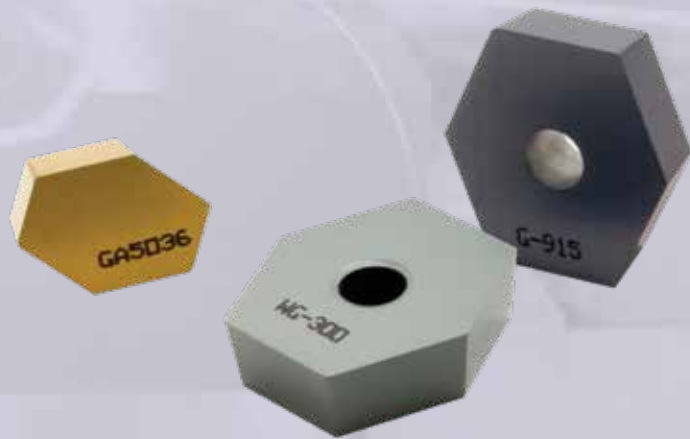


API Ring Groove

Ring Max™ Inserts	RM 02-06
Ring Max™ II	RM 07-14
Ring Max™ III	RM 15-21
Ring Max™ Cartridges	RM 22-24
Ring Max™ STX	RM 25-29
Machining Methods Reference Guide	RM 30
Request Forms	RM 31

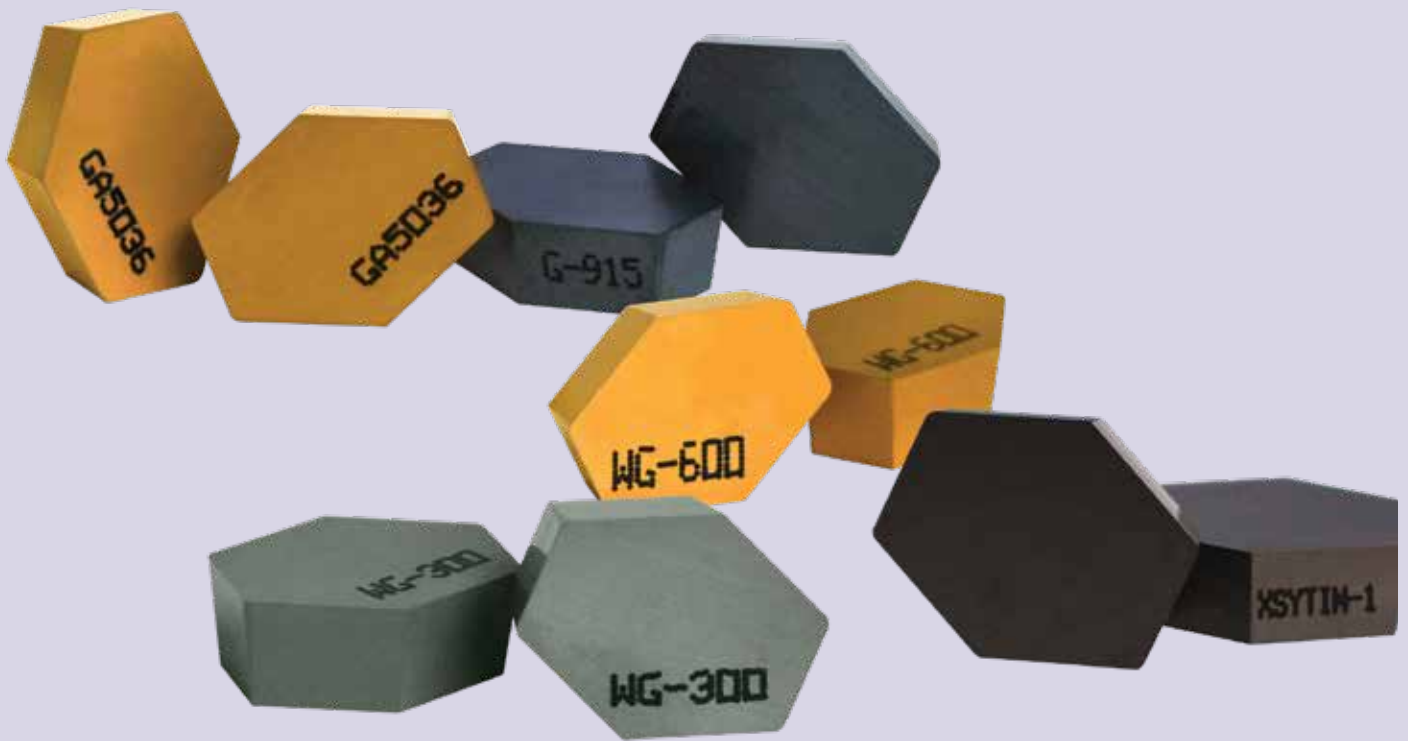




Ring Max™ Grooving Inserts

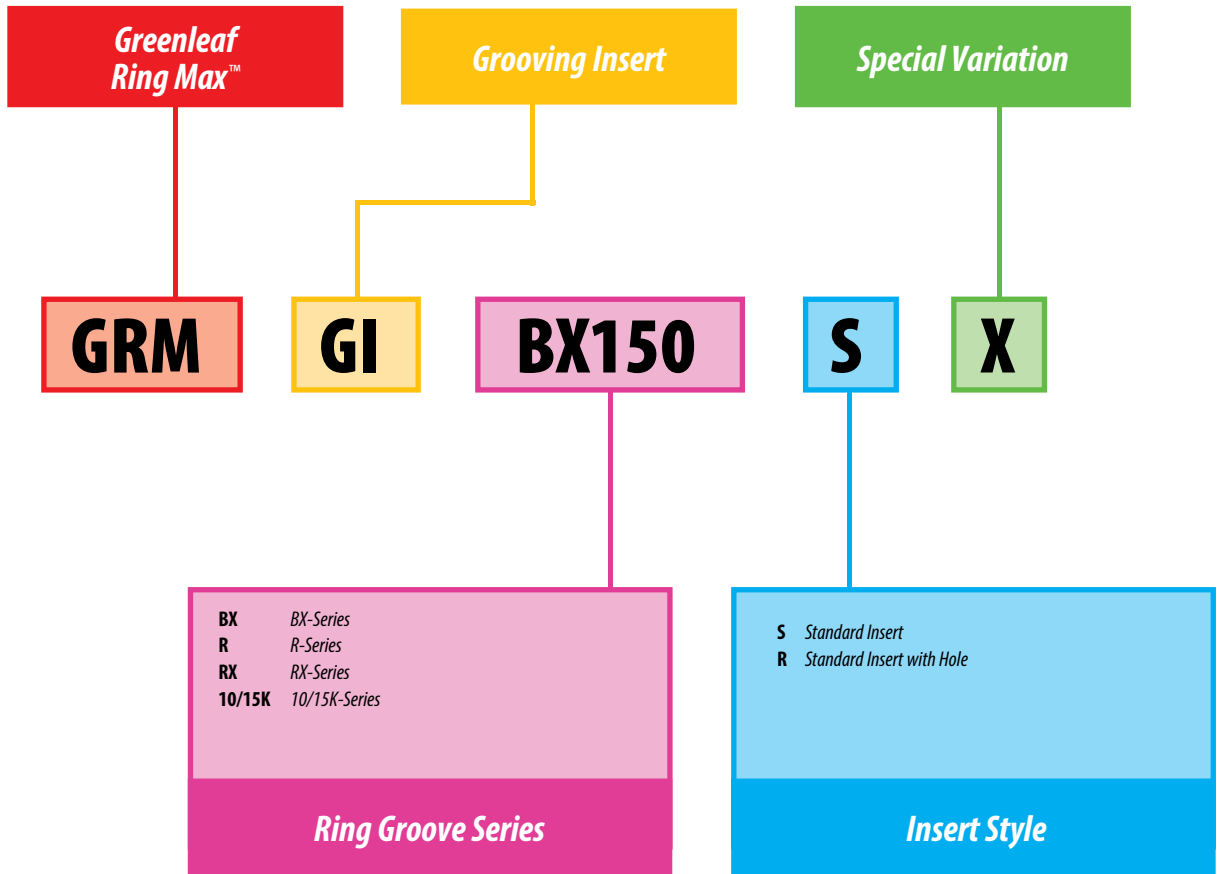
Greenleaf's Ring Max Grooving Inserts are a unique solution for machining API ring grooves and provide the capability of roughing and finishing in various materials. These inserts are specifically designed for use in Ring Max and will significantly increase productivity and savings.

Please contact Greenleaf Corporation for any questions or assistance.



Ring Max™

Grooving Insert Identification System



API RING GROOVE MACHINING

Insert Grades

Carbide



GA5036

A carbide grade that is best combined with the Ring Max for use in cast-steel applications, GA5036 has an advanced MT-CVD coating that promotes long tool life at high speeds.



G-915

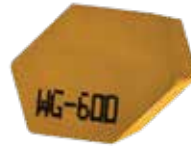
Greenleaf's most versatile grade for machining API ring grooves, G-915 can easily machine most materials and works well on machines with low RPMs.

Ceramic



WG-300®

A whisker-reinforced Al_2O_3 ceramic that is very effective at machining high-temp alloy ring grooves, WG-300® offers increased removal rates up to 10 times higher than carbide.



WG-600®

A coated whisker-reinforced Al_2O_3 ceramic that offers longer tool life and better performance over uncoated ceramics due to excellent thermal and wear resistance at very high surface speeds.

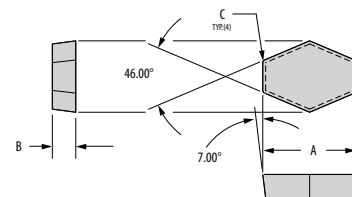


XSYTIN®-1

A phase-toughened ceramic for your most demanding applications, XSYTIN®-1 can run at lower RPMs and higher feed rates than any other ceramic grade and should be considered a first choice when machining rough weld overlay for API ring grooves.

Ring Max™ Inserts

GRM-GI



Insert	Part Number	Steel		Stainless Steel		Heat-Resistant Super Alloys			Dimensions (inches)			
		P		M		S			A	B	C	
		G-915	GA5035	WG-300	G-915	WG-300	WG-600	XSXTIN-1				G-915
	GRM-GI-BX150S	●	▲	◆	◆	●	◆	▲	▲	0.625	0.250	0.031
	GRM-GI-BX151S	●	▲	◆	◆	●	◆	▲	▲	0.625	0.250	0.031
	GRM-GI-BX152S	●	▲	◆	◆	●	◆	▲	▲	0.750	0.250	0.031
	GRM-GI-BX153S	●	▲	◆	◆	●	◆	▲	▲	0.750	0.250	0.031
	GRM-GI-BX154S	●	▲	◆	◆	●	◆	▲	▲	0.750	0.250	0.031
	GRM-GI-BX155R	●	▲	◆	◆	●	◆	▲	▲	0.875	0.250	0.031
	GRM-GI-BX156R	●	▲	◆	◆	●	◆	▲	▲	1.013	0.312	0.031
	GRM-GI-BX169R	●	▲	◆	◆	●	◆	▲	▲	1.000	0.250	0.031
	GRM-GI-RSET1-SX*	●	▲	◆	◆	●	◆	▲	▲	1.000	0.250	0.031
	GRM-GI-R46R	●	▲	◆	◆	●	◆	▲	▲	1.000	0.250	0.060
	GRM-GI-RSET2-SX*	●	▲	◆	◆	●	◆	▲	▲	0.625	0.156	0.031
	GRM-GI-RX201/5SX*	●	▲	◆	◆	●	◆	▲	▲	0.604	0.188	0.015
	GRM-GI-10K/15KSX*	●	▲	◆	◆	●	◆	▲	▲	0.625	0.250	0.030

CARBIDE COATINGS: ME-CVD Coated PVD Coated Uncoated First Choice ◆ Second Choice ● Alternative ▲ Interrupted/Milling ✦ Grade descriptions — pages RM 05

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

* Denotes multiple groove sizes (See chart to below)

NOTE: Depending on groove size, some Ring Max™ inserts may have a hole. All pre-clad groove inserts are designed and built to suit customer specifications.

NOTE: API groove specification GA/ISO-10423 is used for all finish inserts.

Group	Groove Size
R-SET1SX	R-21, R-23, R-24, R-26, R-27, R-30, R-31, R-34, R-35, R-37, R-39, R-41, R-44, R-45, R-49, R-53, R-57, R-61, R-65, R-69, R-82, R-84, R-99
R-SET2SX	R-12, R-13, R-14, R-15, R-16, R-17, R-18, R-19, R-20, R-22, R-25, R-29, R-33, R-36, R-40, R-43, R-48, R-52
10K/15KSX	10K-2 ¹ / ₁₆ " , 10K-3 ¹ / ₁₆ " , 15K-3 ¹ / ₁₆ "

API RING GROOVE MACHINING

Ring Max™ II Ring Groove Tooling

The Ring Max™ II cutters are designed to use fewer components for even greater dimensional accuracy and repeatability from groove to groove. Their unique design ensures accurate seating and secure locking of the insert cartridge into the cutter body.

Standard features and benefits include:

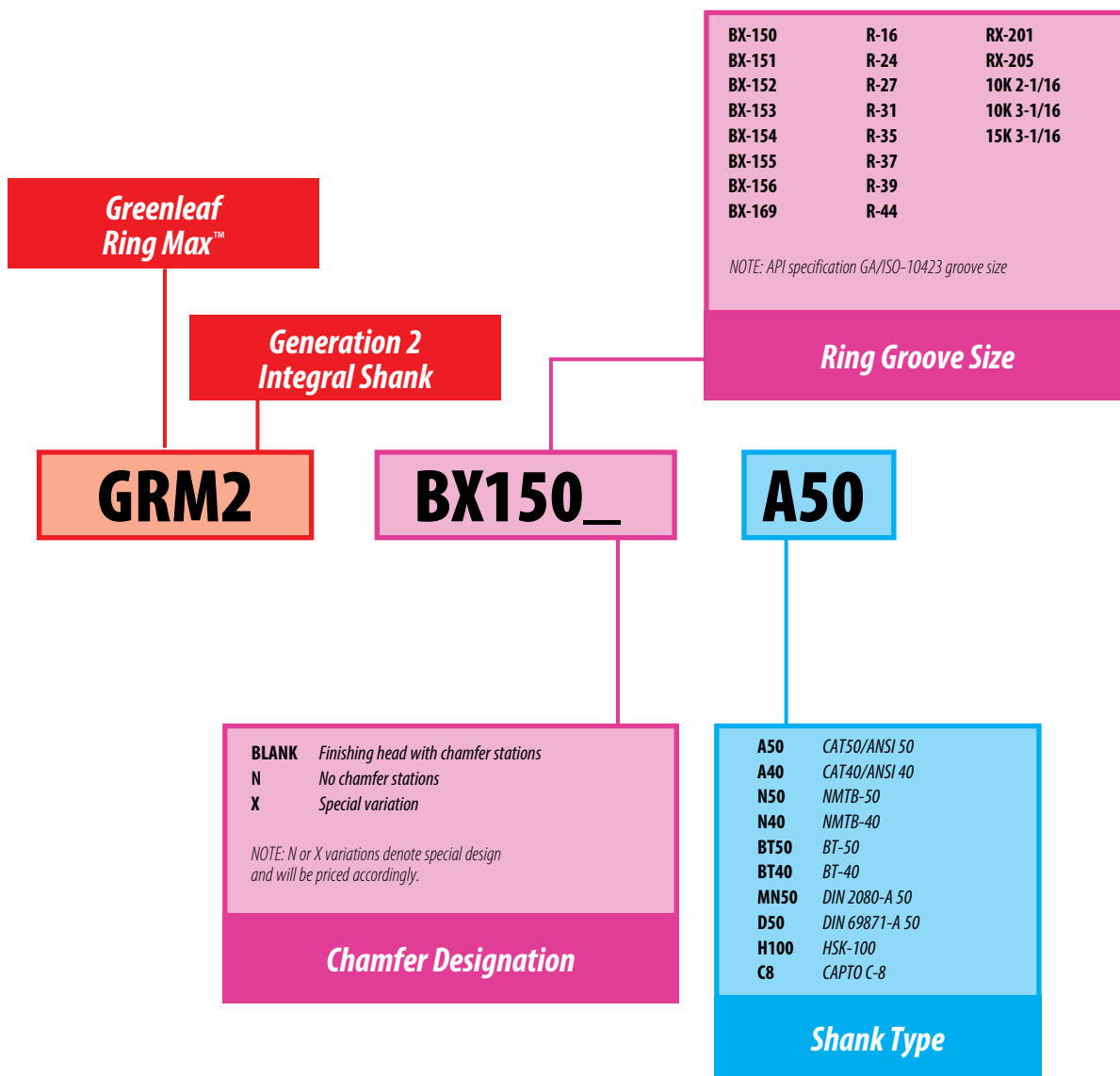
- Cutting of BX, R, and RX API ring grooves in Inconel 625 clad overlay in less than one minute!
- Machines the groove and chamfers in one operation.
- Adjustable and replaceable cartridge design for easy maintenance.

Please contact Greenleaf Corporation for any questions or assistance.



Ring Max™ II

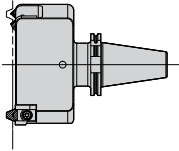
Finishing Head Identification System



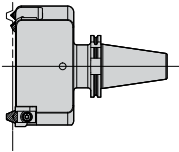
API RING GROOVE MACHINING

Pictorial & Reference Index

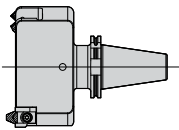
Ring Max™ II Tooling



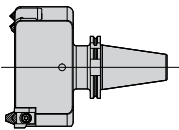
BX Series
page: *RM 10*



R Series
page: *RM 11*



RX Series
page: *RM 12*



10K and 15K Series
page: *RM 12*

Reference

Ring Max™ II

Models
page: *RM 13*

Ring Max™ II Pre-Clad

Models
page: *RM 14*

Machining Methods

Reference Guide
page: *RM 30*

Special Toolchanger Clearance

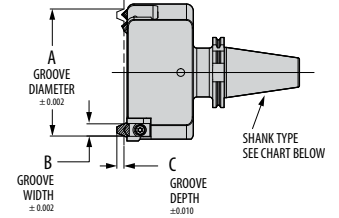
Request Form
page: *RM 31*

Pre-Clad Head

Quote Request Form
page: *RM 31*

Ring Max™ II

BX Series



Part Number Groove Series - Shank Type*	Stock	Dimensions (inches)			Standard Components		Inserts	
		A	B	C	Grooving Cartidge	Chamfer Cartidge	Grooving Insert	Chamfer Insert
GRM2-BX150-_____	See chart below for stocked sizes.	2.895	0.452	0.230	GRM-GC-BX-150	GRMCC01	GRM-GI-BX150S	SPGN-322
GRM2-BX151-_____		3.064	0.468	0.230	GRM-GC-BX-151	GRMCC01	GRM-GI-BX151S	SPGN-322
GRM2-BX152-_____		3.397	0.500	0.240	GRM-GC-BX-152	GRMCC01	GRM-GI-BX152S	SPGN-322
GRM2-BX153-_____		4.048	0.556	0.280	GRM-GC-BX-153	GRMCC01	GRM-GI-BX153S	SPGN-322
GRM2-BX154-_____		4.687	0.608	0.310	GRM-GC-BX-154	GRMCC01	GRM-GI-BX154S	SPGN-322
GRM2-BX155-_____		5.932	0.700	0.340	GRM-GC-BX-155	GRMCC01	GRM-GI-BX155R	SPGN-322
GRM2-BX156-_____		9.523	0.923	0.450	GRM-GC-BX-156	GRMCC01	GRM-GI-BX156R	SPGN-322
GRM2-BX169-_____		6.957	0.668	0.390	GRM-GC-BX-169	GRMCC01	GRM-GI-BX169R	SPGN-322

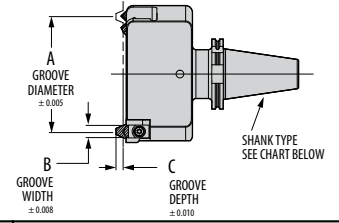
*See chart to below

Shank Description	Ordering Code
CAT50/ANSI 50	A50
CAT40/ANSI 40	A40
NMTB-50	N50
NMTB-40	N40
BT-50	BT50
BT-40	BT40
DIN 2080-A 50	MN50
DIN 69871-A 50	D50
HSK-100	H100
CAPTO C-8	C8

Stocked Sizes	
GRM2-BX150-A50	GRM2-BX154-A40
GRM2-BX150-BT50	GRM2-BX154-A50
GRM2-BX150-D50	GRM2-BX154-BT50
GRM2-BX151-A50	GRM2-BX154-D50
GRM2-BX151-BT50	GRM2-BX155-A40
GRM2-BX151-D50	GRM2-BX155-A50
GRM2-BX152-A40	GRM2-BX155-BT50
GRM2-BX152-A50	GRM2-BX155-D50
GRM2-BX152-BT50	GRM2-BX156-A50
GRM2-BX152-D50	GRM2-BX169-A50

Ring Max™ II

R Series



Part Number Groove Series - Shank Type*	Stock	Dimensions (inches)			Standard Components		Inserts	
		A	B	C	Grooving Cartridge	Chamfer Cartridge	Grooving Insert	Chamfer Insert
GRM2-R16-_____	See chart below for stocked sizes.	2.000	0.344	0.250	GRM-GC-RSET 2 AX	GRMCC01	GRM-GI-RSET 2 SX	SPGN-322
GRM2-R24-_____		3.750	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
GRM2-R27-_____		4.250	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
GRM2-R31-_____		4.875	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
GRM2-R35-_____		5.375	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
GRM2-R37-_____		5.875	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
GRM2-R39-_____		6.375	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
GRM2-R44-_____		7.625	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
GRM2-R46-_____		8.313	0.531	0.390	GRM-GC-R46	GRMCC01	GRM-GI-R46R	SPGN-322

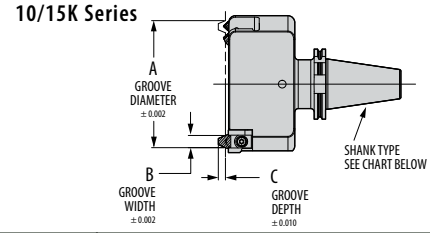
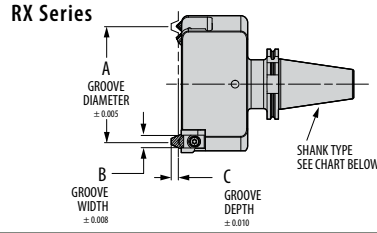
*See chart to below

Shank Description	Ordering Code
CAT50/ANSI 50	A50
CAT40/ANSI 40	A40
NMTB-50	N50
NMTB-40	N40
BT-50	BT50
BT-40	BT40
DIN 2080-A 50	MN50
DIN 69871-A 50	D50
HSK-100	H100
CAPTO C-8	C8

Stocked Sizes
GRM2-R24-A50
GRM2-R24-D50
GRM2-R24N-A50
GRM2-R24N-D50

Ring Max™ II

RX Series / 10K and 15K Series



Part Number Groove Series - Shank Type*	Stock	Dimensions (inches)			Standard Components		Inserts	
		A	B	C	Grooving Cartridge	Chamfer Cartridge	Grooving Insert	Chamfer Insert
GRM2-RX201N-____	See chart below for stocked sizes.	1.813	0.219	0.160	GRM-GCRX201/5-X	N/A	GRM-GI-RX201/5SX	N/A
GRM2-RX205N-____		2.250	0.219	0.160	GRM-GCRX201/5-X	N/A	GRM-GI-RX201/5SX	N/A
GRM2-10K2-____		4.623	0.377	0.258	GRM-GC10/15K-X	GRMCC01	GRM-GI-10/15KSX	SPGN-322
GRM2-10K3N-____		5.748	0.377	0.258	GRM-GC10/15K-X	N/A	GRM-GI-10/15KSX	N/A
GRM2-10K5-____		8.748	0.377	0.258	GRM-GC10/15K-X	GRMCC01	GRM-GI-10/15KSX	SPGN-322
GRM2-15K3-____		6.623	0.377	0.258	GRM-GC10/15K-X	GRMCC01	GRM-GI-10/15KSX	SPGN-322

*See chart to below

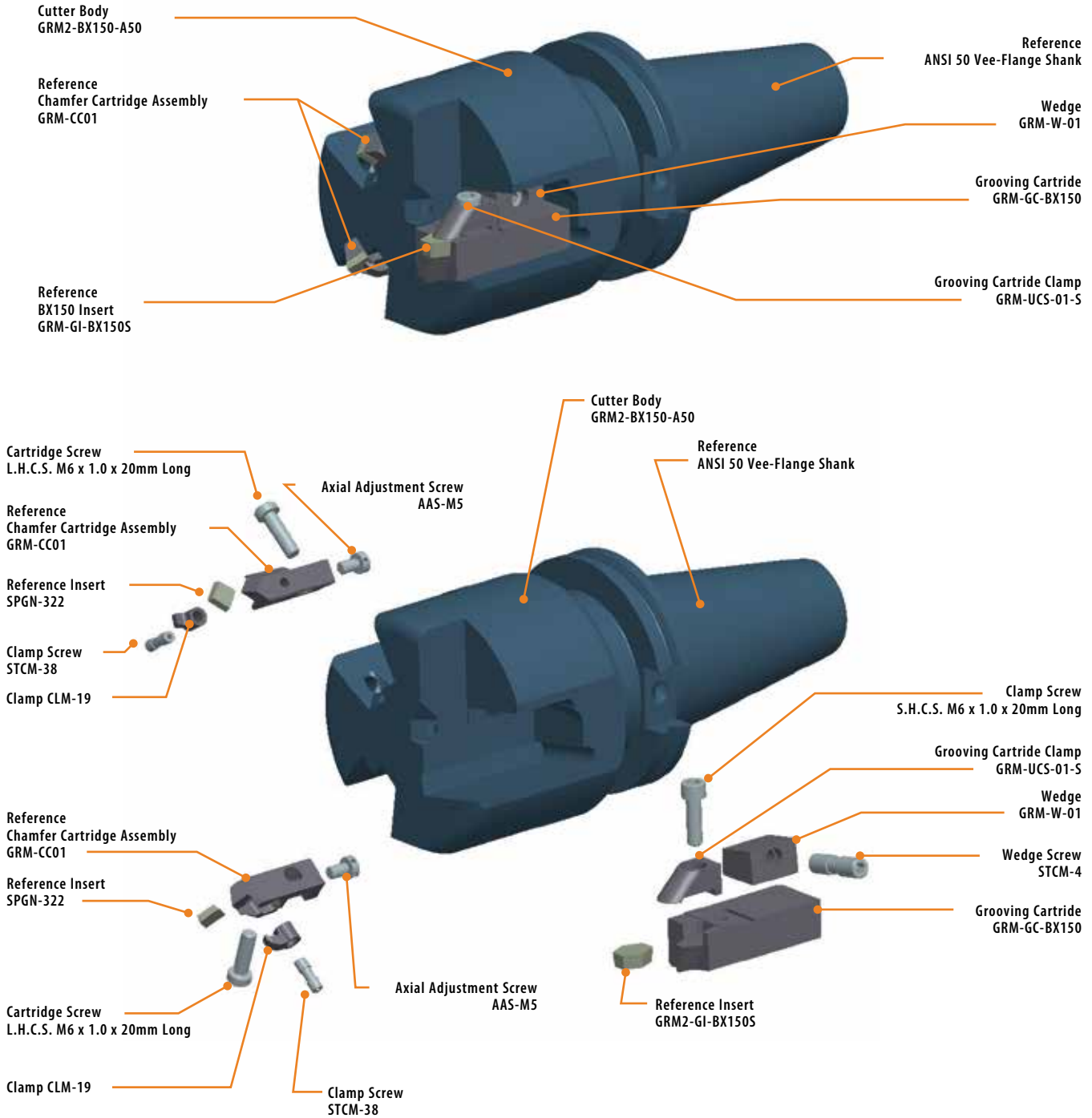
Shank Description	Ordering Code
CAT50/ANSI 50	A50
CAT40/ANSI 40	A40
NMTB-50	N50
NMTB-40	N40
BT-50	BT50
BT-40	BT40
DIN 2080-A 50	MN50
DIN 69871-A 50	D50
HSK-100	H100
CAPTO C-8	C8

Stocked Sizes
Ring Max™ II RX and 10/15K Series are not standard stocked items.

API RING GROOVE MACHINING

Ring Max™ II

Assembled and Exploded Views Reference Guide

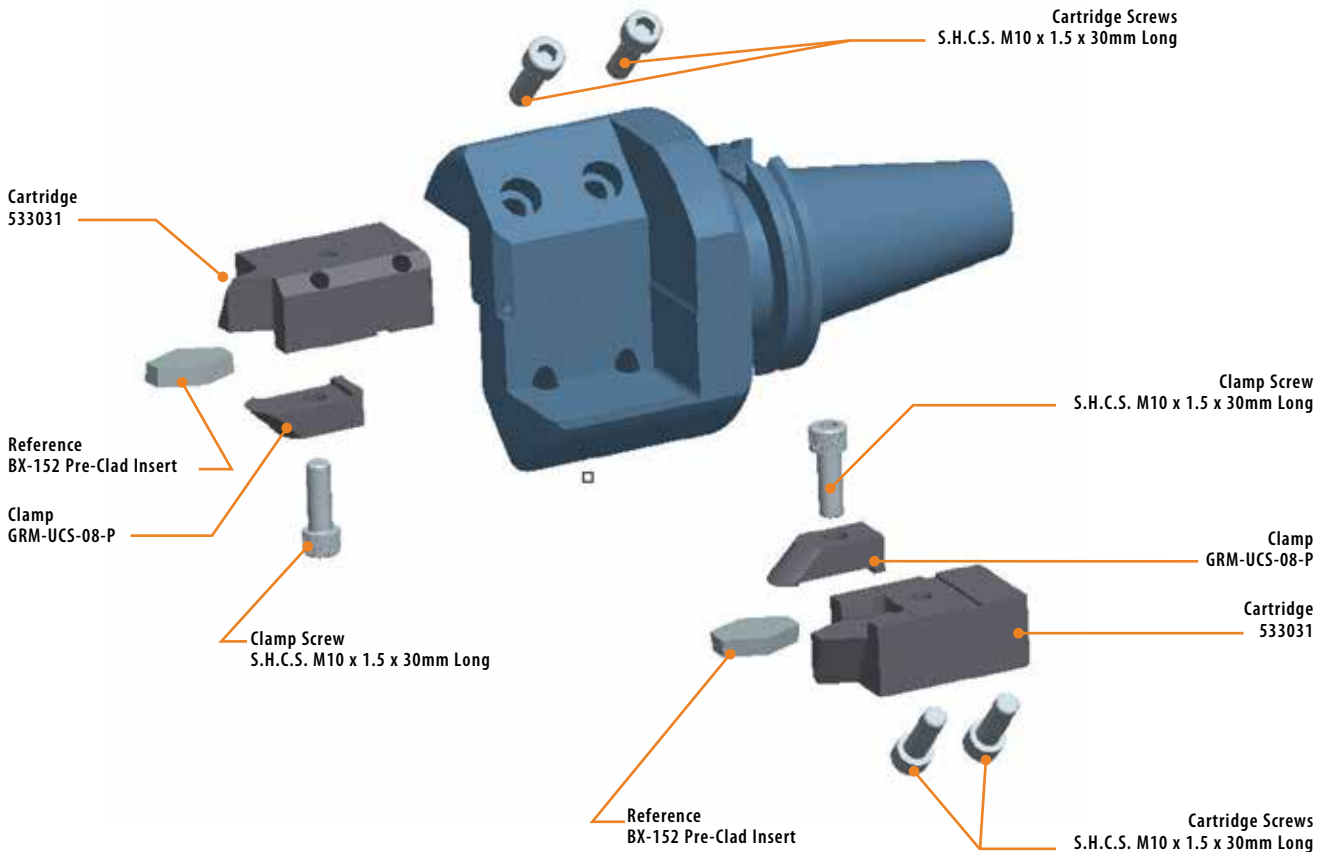
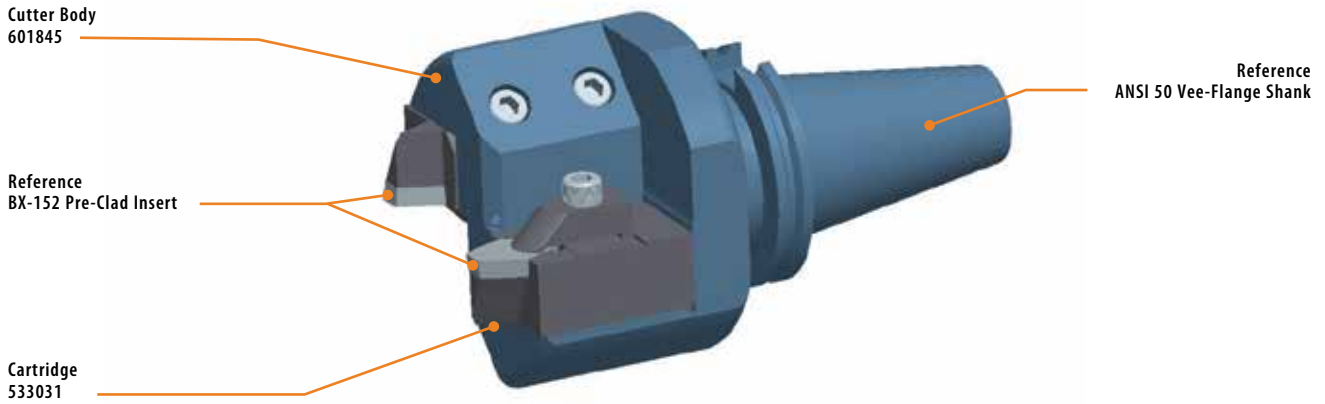


API RING GROOVE MACHINING

Ring Max™ II Quote Request Form For information for a quote form you can download, see page RM 31.

Ring Max™ BX-152 Pre-Clad

Assembled and Exploded Views Reference Guide



Special Toolchanger Clearance Request Form For information for a quote form you can download, see page RM 31.

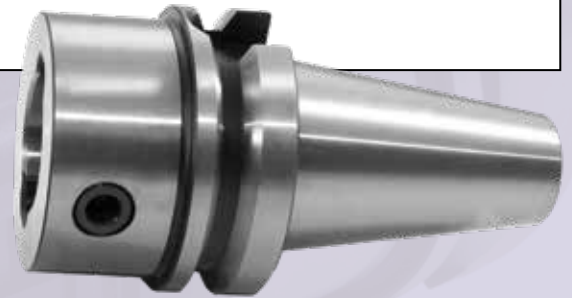
Ring Max™ III Ring Groove Tooling

The Ring Max™ III is a high-precision, two-piece modular system for shop versatility. This system offers many head and shank configurations, including adaptability to Greenleaf's Excelerator® face mills. The Ring Max™ III line delivers the ultimate economical and flexible solution for any shop machining multiple API ring groove sizes.

Standard features and benefits include:

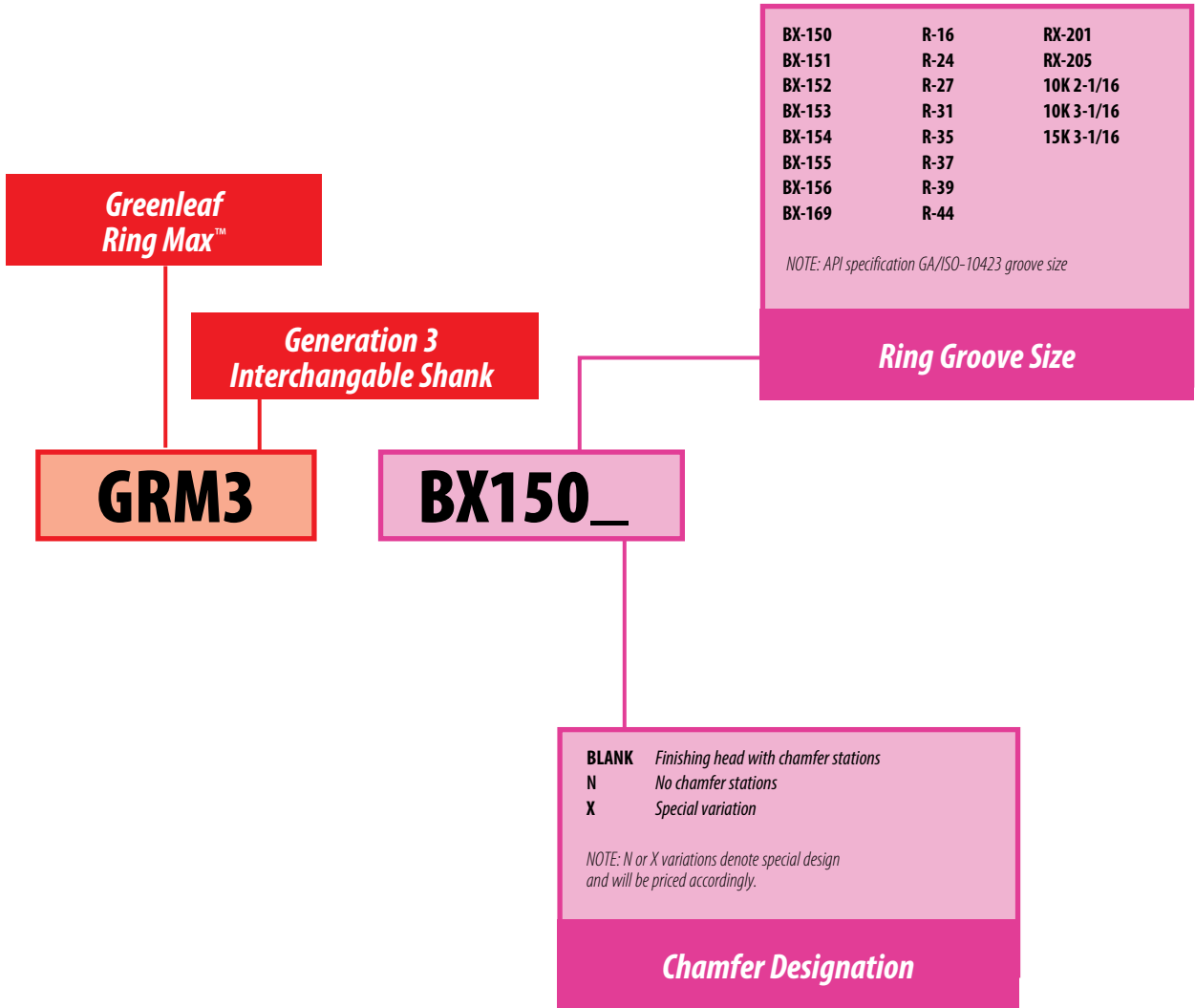
- Cutting of BX, R, and RX API ring grooves in Inconel 625 clad overlay in less than one minute.
- Machines the groove and chamfers in one operation.
- Adjustable and replaceable cartridge design for easy maintenance.

Please contact Greenleaf Corporation for any questions or assistance.



Ring Max™ III

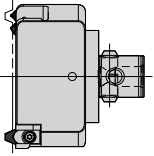
Finishing Head Identification System



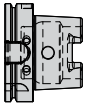
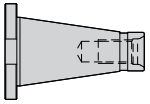
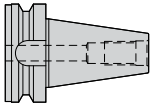
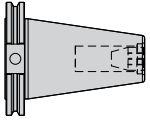
API RING GROOVE MACHINING

Pictorial & Reference Index

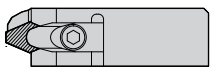
Ring Max™ III Tooling



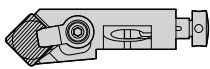
BX Series
R Series
RX Series
10/15K Series
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Ring Max™
Shank Options
page: RM 19



Ring Max™
Grooving Cartridge
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Ring Max™
Chamfer Cartridge
page: RM 24

Reference

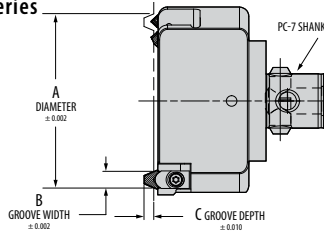
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Models
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Ring Max™ III Pre-Clad
Models
page: RM 21

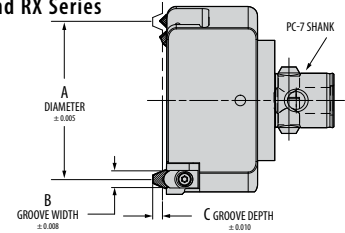
Machining Methods
Reference Guide
page: RM 30

Pre-Clad Head
Quote Request Form
page: RM 31

BX and 10/15K Series



R and RX Series



Ring Max™ III

BX Series / R Series / RX and 10/15K Series

	Part Number	Dimensions (inches)			Standard Components		Inserts		
		Groove Series - Shank Type*	A	B	C	Grooving Cartridge	Chamfer Cartridge	Grooving Insert	Chamfer Insert
BX Series	GRM3-BX150		2.895	0.452	0.230	GRM-GC-BX-150	GRMCC01	GRM-GI-BX150S	SPGN-322
	GRM3-BX151		3.064	0.468	0.230	GRM-GC-BX-151	GRMCC01	GRM-GI-BX151S	SPGN-322
	GRM3-BX152		3.397	0.500	0.240	GRM-GC-BX-152	GRMCC01	GRM-GI-BX152S	SPGN-322
	GRM3-BX153		4.048	0.556	0.280	GRM-GC-BX-153	GRMCC01	GRM-GI-BX153S	SPGN-322
	GRM3-BX154		4.687	0.608	0.310	GRM-GC-BX-154	GRMCC01	GRM-GI-BX154S	SPGN-322
	GRM3-BX155		5.932	0.700	0.340	GRM-GC-BX-155	GRMCC01	GRM-GI-BX155R	SPGN-322
	GRM3-BX169		6.957	0.668	0.390	GRM-GC-BX-169	GRMCC01	GRM-GI-BX169R	SPGN-322
R Series	GRM3-R16		2.000	0.344	0.250	GRM-GC-RSET 2 AX	GRMCC01	GRM-GI-RSET 2 SX	SPGN-322
	GRM3-R24		3.750	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
	GRM3-R27		4.250	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
	GRM3-R31		4.875	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
	GRM3-R35		5.375	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
	GRM3-R37		5.875	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
	GRM3-R39		6.375	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
	GRM3-R44		7.625	0.469	0.320	GRM-GC-RSET 1 X	GRMCC01	GRM-GI-RSET 1 SX	SPGN-322
RX and 10/15K Series	GRM3-RX201N		1.813	0.219	0.160	GRM-GCRX201/5-X	N/A	GRM-GI-RX201/5SX	N/A
	GRM3-RX205N		2.250	0.219	0.160	GRM-GCRX201/5-X	N/A	GRM-GI-RX201/5SX	N/A
	GRM3-10K2		4.623	0.377	0.258	GRM-GC10/15K-X	GRMCC01	GRM-GI-10/15KSX	SPGN-322
	GRM3-10K3N		5.748	0.377	0.258	GRM-GC10/15K-X	N/A	GRM-GI-10/15KSX	N/A
	GRM3-15K3		6.623	0.377	0.258	GRM-GC10/15K-X	GRMCC01	GRM-GI-10/15KSX	SPGN-322

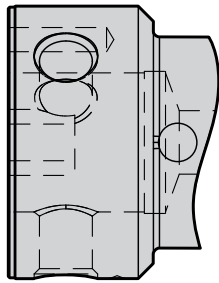
NOTE: Due to blank availability, special designs may need to be a two-piece weld construction or no quote.

API RING GROOVE MACHINING

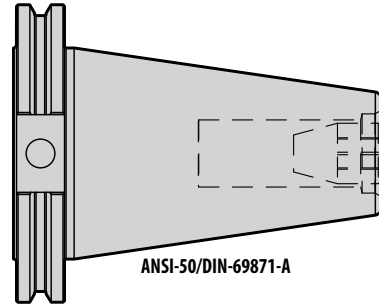
Ring Max™ III

Shank Options

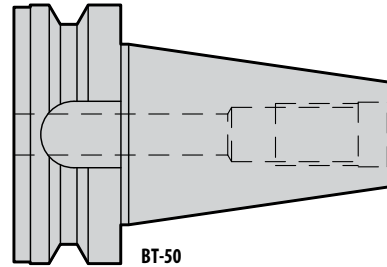
Adapter Designation	Shank A	Shank B
04-GRMA50-000	PC-7	CAT-50 (ANSI-50) Vee Flange
04-GRMA50-000		DIN-69871 (ISO-50) Vee Flange
04-GRMBT50-000		BT-50 Vee Flange
04-GRMNTB50-000		NMTB-50 Vee Flange
04-GRMHSK100-000		HSK-100A



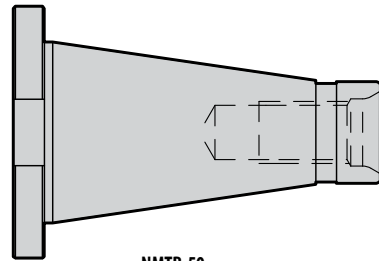
PC-7 Connector



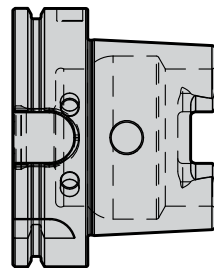
ANSI-50/DIN-69871-A



BT-50



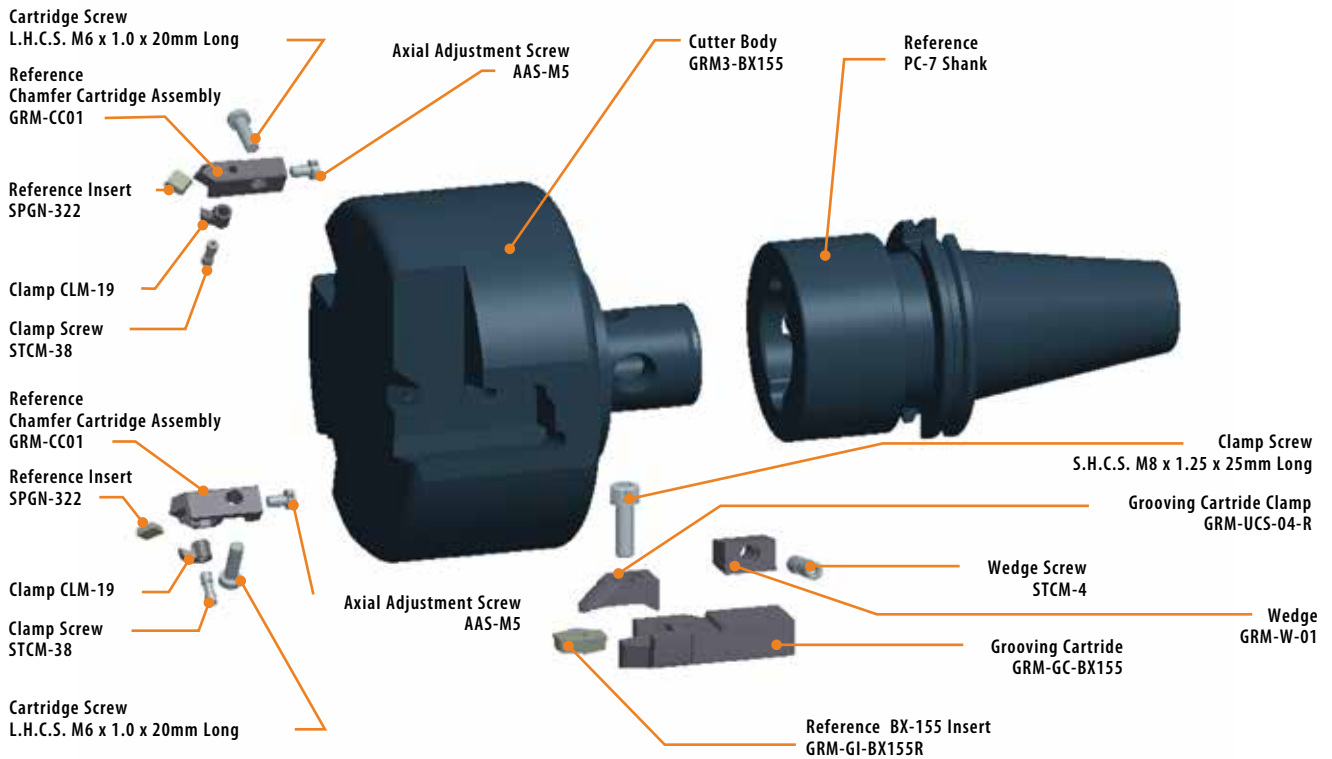
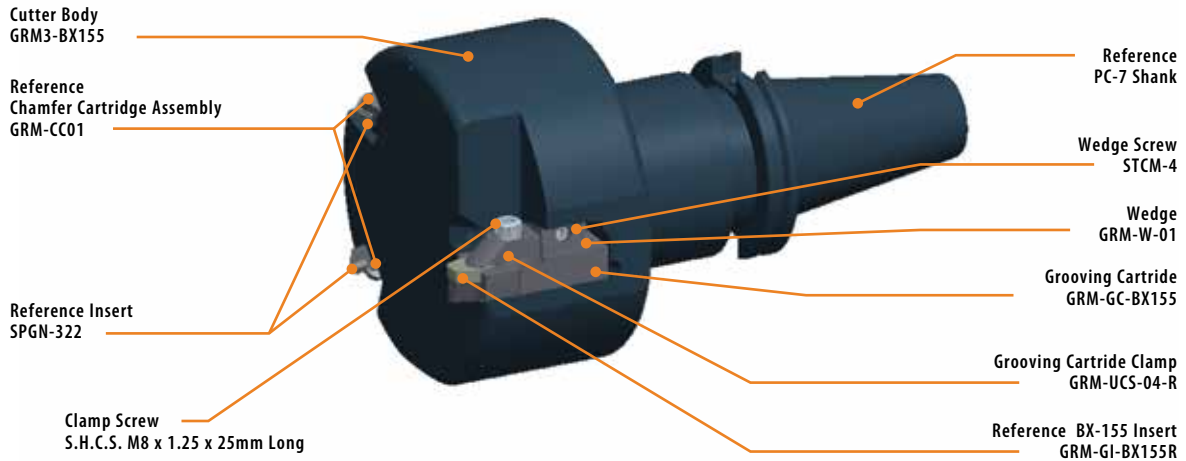
NMTB-50



HSK-100

Ring Max™ GRM3-BX155

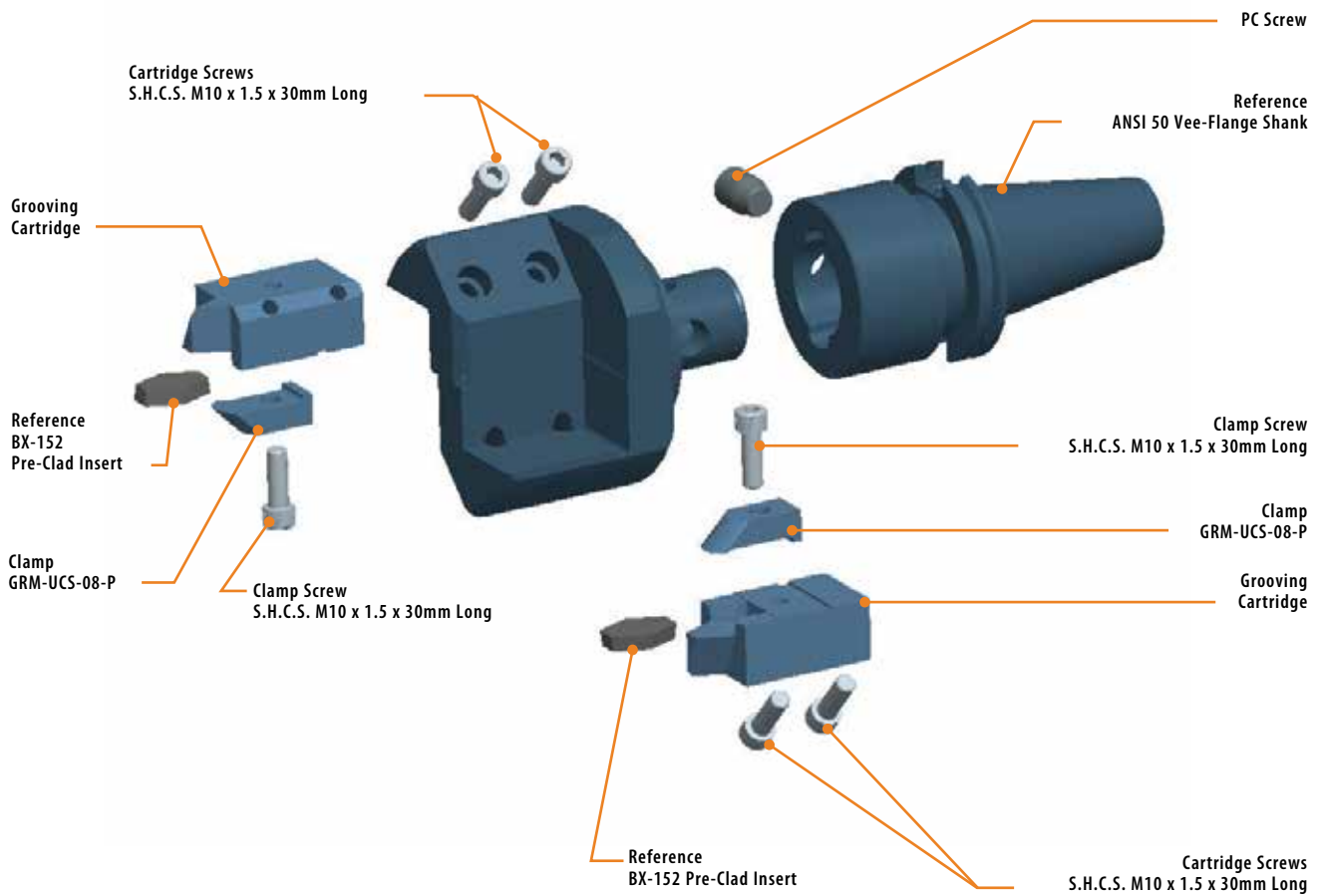
Assembled and Exploded Views Reference Guide



Special Toolchanger Clearance Request Form For information for a quote form you can download, see page RM 31.

Ring Max™ III Pre-Clad

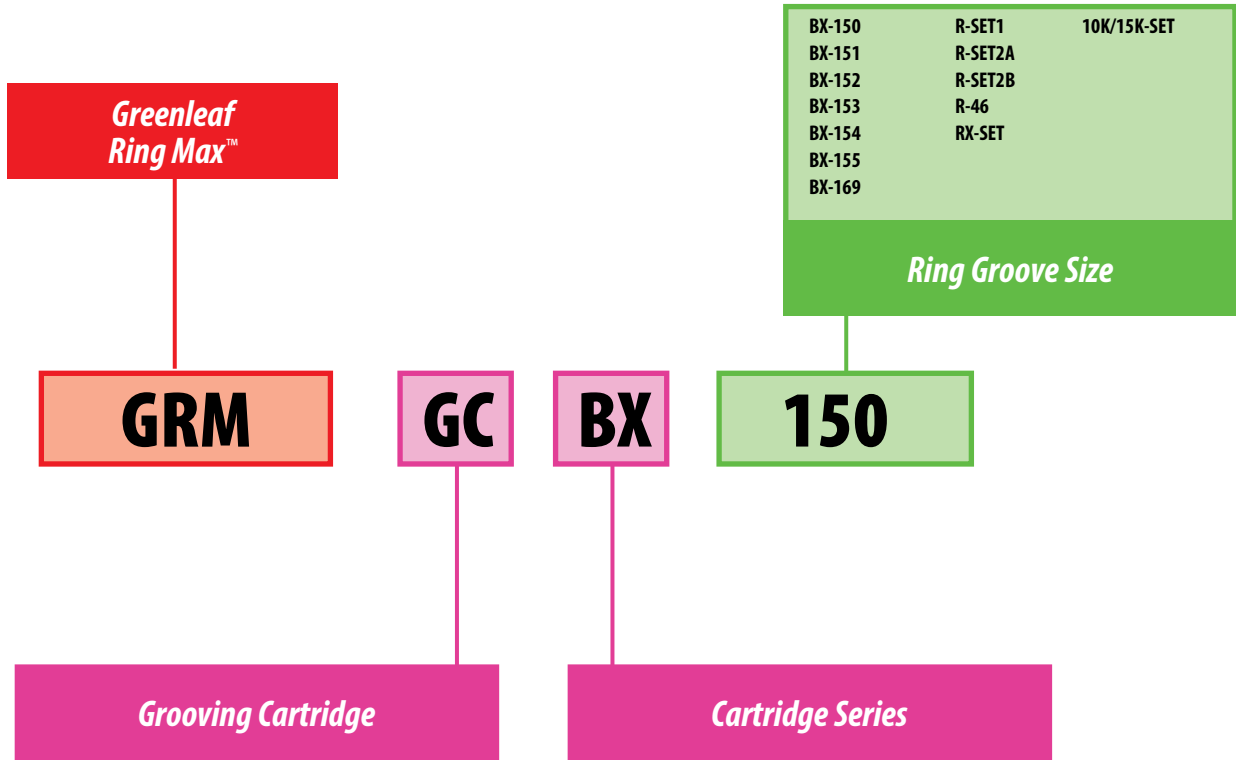
Assembled and Exploded Views Reference Guide



Ring Max™ III Pre-Clad Head Quote Request Form For information for a quote form you can download, see page RM 31.

Ring Max™

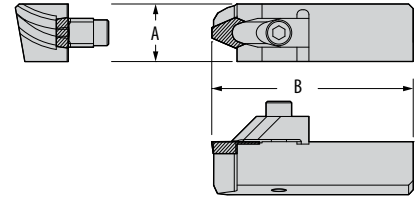
Grooving Cartridge Identification System



API RING GROOVE MACHINING

Ring Max™

Grooving Cartridge



Cartridge		Dimensions (inches)		Standard Components		Inserts
Groove Size	Part Number	A	B	Clamp	Clamp Screw	Purchased Separately
BX-150	GRM-GC-BX-150	1.000	2.625	GRMUCS01S	M6-1.0 SHCS	GRM-GI-BX150S
BX-151	GRM-GC-BX-151	1.000	2.625	GRMUCS01S	M6-1.0 SHCS	GRM-GI-BX151S
BX-152	GRM-GC-BX-152	1.000	2.625	GRMUCS01S	M6-1.0 SHCS	GRM-GI-BX152S
BX-153	GRM-GC-BX-153	1.000	2.625	GRMUCS01S	M6-1.0 SHCS	GRM-GI-BX153S
BX-154	GRM-GC-BX-154	1.117	2.625	GRMUCS01S	M6-1.0 SHCS	GRM-GI-BX154S
BX-155	GRM-GC-BX-155	1.259	3.125	GRMUCS04R	M8-1.25 SHCS	GRM-GI-BX155R
BX-156	GRM-GC-BX-156	1.188	3.125	GRMUCS04R	M8-1.25 SHCS	GRM-GI-BX156R
BX-169	GRM-GC-BX-169	1.000	3.125	GRMUCS04R	M8-1.25 SHCS	GRM-GI-BX169R
R-SET1*	GRM-GCRSET1-X	1.000	3.125	GRMUCS03S	M6-1.0 SHCS	GRM-GI-RSET1SX
R-SET2A*	GRM-GCRSET2A-X	0.750	2.625	GRMUCS05S	M5-0.8 SHCS	GRM-GI-RSET2SX
R-SET2B*	GRM-GCRSET2B-X	1.000	2.625	GRMUCS03S	M5-0.8 SHCS	GRM-GI-RSET2SX
R-46	GRM-GCR46	1.000	3.125	GRMUCS04R	M8-1.25 SHCS	GRM-GI-R46R
RX-SET*	GRM-GCRX201/5-X	0.750	2.625	GRMUCS05S	M5-0.8 SHCS	GRM-GI-RX201/5SX
10/15K-SET*	GRM-GC10/15-X	1.000	2.625	GRMUCS05S	M5-0.8 SHCS	GRM-GI-10/15K5X

* Denotes multiple groove sizes (See chart below.)

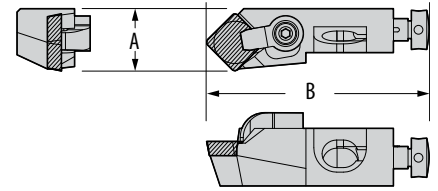
Multiple-Groove Compatibility

Single cartridges can produce multiple grooves when used in the proper gage diameter Ring Max™ grooving head. Use this chart for compatibility.

Shank Description	Ordering Code
R-SET1	R-21, R-23, R-24, R-26, R-27, R-31, R-35, R-37, R-39, R-41, R-44, R-45, R-49, R-53, R-57, R-65, R-69, R-82, R-84
R-SET2A	R-12, R-13, R-14, R-15, R-16, R-17, R-18, R-19, R-20
R-SET2B	R-22, R-25, R-29, R-33, R-36, R-40, R-43, R-48, R-52
RX-SET	RX-201, RX-205
10/15K-SET	10K-2 ¹ / ₁₆ " , 10K-3 ¹ / ₁₆ " , 10K-5 ¹ / ₁₆ " , 15K-3 ¹ / ₁₆ "

Ring Max™

Chamfer Cartridge



Cartridge	Dimension (inches)		Standard Components			Inserts Purchased Separately	Mounting Screws Supplied with Grooving Head
	A	B	Clamp	Clamp Screw	Adj. Screw		
GRM-CC01	0.551	1.971	CLM-19	STCM-38	AAS-M5	SPGN-322	M6-1.0 LHCS

All Ring Max™ heads for generation 2 and 3 use the same chamfer cartridges.

Ring Max™ STX – Lathe Tooling

The Ring Max™ STX system provides the same productivity gains as the Ring Max™ II and Ring Max™ III systems in a square shank tool. Whether you are machining a large diameter groove, or a standard BX, R, or RX groove, the Ring Max™ STX system is your solution for maximizing productivity in multiple API ring groove sizes.

Standard features and benefits include:

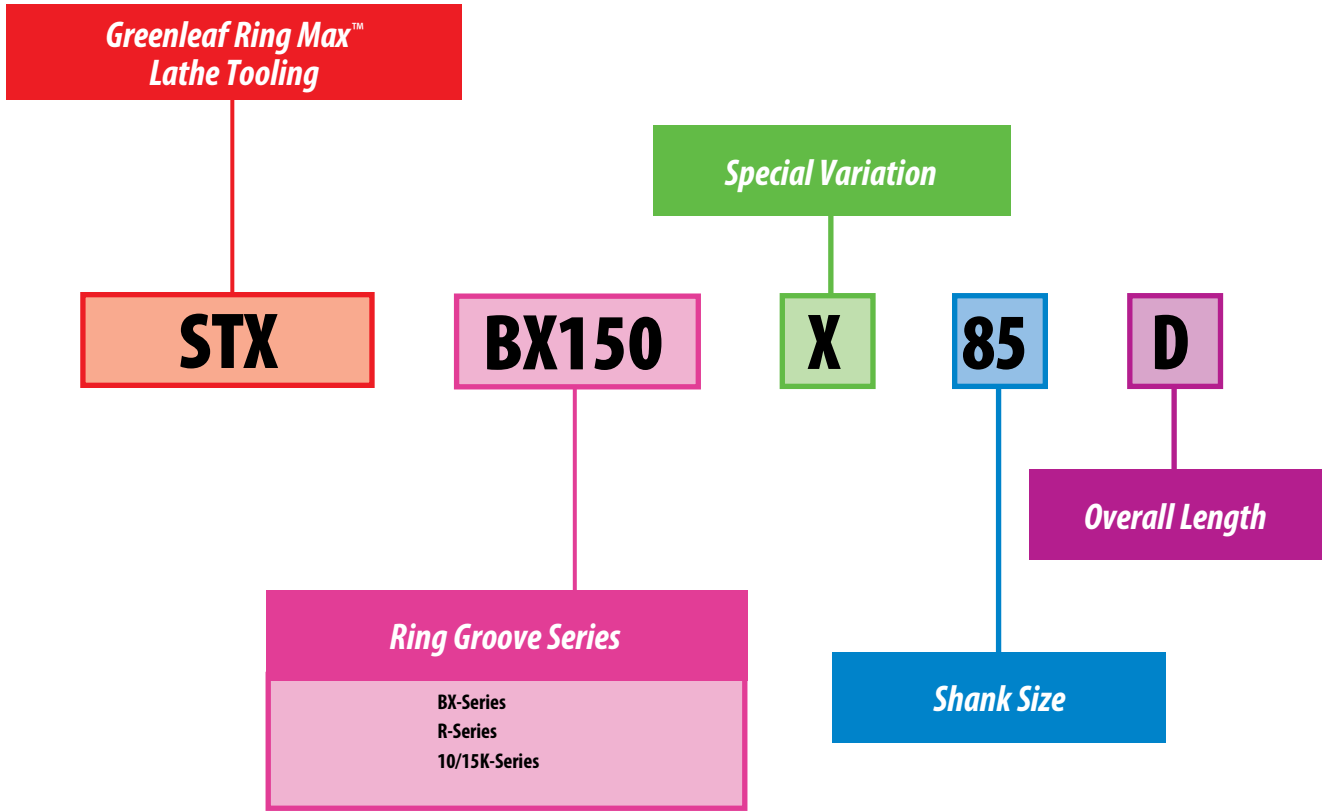
- Roughing and finishing of BX, R, and RX API ring grooves in Inconel 625 clad overlay in less than one minute.
- Utilization of the same clamping system and inserts as the Ring Max™ II and Ring Max™ III™ cutter systems.
- Available in common standard inch and metric shank sizes.

Please contact Greenleaf Corporation for any questions or assistance.



Ring Max™ STX

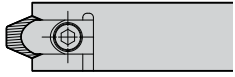
Lathe Tooling Identification System



API RING GROOVE MACHINING

Pictorial & Reference Index

RING MAX™ Lathe Tooling



Ring Max™ STX
Lathe Tooling
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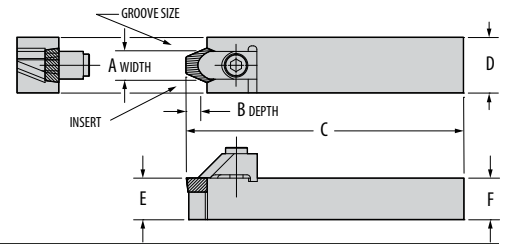
Reference

Ring Max™ STX
Models
page: RM 29

Lathe Tool
Quote Request Form
page: RM 31

Ring Max™ STX

Lathe Tooling



Holder		Dimensions (inches)					
Groove Size	Part Number	A†	B†	C	D	E	F
BX-150	STXBX15016D	0.452	0.230	6.000	1.000	1.000	1.000
	STXBX15085D	0.452	0.230	6.000	1.000	1.250	1.250
BX-151	STXBX15116D	0.468	0.230	6.000	1.000	1.000	1.000
	STXBX15185D	0.468	0.230	6.000	1.000	1.250	1.250
BX-152	STXBX15216D	0.500	0.240	6.000	1.000	1.000	1.000
	STXBX15285D	0.500	0.240	6.000	1.000	1.250	1.250
BX-154	STXBX15416D	0.608	0.310	6.000	1.000	1.000	1.000
	STXBX15485D	0.608	0.310	6.000	1.000	1.250	1.250
BX-155	STXBX15516D	0.700	0.340	6.000	1.000	1.000	1.000
	STXBX15585D	0.700	0.340	6.000	1.000	1.250	1.250
BX-156	STXBX15616D	0.923	0.450	6.000	1.000	1.000	1.000
	STXBX15685D	0.923	0.450	6.000	1.000	1.250	1.250
BX-169	STXBX16916D	0.688	0.390	6.000	1.000	1.000	1.000
	STXBX16985D	0.688	0.390	6.000	1.000	1.250	1.250
R-SET1SX*	STXRSET116D	0.469	0.320	6.000	1.000	1.000	1.000
	STXRSET185D	0.469	0.320	6.000	1.000	1.250	1.250
R-SET2SX*	STXRSET216D	0.469	0.320	6.000	1.000	1.000	1.000
	STXRSET285D	0.469	0.320	6.000	1.000	1.250	1.250
R-46R	STXR4616D	0.531	0.390	6.000	1.000	1.000	1.000
	STXR4685D	0.531	0.390	6.000	1.000	1.250	1.250
10/15KSX*	STX1015KX16D	0.377	0.258	6.000	1.000	1.000	1.000
	STX1015KX85D	0.377	0.258	6.000	1.000	1.250	1.250

† Groove width and depth tolerances comply with API Standard 6A/ISO 10423.
 * Denotes multiple groove sizes (See Multiple-Groove Compatibility chart below.)

Groove Size	Standard Components		Inserts Purchased Separately
	Clamp	Clamp Screw	
BX-150	GRMUCS01S	M6-1.0 SHCS	GRM-GI-BX150S
BX-151	GRMUCS01S	M6-1.0 SHCS	GRM-GI-BX151S
BX-152	GRMUCS01S	M6-1.0 SHCS	GRM-GI-BX152S
BX-154	GRMUCS01S	M6-1.0 SHCS	GRM-GI-BX154S
BX-155	GRMUCS04R	M8-1.25 SHCS	GRM-GI-BX155R
BX-156	GRMUCS04R	M8-1.25 SHCS	GRM-GI-BX156R
BX-169	GRMUCS04R	M8-1.25 SHCS	GRM-GI-BX169R
R-SET1SX*	GRMUCS03S	M6-1.0 SHCS	GRM-GI-RSET1SX
R-SET2SX*	GRMUCS05S	M5-0.8 SHCS	GRM-GI-RSET2SX
R-46R	GRMUCS04R	M8-1.25 SHCS	GRM-GI-R46R
10/15KSX*	GRMUCS05S	M5-0.8 SHCS	GRM-GI-10/15KSX

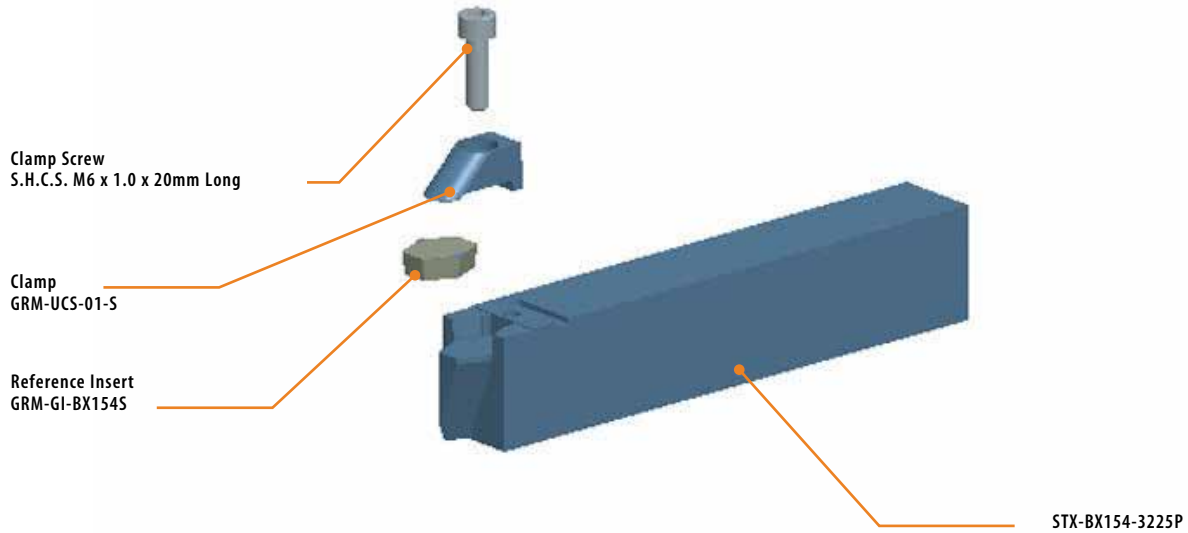
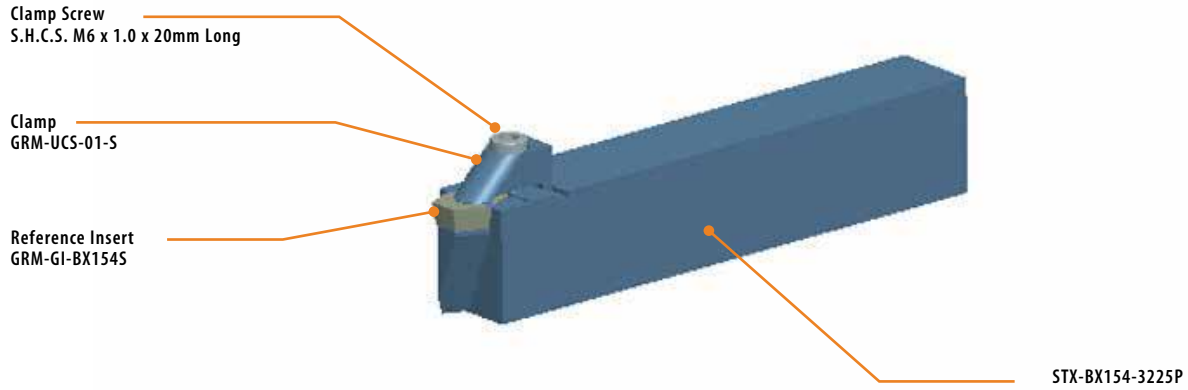
Multiple-Groove Compatibility

Single cartridges can produce multiple grooves. Use this chart for compatibility.

Shank Description	Ordering Code
R-SET1SX	R-21, R-23, R-24, R-26, R-27, R-31, R-35, R-37, R-39, R-41, R-44, R-45, R-49, R-53, R-57, R-65, R-69, R-82, R-84
R-SET2SX	R-12, R-13, R-14, R-15, R-16, R-17, R-18, R-19, R-20
10/15K-SET	10/15K, 10K-2 ¹ / ₁₆ " , 10K-3 ¹ / ₁₆ "

Ring Max™ STX

Assembled and Exploded Views Reference Guide



Ring Max™ Lathe Quote Request Form For information for a quote form you can download, see page RM 31.

Ring Max™

Machining Methods Reference Guide

Method One

Use these instructions for setting gage points and establishing target ring groove depths using an optical comparator.

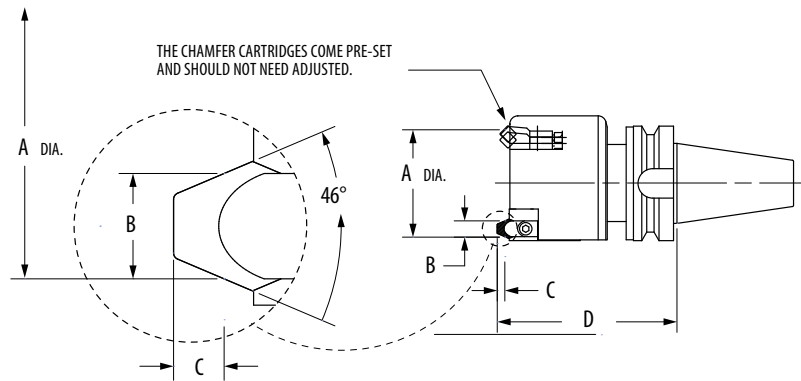
Step One:

Using an optical comparator, find and set the gage points at the groove's A diameter at mid-tolerance. The groove's B dimension will be within the allowable tolerance range.

Step Two:

Once the gage points in Step One have been determined, measure, and record the tool's Z length and the actual measured C dimension over the insert nose.

NOTE: The measured C dimension is the target machining depth and will be within the groove's allowable part tolerance.



Example for BX-152

A		B		C		Z
Part print dimension and tolerance	Target this diameter for gage points	Part print dimension and tolerance	Part print dimension and tolerance	Measure and target this depth for programming	Measure and target this depth for programming	Measure and target this depth for programming
3.395" +0.004 -0.000	3.397"	0.498" +0.004 -0.000	0.230" +0.020 -0.000			

Method Two

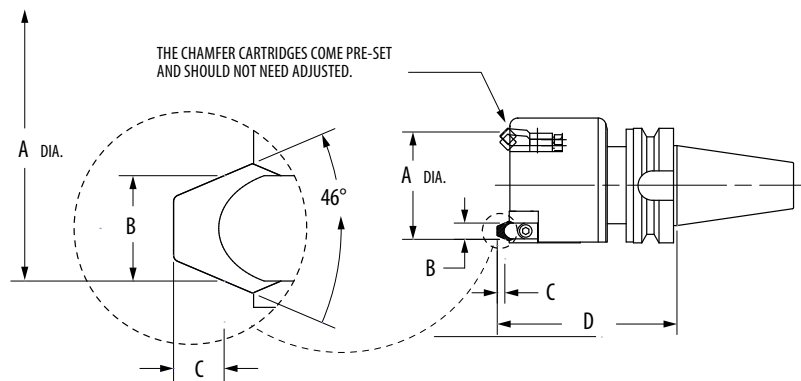
This method is used to machine ring grooves in a rough and finish pass.

Step One:

Machine the groove but reduce the groove depth to leave stock for the finish pass.

Step Two:

Measure the groove's A diameter and use the chart below to determine the additional D depth necessary to bring the A diameter into mid-tolerance.



If the A groove diameter is undersize by:	Increase the groove depth D by:
0.0010	0.0012
0.0020	0.0023
0.0030	0.0035
0.0040	0.0047
0.0050	0.0059
0.0060	0.0071
0.0070	0.0082
0.0080	0.0094
0.0090	0.0106
0.0100	0.0118
0.0110	0.0130
0.0120	0.0141

API RING GROOVE MACHINING

Greenleaf Sustainable Productivity

FOR BEST RESULTS, complete this form and email to: engineering@greenleafcorporation.com or call: 800-458-1850

Ring Max™ II Quote Request Form

Part Information:
 Part Name: _____
 Quantity: _____ Unit: _____
 Date quoted: _____ Lead: _____ Catalog: _____ Part: _____
 Material/condition: _____

Special Toolchanger Clearance Request Form

Tool	Quantity	Unit	Lead	Part

Name: _____ Title: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 Phone: _____ Fax: _____
 Email: _____
 Part: _____
 Lead: _____

Ring Max™ II Quote Request Form

We have a Ring Max™ II Quote Request Form that you can download at — <https://www.greenleafcorporation.com/RingMax2QuoteRequest.pdf>

If you have any questions, contact the Greenleaf Tech Team at 800-458-1850, or email the engineering department at engineering@greenleafcorporation.com.



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FOR BEST RESULTS, complete this form and email to: engineering@greenleafcorporation.com or call: 800-458-1850

Special Toolchanger Clearance Request Form

Part Information:
 Part Name: _____
 Quantity: _____ Unit: _____
 Date quoted: _____ Lead: _____ Catalog: _____ Part: _____
 Material/condition: _____

Name: _____ Title: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 Phone: _____ Fax: _____
 Email: _____
 Part: _____
 Lead: _____

Special Toolchanger Clearance Request Form

We have a Special Toolchanger Clearance Request Form that you can download at — <https://www.greenleafcorporation.com/SpecialToolchangerClearanceRequest.pdf>

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Ring Max™ III Pre-Clad Head Quote Request Form

Part Information:
 Part Name: _____
 Quantity: _____ Unit: _____
 Date quoted: _____ Lead: _____ Catalog: _____ Part: _____
 Material/condition: _____

Name: _____ Title: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 Phone: _____ Fax: _____
 Email: _____
 Part: _____
 Lead: _____

Ring Max™ III Pre-Clad Head Quote Request Form

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If you have any questions, contact the Greenleaf Tech Team at 800-458-1850, or email the engineering department at engineering@greenleafcorporation.com.



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Ring Max™ Lathe Quote Request Form

Part Information:
 Part Name: _____
 Quantity: _____ Unit: _____
 Date quoted: _____ Lead: _____ Catalog: _____ Part: _____
 Material/condition: _____

Name: _____ Title: _____
 Address: _____
 City: _____ State: _____ Zip: _____
 Phone: _____ Fax: _____
 Email: _____
 Part: _____
 Lead: _____

Ring Max™ Lathe Quote Request Form

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API RING GROOVE MACHINING