

# GROOVE 'N TURN® INSERTS

U.S. PATENT NOS. 6,688,816 and 6,824,333

## PRODUCT INFORMATION

- Face grooving for major diameters .300", .750", 1.250", 3" and greater.
- Face grooving with a central hub, recessed or flat face.
- .004" - .150" in .001" increments available.
- Sub-micron grain **DURA-MAX® 2000** and **5000** Carbides.
- Inserts available with TiN, TiAlN, TiCN and Diamond coating.



## MODIFICATIONS

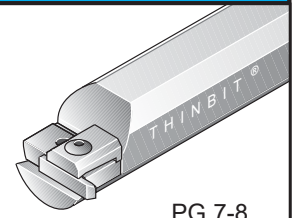
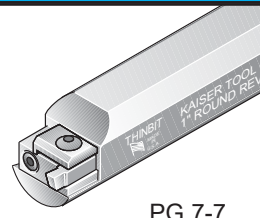
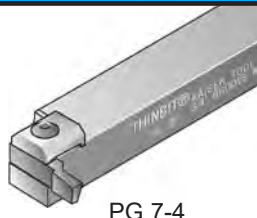
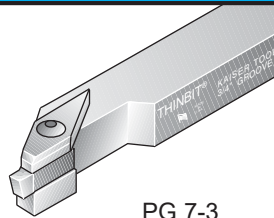
SEE PAGES 8-2 & 8-3 FOR ADDITIONAL INFORMATION

<b>RADII (TOP VIEW)</b>	<b>DEPTH OF CUT (TOP VIEW)</b>	<b>SIZING (TOP VIEW)</b>	<b>BACK CLEARANCE (TOP VIEW)</b>
<b>LEAD ANGLE (TOP VIEW)</b>	<b>TOP RAKE (SIDE VIEW)</b>	<b>CHIP BREAKER (SIDE VIEW)</b>	<b>SIDE CLEARANCE (END VIEW)</b>

## TOOLHOLDER SELECTIONS

### CNC, SWISS, CONVENTIONAL STYLE

### ROUND STYLE



### 45° STYLE

### SWISS FACE STYLE



## TECHNICAL SECTIONS

### PRODUCT DEMONSTRATION



[www.thinbit.com/qr2-9](http://www.thinbit.com/qr2-9)

### SPEEDS AND FEEDS

PG 9-12

### APPLICATION REFERENCE

PGS 9-3 & 9-4

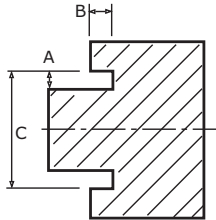
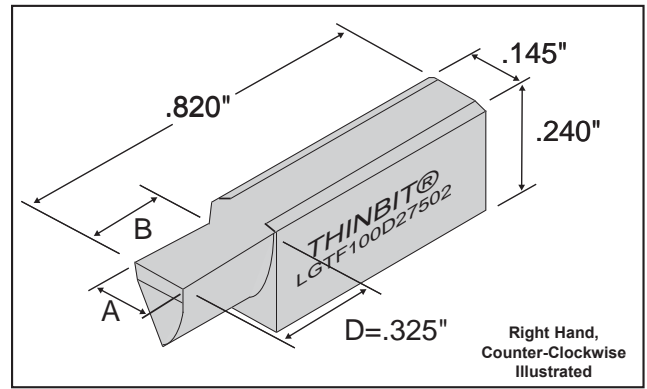
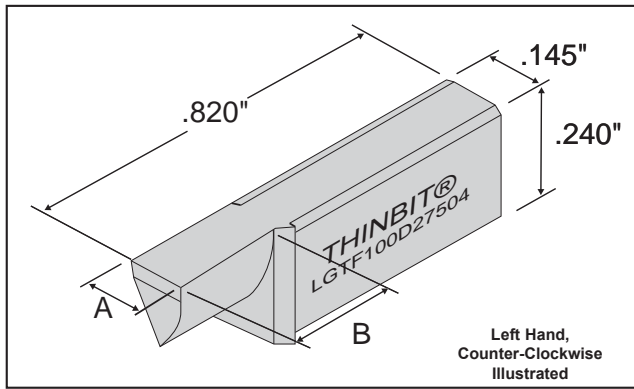
### TROUBLESHOOTING

PG 9-7

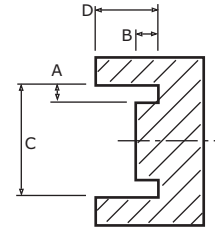
## KAISER TOOL COMPANY, INC.

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# FACE GROOVING INSERTS



**FRONT RAKE:** Primary 10° honed, Secondary 15°  
**BACK CLEARANCE:** 2-1/2° both sides  
**SIDE CLEARANCE:** .004" - .019" - 0° ID side  
                           .020" - .150" - 5° ID side  
**RADIUS:** Sharp corner through full radius available  
**TOP RAKE:** 0°  
**LEAD ANGLE:** 0°



Cut with a LH CCW Insert

**NOTE:** Capable of grooving along a shoulder

Cut with a RH CCW Insert

## ORDERING INSTRUCTIONS

### EXAMPLE:

Sample **ORDER CODE** for a left hand/counter-clockwise, .100" wide insert in **DURA-MAX® 2000**, with a .750" major diameter and no corner radius is:

**LGTF 100 D27504**

Specify the Insert Width 'A'      ↑

SPECIFICATIONS				ORDER CODE			INFO.		
Insert Orientation	Insert Width  'A'  ± .001"	Depth of Cut  'B'	Major Diameter  Can be used on any diameter equal to or greater than listed	Insert Grades <small>See Page 9-5 for expanded material descriptions and Page 9-12 for Speeds and Feeds information</small>		Add-ons <small>Use 'Order Code' and Add</small>			Toolholder Catalog Section 7  Use Toolholders Beginning With 'L'
				DURA-MAX® 2000 Carbide For Steel & Interrupted Cutting	DURA-MAX® 5000 Carbide For Aluminum & Nonferrous	Full Radius Page 8-3	Corner Radius Page 8-3	Coating Page 9-6	
Left Hand/ Counter-Clockwise	.004" - .150"	<small>Width    D.O.C.</small> .004"-.033" = 3 x 'A' .034"-.039" = .100" .040"-.100" = 2.5 x 'A' .101"-.150" = .250"	.300"	LGTF ___ D23004	LGTF ___ D53004	add 'FR'	(indicate size in .xxx")	TiN add 'C' TiCN add 'D' TiAlN add 'E' Diamond add 'F'	For shoulder cutting use left hand straight holder or right hand 90° holder
			.750"	LGTF ___ D27504	LGTF ___ D57504				
			1.250"	LGTF ___ D212504	LGTF ___ D512504				
			* 3.000"	LGT ___ D2L	LGT ___ D5L				
Right Hand/ Counter-Clockwise	.004" - .150"	<small>Width    D.O.C.</small> .004"-.033" = 3 x 'A' .034"-.039" = .100" .040"-.100" = 2.5 x 'A' .101"-.150" = .250"	300"	LGTF ___ D23002	LGTF ___ D53002	add 'FR'	(indicate size in .xxx")	TiAlN add 'E' Diamond add 'F'	Use right hand or left hand straight holder or right hand 90° holder
			.750"	LGTF ___ D27502	LGTF ___ D57502				
			1.250"	LGTF ___ D212502	LGTF ___ D512502				
			* 3.000"	LGT ___ D2R	LGT ___ D5R				

\* 3.000" Major Diameter Excludes .004" - .019" Insert Width Due to Side Clearance

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INSERTS  
FACE GROOVING

# INTRODUCING

## MILL A GROOVE<sup>®</sup>

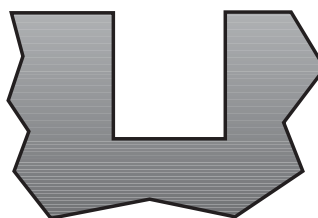
**THINBIT<sup>®</sup>**, by Kaiser Tool Company, presents the **Mill A Groove<sup>®</sup>** line for trepanning on a CNC or conventional milling machine using a boring holder.

**Mill A Groove<sup>®</sup>** enables machining groove diameters that are concentric to the spindle rotation and not the table movement and eliminates secondary lathe operations for face grooving.

**MILL A GROOVE<sup>®</sup>** tooling can produce a groove that is symmetrical, like a typical end mill, or an asymmetrical form that cannot be made with an end mill. One insert can make convex and concave radius grooves, chamfered edges, angles and special profiles.



Asymmetrical Groove



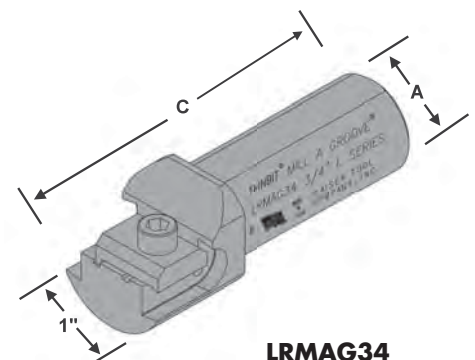
Symmetrical Groove

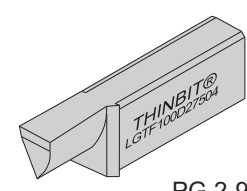
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# THINBIT<sup>®</sup> MILL A GROOVE<sup>®</sup>

MILLING

<b>PRODUCT INFORMATION</b>	<ul style="list-style-type: none"> <li>• Designed for trepanning on CNC machines.</li> <li>• Enables machining groove diameters that are concentric to the spindle rotation, not the table movement.</li> <li>• Eliminates secondary lathe operations for face grooving.</li> <li>• Groove can be symmetrical or asymmetrical.</li> <li>• One insert can make convex and concave radius grooves, chamfered edges, angles and special profiles.</li> </ul>	 <p><b>LRMAG34</b></p>
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<b>INSERT SELECTIONS</b>	<b>FACE GROOVING</b>	<b>TOOLHOLDER</b>	<b>TOOLHOLDER</b>
	 <p>PG 2-9</p>	<p>Due to the potential complexity of configuring these toolholders, we recommend calling for assistance.</p>	<p><b>MILL A GROOVE<sup>®</sup></b> toolholders are designed to work in combination with boring heads.</p>

## ORDERING INSTRUCTIONS

Select the **ORDER CODE** in the table below that represents your selection of shank dimensions.

**EXAMPLE:**

The **ORDER CODE** for a 1/2" round shank for inserts beginning with 'L' is:

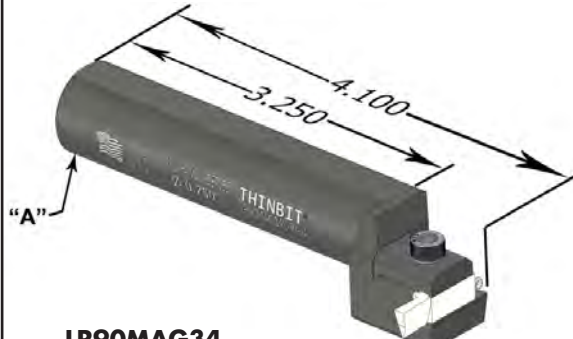
**LRMAG12**

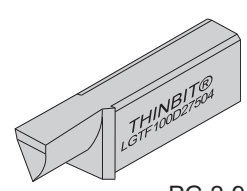
TECHNICAL SECTIONS	SPEEDS AND FEEDS	FORMULA	TROUBLESHOOTING
	<p>PG 9-12</p> <p>Use Inches Per Revolution for the chip load to calculate the Inches Per Minute on milling machines.</p>	$\text{RPM} = \frac{\text{SFM} \times 12}{\pi \times \text{DIAMETER}}$ <p><b>RPM x Chip Load = Inches per Minute</b></p>	<p>PG 9-7</p>

Shank Orientation	Shank Dimensions "A"	Toolholder Package (Includes Shank, head, clamp and hardware)	Overall Length "C"	Clamp	Clamp Hardware	
<b>Right Hand or Left Hand</b>	.500" Ø X 1.50" long	LRMAG12	2.35"	Clamp C	Screw: S2808  Wrench: W1009  Pin: P0305	
	Use as right hand with right hand inserts	.625" Ø X 1.63" long	LRMAG58			2.48"
Use as left hand with left hand inserts		.750" Ø X 1.63" long	LRMAG34			2.48"
		.787" Ø X 1.63" long	LRMAG20M			2.48"
Use as either hand with centered inserts		.984" Ø X 1.92" long	LRMAG25M			2.77"
	1.00" Ø X 1.92" long	LRMAG01	2.77"			

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<b>PRODUCT INFORMATION</b>	<ul style="list-style-type: none"> <li>• Designed for trepanning on CNC machines.</li> <li>• Enables machining groove diameters that are concentric to the spindle rotation, not the table movement.</li> <li>• Eliminates secondary lathe operations for face grooving.</li> <li>• Groove can be symmetrical or asymmetrical.</li> <li>• One insert can make convex and concave radius grooves, chamfered edges, angles and special profiles.</li> </ul>	 <p><b>LR90MAG34</b></p>
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<b>INSERT SELECTIONS</b>	<b>FACE GROOVING</b>	<b>TOOLHOLDER</b>	<b>TOOLHOLDER</b>
	 <p>PG 2-9</p>	<p>Due to the potential complexity of configuring these toolholders, we recommend calling for assistance.</p>	<p><b>MILL A GROOVE<sup>®</sup></b> toolholders are designed to work in combination with boring heads.</p>

## ORDERING INSTRUCTIONS

Select the **ORDER CODE** in the table below that represents your selection of shank dimensions.

**EXAMPLE:**

The **ORDER CODE** for a 1/2" round shank for inserts beginning with 'L' is:

**LR90MAG12L**

TECHNICAL SECTIONS	SPEEDS AND FEEDS	FORMULA	TROUBLESHOOTING
	<p>PG 9-12</p> <p>Use Inches Per Revolution for the chip load to calculate the Inches Per Minute on milling machines.</p>	$RPM = \frac{SFM \times 12}{\pi \times DIAMETER}$ <p><b>RPM x Chip Load = Inches per Minute</b></p>	<p>PG 9-7</p>

Shank Orientation	Shank Dimensions "A"	Toolholder Package (Includes Shank, head, clamp and hardware)	Clamp	Clamp Hardware
<p><b>Left Hand</b></p> <p>Use as left hand with right hand or centered inserts</p>	.500" Ø	LR90MAG12L	Clamp C	<p>Screw: S2808</p> <p>Wrench: W1009</p> <p>Pin: P0305</p>
	.625" Ø	LR90MAG58L		
	.750" Ø	LR90MAG34L		
	.787" Ø	LR90MAG20LM		
	.984" Ø	LR90MAG25LM		
	1.00" Ø	LR90MAG01L		

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