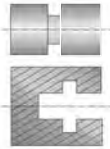


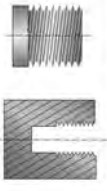



	GENERAL TECHNICAL INFORMATION	
	PAGE 9-2	PAGE OMITTED
	PAGE 9-3	EXTERNAL APPLICATION REFERENCE
	PAGE 9-4	INTERNAL APPLICATION REFERENCE
	PAGE 9-5	INSERT GRADE INFORMATION
	PAGE 9-6	INSERT COATING INFORMATION
	PAGE 9-7	TROUBLESHOOTING INFORMATION
	PAGE 9-8	GENERAL TOOLHOLDER INFORMATION

	GROOVING - CATALOG SECTION 1	
	PAGE 9-9	GEOMETRY AND SET-UP INFORMATION
	PAGE 9-10	SPEEDS AND FEEDS

	FACE GROOVING - CATALOG SECTION 2	
	PAGE 9-11	GEOMETRY AND SET-UP INFORMATION
	PAGE 9-12	SPEEDS AND FEEDS

	BORING & TURNING - CATALOG SECTION 3	
	PAGE 9-13	GEOMETRY AND SET-UP INFORMATION
	PAGE 9-14	SPEEDS AND FEEDS FOR MBE, MBF AND MBG SERIES BORING BARS
	PAGE 9-15	SPEEDS AND FEEDS FOR MBZ, MBA, MBB AND MBC SERIES BORING BARS AND MICROBIT [®] SOLID CARBIDE BORING TOOLS
	PAGE 9-16	SPEEDS AND FEEDS FOR MBA, MBB AND MBC PCD AND CBN TIPPED INSERTS

	THREADING - CATALOG SECTION 4	
	PAGE 9-17	GEOMETRY AND SET-UP INFORMATION
	PAGE 9-18	SPEEDS AND FEEDS

	PARTING - CATALOG SECTION 5	
	PAGE 9-19	GEOMETRY AND SET-UP INFORMATION
	PAGE 9-20	SPEEDS AND FEEDS

HOURS:

OUR BUSINESS HOURS ARE **7:30AM** TO **5:00PM** EASTERN STANDARD TIME.
 PROCESSING FOR SAME DAY SHIPMENT STOPS AT **3:00PM** EASTERN STANDARD TIME.

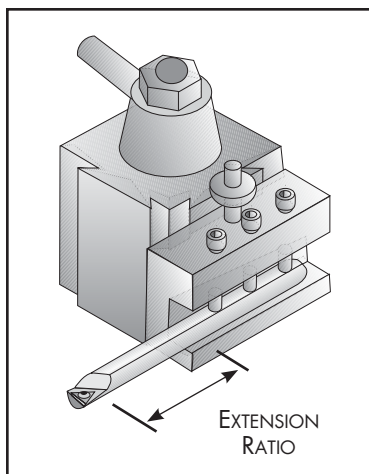
LOT NUMBERS:

MOST PRODUCTS HAVE A 6 DIGIT LOT NUMBER LASER ENGRAVED ALONG WITH THE PART NUMBER.
 THIS NUMBER MAY REQUIRE 10X MAGNIFICATION TO READ.

NOTE: REGISTERED PATENTS AND TRADEMARKS LICENSED TO KAISER TOOL COMPANY, INC. ARE
 LOCATED ON OUR WEBSITE AT: [HTTP://WWW.THINBIT.COM/ABOUT/TRADE_NAMES.HTML](http://www.thinbit.com/about/trade_names.html)

KAISER TOOL COMPANY, INC.

Phone: 888-THINBIT (888-844-6248) or (260) 484-3620 • Fax: 888-THINFAX (888-844-6329) or (260) 482-1881
www.thinbit.com • General E-mail: thinbit@kaisertool.com • Orders: orders@thinbit.com • Quotes: quotes@thinbit.com



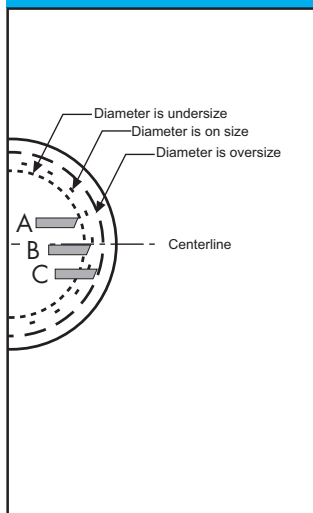
Extension Ratios					
Bar Diameter	Steel 4 x ø	Heavy Metal 6 x ø	Carbide 8 x ø	Shank Height	Steel
.156"	.625"	.937"	1.250"	.312"	1.250"
.187"	.750"	1.125"	1.500"	.375"	1.500"
.250"	1.000"	1.500"	2.000"	.500"	2.000"
.312"	1.250"	1.875"	2.500"	.625"	2.500"
.375"	1.500"	2.250"	3.000"	.750"	2.500"
.500"	2.000"	3.000"	4.000"	1.000"	2.500"
.625"	2.500"	3.750"	5.000"	1.250"	2.500"
.750"	3.000"				
1.000"	4.000"				

Extending a toolholder beyond these recommendations can cause excessive deflection which will result in poor surface finish and reduced insert life. These recommendations may need to be reduced if cutting materials with low machinability, taking heavy cuts or using the tooling in non-rigid machine set-ups.

Toolholder Notes:

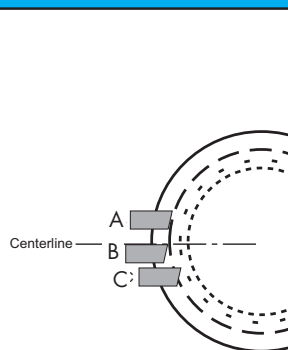
- To avoid burrs on your shanks, use only dog point screws. The use of cup point screws promotes burrs on the shanks and can result in problems removing or re-installing bars.
- Complete toolholders may be an assembly of several components each having an individual part number.
- Heavy Metal is a high density Tungsten based alloy that is very tough, stiff and vibration resistant.

INTERNAL TOOL & FACE GROOVING CUTTING HEIGHTS



- Normal cutting forces cause tool deflection, therefore internal tools are manufactured to cut .002" to .010" above centerline.
- Setting tool above 'A' will cause diameter to be under desired size.
- Setting tool to cut at 'A' will cause insert to deflect to 'B' and cut desired diameter.
- Setting tool below 'A' will cause insert to deflect to 'C' and cause diameter to be oversized.
- Keep in mind if tools are mounted cutting edge toward floor, above center is toward floor.

EXTERNAL TOOL CUTTING HEIGHTS



- External tools are manufactured to cut on center to .005" below centerline.
- Setting tool to cut at 'A' can cause heel of insert to rub or cause failure.
- Setting tool to cut at 'B' will cause insert to deflect slightly and cut at 'C'.
- Setting tool below 'C' can cause insert to grab or fail.
- Keep in mind if tools are mounted cutting edge toward floor, below center is toward ceiling.

DEEPCROOVE® Head and Shank Compatibility Chart

Shank	Package	Page	Head	Clamp	Shank	Package	Page	Head	Clamp	Shank	Package	Page	Head	Clamp
DGS__XL	C	2-16	DGH4	DGC2	DGS__XR	B	2-16	DGH3	DGC1	DGS__ZR	N	2-8	DGH6	DGC6
	E	1-14	DGH2	DGC2		F	1-14	DGH1	DGC1		O	7-13	DGH3	DGC1
	S	7-14	DGH5	DGC5		T	7-14	DGH6	DGC6		Q	7-13	DGH1	DGC1
DGS__YR	D	2-16	DGH4	DGC2	DGS__YL	A	2-16	DGH3	DGC1	DGS__ZL	M	2-8	DGH5	DGC5
	G	1-14	DGH2	DGC2		H	1-14	DGH1	DGC1		P	7-13	DGH4	DGC2
	U	7-14	DGH5	DGC5		V	7-14	DGH6	DGC6		R	7-13	DGH2	DGC2

KAISER TOOL COMPANY, INC.

Speeds & Feeds - Grooving

Material To Be Cut		Carbide			High Speed Steel	
		Carbide Grade	Speed (SFM)	Feed (IPR)	Speed (SFM)	Feed (IPR)
Aluminum	2021-6061	DURA-MAX® 5000	1000	.002	500	.002
Brass		DURA-MAX® 5000	250	.001	75	.001
Bronze		DURA-MAX® 5000	250	.001	70	.001
Cast Iron	Gray	DURA-MAX® 5000	120-345	.0015-.004	35-125	.0015-.004
	Ductile	DURA-MAX® 2000	70-345	.001-.004	15-125	.001-.004
	Malleable	DURA-MAX® 2000	75-525	.0015-.003	35-170	.0015-.003
Copper	101-757	DURA-MAX® 5000	150-170	.002	85-90	.002
	834-978	DURA-MAX® 5000	600	.003	340	.003
Magnesium	AZ, AM, EZ, ZE, HK Types	DURA-MAX® 5000	1000	.002	500	.002
Nickel	Nickel 200-230	DURA-MAX® 5000	225	.002	85	.002
	Monel	DURA-MAX® 5000	150	.001-.0015	15-60	.001-.0015
	Inconel, Waspaloy	DURA-MAX® 5000	45	.002	15	.002
	Hastelloy	DURA-MAX® 5000	75-95	.002	10-15	.002
Plastic	Teflon (TFE, CTFE)	DURA-MAX® 5000	400	.002	250	.002
	Nylon	DURA-MAX® 5000	350-600	.002-.003	350	.002-.003
	Phenolic	DURA-MAX® 5000	600	.003	350	.003
	Glass Filled	DURA-MAX® 5000	250	.002	NA	NA
Stainless Steel	201-385	DURA-MAX® 5000	225-275	.001-.0015	65-85	.001-.0015
	405-446	DURA-MAX® 2000	300	.0011	90	.0011
	14-4, 15-5, 16-6, 17-4 PH	DURA-MAX® 2000	110-205	.0006-.0012	30-60	.0006-.0012
Steel	1005-1029	DURA-MAX® 2000	255-450	.001-.002	80-140	.001-.002
	1030-1055	DURA-MAX® 2000	115-370	.0009-.0015	35-115	.0009-.0015
	1060-1095	DURA-MAX® 2000	95-255	.0007-.001	30-80	.0007-.001
	10L45-10L50	DURA-MAX® 2000	130-450	.0009-.0015	40-140	.0009-.0015
	12L13-12L15	DURA-MAX® 2000	550-600	.003-.0035	225-280	.003-.0035
	41L30-41L50	DURA-MAX® 2000	65-350	.0007-.0015	20-110	.0007-.0015
	4140-4150	DURA-MAX® 2000	65-370	.0007-.0015	20-115	.0007-.0015
	4140 (35 HRc)	DURA-MAX® 2000	200	.001	70	.001
	8617-8622	DURA-MAX® 2000	125-390	.001-.0016	40-120	.001-.0016
	M1-M6	DURA-MAX® 2000	190	.0013	60	.0013
	H10-H19	DURA-MAX® 2000	65-255	.0007-.0011	20-80	.007-.0011
	D2-D7	DURA-MAX® 2000	150-205	.001	45-60	.001
	A2-A9, 01-07	DURA-MAX® 2000	150-205	.001	45-60	.001
	W1, W2	DURA-MAX® 2000	375	.0015	110	.0015
	M-50, 52100	DURA-MAX® 2000	65-275	.0007-.0015	20-85	.0007-.0015
Titanium	Ti-6Al-6V	DURA-MAX® 5000	95	.001	45	.001

THESE SPEEDS AND FEEDS ARE GIVEN AS A STARTING POINT ONLY AND MAY BE ADJUSTED UP OR DOWN DEPENDING ON CONDITIONS. ANY TIME THERE IS AN INTERRUPTED CUT IN YOUR OPERATION, **DURA-MAX® 2000** CARBIDE IS RECOMMENDED.

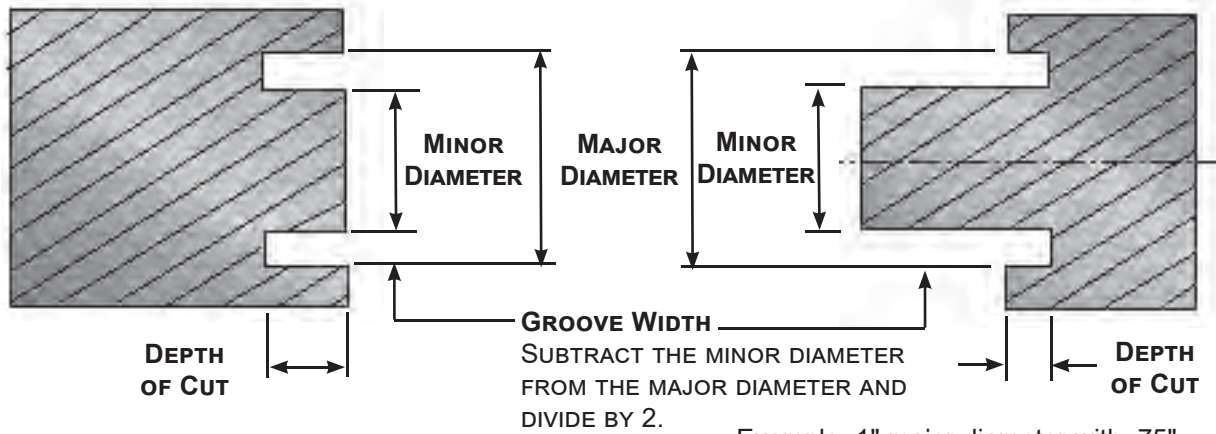
FORMULA FOR CONVERSION FROM SFM TO RPM

SFM = SURFACE FEET PER MINUTE RPM = REVOLUTIONS PER MINUTE IPR = INCHES PER REVOLUTION DIAMETER = CUTTING DIAMETER $\pi = 3.14$

$$RPM = \frac{SFM \times 12}{(\pi) \times DIAMETER}$$

KAISER TOOL COMPANY, INC.

Phone: 888-THINBIT (888-844-6248) or (260) 484-3620 • Fax: 888-THINFAX (888-844-6329) or (260) 482-1881
www.thinbit.com • General E-mail: thinbit@kaisertool.com • Orders: orders@thinbit.com • Quotes: quotes@thinbit.com



Example: 1" major diameter with .75" minor diameter.

$$\frac{1" - .75"}{2} = .125" \text{ Groove Width}$$

Setup Guide

External Face Grooving Applications

Decrease surface speed (SFM)
Increase feed (IPR)

Set tool on .002" to .010" above center. Keep smaller inserts closer to center.

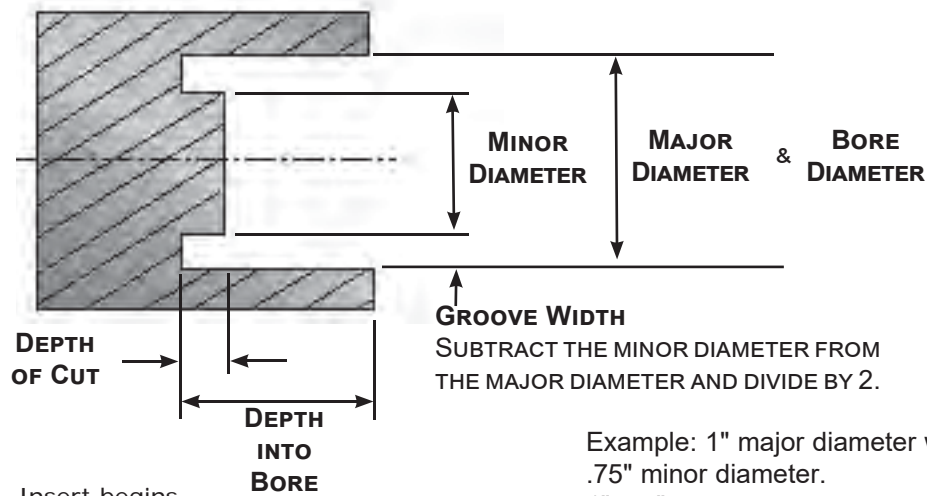
Modify Parameter

Insert width:	.004"	.020"	.040"	.060"	.080"	.100"	.120"	.140"	.160"	.180"	.200"	.220"	.250"
---------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Internal Face Grooving Applications

Decrease surface speed (SFM)
Increase feed (IPR)

Set tool .002" to .010" above center. Keep smaller inserts closer to center.

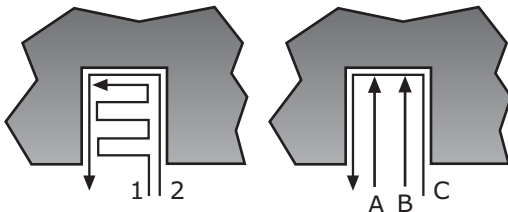


Example: 1" major diameter with .75" minor diameter.

$$\frac{1" - .75"}{2} = .125" \text{ Groove Width}$$

Insert begins with:
LGT, MGT1, FT

Insert begins with:
DGI, DGMI



Cutting Paths

Use these diagrams for expanding the size of grooves.

Note: Side load on path 1 should be 10% to 30% of depth of cut on insert.

KAISER TOOL COMPANY, INC.