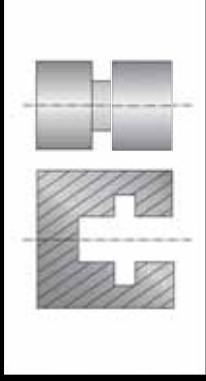



PRODUCT SELECTION GUIDE - GROOVING

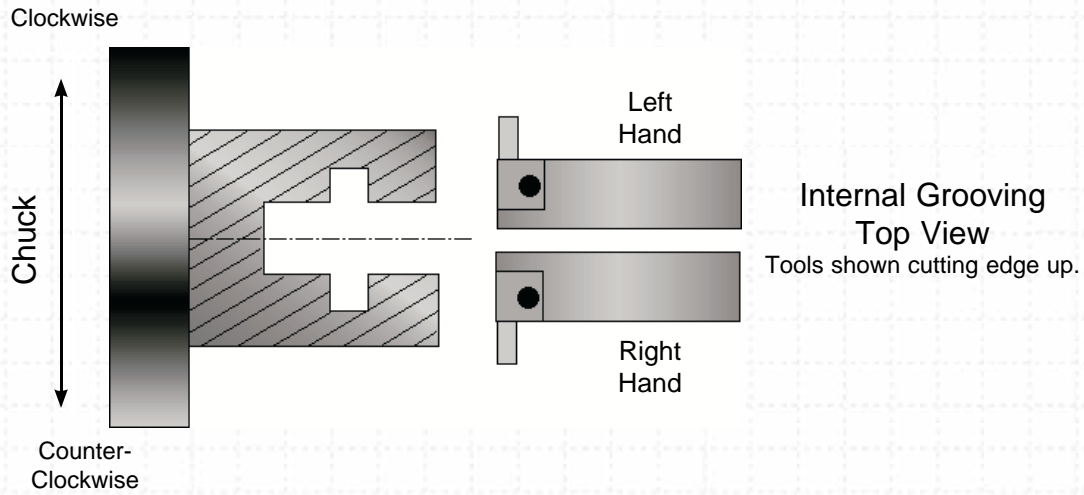
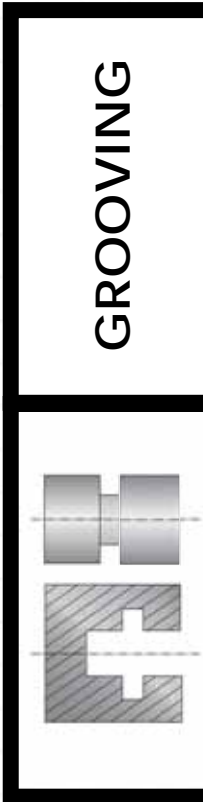
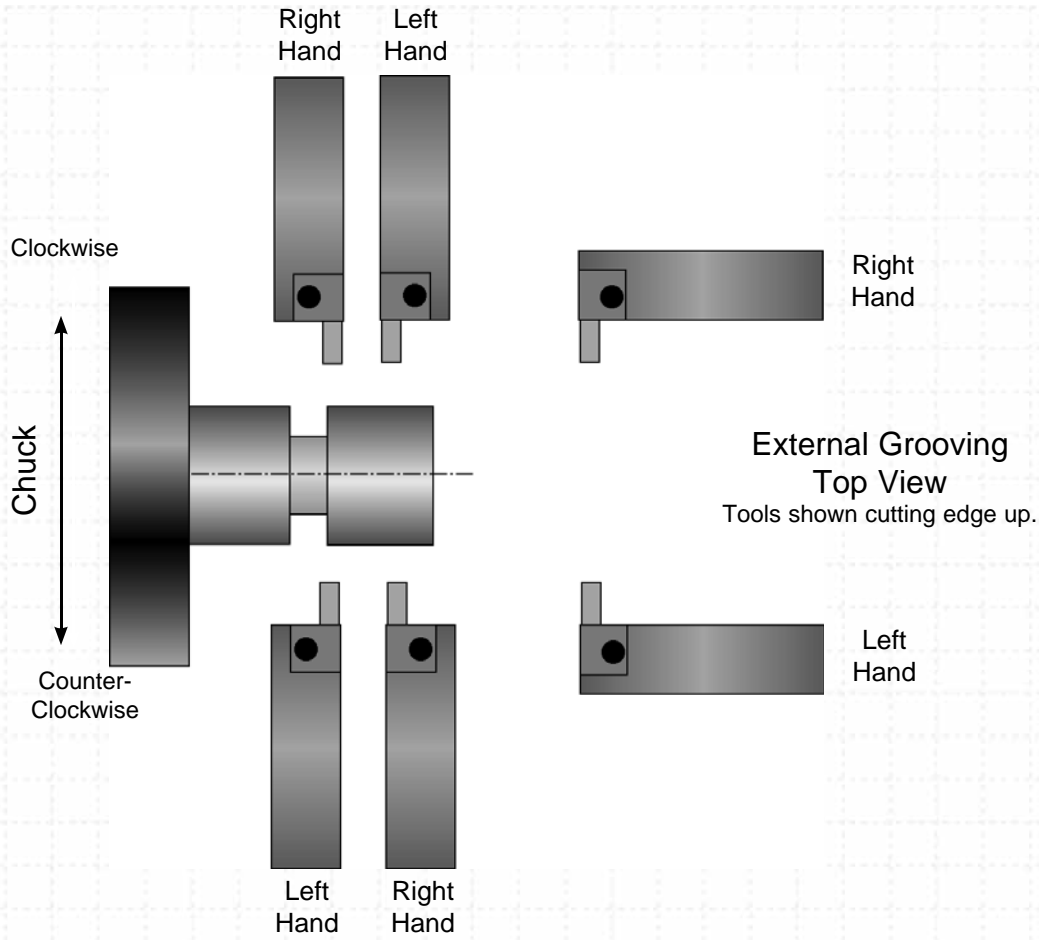
GROOVING



PAGE 1-3		<ul style="list-style-type: none"> • For internal diameters of .125" and larger • Groove widths .004"-.250" • For Depths of Cut up to .150" • Solid carbide shanks in 1/8", 3/16", 1/4", 5/16", 3/8" and 1/2" diameter
PAGE 1-5		<ul style="list-style-type: none"> • For internal diameters of .325" and larger • Groove widths .004"-.125" • For Depths of Cut up to .125" • Inserts can groove, bore and generate profiles • Inserts can also be used for face grooving
PAGE 1-7		<ul style="list-style-type: none"> • For internal diameters of 1" and larger • Groove widths 2, 3 and 4mm • For Depths of Cut up to .500"
PAGE 1-9		<ul style="list-style-type: none"> • Groove widths .004"-.150" • For Depths of Cut 2-1/2 to 3 times width • Inserts can groove, turn and generate profiles • Inserts can also be used for face grooving • Carbide and High Speed Steel
PAGE 1-11		<ul style="list-style-type: none"> • Groove widths .095", .125" & .142" • Included Angle 7° • Major diameter from .300" • Two grades of Sub-Micron Grain Carbide
PAGE 1-13		<ul style="list-style-type: none"> • Groove widths 2, 3, 4, 5 and 6mm • For Depths of Cut to 1" • Inserts can also be used for parting and face grooving
PAGE 8-7		 <p>Used for generating multiple groove forms simultaneously</p>

KAISER TOOL COMPANY, INC.

TOOLING ORIENTATION GUIDE - GROOVING

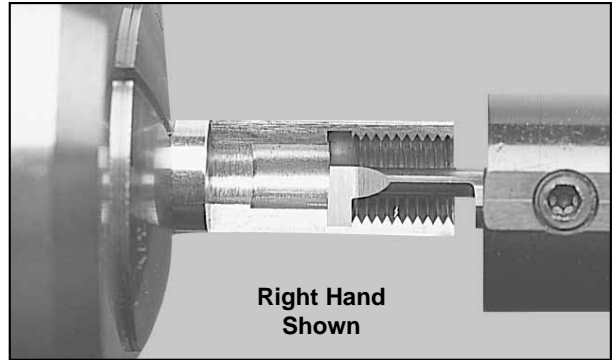


KAISER TOOL COMPANY, INC.

MICROBIT®

TOOL SIZES AND APPLICATIONS

- Internal grooving for diameters .125" and larger.
- .004" through .250" groove widths in .001" increments.
- 1/8", 3/16", 1/4", 5/16", 3/8" and 1/2" shanks.



INSERT GRADES AND COATINGS

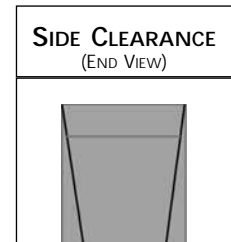
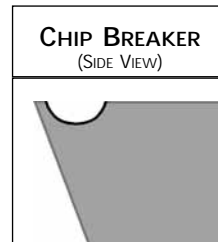
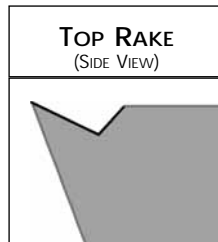
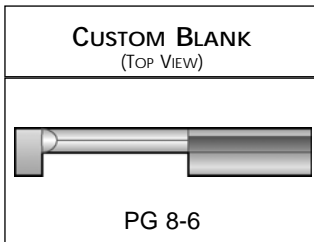
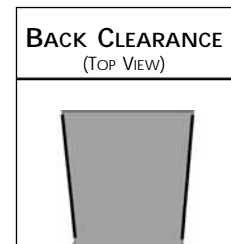
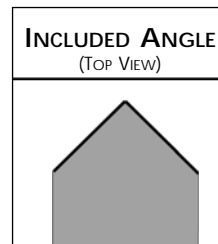
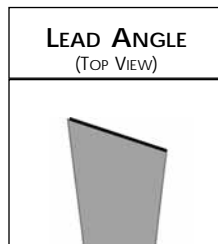
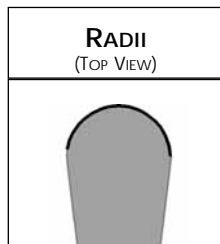
- Sub-micron grain **DURA-MAX® 2000** Carbide.
- Tools available with TiN, TiAlN, TiCN and Diamond coating.

GENERAL INFORMATION

- Short neck lengths for greater rigidity; long neck lengths for greater reach.
- Elliptically ground necks for greater strength.
- Uncoated **DURA-MAX® 2000** stocked for **fast**, 24-48 hour shipment.

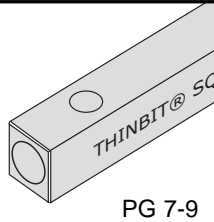
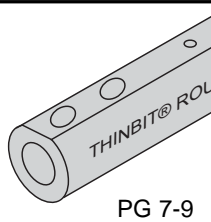
MODIFICATIONS

SEE PAGE
8-3
FOR ADDITIONAL
INFORMATION



ADAPTER STYLES

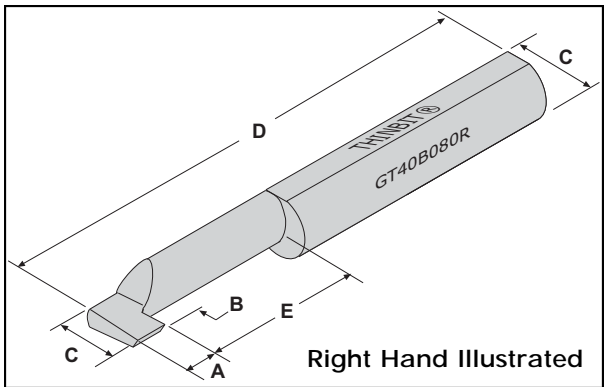
TOOLHOLDER SELECTIONS



KAISER TOOL COMPANY, INC.

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www.thinbit.com • General E-mail: thinbit@kaisertool.com • Orders: orders@thinbit.com • Quotes: quotes@thinbit.com

I.D. GROOVING TOOLS



FRONT RAKE: Primary 21°
 BACK CLEARANCE: 2°
 SIDE CLEARANCE: 2°
 RADIUS: None
 TOP RAKE: 0°
 LEAD ANGLE: 0°

ORDERING INSTRUCTIONS

Complete the **ORDER CODE** in the table below that represents your selection of groove width and tool dimensions.

EXAMPLE:

The **ORDER CODE** for a 1/4" shank, right hand tool with an .080" tool width, .110" Depth of Cut and .500" long neck is:

GT40B 0 8 0 R

Specify the Tool Width 'A' _____ ↑

SPECIFICATIONS				ORDER CODE				INFORMATION											
Minimum Bore & Shank 'C'	Tool Width Range 'A' +.0009/-.0000	Depth of Cut 'B'	Neck Length 'E'	DURA-MAX® 2000 Carbide See Page 9-10 for speeds and feeds		Add-ons Use 'Order Code' and Add			Overall Length 'D'	Toolholder Page 7-9 Use Toolholders Beginning With									
				Right Hand	Left Hand	Full Radius Page 8-3	Corner Radius Page 8-3	Coating Page 9-6											
1/8"	.004"-.063"	.004"-.006" = 3 x 'A'	.250"	GT20C ___ R	GT20C ___ L	* See Note	add 'FR'	(indicate size in .xxx")	TIN add 'C'	1.365" + 'A'	"AD"								
		.007"-.063" = .020"	.375"	GT21C ___ R	GT21C ___ L														
		.004"-.016" = 3 x 'A'	.250"	GT20B ___ R	GT20B ___ L														
		.017"-.063" = .050"	.375"	GT21B ___ R	GT21B ___ L														
3/16"	.004"-.093"	.004"-.011" = 3 x 'A'	.375"	GT30C ___ R	GT30C ___ L					* See Note	add 'CR_ _ _'	TiCN add 'D'	1.865" + 'A'	"AD"					
		.012"-.093" = .035"	.625"	GT31C ___ R	GT31C ___ L														
		.004"-.026" = 3 x 'A'	.375"	GT30B ___ R	GT30B ___ L														
		.027"-.093" = .080"	.625"	GT31B ___ R	GT31B ___ L														
1/4"	.004"-.125"	.004"-.016" = 3 x 'A'	.500"	GT40C ___ R	GT40C ___ L								* See Note	* See Note	TiAIN add 'E'	2.365" + 'A'	"AD"		
		.017"-.125" = .050"	.750"	GT41C ___ R	GT41C ___ L														
		.004"-.036" = 3 x 'A'	.500"	GT40B ___ R	GT40B ___ L														
		.037"-.125" = .110"	.750"	GT41B ___ R	GT41B ___ L														
5/16"	.004"-.156"	.004"-.021" = 3 x 'A'	.625"	GT50C ___ R	GT50C ___ L	* See Note	* See Note	Diamond add 'F'	2.330" + 'A'							"AD"			
		.022"-.156" = .063"	1.000"	GT51C ___ R	GT51C ___ L														
		.004"-.046" = 3 x 'A'	.625"	GT50B ___ R	GT50B ___ L														
		.047"-.156" = .140"	1.000"	GT51B ___ R	GT51B ___ L														
3/8"	.004"-.187"	.004"-.036" = 3 x 'A'	.750"	GT60C ___ R	GT60C ___ L				* See Note	* See Note	Diamond add 'F'	2.800" + 'A'				"AD"			
		.037"-.187" = .110"	1.250"	GT61C ___ R	GT61C ___ L														
1/2"	.004"-.250"	.004"-.050" = 3 x 'A'	1.000"	GT80C ___ R	GT80C ___ L							* See Note				* See Note	Diamond add 'F'	3.240" + 'A'	"AD"
		.051"-.250" = .150"	1.750"	GT81C ___ R	GT81C ___ L														

* Maximum radius limited to Depth of Cut

KAISER TOOL COMPANY, INC.

SHANK SIZES AND APPLICATIONS

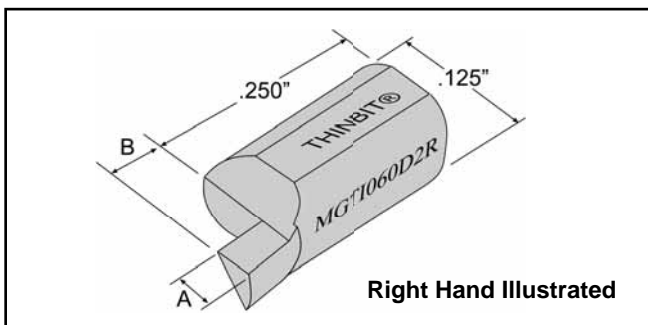
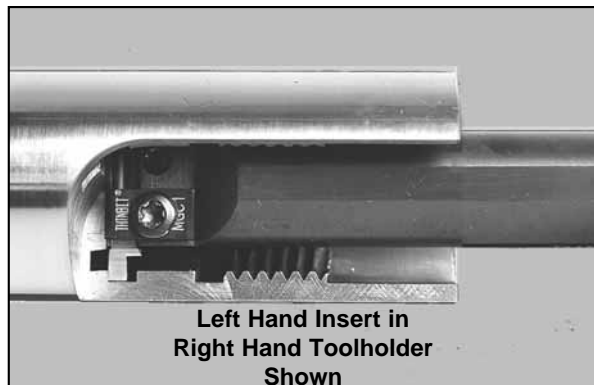
- Internal grooving and profiling for diameters .325" and larger.
- Shank sizes 1/4", 3/8", 1/2" and 5/8" in steel, heavy metal or carbide.

GENERAL INFORMATION

- All toolholders shipped in 24 hours.
- All toolholders are reversible for right and left hand orientation.

MODIFICATIONS

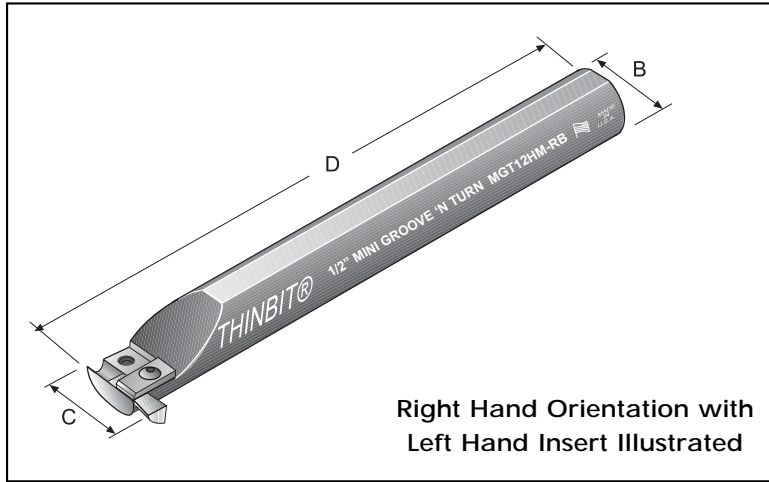
- Modifications can be provided on any of our tooling. Please contact us with your application requirements.



FRONT RAKE: 15°
BACK CLEARANCE: 2° both sides
SIDE CLEARANCE: 2° I.D. side
RADIUS: None
TOP RAKE: 0°
LEAD ANGLE: 0°

SPECIFICATIONS			ORDER CODE				
Insert Orientation	Insert Width 'A' +.001"/-.001"	Depth of Cut 'B'	Insert Grades		Add-ons		
			DURA-MAX® 2000 Carbide For Steel & Interrupted Cutting	DURA-MAX® 5000 Carbide For Aluminum & Non-ferrous	Full Radius Page 8-3	Corner Radius Page 8-3	Coating Page 9-6
Right Hand For ID grooving use left hand 'MGT' Page 1-5 For face grooving use right hand 'MGTF' Page 2-6	.004"-.063"	<u>Width</u> <u>DOC</u> .004"-.031" = 2 x 'A' .032"-.063" = .063"	MGTI _ _ _D2R	MGTI _ _ _D5R	add 'FR'	(indicate size in .xxx")	TiN add 'C' TiCN add 'D' TiAlN add 'E' Diamond add 'F'
	.064"-.125"	<u>Width</u> <u>DOC</u> .064"-.083" = 1.5 x 'A' .084"-.125" = .125"					
Left Hand For ID grooving use right hand 'MGT' Page 1-5 For face grooving use left hand 'MGTF' Page 2-6	.004"-.063"	<u>Width</u> <u>DOC</u> .004"-.031" = 2 x 'A' .032"-.063" = .063"	MGTI _ _ _D2L	MGTI _ _ _D5L			
	.064"-.125"	<u>Width</u> <u>DOC</u> .064"-.083" = 1.5 x 'A' .084"-.125" = .125"					

KAISER TOOL COMPANY, INC.



- Note:
- All toolholders are reversible for right hand or left hand orientation.
 - For grooving:

Insert Width	Depth of Cut
.004"-.031"	2 x width
.032"-.063"	.063"
.064"-.083"	1.5 x width
.084"-.125"	.125"

ORDERING INSTRUCTIONS

Select the **ORDER CODE** in the table below that represents your selection of tool specifications.

EXAMPLE:

The **ORDER CODE** for a .575" minimum bore toolholder with a 1/2" steel shank is: **MGT12**

SPECIFICATIONS		ORDER CODE				INFORMATION		
Minimum Bore 'C'	Toolholder Material Extension Ratios: Steel: 4xø Heavy Metal: 6xø Carbide: 8xø	Toolholder Package Includes Shank, Clamp and Hardware	Replacement Parts Clamp Only Screw Only Wrench Only			Overall Length 'D'	Shank Diameter 'B'	Inserts Use Inserts Beginning With
.325" .063" Insert Width Maximum	Steel	MGT14	MGC1	F31	W31	4.000"	1/4"	Grooving: "MGTI" Page 1-5 Threading: "MGTT" Page 4-8 Use right hand inserts for clockwise or left hand inserts for counter-clockwise
	Heavy Metal	MGT14HM				3.965"		
	Carbide	MGT14C				6.504"		
.450" .063" Insert Width Maximum	Steel	MGT38	MGC1	F31	W31	5.500"	3/8"	
	Heavy Metal	MGT38HM				5.485"		
	Carbide	MGT38C				6.768"		
.575" (Threading & Groove Widths .004"-.063") or .640" (Groove Widths .064"-.125")	Steel	MGT12	MGC1	F31	W31	5.500"	1/2"	
	Heavy Metal	MGT12HM				5.485"		
.690" (Threading & Groove Widths .004"-.063") or .755" (Groove Widths .064"-.125")	Steel	MGT58	MGC1	F31	W31	5.500"	5/8"	

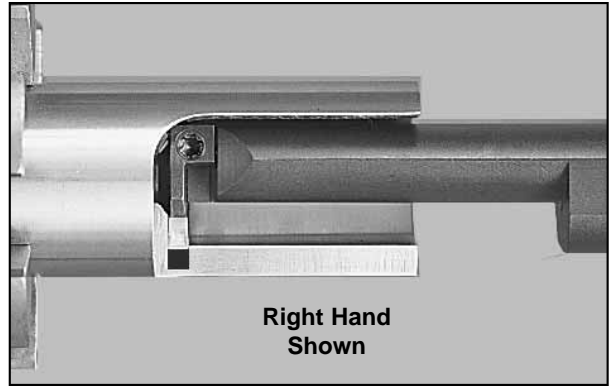
KAISER TOOL COMPANY, INC.

SHANK SIZES AND APPLICATIONS

- Internal grooving for diameters 1" and larger.
- 3/4" and 1" shank diameters.

GENERAL INFORMATION

- DEEPGROOVE® packages shipped in 1-5 days.
- Elliptical neck for increased strength and rigidity.
- Right hand orientation for counter-clockwise rotation.

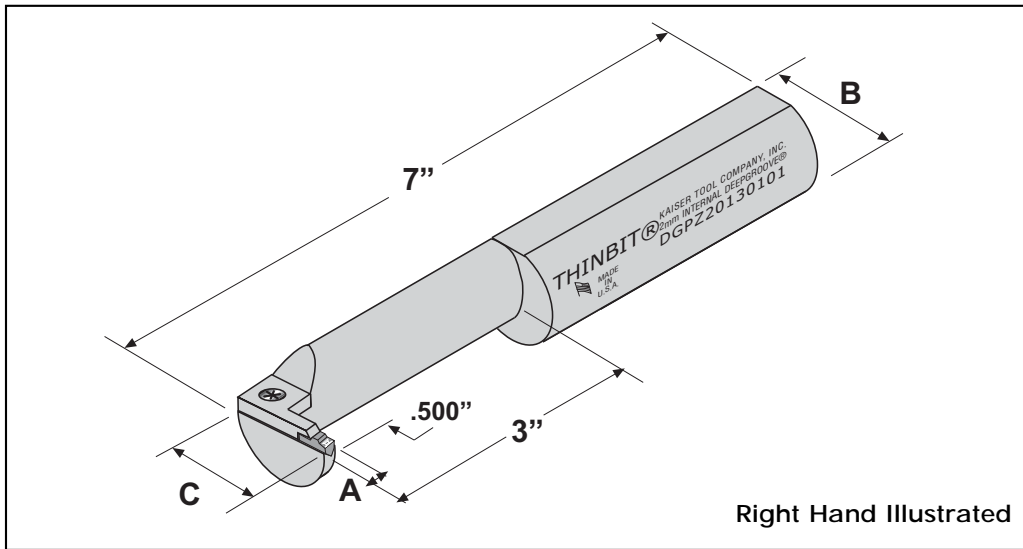


INSERT STYLES



INSERT SELECTIONS SEE PAGE 6-1

Modifications can be provided on any of our tooling. Please contact us with your application requirements.



ORDERING INSTRUCTIONS

Select the **ORDER CODE** in the table below that represents your selection of tool specifications.

EXAMPLE:

The **ORDER CODE** for a 2mm insert width toolholder package with a 1" shank is:
DGPZ20130101

SPECIFICATIONS			ORDER CODE				INFO.			
Minimum Bore 'C'	Insert Width 'A'	Shank Diameter 'B'	Toolholder Package Includes Shank, Clamp and Hardware Right Hand	Replacement Parts				Inserts Page 6-1 Use Inserts Beginning With		
				Shank	Clamp	Screw	Wrench			
1"	2mm (.078")	3/4"	DGPZ20130134	DGT20133401R	DGC82013	S7352	W4010	"DGI2"		
		1"	DGPZ20130101	DGT20130101R	DGC82013					
	3mm (.118")	3/4"	DGPZ30130134	DGT30133401R	DGC83013			S7352	W4010	"DGMI3"
		1"	DGPZ30130101	DGT30130101R	DGC83013					
	4mm (.157")	3/4"	DGPZ40130134	DGT40133401R	DGC84013			S7352	W4010	"DGMI4"
		1"	DGPZ40130101	DGT40130101R	DGC84013					

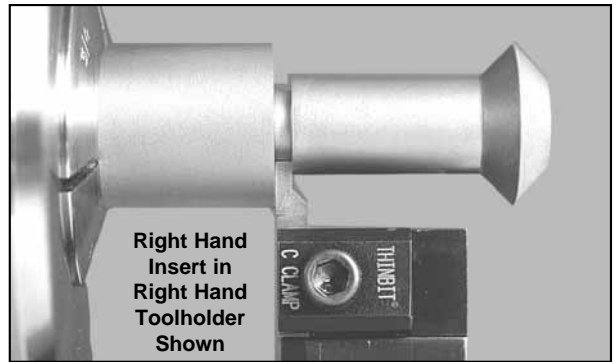
KAISER TOOL COMPANY, INC.

GROOVE 'N TURN[®] INSERTS

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

INSERT SIZES AND APPLICATIONS

- External grooving and turning.
- Internal grooving and boring with 1.250" minimum bore diameter.
- .004" through .150" in .001" increments available.



INSERT GRADES AND COATINGS

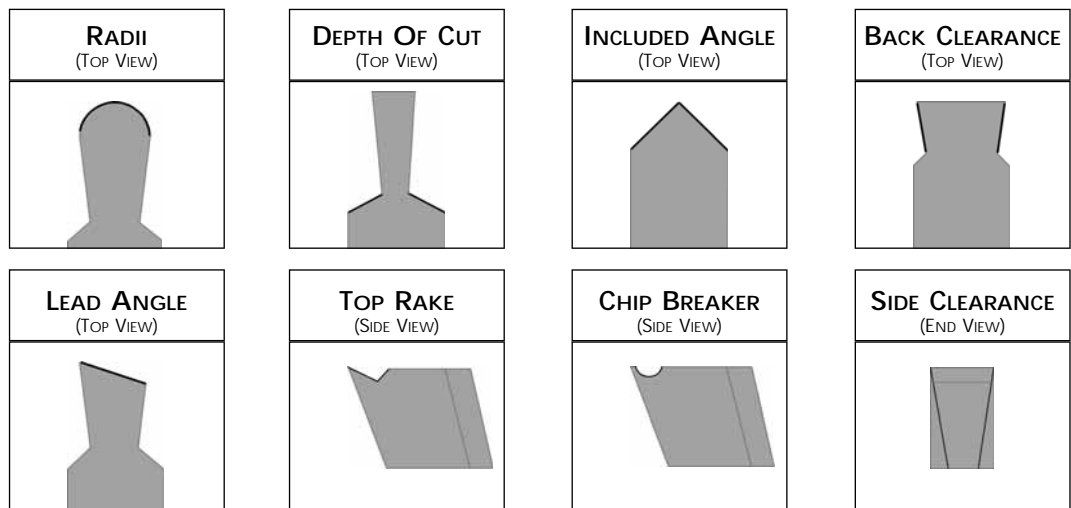
- Sub-micron grain **DURA-MAX[®] 2000** and **5000** Carbides and High Speed Steel.
- Inserts available with TiN, TiAlN, TiCN and Diamond coating.

GENERAL INFORMATION

- Uncoated, TiN and TiAlN **DURA-MAX[®] 2000** and **5000** Carbides and uncoated High Speed Steel stocked for fast, 24 - 48 hour shipment.

MODIFICATIONS

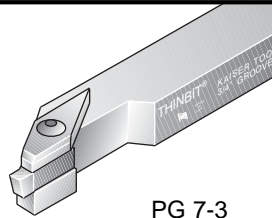
SEE PAGE 8-3 FOR ADDITIONAL INFORMATION



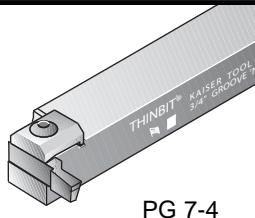
TOOLHOLDER SELECTIONS

CNC, SWISS, CONVENTIONAL STYLE

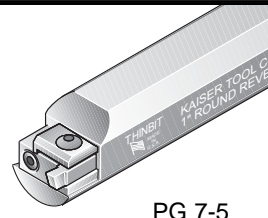
ROUND STYLE



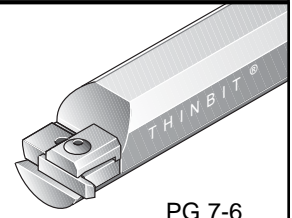
PG 7-3



PG 7-4



PG 7-5

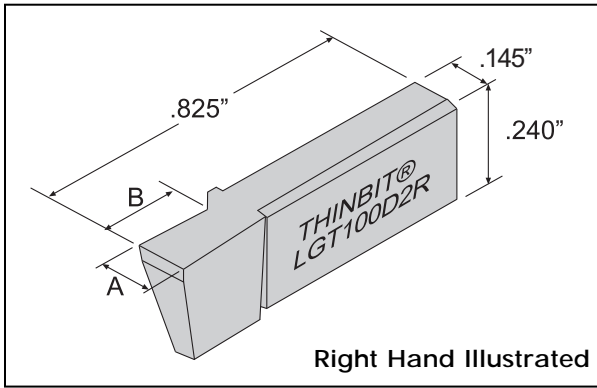


PG 7-6

KAISER TOOL COMPANY, INC.

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O.D./I.D. GROOVING AND TURNING INSERTS



FRONT RAKE:
 CARBIDE: Primary 10° honed, Secondary 15°
 HIGH SPEED STEEL: 15°

BACK CLEARANCE: 2-1/2° both sides

SIDE CLEARANCE: .004" - .019" - 0° both sides
 .020" - .150" - 5° both sides

RADIUS: None or .007" standard; all sizes available

TOP RAKE: 0°

LEAD ANGLE: 0°

NOTE: .004"-.019" inserts are not designed for turning

ORDERING INSTRUCTIONS

Complete the **ORDER CODE** in the table below that represents your selection of groove width and insert grade.

EXAMPLE:

The **ORDER CODE** for a right hand, .100" insert width in **DURA-MAX® 2000** is:

LGT 1 0 0 D 2 R

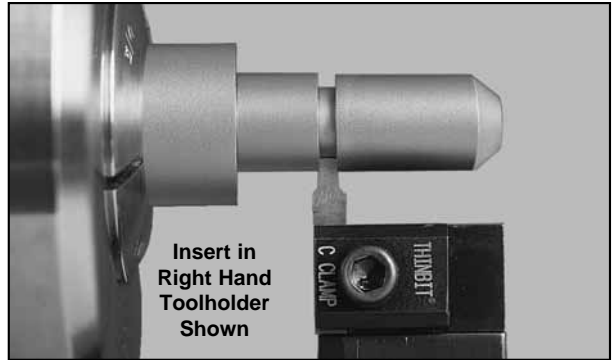
Specify the Insert Width 'A'

SPECIFICATIONS			ORDER CODE			INFO.			
Insert Orientation & Radius	Insert Width 'A' +.0009/-.0000	Depth of Cut 'B'	Insert Grades See Page 9-5 for expanded material descriptions and Page 9-10 for speeds and feeds information			Add-ons Use 'Order Code' and Add			Toolholder Catalog Section 7 Use Toolholders Beginning With
			DURA-MAX® 2000 Carbide For Steel & Interrupted Cutting	DURA-MAX® 5000 Carbide For Aluminum & Non-ferrous	High Speed Steel	Full Radius Page 8-3	Corner Radius Page 8-3	Coating Page 9-6	
Right Hand; No Radius	.004"-.150"	Width DOC .004"-.033" = 3 x 'A' .034"-.039" = .100" .040"-.100" = 2.5 x 'A' .101"-.150" = .250"	LGT ___ D2R	LGT ___ D5R	LGT ___ HSR	add 'FR'	add 'CR___' (indicate size in .xxx")	TiN add 'C' TiCN add 'D'	"L" Use right hand straight holder or left hand 90° holder
Left Hand; No Radius	.004"-.150"		LGT ___ D2L	LGT ___ D5L	LGT ___ HSL	add 'FR'	add 'CR___' (indicate size in .xxx")	TiAIN add 'E' Diamond add 'F'	"L" Use left hand straight holder or right hand 90° holder

KAISER TOOL COMPANY, INC.

**INSERT SIZES
AND
APPLICATIONS**

- External grooving.
- Internal **Static O-Ring** grooving with 1.250" minimum bore diameter.



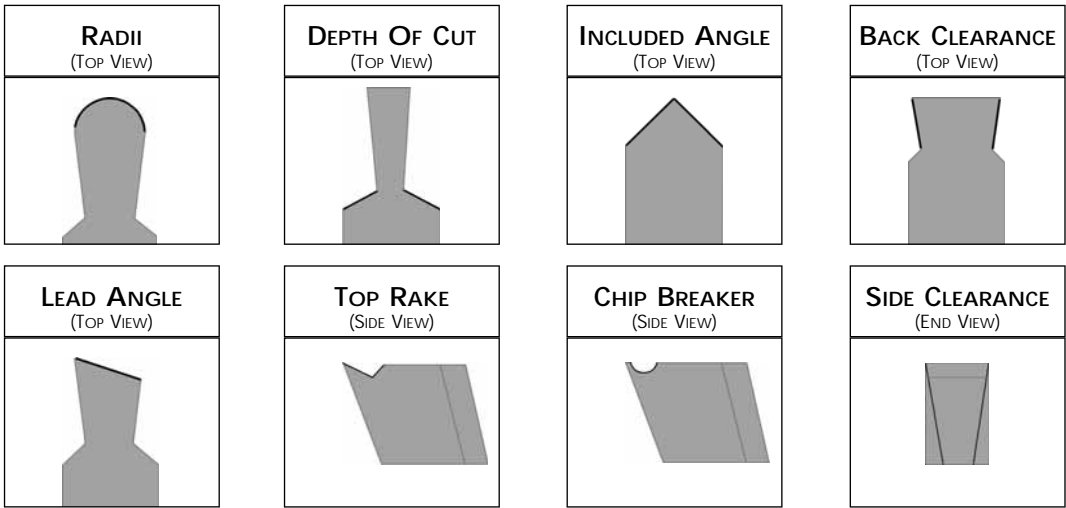
**INSERT GRADES
AND
COATINGS**

- Sub-micron grain **DURA-MAX[®] 2000** and **5000** Carbides.
- Inserts available with TiN, TiAlN, TiCN and Diamond coating.

**GENERAL
INFORMATION**

- Uncoated **DURA-MAX[®] 2000** and **5000** Carbides stocked for **fast, 24 - 48** hour shipment.

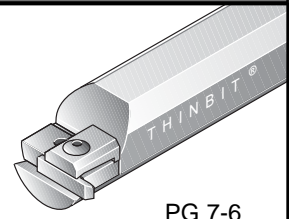
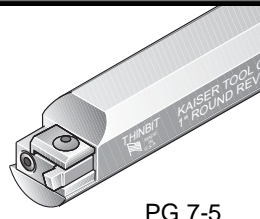
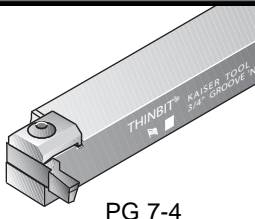
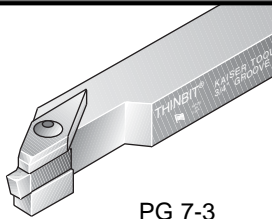
MODIFICATIONS
SEE PAGE
8-3
FOR ADDITIONAL
INFORMATION



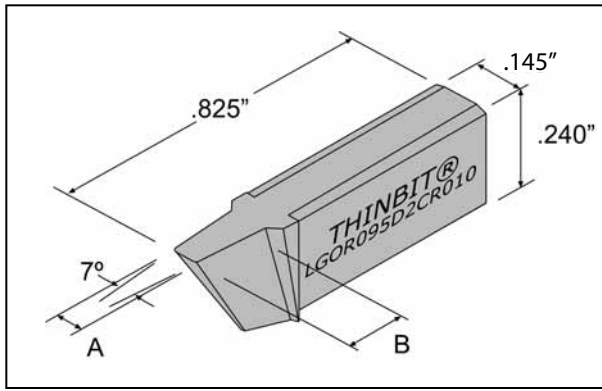
**TOOLHOLDER
SELECTIONS**

CNC, SWISS, CONVENTIONAL STYLE

ROUND STYLE



O.D. STATIC O-RING INSERTS



FRONT RAKE: Primary 10° honed, Secondary 15°
 BACK CLEARANCE: 7° included angle
 SIDE CLEARANCE: 5° both sides
 RADIUS: .010" or .020"
 TOP RAKE: 0°
 LEAD ANGLE: 0°
 DEPTH OF CUT: .200" or .250"

ORDERING INSTRUCTIONS

Complete the **ORDER CODE** in the table below that represents your selection of groove width and insert grade.

EXAMPLE:

The **ORDER CODE** for a centered .010" corner radius in **DURA-MAX® 2000**, with a .095" insert width is:

L G O R 095 D 2 C R 0 1 0

Specify the Insert Width 'A' →

SPECIFICATIONS			ORDER CODE		INFO.	
Insert Orientation & Radius	Insert Width	Depth of Cut	Insert Grades See Page 9-5 for expanded material descriptions and Page 9-12 for speeds and feeds information		Add-ons Use 'Order Code' and Add Coating Page 9-6	Toolholder Catalog Section 7 Use Toolholders Beginning With
	'A' +.001"/-0.001"	'B'	DURA-MAX® 2000 Carbide For Steel & Interrupted Cutting	DURA-MAX® 5000 Carbide For Aluminum & Non-ferrous		
Centered .010" Corner Radius	.095"	.250"	LGOR095D2CR010	LGOR095D5CR010	TiN add 'C'	"L"
	.142"	.200"	LGOR142D2CR010	LGOR142D5CR010	TiCN add 'D' TiAlN add 'E'	
Centered .020" Corner Radius	.125"	.250"	LGOR125D2CR020	LGOR125D5CR020	Diamond add 'F'	

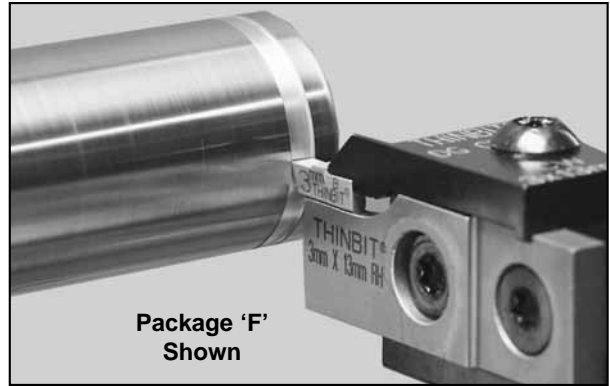
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TOOL SIZES AND APPLICATIONS

- External grooving and parting with depths of cut to 1".
- Shank sizes 3/4", 1", 16mm, 20mm and 25mm in straight and 90° orientations.

GENERAL INFORMATION

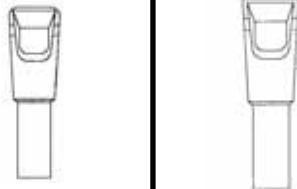
- DEEPGROOVE® packages shipped in 1-5 days.
- Modular tooling system will also accept face grooving heads. See compatibility guide on Page 9-8.
- If a round shank is required, see Page 7-11, package styles 'O' and 'R'.



INSERT SELECTIONS

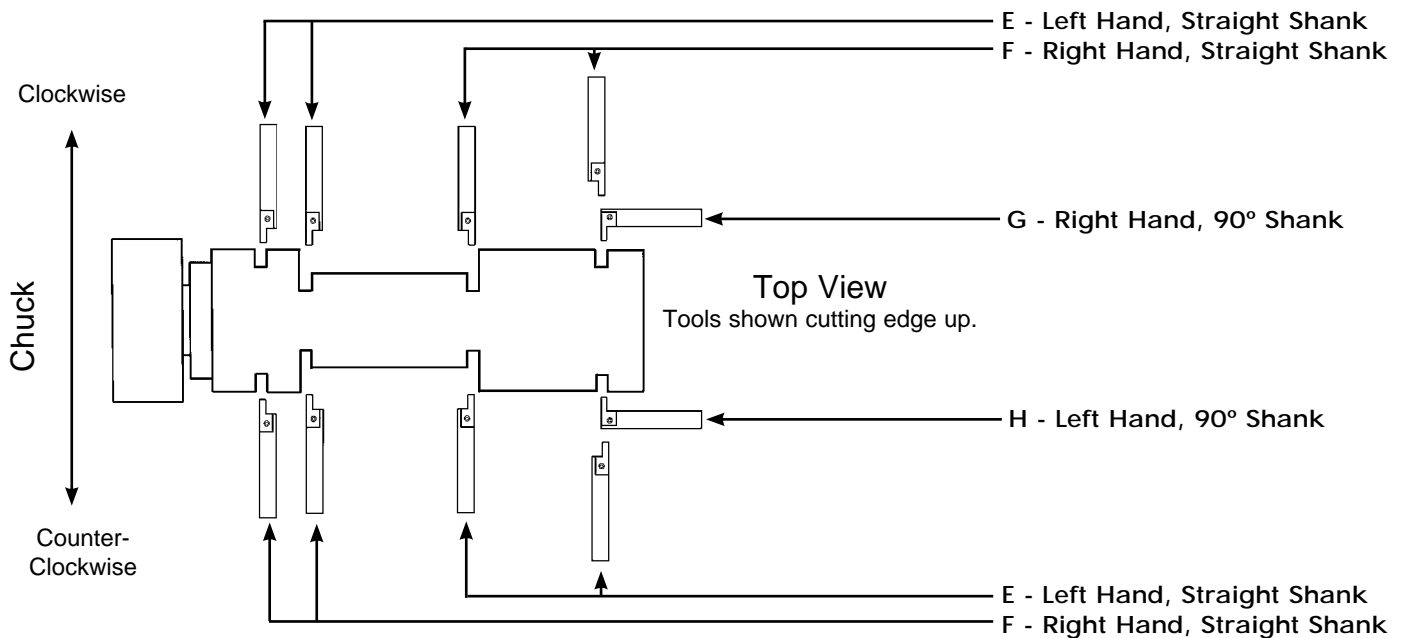
SEE PAGE
6-1

INSERT STYLES



Modifications can be provided on any of our tooling.
Please contact us with your application requirements.

PACKAGE STYLE



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ORDERING INSTRUCTIONS



3/4" and 1" Shanks

Select the **ORDER CODE** in the table below that represents your selection of tool specifications.

EXAMPLE:

The **ORDER CODE** for a 3mm insert width, toolholder package style 'E' with a .500" depth of cut and 1" shank is:

DGPE301301

Metric Shanks

Complete the **ORDER CODE** in the table below with the shank size as 16 (16mm), 20 (20mm) or 25 (25mm).

EXAMPLE:

The **ORDER CODE** for a 3mm insert width, toolholder package style 'E' with a .500" depth of cut and 20mm shank is:

DGPE3013 2Q ← Specify the 'SHANK SIZE'

SPECIFICATIONS				ORDER CODE							
Insert Width	Depth of Cut	Package Style See Page 1-13	Inserts Page 6-1 Use Inserts Beginning With	Toolholder Package <small>Includes Shank, Head, Clamp and Hardware</small>			Head	Head Hardware	Replacement Parts		
				3/4" Shank <small>3/4"x3/4"x5"</small>	1" Shank <small>1"x1"x5"</small>	Metric Shanks <small>16 = 16x16x125mm 20 = 20x1"x125mm 25 = 25x1"x125mm</small>			Shanks <small>34 = 3/4" 01 = 1" 16 = 16mm 20 = 20mm 25 = 25mm</small>	Clamp	Clamp Hardware
2mm (.078")	13mm (1/2")	E	"DGI2"	DGPE201334	DGPE201301	DGPE2013 __	DGH22013		DGS__XL	DGC22013	
		G		DGPG201334	DGPG201301	DGPG2013 __			DGS__YR		
		F		DGPF201334	DGPF201301	DGPF2013 __			DGS__XR		
		H		DGPH201334	DGPH201301	DGPH2013 __			DGS__YL		
3mm (.118")	13mm (1/2")	E	"DGI3"	DGPE301334	DGPE301301	DGPE3013 __	DGH23013		DGS__XL	DGC23013	
		G		DGPG301334	DGPG301301	DGPG3013 __			DGS__YR		
		F		DGPF301334	DGPF301301	DGPF3013 __			DGS__XR		
		H		DGPH301334	DGPH301301	DGPH3013 __			DGS__YL		
4mm (.157")	13mm (1/2")	E	"DGI4"	DGPE401334	DGPE401301	DGPE4013 __	DGH24013		DGS__XL	DGC24013	
		G		DGPG401334	DGPG401301	DGPG4013 __			DGS__YR		
		F		DGPF401334	DGPF401301	DGPF4013 __			DGS__XR		
		H		DGPH401334	DGPH401301	DGPH4013 __			DGS__YL		
	20mm (3/4")	E		DGPE402034	DGPE402001	DGPE4020 __	DGH24020		DGS__XL	DGC24020	
		G		DGPG402034	DGPG402001	DGPG4020 __			DGS__YR		
		F		DGPF402034	DGPF402001	DGPF4020 __			DGS__XR		
		H		DGPH402034	DGPH402001	DGPH4020 __			DGS__YL		
5mm (.197")	13mm (1/2")	E	"DGI5"	DGPE501334	DGPE501301	DGPE5013 __	DGH25013	Wrench: W4025	DGS__XL	DGC25013	Wrench: W4025
		G		DGPG501334	DGPG501301	DGPG5013 __			DGS__YR		
		F		DGPF501334	DGPF501301	DGPF5013 __			DGS__XR		
		H		DGPH501334	DGPH501301	DGPH5013 __			DGS__YL		
	25mm (1")	E		DGPE502534	DGPE502501	DGPE5025 __	DGH25025		DGS__XL	DGC25025	
		G		DGPG502534	DGPG502501	DGPG5025 __			DGS__YR		
		F		DGPF502534	DGPF502501	DGPF5025 __			DGS__XR		
		H		DGPH502534	DGPH502501	DGPH5025 __			DGS__YL		
6mm (.236")	13mm (1/2")	E	"DGI6"	DGPE601334	DGPE601301	DGPE6013 __	DGH26013		DGS__XL	DGC26013	
		G		DGPG601334	DGPG601301	DGPG6013 __			DGS__YR		
		F		DGPF601334	DGPF601301	DGPF6013 __			DGS__XR		
		H		DGPH601334	DGPH601301	DGPH6013 __			DGS__YL		
	25mm (1")	E		DGPE602534	DGPE602501	DGPE6025 __	DGH26025		DGS__XL	DGC26025	
		G		DGPG602534	DGPG602501	DGPG6025 __			DGS__YR		
		F		DGPF602534	DGPF602501	DGPF6025 __			DGS__XR		
		H		DGPH602534	DGPH602501	DGPH6025 __			DGS__YL		

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