	0.938	1.250	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTFPR-16-3	C-CTFPL-16-3	TPGN-322	1.000	1.000	6.000	0.938	1.250	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTFPR-20-3	C-CTFPL-20-3	TPGN-322	1.250	1.250	6.000	0.938	1.500	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTFPR-16-4C	C-CTFPL-16-4C	TPGN-432	1.000	1.000	5.000	1.219	1.250	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTFPR-16-4	C-CTFPL-16-4	TPGN-432	1.000	1.000	6.000	1.219	1.250	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTFPR-20-4	C-CTFPL-20-4	TPGN-432	1.250	1.250	6.000	1.219	1.500	SP4	6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTFPR-24-4	C-CTFPL-24-4	TPGN-432	1.500	1.500	8.000	1.219	2.000	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508

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C-CTGPR/L

Style G / Triangle / Positive Rake / 0° Lead



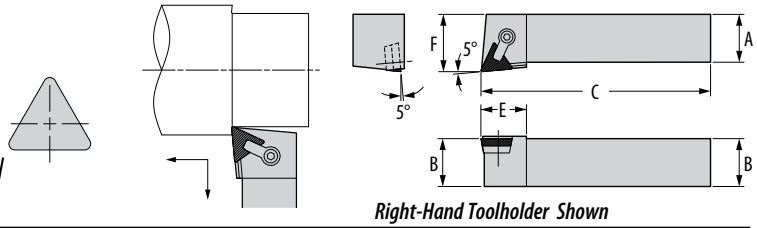
Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-CTGPR-16-3C	C-CTGPL-16-3C	TPGN-322	1.000	1.000	5.000	1.109	1.250	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTGPR-16-3	C-CTGPL-16-3	TPGN-322	1.000	1.000	6.000	1.109	1.250	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTGPR-20-3	C-CTGPL-20-3	TPGN-322	1.250	1.250	6.000	1.109	1.500	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTGPR-16-4C	C-CTGPL-16-4C	TPGN-432	1.000	1.000	5.000	1.188	1.250	SP-4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTGPR-16-4	C-CTGPL-16-4	TPGN-432	1.000	1.000	6.000	1.188	1.250	SP-4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTGPR-20-4	C-CTGPL-20-4	TPGN-432	1.250	1.250	6.000	1.188	1.500	SP-4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTGPR-24-4	C-CTGPL-24-4	TPGN-432	1.500	1.500	8.000	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 F / Triangle / Positive Rake / 5° Reverse Lead



Right-Hand Toolholder Shown

Part Number		Gage	Dimensions (inches)					Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts	A	B	C	E	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
C-CTLPR-16-3C	C-CTLPL-16-3C	TPGN-322	1.000	1.000	5.000	1.109	1.250	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTLPR-16-3	C-CTLPL-16-3	TPGN-322	1.000	1.000	6.000	1.109	1.250	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTLPR-20-3	C-CTLPL-20-3	TPGN-322	1.250	1.250	6.000	1.109	1.500	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
C-CTLPR-16-4C	C-CTLPL-16-4C	TPGN-432	1.000	1.000	5.000	1.188	1.250	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTLPR-16-4	C-CTLPL-16-4	TPGN-432	1.000	1.000	6.000	1.188	1.250	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTLPR-20-4	C-CTLPL-20-4	TPGN-432	1.250	1.250	6.000	1.188	1.500	SP4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
C-CTLPR-24-4	C-CTLPL-24-4	TPGN-432	1.500	1.500	8.000	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.*

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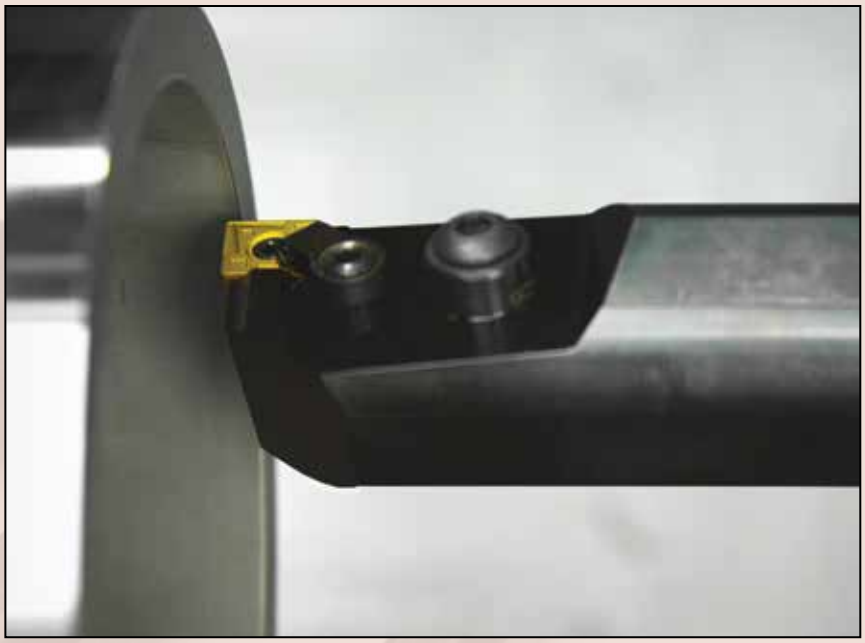
Industry-Standard Boring Bars for Carbide Inserts

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 ensure 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.

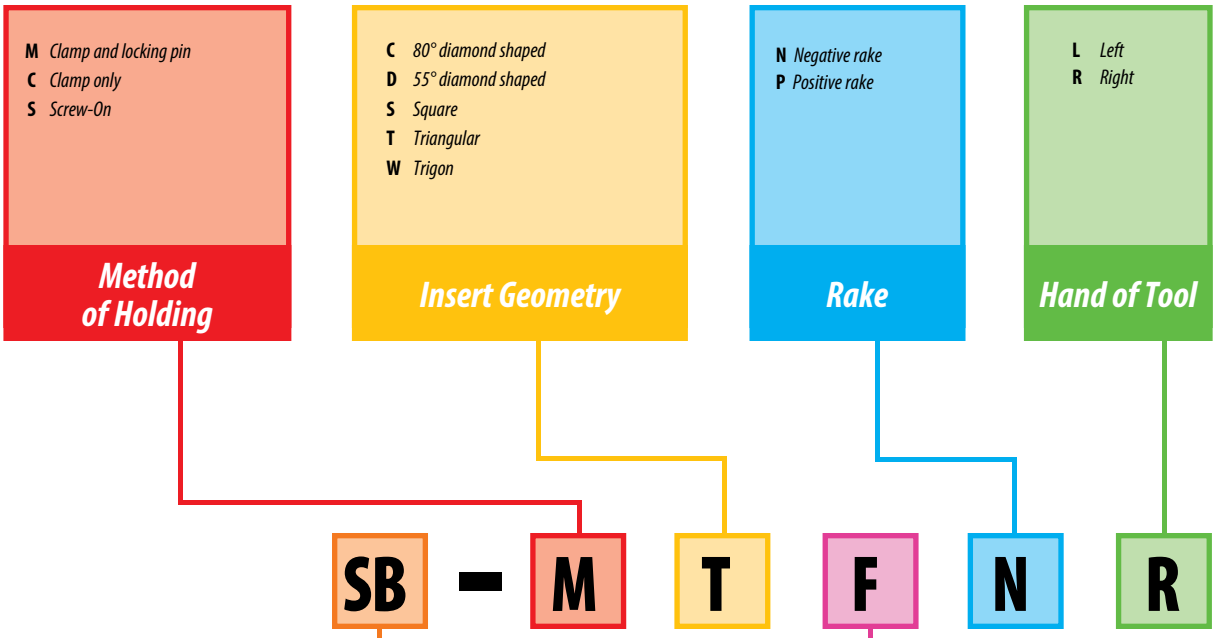


Greenleaf Tune-Up Kits

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.



Boring Bar Identification System



SB *Steel bar*

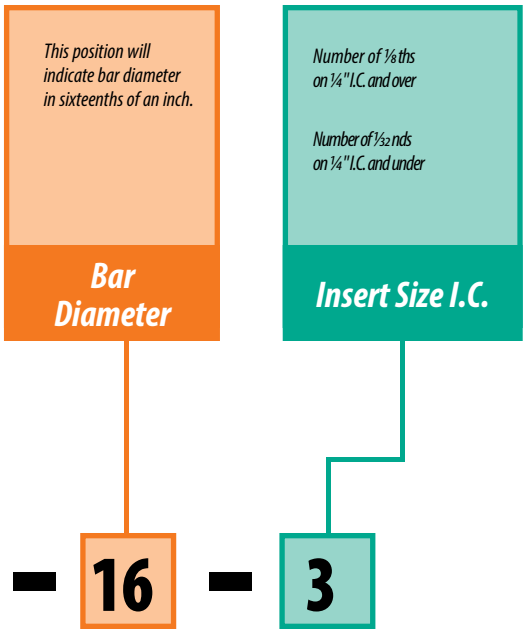
Material

F *Offset shank with 0° (90°) end cutting edge angle*
J *Offset shank with 3° (87°) end cutting edge angle*
K *Offset shank with 15° (75°) end cutting edge angle*
L *Offset shank with negative 5° (95°) end or side cutting edge angle*
U *Offset shank with negative 0° (90°) end cutting edge angle*

Boring Bar Style

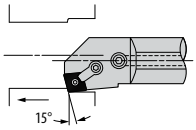
NOTE:
The angles shown in parentheses are the angles as shown in the ANSI standard.

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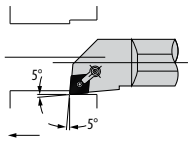

This position will indicate bar diameter in sixteenths of an inch.
Bar Diameter
Number of 1/8ths on 1/4" I.C. and over
Number of 1/32nds on 1/4" I.C. and under
Insert Size I.C.
- 16 - 3

Pictorial Index

80° Diamond – Negative

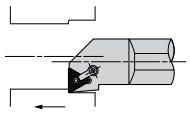


SB-MCKNR/L
Style K
80° Diamond
(Using 100° Corner)
Negative Rake
15° Lead
page: T 114

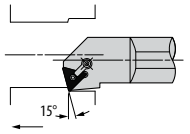


SB-MCLNR/L
Style L
80° Diamond
Negative Rake
5° Reverse Lead
page: T 114

Triangle – Negative

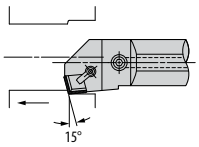


SB-MTFNR/L
Style F
Triangle
Negative Rake
0° Lead
page: T 117

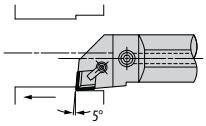


SB-MTKNR/L
Style K
Triangle
Negative Rake
15° Lead
page: T 117

80° Diamond – Positive

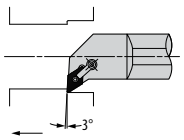


SB-CCKPR/L
Style K
80° Diamond
(Using 100° Corner)
Positive Rake
15° Lead
page: T 119



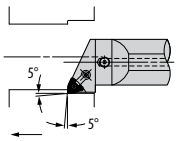
SB-CCLPR/L
Style L
80° Diamond
Positive Rake
5° Reverse Lead
page: T 119

55° Diamond – Negative



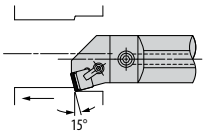
SB-MDUNR/L
Style U
55° Diamond
Negative Rake
3° Reverse Lead
page: T 115

Trigon – Negative



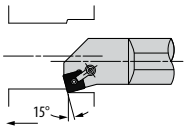
SB-MWLNR/L
Style L
80° Trigon
Negative Rake
5° Reverse Lead
page: T 118

Square – Positive



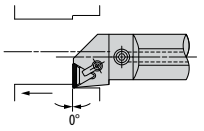
SB-CSKPR/L
Style K
Square
Positive Rake
15° Lead
page: T 120

Square – Negative



SB-MSKNR/L
Style K
Square
Negative Rake
15° Lead
page: T 116

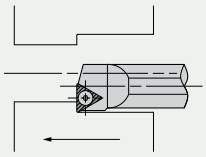
Triangle – Positive



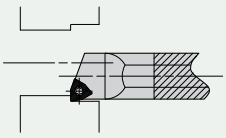
SB-CTFPR/L
Style F
Triangle
Positive Rake
0° Lead
page: T 121

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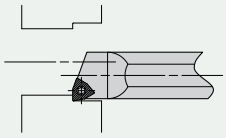
Screw-On



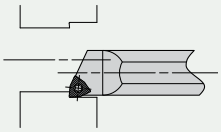
S-STFNR/L
Style F
Triangle
Positive Rake
0° Lead
page: T 121



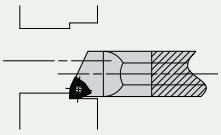
S-SWFCR/L
Style F
Screw-On Trigon
Heavy Metal
Fixed Steel Head
0° Lead
page: T 122



C-SWFCR/L
Style F
Screw-On Trigon
Solid Steel
0° Lead
page: T 122



S-SWLCR/L
Style L
Screw-On Trigon
Solid Steel
5° Reverse Lead
page: T 123

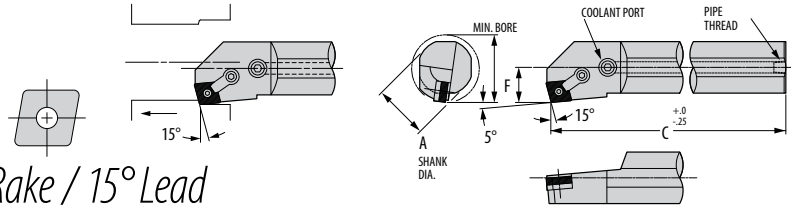


C-SWLCR/L
Style L
Screw-On Trigon
Heavy Metal
Fixed Steel Head
5° Reverse Lead
page: T 123

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

SB-MCKNR/L

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



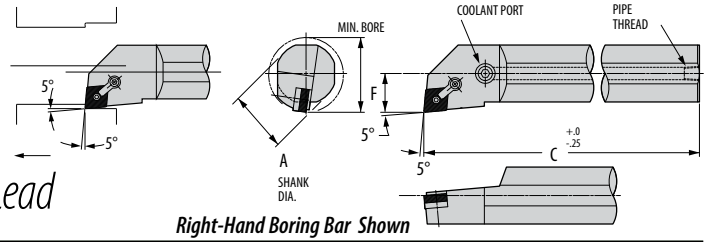
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Clamp Screw	Shim	Lock Pin		Shim Screw	Shim
SB-MCKNR-16-4	SB-MCKNL-16-4	CNGA-432	1.250	1.000	12.000	0.640	CL-20	XNS-47	–	NL-44	TK-00657	–	–
SB-MCKNR-20-4	SB-MCKNL-20-4	CNGA-432	1.468	1.250	13.750	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	1.500	13.750	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	1.750	13.750	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	2.000	16.000	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	2.250	16.000	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	2.500	16.000	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 toolholder.*

SB-MCLNR/L

Style L / 80° Diamond / Negative Rake / 5° Reverse Lead



Right-Hand Boring Bar Shown

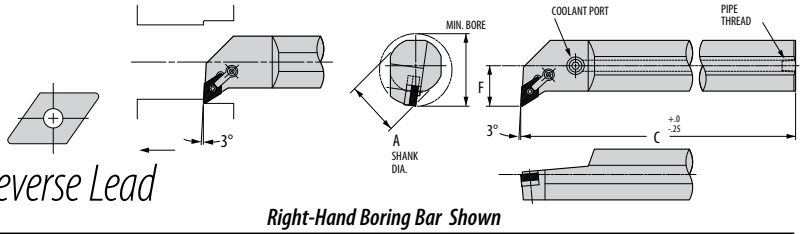
Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Clamp Screw	Shim	Lock Pin		Shim Screw	Shim
SB-MCLNR-16-4	SB-MCLNL-16-4	CNGA-432	1.375	1.000	12.000	0.640	CL-20	XNS-47	–	NL-44	TK-00657	–	–
SB-MCLNR-20-4	SB-MCLNL-20-4	CNGA-432	1.600	1.250	13.750	0.765	CL-20	XNS-47	CSNB-433	NL-46A	TK-00658	S-46S	–
SB-MCLNR-24-4	SB-MCLNL-24-4	CNGA-432	1.800	1.500	13.750	0.890	CL-20	XNS-47	CSN-432	NL-46	TK-00659	S-46S	–
SB-MCLNR-28-4	SB-MCLNL-28-4	CNGA-432	1.925	1.750	13.750	1.015	CL-20	XNS-47	CSN-432	NL-46	TK-00659	S-46S	–
SB-MCLNR-32-6	SB-MCLNL-32-6	CNGA-643	2.475	2.000	16.000	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	2.250	16.000	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	2.500	16.000	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 toolholder.*

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SB-MDUNR/L

Style U / 55° Diamond / Negative Rake / 3° Reverse Lead



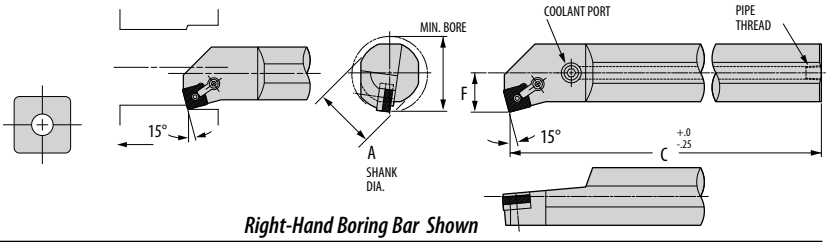
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Clamp Screw	Shim	Lock Pin		Shim Screw
SB-MDUNR-20-4	SB-MDUNL-20-4	DNGA-432	2.000	1.250	13.750	1.000	CL-12	XNS-59	DSN-433	NL-46	TK-00660	S-46S
SB-MDUNR-24-4	SB-MDUNL-24-4	DNGA-432	2.250	1.500	13.750	1.125	CL-12	XNS-59	DSN-433	NL-46	TK-00660	S-46S
SB-MDUNR-28-4	SB-MDUNL-28-4	DNGA-432	2.500	1.750	13.750	1.250	CL-12	XNS-59	DSN-433	NL-46	TK-00660	S-46S
SB-MDUNR-28-5	SB-MDUNL-28-5	DNGA-543	2.750	1.750	13.750	1.375	CL-30	XNS-510	DSN-533	NL-58	TK-00722	S-58S
SB-MDUNR-32-5	SB-MDUNL-32-5	DNGA-543	3.000	2.000	16.000	1.500	CL-30	XNS-510	DSN-533	NL-58	TK-00722	S-58S
SB-MDUNR-36-5	SB-MDUNL-36-5	DNGA-543	3.250	2.250	16.000	1.625	CL-30	XNS-510	DSN-533	NL-58	TK-00722	S-58S
SB-MDUNR-40-5	SB-MDUNL-40-5	DNGA-543	3.500	2.500	16.000	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 toolholder.*

SB-MSKNR/L

Style K / Square / Negative Rake / 15° Lead



Right-Hand Boring Bar Shown

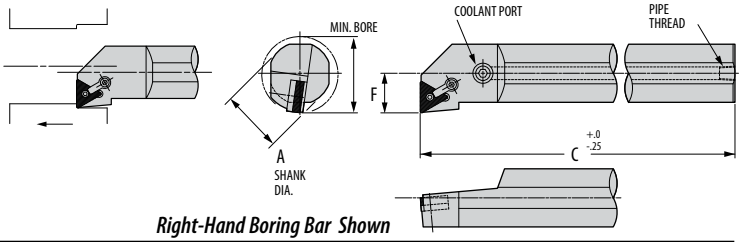
Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Clamp Screw	Shim	Lock Pin		Shim Screw	Shim
SB-MSKNR-16-4	**SB-MSKNL-16-4**	SNGA-432	1.350	1.000	12.000	0.640	CL-6	XNS-36	–	NL-44	TK-00661	–	–
SB-MSKNR-20-4	**SB-MSKNL-20-4**	SNGA-432	1.600	1.250	13.750	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	1.500	13.750	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	1.750	13.750	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	2.000	16.000	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	2.250	16.000	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	2.000	16.000	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	2.250	16.000	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	2.500	16.000	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 toolholder.*

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SB-MTFNR/L

Style F / Triangle / Negative Rake / 0° Lead



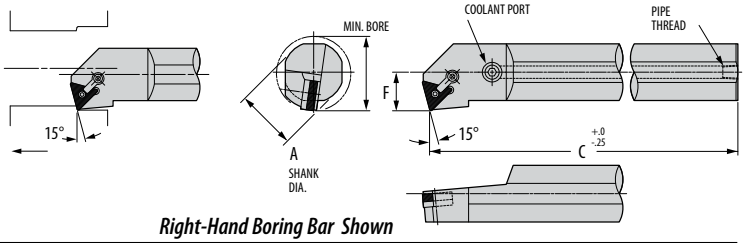
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Clamp Screw	Shim	Lock Pin		Shim Screw	Shim
SB-MTFNR-16-3	SB-MTFNL-16-3	TNGA-332	1.425	1.000	12.000	0.640	CL-6	XNS-35	–	NL-33L	TK-00663	–	–
SB-MTFNR-20-3	SB-MTFNL-20-3	TNGA-332	1.025	1.250	13.750	0.765	CL-6	XNS-35	ITSN-322	NL-34L	TK-00664	S-34S	–
SB-MTFNR-24-3	SB-MTFNL-24-3	TNGA-332	1.825	1.500	13.750	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	1.750	13.750	1.015	CL-6	XNS-35	ITSN-322	NL-34L	TK-00664	S-34S	–
SB-MTFNR-24-4	SB-MTFNL-24-4	TNGA-432	1.968	1.500	13.750	1.031	CL-9	XNS-59	ITSN-432	NL-46	TK-00665	S-46S	TS-424
SB-MTFNR-28-4	SB-MTFNL-28-4	TNGA-432	2.218	1.750	13.750	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	2.000	16.000	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	2.250	16.000	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	2.500	16.000	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 toolholder.*

SB-MTKNR/L

Style K / Triangle / Negative Rake / 15° Lead



Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Clamp Screw	Shim	Lock Pin		Shim Screw	Shim
SB-MTKNR-16-3	SB-MTKNL-16-3	TNGA-332	1.325	1.000	12.000	0.640	CL-6	XNS-35	–	NL-33L	TK-00663	–	–
SB-MTKNR-20-3	SB-MTKNL-20-3	TNGA-332	1.550	1.250	13.750	0.765	CL-6	XNS-35	ITSN-322	NL-34L	TK-00664	S-34S	–
SB-MTKNR-24-3	SB-MTKNL-24-3	TNGA-332	1800	1.500	13.750	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	1.750	13.750	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	1.500	13.750	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	1.750	13.750	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	2.000	16.000	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	2.250	16.000	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	2.500	16.000	1.531	CL-12	XNS-510	ITSN-533	NL-58	TK-00569	S-58S	–

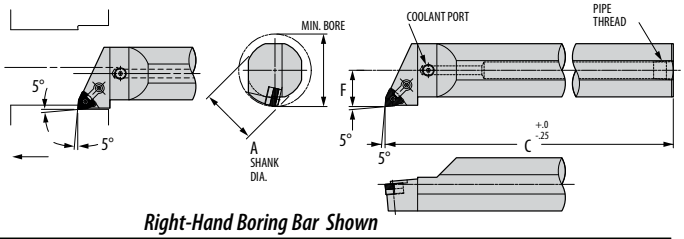
** Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.*

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SB-MWLNR/L

Style L / 80° Trigon / Negative Rake / 5° Reverse Lead





Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components
Right Hand	Left Hand	Inserts		A	C	F	Seat	Lock Pin	Clamp	Clamp Screw		Seat
† SB-MWLNR-12-3	SB-MWLNL-12-3†	WNMA-332	1.025	0.750	10.000	0.515	–	NL-33L	CL-6	XNS-36	TK-00796	–
SB-MWLNR-16-3	SB-MWLNL-16-3	WNMA-332	1.200	1.000	12.000	0.640	–	NL-33L	CL-6	XNS-36	TK-00796	–
SB-MWLNR-20-3	SB-MWLNL-20-3	WNMA-332	1.470	1.250	13.750	0.765	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777	IWSN-332
SB-MWLNR-24-3	SB-MWLNL-24-3	WNMA-332	1.780	1.500	13.750	0.890	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777	IWSN-332
SB-MWLNR-16-4	SB-MWLNL-16-4	WNMA-432	1.280	1.000	12.000	0.640	–	NL-44	CL-20	XNS-47	TK-00657	–
SB-MWLNR-20-4	SB-MWLNL-20-4	WNMA-432	1.530	1.250	13.750	0.765	IWSN-433	NL-46	CL-20	XNS-48	TK-00759	–
SB-MWLNR-24-4	SB-MWLNL-24-4	WNMA-432	1.780	1.500	13.750	0.890	IWSN-433	NL-46	CL-20	XNS-48	TK-00759	–

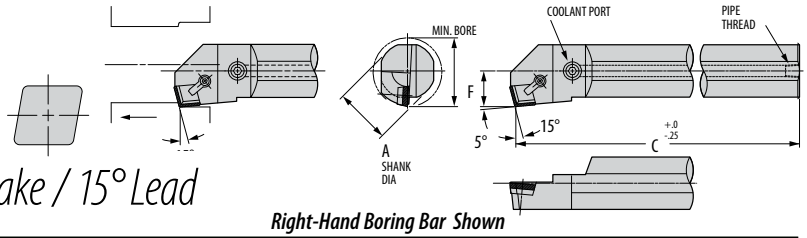
** Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.*

† Coolant port not available.

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SB-CCKPR/L

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



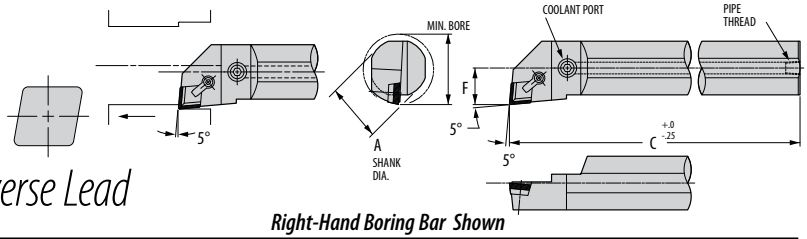
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components					*Tune-Up Kit
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Clamp Screw	Shim	Shim Screw	Chipbreaker	
SB-CCKPR-16-4	SB-CCKPL-16-4	CPGN-422	1.250	1.000	12.000	0.640	CL-7	XNS-35	–	–	CBDC-415L	TK-00820
SB-CCKPR-20-4	SB-CCKPL-20-4	CPGN-422	1.468	1.250	13.750	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	1.500	13.750	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	1.750	13.750	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	2.000	16.000	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	2.250	16.000	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	2.500	16.000	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 toolholder.*

SB-CCLPR/L

Style L / 80° Diamond / Positive Rake / 5° Reverse Lead



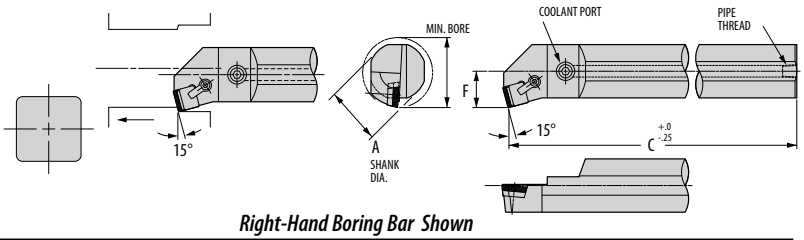
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components					*Tune-Up Kit
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Clamp Screw	Shim	Shim Screw	Chipbreaker	
SB-CCKPR-16-4	SB-CCKPL-16-4	CPGN-422	1.250	1.000	12.000	0.640	CL-7	XNS-35	–	–	CBDC-4L	TK-00705
SB-CCKPR-20-4	SB-CCKPL-20-4	CPGN-422	1.468	1.250	13.750	0.765	CL-20	XNS-47	CSP-422	#4-40 x 1/4 F.H.C.S.	CBDC-4L	TK-00746
SB-CCKPR-24-4	SB-CCKPL-24-4	CPGN-422	1.718	1.500	13.750	0.890	CL-20	XNS-47	CSP-422	#4-40 x 1/4 F.H.C.S.	CBDC-4L	TK-00746
SB-CCKPR-28-4	SB-CCKPL-28-4	CPGN-422	1.968	1.750	13.750	1.015	CL-20	XNS-47	CSP-422	#4-40 x 1/4 F.H.C.S.	CBDC-4L	TK-00746
SB-CCKPR-32-6	SB-CCKPL-32-6	CPGN-633	2.468	2.000	16.000	1.281	CL-30	XNS-59	CSP-632	#5-40 x 3/8 F.H.C.S.	CBDC-6G	TK-00532
SB-CCKPR-36-6	SB-CCKPL-36-6	CPGN-633	2.718	2.250	16.000	1.406	CL-30	XNS-59	CSP-632	#5-40 x 3/8 F.H.C.S.	CBDC-6G	TK-00532
SB-CCKPR-40-6	SB-CCKPL-40-6	CPGN-633	2.968	2.500	16.000	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 toolholder.*

SB-CSKPR/L

Style K / Square / Positive Rake / 15° Lead



Right-Hand Boring Bar Shown

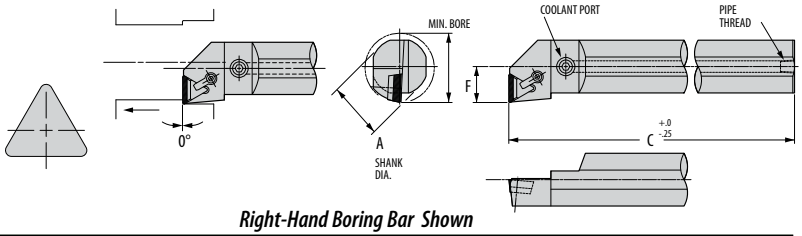
Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components					*Tune-Up Kit
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Clamp Screw	Shim	Shim Screw	Chipbreaker	
SB-CSKPR-16-4	**SB-CSKPL-16-4**	SPGN-422	1.250	1.000	12.000	0.640	CL-7	XNS-35	–	–	CBS-4G	TK-00757
SB-CSKPR-20-4	**SB-CSKPL-20-4**	SPGN-422	1.468	1.250	13.750	0.765	CL-20	XNS-47	–	–	CBS-4G	TK-00776
SB-CSKPR-24-4	**SB-CSKPL-24-4**	SPGN-422	1.718	1.500	13.750	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	1.750	13.750	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	2.000	16.000	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	2.250	16.000	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	2.500	16.000	1.531	CL-30	XNS-59	SP-60	#8-32 x 1/2 F.H.C.S.	CBS-6G	TK-00825

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SB-CTFPR/L

Style F / Triangle / Positive Rake / 0° Lead



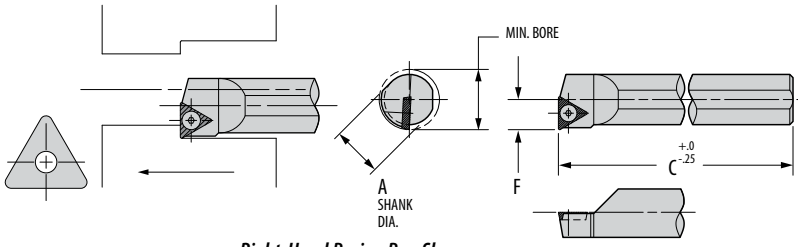
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components					*Tune-Up Kit
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Clamp Screw	Shim	Shim Screw	Chipbreaker	
SB-CTFPR-16-3	SB-CTFPL-16-3	TPGN-322	1.250	1.000	12.000	0.640	CL-7	XNS-35	–	–	CBT-3G	TK-00655
SB-CTFPR-20-3	SB-CTFPL-20-3	TPGN-322	1.468	1.250	13.750	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	1.500	13.750	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	1.750	13.750	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	1.500	13.750	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	1.750	13.750	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	2.000	16.000	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	2.250	16.000	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	2.500	16.000	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 toolholder.*

S-STFNR/L

Style F / Triangle / Positive Rake / 0° Lead



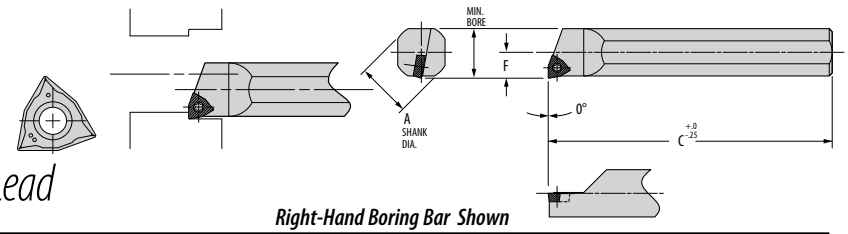
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Std Components	*Tune-Up Kit
Right Hand	Left Hand	Inserts		A	C	F	Insert Screw	
S-STFNR-6-2	S-STFNL-6-2	TP-41	0.500	0.375	6.000	0.250	#4-40 x 1/4 BHCS	TK-00922
S-STFNR-8-2	S-STFNL-8-2	TP-41	0.625	0.500	8.000	0.312	#4-40 x ¼ BHCS	TK-00922
S-STFNR-10-2	S-STFNL-10-2	TP-41	0.750	0.625	10.000	0.375	#4-40 x 1/4 BHCS	TK-00922
S-STFNR-12-3	S-STFNL-12-3	TPGA-322	1.000	0.750	10.000	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 toolholder.*

S-SWFCR/L

Style F / Screw-On Trigon / Solid Steel / 0° Lead



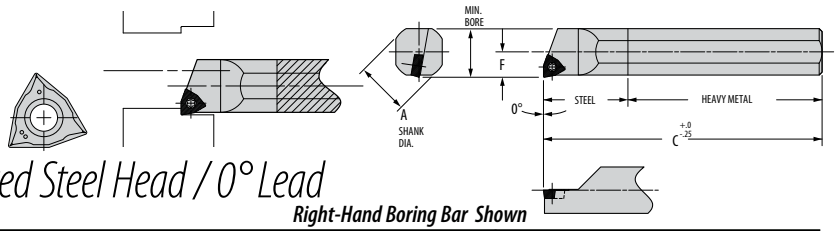
Right-Hand Boring Bar Shown

Part Number		Gage		Dimensions (inches)			Std Components	
Right Hand	Left Hand	Inserts	Minimum Bore	A	F	C	Insert Screw	*Tune-Up Kit
S06-SWFCR-2-050	S06-SWFCL-2-050	WCMT-21.51	0.438	0.375	0.219	5	PT-589T	TK-00804
S08-SWFCR-2-060	S08-SWFCL-2-060	WCMT-21.51	0.563	0.500	0.281	6	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	PT-559T	TK-00807
S10-SWFCR-3-040	S10-SWFCL-3-040	WCMT-32.51	0.719	0.625	0.359	4	PT-559T	TK-00807
S10-SWFCR-3-070	S10-SWFCL-3-070	WCMT-32.51	0.719	0.625	0.359	7	PT-559T	TK-00807
S12-SWFCR-3-040	S12-SWFCL-3-040	WCMT-32.51	0.844	0.750	0.422	4	PT-559T	TK-00807
S12-SWFCR-3-080	S12-SWFCL-3-080	WCMT-32.51	0.844	0.750	0.422	8	PT-559T	TK-00807
S16-SWFCR-3-050	S16-SWFCL-3-050	WCMT-32.51	1.094	1.000	0.547	5	PT-559T	TK-00807
S16-SWFCR-3-100	S16-SWFCL-3-100	WCMT-32.51	1.094	1.000	0.547	10	PT-559T	TK-00807
S20-SWFCR-3-120	S20-SWFCL-3-120	WCMT-32.51	1.344	1.250	0.672	12	PT-559T	TK-00807

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

C-SWFCR/L

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



Right-Hand Boring Bar Shown

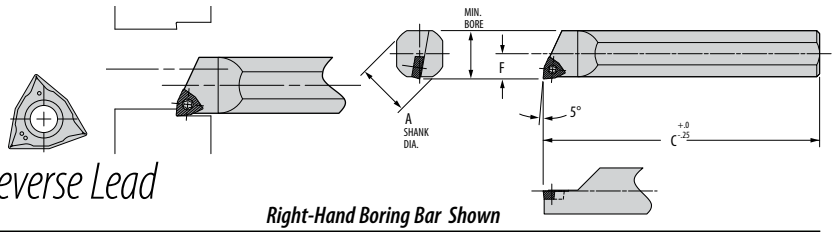
Part Number		Gage		Dimensions (inches)			Std Components	
Right Hand	Left Hand	Inserts	Minimum Bore	A	F	C	Insert Screw	*Tune-Up Kit
C06-SWFCR-2-060	C06-SWFCL-2-060	WCMT-21.51	0.438	0.375	0.219	6.000	PT-589T	TK-00804
C06-SWFCR-2-080	C06-SWFCL-2-080	WCMT-21.51	0.438	0.375	0.219	8.000	PT-589T	TK-00804
C08-SWFCR-2-060	C08-SWFCL-2-060	WCMT-21.51	0.563	0.500	0.281	6.000	PT-589T	TK-00804
C08-SWFCR-2-080	C08-SWFCL-2-080	WCMT-21.51	0.563	0.500	0.281	8.000	PT-589T	TK-00804
C10-SWFCR-3-060	C10-SWFCL-3-060	WCMT-32.51	0.719	0.625	0.359	6.000	PT-559T	TK-00807
C10-SWFCR-3-100	C10-SWFCL-3-100	WCMT-32.51	0.719	0.625	0.359	10.000	PT-559T	TK-00807
C12-SWFCR-3-060	C12-SWFCL-3-060	WCMT-32.51	0.844	0.750	0.422	6.000	PT-559T	TK-00807
C12-SWFCR-3-100	C12-SWFCL-3-100	WCMT-32.51	0.844	0.750	0.422	10.000	PT-559T	TK-00807
C16-SWFCR-3-060	C16-SWFCL-3-060	WCMT-32.51	1.094	1.000	0.547	6.000	PT-559T	TK-00807
C16-SWFCR-3-120	C16-SWFCL-3-120	WCMT-32.51	1.094	1.000	0.547	12.000	PT-559T	TK-00807

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

These boring bars do not use coolant.

S-SWLCR/L

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



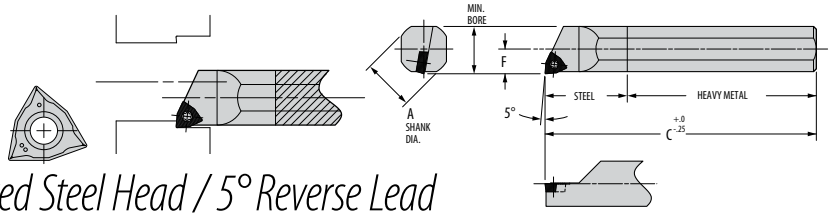
Right-Hand Boring Bar Shown

Part Number		Gage		Dimensions (inches)			Std Components	
Right Hand	Left Hand	Inserts	Minimum Bore	A	F	C	Insert Screw	*Tune-Up Kit
S06-SWLCR-2-050	S06-SWLCL-2-050	WCMT-21.51	0.438	0.375	0.219	5.000	PT-589T	TK-00804
S08-SWLCR-2-060	S08-SWLCL-2-060	WCMT-21.51	0.563	0.500	0.281	6.000	PT-589T	TK-00804
S08-SWLCR-3-025	S08-SWLCL-3-025	WCMT-32.51	0.625	0.500	0.312	2.500	PT-559T	TK-00807
S08-SWLCR-3-060	S08-SWLCL-3-060	WCMT-32.51	0.625	0.500	0.312	6.000	PT-559T	TK-00807
S10-SWLCR-3-040	S10-SWLCL-3-040	WCMT-32.51	0.719	0.625	0.359	4.000	PT-559T	TK-00807
S10-SWLCR-3-070	S10-SWLCL-3-070	WCMT-32.51	0.719	0.625	0.359	7.000	PT-559T	TK-00807
S12-SWLCR-3-040	S12-SWLCL-3-040	WCMT-32.51	0.844	0.750	0.422	4.000	PT-559T	TK-00807
S12-SWLCR-3-080	S12-SWLCL-3-080	WCMT-32.51	0.844	0.750	0.422	8.000	PT-559T	TK-00807
S16-SWLCR-3-050	S16-SWLCL-3-050	WCMT-32.51	1.094	1.000	0.547	5.000	PT-559T	TK-00807
S16-SWLCR-3-100	S16-SWLCL-3-100	WCMT-32.51	1.094	1.000	0.547	10.000	PT-559T	TK-00807
S20-SWLCR-3-120	S20-SWLCL-3-120	WCMT-32.51	1.344	1.250	0.672	12.000	PT-559T	TK-00807

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

C-SWLCR/L

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



Right-Hand Boring Bar Shown

Part Number		Gage		Dimensions (inches)			Std Components	
Right Hand	Left Hand	Inserts	Minimum Bore	A	F	C	Insert Screw	*Tune-Up Kit
C06-SWLCR-2-060	C06-SWLCL-2-060	WCMT-21.51	0.438	0.375	0.219	6.000	PT-589T	TK-00804
C06-SWLCR-2-080	C06-SWLCL-2-080	WCMT-21.51	0.438	0.375	0.219	8.000	PT-589T	TK-00804
C08-SWLCR-2-060	C08-SWLCL-2-060	WCMT-21.51	0.563	0.500	0.281	6.000	PT-589T	TK-00804
C08-SWLCR-2-080	C08-SWLCL-2-080	WCMT-21.51	0.563	0.500	0.281	8.000	PT-589T	TK-00804
C10-SWLCR-3-060	C10-SWLCL-3-060	WCMT-32.51	0.719	0.625	0.359	6.000	PT-559T	TK-00807
C10-SWLCR-3-100	C10-SWLCL-3-100	WCMT-32.51	0.719	0.625	0.359	10.000	PT-559T	TK-00807
C12-SWLCR-3-060	C12-SWLCL-3-060	WCMT-32.51	0.844	0.750	0.422	6.000	PT-559T	TK-00807
C12-SWLCR-3-100	C12-SWLCL-3-100	WCMT-32.51	0.844	0.750	0.422	10.000	PT-559T	TK-00807
C16-SWLCR-3-060	C16-SWLCL-3-060	WCMT-32.51	1.094	1.000	0.547	6.000	PT-559T	TK-00807
C16-SWLCR-3-120	C16-SWLCL-3-120	WCMT-32.51	1.094	1.000	0.547	12.000	PT-559T	TK-00807

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

These boring bars do not use coolant.

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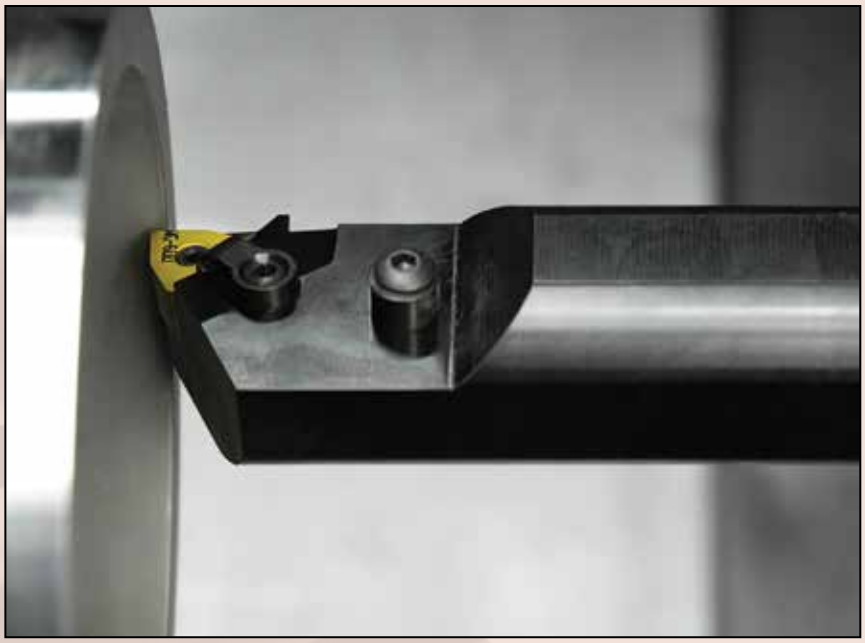
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Boring Bars for Ceramic Inserts

This section contains boring bars using the ceramic inserts 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.

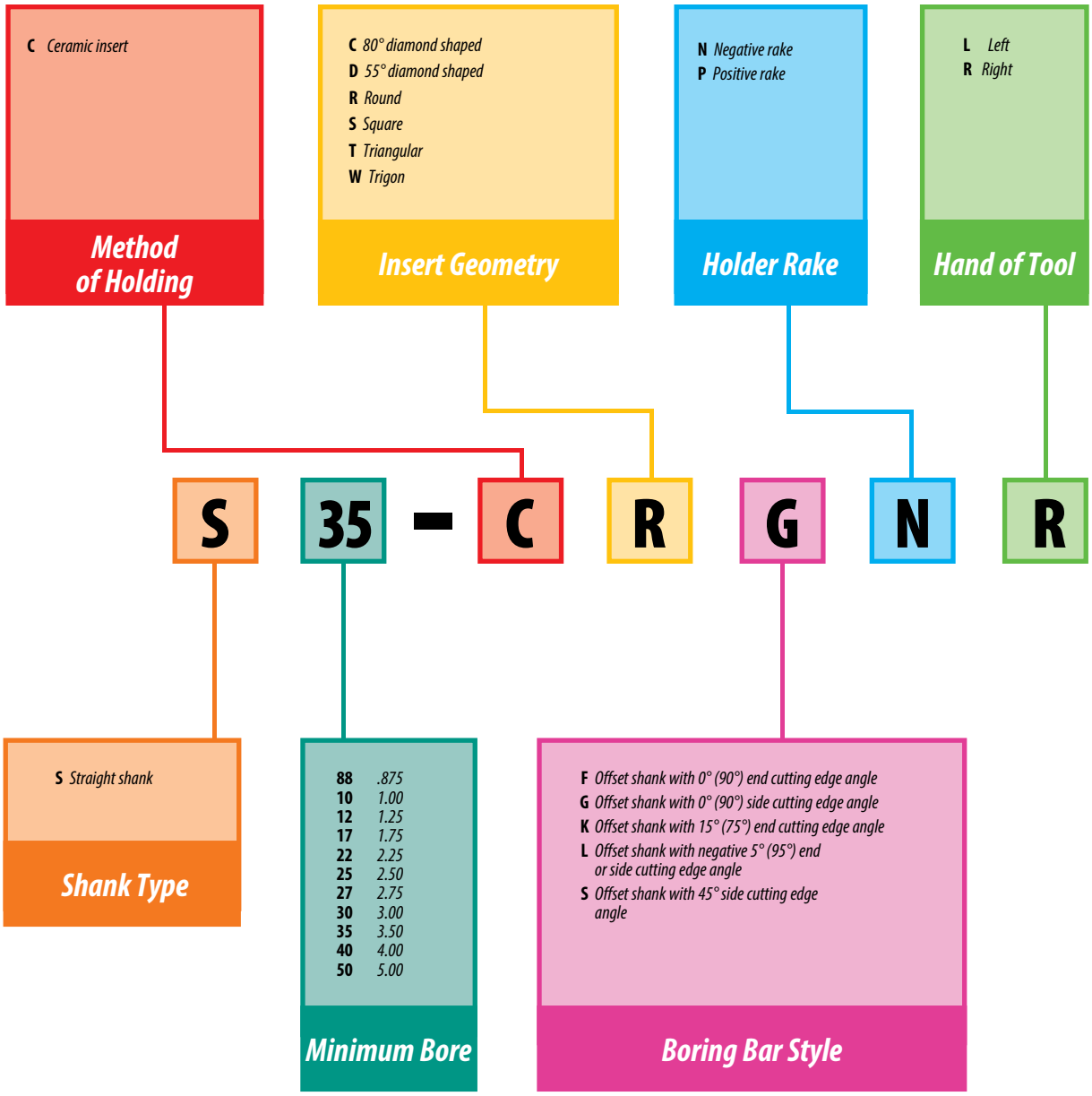
Greenleaf's boring bar capability includes numerous additional styles not shown in this catalog. Contact us if you do not see the bar you need. Our special design and build services can be counted on to meet your individual needs.



Greenleaf 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.

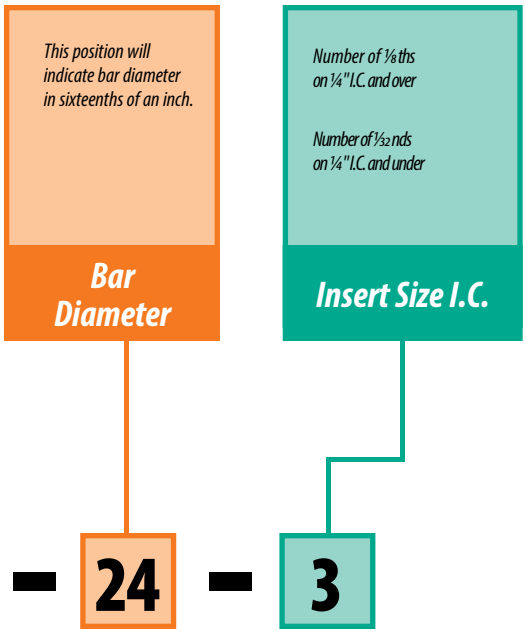


Ceramic-Insert Boring Bar Identification System



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

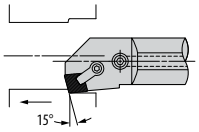
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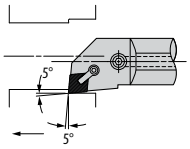
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Pictorial Index

80°/100° Diamond – Negative

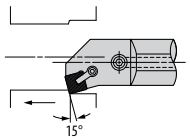


S-CCKNR/L
Style K
80° Diamond
(Using 100° Corner)
Negative Rake
15° Lead
page: T 130

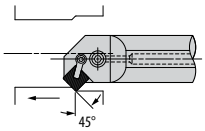


S-CCLNR/L
Style L
80° Diamond
Negative Rake
5° Reverse Lead
page: T 130

Square – Negative

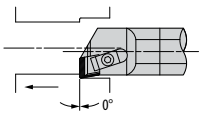


S-CSKNR/L
Style K
Square
Negative Rake
15° Lead
page: T 132

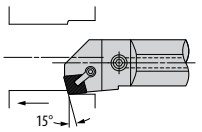


S-CSSNR/L
Style S
Square
Negative Rake
45° Lead
page: T 132

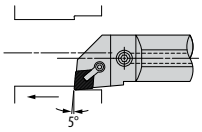
80° Diamond – Positive



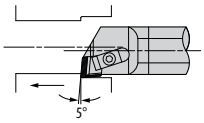
S-CCFPR/L
Style F
Heavy Metal Shank
80° Diamond
Positive Rake
0° Lead
page: T 134



S-CCKPR/L
Style K
80° Diamond
(Using 100° Corner)
Positive Rake
15° Lead
page: T 134

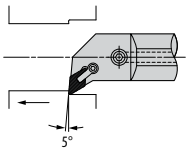


S-CCLPR/L
Style L
80° Diamond
Positive Rake
5° Reverse Lead
page: T 134



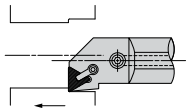
S-CCLPR/L
Style L
Heavy Metal Shank
80° Diamond
Positive Rake
5° Reverse Lead
page: T 135

55° Diamond – Negative



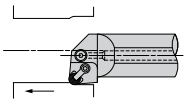
S-CDLNR/L
Style L
55° Diamond
Negative Rake
5° Reverse Lead
page: T 131

Triangle – Negative



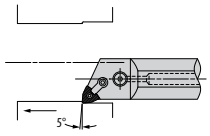
S-CTFNR/L
Style F
Triangle
Negative Rake
0° Lead
page: T 133

Round – Negative



S-CRGNR/L
Style G
Round
Negative Rake
page: T 131

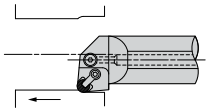
Trigon – Negative



S-CWLNR/L
Style L
Trigon
Negative Rake
5° Reverse Lead
page: T 133

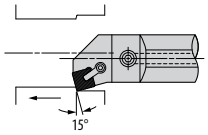
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Round – Positive

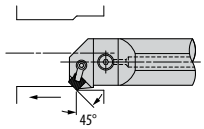


S-CRGPR/L
Style G
Round
Positive Rake
page: T 135

Square – Positive

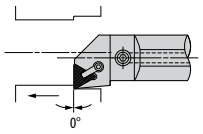


S-CSKPR/L
Style K
Square
Positive Rake
15° Lead
page: T 136

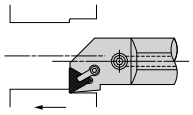


S-CSSPR/L
Style S
Square
Positive Rake
45° Lead
page: T 136

Triangle – Positive



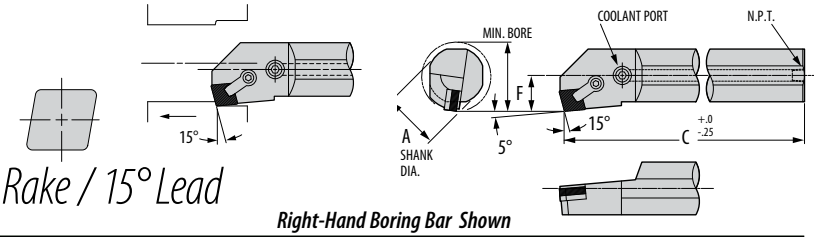
S-CTFPR/L
Style F
Triangle
Positive Rake
0° Lead
page: T 137



S-STFNR/L
Style F
Triangle
Positive Rake
0° Lead
page: T 137

S-CCKNR/L

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



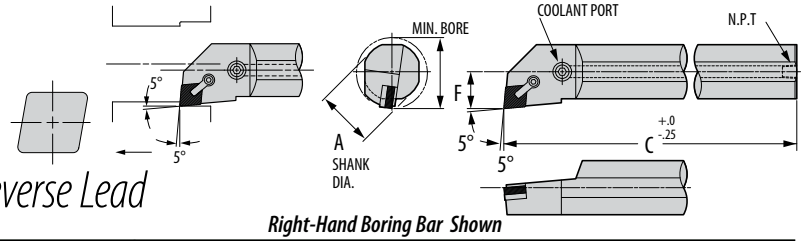
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp
S30-CCKNR-16-4	S30-CCKNL-16-4	CNGN-432	1.500	1.000	12.000	0.640	–	–	CL-12	XNS-58	TK-00670	NL-44	CL-9
S40-CCKNR-24-4	S40-CCKNL-24-4	CNGN-432	2.700	1.500	13.750	0.890	CSN-433	S-46S	CL-12	XNS-59	TK-00677	NL-46	CL-9
S40-CCKNR-32-4	S40-CCKNL-32-4	CNGN-432	2.700	2.000	16.000	1.140	CSN-433	S-46	CL-12	XNS-59	TK-00678	NL-46	CL-9
S50-CCKNR-32-6	S50-CCKNL-32-6	CNGN-643	3.400	2.000	16.000	1.281	CSN-633	S-68	CL-30	XNS-59	TK-00711	NL-68	CL-12
S50-CCKNR-40-6	S50-CCKNL-40-6	CNGN-643	3.250	2.500	16.000	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 toolholder.*

S-CCLNR/L

Style L / 80° Diamond / Negative Rake / 5° Reverse Lead



Right-Hand Boring Bar Shown

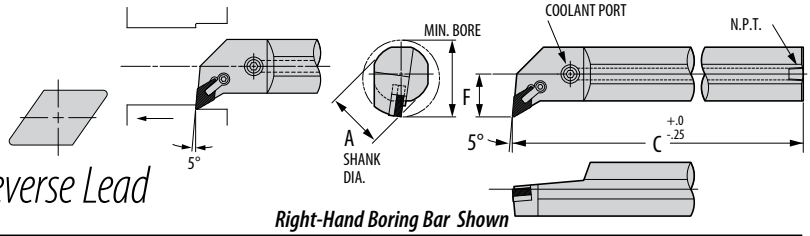
Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp
S30-CCLNR-16-4	S30-CCLNL-16-4	CNGN-432	1.500	1.000	12.000	0.640	–	–	CL-12	XNS-58	TK-00670	NL-44	CL-9
S40-CCLNR-24-4	S40-CCLNL-24-4	CNGN-432	4.000	2.700	13.750	0.890	CSN-433	S-46	CL-12	XNS-59	TK-00678	NL-46	CL-9
S40-CCLNR-32-4	S40-CCLNL-32-4	CNGN-432	4.000	2.700	16.000	1.140	CSN-433	S-46	CL-12	XNS-59	TK-00678	NL-46	CL-9
S50-CCLNR-32-6	S50-CCLNL-32-6	CNGN-643	5.000	2.700	16.000	1.281	CSN-633	S-68	CL-30	XNS-59	TK-00711	NL-68	CL-12
S50-CCLNR-40-6	S50-CCLNL-40-6	CNGN-643	5.000	2.500	16.000	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 toolholder.*

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S-CDLNR/L

Style L / 55° Diamond / Negative Rake / 5° Reverse Lead



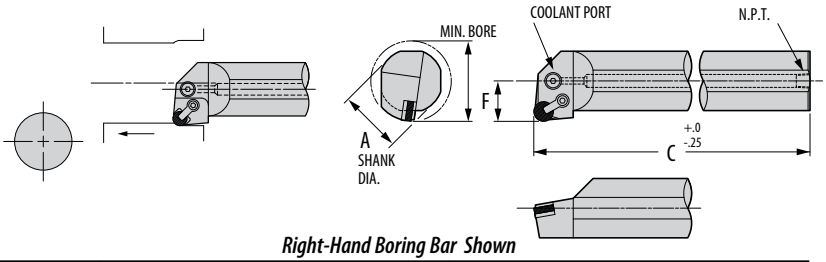
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp
S35-CDLNR-24-3	S35-CDLNL-24-3	DNGN-322	2.250	1.500	13.750	1.000	DSN-333	S-34	CL-12	XNS-59	TK-00513	NL-34L	–
S35-CDLNR-32-3	S35-CDLNL-32-3	DNGN-322	3.500	2.000	16.000	1.250	DSN-333	S-34	CL-12	XNS-59	TK-00513	NL-34L	–
S40-CDLNR-32-4	S40-CDLNL-32-4	DNGN-432	2.400	2.000	16.000	1.375	DSN-433	S-46	CL-30	XNS-59	TK-00514	NL-46	CL-12
S40-CDLNR-40-4	S40-CDLNL-40-4	DNGN-432	2.900	2.500	16.000	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 toolholder.*

S-CRGNR/L

Style G / Round / Negative Rake



Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components		
Right Hand	Left Hand	Inserts		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw		Clamp	Combination	
													Insert Thick.	Shim Seat
S30-CRGNR-24-3	S30-CRGNL-24-3	RNGN-33	3.000	1.500	13.750	1.015	–	–	CL-6	XNS-36	TK-00671	CL-6	–	–
S30-CRGNR-32-3	S30-CRGNL-32-3	RNGN-33	3.000	2.000	16.000	1.265	–	–	CL-6	XNS-36	TK-00671	CL-6	–	–
S35-CRGNR-32-4	S35-CRGNL-32-4	RNGN-43	3.500	2.000	16.000	1.281	IRSN-42	S-46	CL-12	XNS-59	TK-00674	CL-9	5/16	No shim
S35-CRGNR-40-4	S35-CRGNL-40-4	RNGN-43	3.500	2.500	16.000	1.531	IRSN-42	S-46	CL-12	XNS-59	TK-00674	CL-9	5/16	No shim
S50-CRGNR-32-4	S50-CRGNL-32-4	RNGN-45	5.000	2.000	16.000	1.281	IRSN-43	S-46	CL-12	XNS-59	TK-00516	CL-9	3/16 †or	IRSN-45
S50-CRGNR-40-4	S50-CRGNL-40-4	RNGN-45	5.000	2.500	16.000	1.531	IRSN-43	S-46	CL-12	XNS-59	TK-00516	CL-9	1/4	IRSN-44
S35-CRGNR-32-5	S35-CRGNL-32-5	RNGN-55	3.500	2.000	16.000	1.281	–	–	CL-12	XNS-59	TK-00675	CL-9	3/16	RSN-52
S35-CRGNR-40-5	S35-CRGNL-40-5	RNGN-55	3.500	2.500	16.000	1.531	–	–	CL-12	XNS-59	TK-00675	CL-9	3/16	RSN-52
S50-CRGNR-32-5	S50-CRGNL-32-5	RNGN-55	5.000	2.000	16.000	1.281	RSN-53	S-58	CL-12	XNS-59	TK-00517	CL-9	3/16 †or	RSN-55
S50-CRGNR-40-5	S50-CRGNL-40-5	RNGN-55	5.000	2.500	16.000	1.531	RSN-53	S-58	CL-12	XNS-59	TK-00517	CL-9	¼	RSN-54
S35-CRGNR-32-6	S35-CRGNL-32-6	RNGN-65	3.500	2.000	16.000	1.281	–	–	CL-30	XNS-59	TK-00676	CL-12	3/16	RSN-62
S35-CRGNR-40-6	S35-CRGNL-40-6	RNGN-65	3.500	2.500	16.000	1.531	–	–	CL-30	XNS-59	TK-00676	CL-12	3/16	RSN-62
S50-CRGNR-32-6	S50-CRGNL-32-6	RNGN-65	5.000	2.000	16.000	1.281	RSN-63	S-68	CL-30	XNS-59	TK-00518	CL-12	3/16 †or	RSN-65
S50-CRGNR-40-6	S50-CRGNL-40-6	RNGN-65	5.000	2.500	16.000	1.531	RSN-63	S-68	CL-30	XNS-59	TK-00518	CL-12	1/4	RSN-64

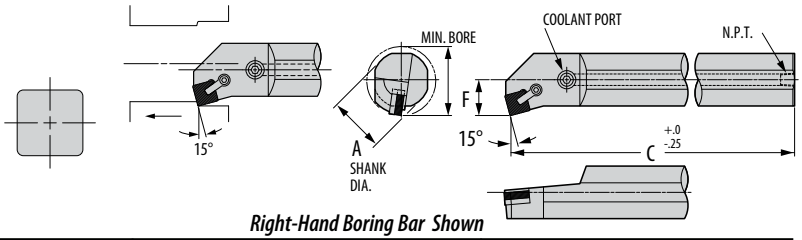
** Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.*

† Insert thickness will need to correspond with the proper shim seat thickness.

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S-CSKNR/L

Style K / Square / Negative Rake / 15° Lead



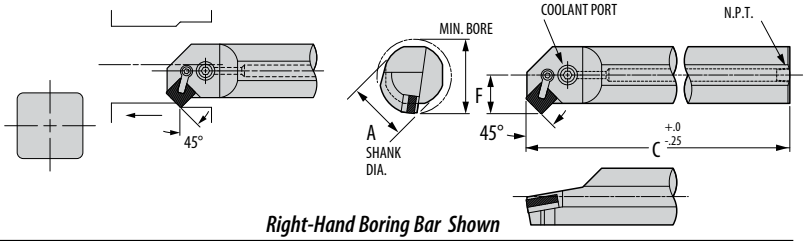
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp
S30-CSKNR-16-4	S30-CSKNL-16-4	SNGN-432	3.000	1.000	12.000	0.640	–	–	CL-12	XNS-58	TK-00672	NL-44	CL-9
S40-CSKNR-24-4	S40-CSKNL-24-4	SNGN-432	4.000	1.500	13.750	0.890	ISSN-433	S-46	CL-12	XNS-59	TK-00723	NL-46	CL-9
S40-CSKNR-32-4	S40-CSKNL-32-4	SNGN-432	4.000	2.000	16.000	1.140	ISSN-433	S-46	CL-12	XNS-59	TK-00679	NL-46	CL-9
S50-CSKNR-32-5	S50-CSKNL-32-5	SNGN-543	5.000	2.000	16.000	1.281	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9
S50-CSKNR-40-5	S50-CSKNL-40-5	SNGN-543	5.000	2.500	16.000	1.531	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9
S50-CSKNR-32-6	S50-CSKNL-32-6	SNGN-643	5.000	2.000	16.000	1.281	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12
S50-CSKNR-40-6	S50-CSKNL-40-6	SNGN-643	5.000	2.500	16.000	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 toolholder.*

S-CSSNR/L

Style S / Square / Negative Rake / 45° Lead



Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp
S30-CSSNR-16-4	S30-CSSNL-16-4	SNGN-432	3.000	1.000	12.000	0.640	–	–	CL-12	XNS-59	TK-00675	NL-44	CL-9
S40-CSSNR-24-4	S40-CSSNL-24-4	SNGN-432	4.000	1.500	13.750	0.890	ISSN-433	S-46	CL-12	XNS-59	TK-00679	NL-46	CL-9
S40-CSSNR-32-4	S40-CSSNL-32-4	SNGN-432	4.000	2.000	16.000	1.140	ISSN-433	S-46	CL-12	XNS-59	TK-00679	NL-46	CL-9
S50-CSSNR-32-5	S50-CSSNL-32-5	SNGN-543	5.000	2.000	16.000	1.281	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9
S50-CSSNR-40-5	S50-CSSNL-40-5	SNGN-543	5.000	2.500	16.000	1.531	SSN-533	S-58	CL-12	XNS-59	TK-00520	NL-58	CL-9
S50-CSSNR-32-6	S50-CSSNL-32-6	SNGN-643	5.000	2.000	16.000	1.281	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12
S50-CSSNR-40-6	S50-CSSNL-40-6	SNGN-643	5.000	2.500	16.000	1.531	ISSN-633	S-68	CL-30	XNS-59	TK-00521	NL-68	CL-12

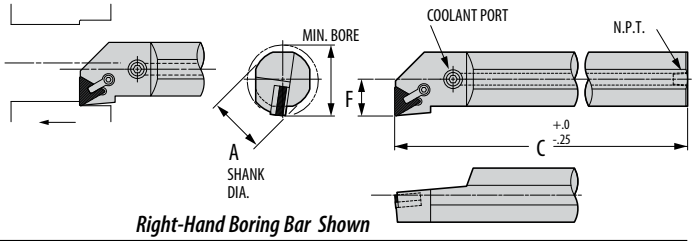
** Tune-Up Kits include one complete set of Standard Components to allow you to refurbish the toolholder.*

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S-CTFNR/L

Style F / Triangle / Negative Rake / 0° Lead





Right-Hand Boring Bar Shown

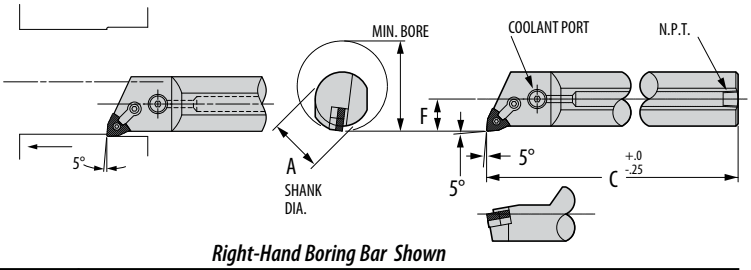
Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts		A	C	F	Clamp	Seat Screw	Clamp	Clamp Screw		Lock Pin	Clamp
S30-CTFNR-16-3	S30-CTFNL-16-3	TNGN-332	3.000	1.000	12.000	0.640	–	–	CL-7	XNS-36	TK-00719	NL-33L	CL-6
S35-CTFNR-24-3	S35-CTFNL-24-3	TNGN-332	3.500	1.500	13.750	0.890	ITSN-322	S-34	CL-7	XNS-36	TK-00522	NL-34L	CL-6
S40-CTFNR-24-4	S40-CTFNL-24-4	TNGN-432	4.000	1.500	13.750	1.031	ITSN-432	S-46	CL-12	XNS-59	TK-00680	NL-46	CL-9
S40-CTFNR-32-4	S40-CTFNL-32-4	TNGN-432	4.000	2.000	16.000	1.281	ITSN-432	S-46	CL-12	XNS-59	TK-00680	NL-46	CL-9
S40-CTFNR-40-4	S40-CTFNL-40-4	TNGN-432	4.000	2.500	16.000	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 toolholder.*

S-CWLNR/L

Style L / Trigon / Negative Rake / 5° Reverse Lead





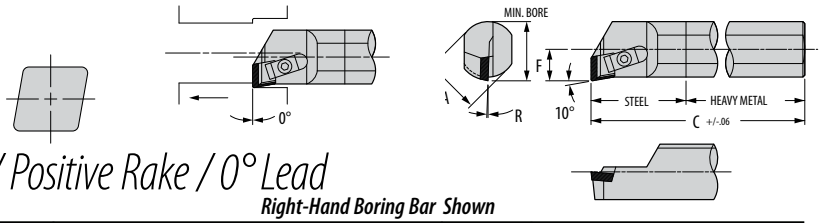
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts		A	C	F	Shim Seat	Lock Pin	Clamp	Clamp Screw	
S30-CWLNR-16-3	S30-CWLNL-16-3	WNGA-332	3.000	1.000	12.000	0.640	–	NL-33L	CL-6	XNS-36	TK-00740
S35-CWLNR-24-3	S35-CWLNL-24-3	WNGA-332	3.500	1.500	13.750	0.890	IWSN-322	NL-34L	CL-6	XNS-36	TK-00777
S30-CWLNR-16-4	S30-CWLNL-16-4	WNGA-432	3.000	1.000	12.000	0.640	–	NL-44	CL-20	XNS-48	TK-00887
S40-CWLNR-24-4	S40-CWLNL-24-4	WNGA-432	4.000	1.500	13.750	0.890	IWSN-433	NL-46	CL-20	XNS-48	TK-00759
S40-CWLNR-32-4	S40-CWLNL-32-4	WNGA-432	4.000	2.000	16.000	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 toolholder.*

S-CCFPR/L

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



Right-Hand Boring Bar Shown

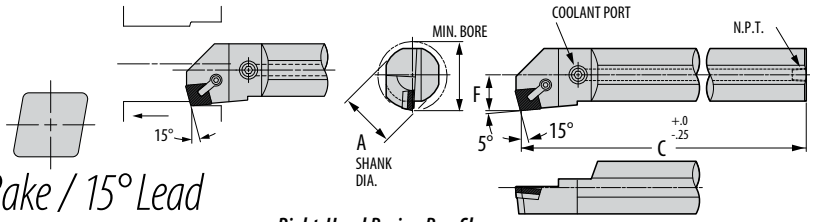
Part Number		Gage	Min. Bore	Dimensions (inches)				Standard Components				Eff. Width	*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts		A	C	F	R	Clamp	Clamp Screw	Chipbreaker	Chipbreaker			Chip-breaker†	Eff. Width
S88-CCFPR-12-3	—	CPGN-321	0.875	0.750	10.000	0.437	3°	33704	#6-32 x 1/2 B.H.C.S.	307378-R	—	.093"	TK-00682	307377-R	0.062
—	S88-CCFPL-12-3	CPGN-321	0.875	0.750	10.000	0.437	3°	33704	#6-32 x 1/2 B.H.C.S.	—	307378-L	.093"	TK-00681	307377-L	0.062
S10-CCFPR-14-3	—	CPGN-321	1.000	0.875	10.000	0.500	2°	33704	#6-32 x 1/2 B.H.C.S.	307378-R	—	.093"	TK-00682	307379-R	0.125
—	S10-CCFPL-14-3	CPGN-321	1.000	0.875	10.000	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 toolholder.*

† *Specifiy 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



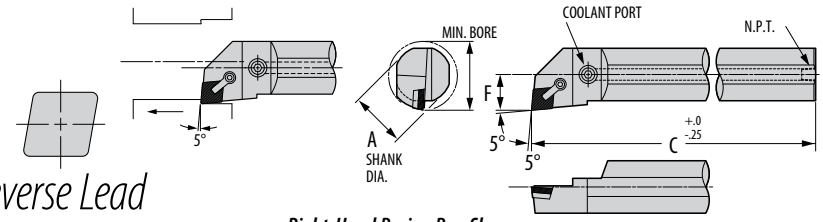
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
S12-CCKPR-16-4	S12-CCKPL-16-4	CPGN-432	1.250	1.000	12.000	0.640	–	–	CL-22	XNS-46	TK-00666
S17-CCKPR-24-4	S17-CCKPL-24-4	CPGN-432	1.718	1.500	13.750	0.890	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
S22-CCKPR-32-4	S22-CCKPL-32-4	CPGN-432	2.218	2.000	16.000	1.140	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
S27-CCKPR-40-4	S27-CCKPL-40-4	CPGN-432	2.718	2.500	16.000	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 toolholder.*

S-CCLPR/L

Style L / 80° Diamond / Positive Rake / 5° Reverse Lead



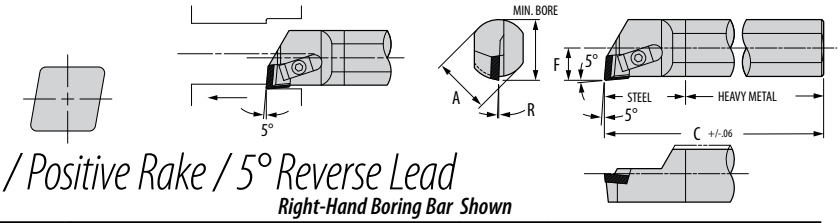
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
S12-CCLPR-16-4	S12-CCLPL-16-4	CPGN-432	1.250	1.000	12.000	0.640	–	–	CL-22	XNS-46	TK-00666
S17-CCLPR-24-4	S17-CCLPL-24-4	CPGN-432	1.718	1.500	13.750	0.890	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00501
S22-CCLPR-32-4	S22-CCLPL-32-4	CPGN-432	2.218	2.000	16.000	1.140	SP-49	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00669
S27-CCLPR-40-4	S27-CCLPL-40-4	CPGN-432	2.718	2.500	16.000	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 toolholder.*

S-CCLPR/L

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



Right-Hand Boring Bar Shown

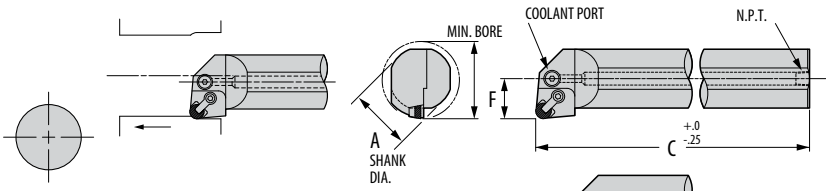
Part Number		Gage	Min. Bore	Dimensions (inches)				Standard Components				Eff. Width	*Tune-Up Kit	Optional Components	
Right Hand	Left Hand	Inserts		A	C	F	R	Clamp	Clamp Screw	Chipbreaker	Chipbreaker			Chip-breaker†	Eff. Width
S88-CCLPR-12-3	—	CPGN-321	0.875	0.750	10.000	0.437	3°	33704	#6-32 x 1/2 B.H.C.S.	307378-R	—	.093″	TK-00682	307377-R	0.062
—	S88-CCLPL-12-3	CPGN-321	0.875	0.750	10.000	0.437	3°	33704	#6-32 x 1/2 B.H.C.S.	—	307378-L	.093″	TK-00681	307377-L	0.062
S10-CCLPR-14-3	—	CPGN-321	1.000	0.875	10.000	0.500	2°	33704	#6-32 x 1/2 B.H.C.S.	307378-R	—	.093″	TK-00682	307379-R	0.125
—	S10-CCLPL-14-3	CPGN-321	1.000	0.875	10.000	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 toolholder.*

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

S-CRGPR/L

Style G / Round / Positive Rake



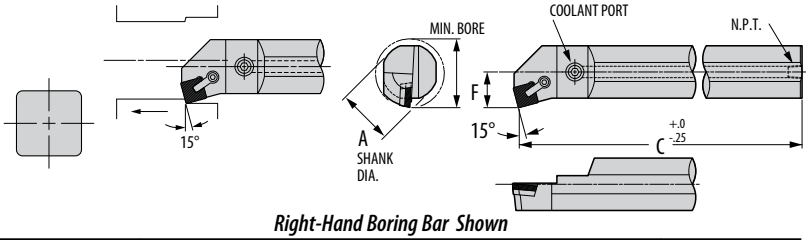
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
S12-CRGPR-16-3	S12-CRGPL-16-3	RPGN-32	1.250	1.000	12.000	0.640	–	–	CL-7	XNS-36	TK-00667
S17-CRGPR-24-3	S17-CRGPL-24-3	RPGN-32	1.718	1.500	13.750	0.890	SP-34	#2-56x 1/4 S.H.C.S.	CL-7	XNS-36	TK-00502
S22-CRGPR-32-3	S22-CRGPL-32-3	RPGN-32	2.218	2.000	16.000	1.140	SP-34	#2-56x 1/4 S.H.C.S.	CL-7	XNS-36	TK-00502
S25-CRGPR-32-4	S25-CRGPL-32-4	RPGN-43	2.468	2.000	16.000	1.281	SP-44	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00503
S30-CRGPR-40-4	S30-CRGPL-40-4	RPGN-43	2.968	2.500	16.000	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 toolholder.*

S-CSKPR/L

Style K / Square / Positive Rake / 15° Lead



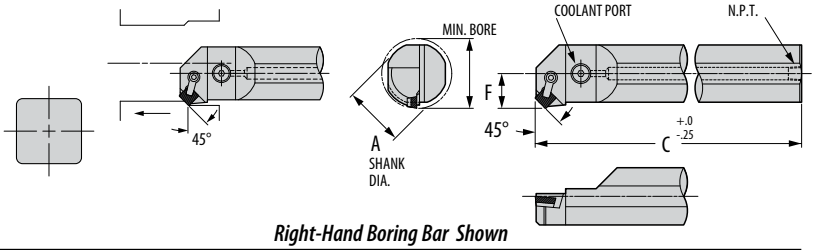
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
S12-CSKPR-16-4	**S12-CSKPL-16-4**	SPGN-432	1.250	1.000	12.000	0.640	–	–	CL-7	XNS-36	TK-00667
S17-CSKPR-24-4	**S17-CSKPL-24-4**	SPGN-432	1.718	1.500	13.750	0.890	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
S22-CSKPR-32-4	**S22-CSKPL-32-4**	SPGN-432	2.218	2.000	16.000	1.140	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
S27-CSKPR-40-4	**S27-CSKPL-40-4**	SPGN-432	2.718	2.500	16.000	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 toolholder.*

S-CSSPR/L

Style S / Square / Positive Rake / 45° Lead



Right-Hand Boring Bar Shown

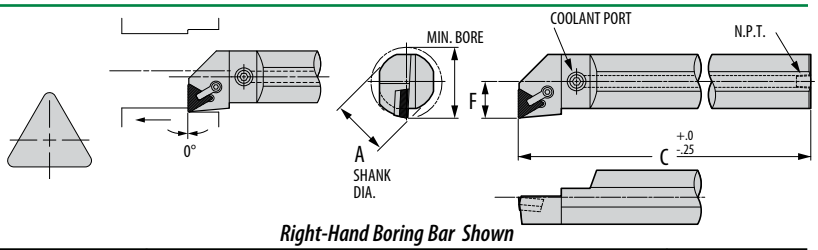
Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
S12-CSSPR-16-4	**S12-CSSPL-16-4**	SPGN-432	1.250	1.000	12.000	0.640	–	–	CL-7	XNS-36	TK-00667
S17-CSSPR-24-4	**S17-CSSPL-24-4**	SPGN-432	1.718	1.500	13.750	0.890	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-58	TK-03027
S22-CSSPR-32-4	**S22-CSSPL-32-4**	SPGN-432	2.218	2.000	16.000	1.140	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504
S27-CSSPR-40-4	**S27-CSSPL-40-4**	SPGN-432	2.718	2.500	16.000	1.390	SP-41	#4-40x 3/8 F.H.C.S.	CL-12	XNS-59	TK-00504

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S-CTFPR/L

Style F / Triangle / Positive Rake / 0° Lead



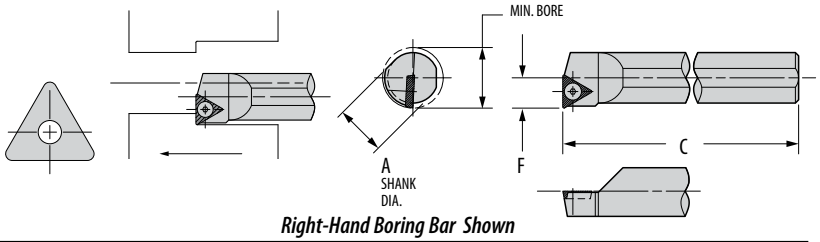
Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components				*Tune-Up Kit
Right Hand	Left Hand	Inserts		A	C	F	Shim Seat	Seat Screw	Clamp	Clamp Screw	
S12-CTFPR-16-3	S12-CTFPL-16-3	TPGN-322	1.250	1.000	12.000	0.640	–	–	CL-7	XNS-35	TK-00668
S17-CTFPR-24-3	S17-CTFPL-24-3	TPGN-322	1.718	1.500	13.750	0.890	SP3A	#4-40x 3/8 F.H.C.S.	CL-7	XNS-36	TK-00507
S20-CTFPR-24-4	S20-CTFPL-24-4	TPGN-432	1.968	1.500	13.750	1.031	SP-4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
S25-CTFPR-32-4	S25-CTFPL-32-4	TPGN-432	2.468	2.000	16.000	1.281	SP-4	#6-32x 1/2 F.H.C.S.	CL-12	XNS-59	TK-00508
S30-CTFPR-40-4	S30-CTFPL-40-4	TPGN-432	2.968	2.500	16.000	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 toolholder.*

S-STFNR/L

Style F / Triangle / Positive Rake / 0° Lead



Right-Hand Boring Bar Shown

Part Number		Gage	Minimum Bore	Dimensions (inches)			Standard Components	*Tune-Up Kit
Right Hand	Left Hand	Inserts		A	C	F	Insert Screw	
S-STFNR-6-2	S-STFNL-6-2	TP-41	0.500	0.375	6.000	0.250	#4-40x1/4BHCS	TK-00922
S-STFNR-8-2	S-STFNL-8-2	TP-41	0.625	0.500	8.000	0.312	#4-40x1/4BHCS	TK-00922
S-STFNR-10-2	S-STFNL-10-2	TP-41	0.750	0.625	10.000	0.375	#4-40x1/4BHCS	TK-00922
S-STFNR-12-3	S-STFNL-12-3	TPGA322	1.000	0.750	10.000	0.500	#6-32x3/8BHCS	TK-00923

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