

THE NEW VALUE FRONTIER



Cera-Notch Grooving and Threading System

Grooving
Threading
Face Grooving
Deep Grooving



LFC Program
Inside

ADVANCING PRODUCTIVITY

Grooving with Cermets

Characteristics:

- Offer better surface finishes on carbon and alloy steel than coated carbides
- Higher cutting speeds than coated carbide are possible, reducing cycle times
- Cermets are ideal for light feeds and few interruptions
- Kyocera offers one of the largest selection of cermets for grooving anywhere

Grades:

- **TC40** is the first choice for carbon and alloy steels
- **TC60** is recommended for ID grooving and tool steel

Grooving with Coated Carbides

Characteristics:

- Offer better edge strength for high feeds and interruptions
- Coating improves tool life and surface finish
- Better suited for low speed applications or stainless steel

Grades:

- **PR930** is a good general purpose grade for steels and stainless steels
- **PR660** is the first choice for stainless steels and tougher applications
- **KW10 (Uncoated)** is the first choice for cast irons and non-ferrous materials

Grooving with Ceramics

Characteristics:

- Ideal for grooving cast irons and hardened steels
- Excellent wear resistance
- No coolant is needed

Grades:


- **A65** can achieve high tool life and reduced cycle times in continuous grooving cast iron and hardened steels

Grooving with Kyocera cermets can save you money!

Increased Tool Life

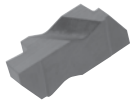
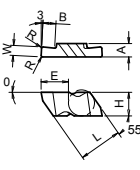
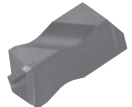
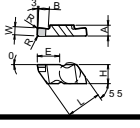
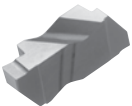
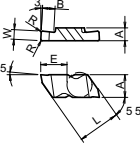
Stress Proof Spool V = 885 SFM d = .035 f = .004 ipr Wet KCGP2031R TC40	
TC40	4200 pcs/edge
Competitor Coated Carbide	1400 pcs/edge
Notes: TC40 tripled the tool life of the competitor's coated carbide	

Decreased Cycle Time


8620 Shaft Housing Kyocera Conditions V = 750 SFM d = .040 f = .003 ipr Wet KCGP3062L TC60 Competitor Conditions V = 550 SFM d = .040 f = .003 ipr Wet	
TC60	120 pcs/edge
Competitor Coated Carbide	55 pcs/edge
Notes: TC60 cut cycle time by 30% and doubled the tool life of the competitor's coated carbide	

- Better tool life leads to less inserts used, less down time, and fewer offsets.**
- Decreased cycle time means you spend less time and money machining the part.**

■ Grooving Inserts

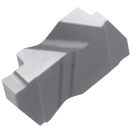
Insert	Description	Dimensions							Cermet		Carbide			Ceramic	CBN		
		+/- .001 W	B	R	A	L	H	E	TC40	TC60	PR660	PR930	KW10	A65	KBN10B		
	 KCG 2062 R/L KCG 2125 R/L KCG 3062 R/L KCG 3094 R/L KCG 3125 R/L KCG 3156 R/L	.062 .125 .062 .094 .125 .156	.110 .094 .150	 .008 	.150 	.350 	.219 	.270 						● L R ● R ●			
		 KCG 3047 R/L KCG 3062 R/L KCG 3094 R/L	.047 .062 .094	.075 .094 .150	 .008 	.195 	.634 	.344 	.405 						R ● L		
			KCGP 2031 R/L KCGP 2041 R/L KCGP 2047 R/L	.031 .041 .047	.050	.003					● ● ●	● ● ●	● ● ●	● ● ●	● ● ●		
			KCGP 2058 R/L KCGP 2062 R/L KCGP 2094 R/L KCGP 2125 R/L	.058 .062 .094 .125	.110	.008	.150	.350	.219	.270	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● ●	● ● ● R		
			KCGP 3047 R/L KCGP 3062 R/L KCGP 3072 R/L	.047 .062 .072	.075						● ● ●	● ● ●	● ● ●	● ● ●	R ● ●		
KCGP 3078 R/L KCGP 3088 R/L KCGP 3094 R/L KCGP 3097 R/L KCGP 3105 R/L			.078 .088 .094 .097 .105	.094						● ● ● ● ●	R L ● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●			
KCGP 3110 R/L KCGP 3122 R/L KCGP 3125 R/L KCGP 3142 R/L KCGP 3156 R/L KCGP 3178 R/L			.110 .122 .125 .142 .156 .178	.150	.008	.195	.634	.344	.405	● ● ● ● ● ●	● ● ● R ●	● ● ● ● ● ●	● ● ● ● ● ●	● ● ● ● ● ●			
KCGP 3185 R/L KCGP 3189 R/L KCGP 4125 R/L KCGP 4189 R/L KCGP 4213 R/L KCGP 4219 R/L KCGP 4250 R/L			.185 .189 .125 .189 .213 .219 .250	.150 .250	.008 .018		.255	.764	.453 .636	● ● ● ● ● ● ●	● ● ● ● ● ● ●	● ● ● ● ● ● ●	● ● ● ● ● ● ●	● ● ● ● ● ● ●			

■ Face Grooving Inserts

Insert	Description	Dimensions							Carbide		
		+/- .001 W	B	R	A	L	H	E	PR660	PR930	KW10
	KCFP 3125 R/L	.125		.008						●	
	KCFP 3156 R/L	.156	.150	.008	.195	.634	.344	.405		●	
	KCFP 3189 R/L	.188		.023						●	

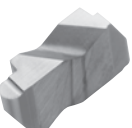
Note- See page 7 for groove limits

■ Deep Grooving Inserts

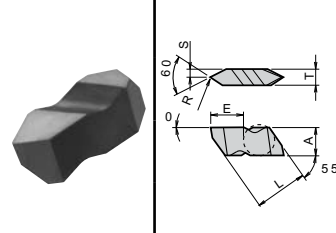
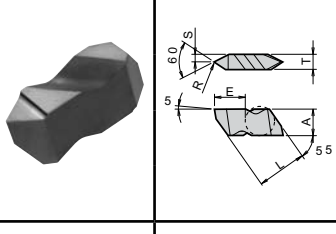
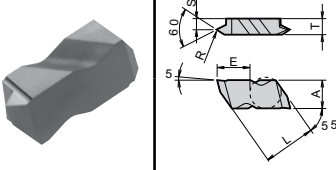
Insert	Description	Dimensions							Cermet		Carbide	
		+/- .001 W	B	R	A	L	H	E	TC40	TC60	PR660	PR930
	KCGDP 3062 R/L	.062	.125			.634		.405	●			●
	KCGDP 3094 R/L*	.094		.008					●			●
	KCGDP 3125 R/L*	.125	.250		.195	.716	.344	.505	●			●
	KCGDP 3189 R/L*	.189		.023					●			●

* These inserts have one cutting edge

■ Full Radius Grooving Inserts

Insert	Description	Dimensions							Cermet		Carbide						
		+/- .001 W	B	R	A	L	H	E	TC40	TC60	PR660	PR930	KW10				
	KCRP 2031 R/L	.062	.094	.031	.150	.350	.219	.270		R	R	R					
	KCRP 2039 R/L	.078	.110	.039												●	
	KCRP 2047 R/L	.094	.150	.047													
	KCRP 2062 R/L	.125		.062						R							
	KCRP 3031 R/L	.062	.094	.031	.195	.634	.344	.405	●	R	●	●	L				
	KCRP 3047 R/L	.094		.047									●		●	●	
	KCRP 3062 R/L	.125	.150	.062									●		●	●	
	KCRP 3078 R/L	.156		.078									●				
	KCRP 3094 R/L	.188		.094									●			R	
	KCRP 4125 R/L	.250	.250	.125	.255	.764	.453	.636	●		R	●					

■ Threading Inserts

Insert	Description	Dimensions							Cermet		Car-bide	
		Pitch TPI	A	T	R	E	S	L	TC40	TC60	PR660	PR930
	KCT 2 R/L	external 8-36 internal 7-20	.219	.150	.004	.2661	.075	.350		●	●	
	KCT 3 R/L	external 6-20 internal 5-12	.344	.195	.007	.3999	.098	.634		●	●	
	KCTP 2 R/L	external 8-36 internal 7-20	.219	.150	.004	.2661	.075	.350		●	●	
	KCTP 3 R/L	external 6-20 internal 5-12	.344	.195	.007	.3999	.098	.634		●	●	
	KCTK 2 R/L	external 14-44 internal 12-24	.219	.150	.003	.2679	.110	.350		●	●	
	KCTK 3 R/L	external 10-44 internal 9-24	.344	.195	.003	.4022	.141	.634		●	●	

● Cera-Notch Conversion Chart

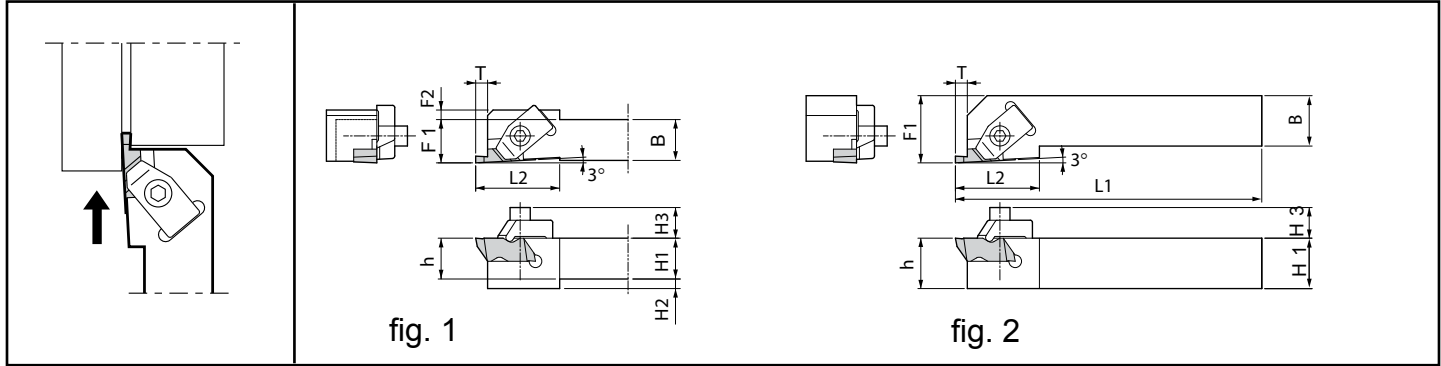
Notch/Lock Style Inserts Conversion								
Insert Style	Kyocera	Horizon	Tool-Flo	Kennametal	RTW	Valenite	Sandvik	Mitsubishi
Notch Style Grooving Inserts								
Face Grooving	KCFP	HF	FLF	NF	-	-	TLF*	EF
ID or OD Grooving	KCG/KCGP	HG	FLG	NG	PG	VLG	TLG*	EG
w/ Chipbreaker	KCGP-MY	HG-K	FLG CB	NG-K	PG-K	-	-	EG-K
Deep Grooving	KCGDP	HGD	FLGD	NGD	PGD	-	-	EGD
Positive Grooving	KCGP	HGP	FLGP	NGP	-	VLGP	TLGP*	EGP
Full Nose Radius	KCRP	HR	FLR	NR	PR	VLR	TLR*	EGR
Positive Full Nose Radius	KCRP	HRP	FLRP	NRP	PRP	VLRP	TLRP*	-
Notch Style Threading Inserts								
60° V Partial Profile	KCT	HT	FLT	NT	PT	VLT	TLT*	ET
60° V Fine Pitch Positive	KCTK	HTK	FLTK	NTK	PTK	VLTK	TLTK*	-
60° V Positive	KCTP	HTP	FLTP	NTP	PTP	VLTP	TLTP*	-

*Sandvik uses different clamp system. Requires Kyocera or any other standard clamp from competitor.

■ Toolholders (External Grooving)

KKC

OD Grooving Toolholder



Description	Stock			Dimensions									Fig.	Spare Parts													
	R	L		H1=h	H2	H3	B	L1	L2	F1	F2	T		Clamp	Clamp Screw												
KKC R/L 1010K-2-125F	●		mm	10	2	9.2	10	125	19.05	10.25	2	3.5	1	CKC-2 R/L	SKC-2	(7/64 hex)											
1212M-2-150F	●			12	-	9.2	12	150	19.05	12.25	-	3.5	1														
KKC R/L 6-2X	●	●	in	.375	-	.362	.375	2.50	.750	.562	-	.138	2	CKC-2 R/L	SKC-2	(7/64 hex)											
6-2CF	●	●		.375	.125		.375	5.00		.385	.125		1														
8-2X	●	●		.500	-		.500	3.50		.750	-		2														
8-2DF	●	●		.500			.500	6.00		.510			1														
10-2DF	●	●		.625			.625	6.00		.635							2										
12-2B	●	●		.750			.750	4.50		1.000								-									
12-2C	●	●		.750			.750	5.00		1.000									2								
16-2C	●	●		1.00			1.00	5.00		1.250										.210							
16-2D	●	●		1.00			1.00	6.00		1.250											-						
12-3B	●	●		.750			-	.750		4.50												1.250	1.000	2	CKC-3 R/L	SKC-3	(LW-156)
12-3C	●	●		.750				.750		5.00												1.250	1.000				
16-3C	●	●		1.00				1.00		5.00												1.250	1.250				
16-3D	●	●		1.00				1.00		6.00												1.250	1.250				
20-3D	●	●		1.25				1.25		6.00												1.250	1.500				
16-4D	●	●	1.00	1.00		6.00		1.380	1.250	.294																	
20-4D	●	●	1.25	1.25		6.00		1.380	1.500																		

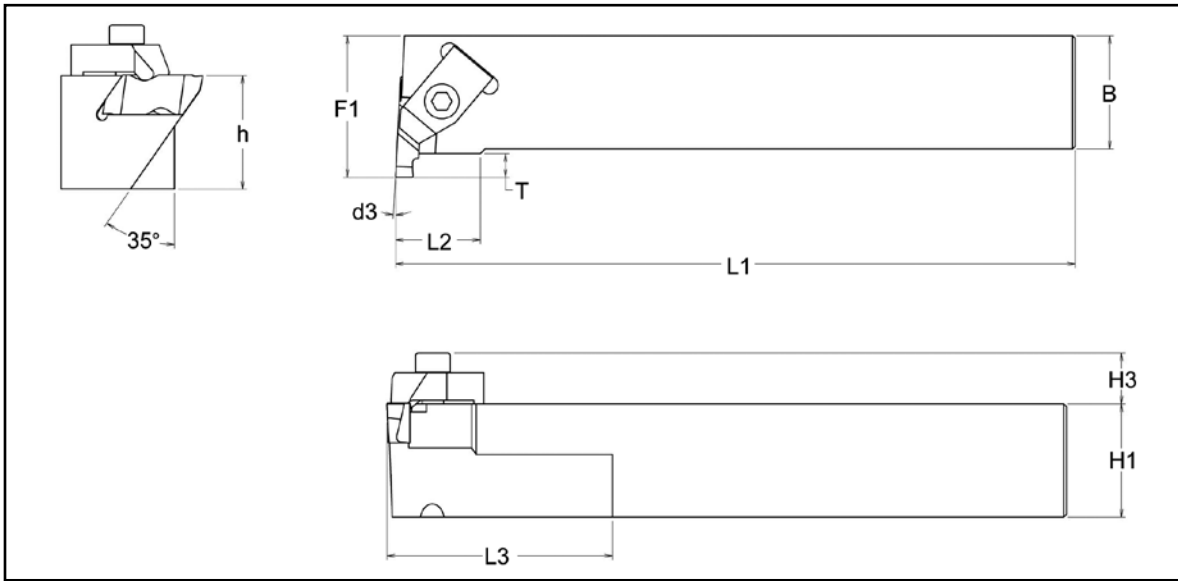
Note- Right hand holders require right hand inserts and clamps; left hand holders require left hand inserts and clamps

Items marked in () are not included with toolholder

Toolholder	Applicable Insert
KKC...2	KC_2...
KKC...3	KC_3...
KKC...4	KC_4...

KKCE

Face Grooving Toolholder



Description	Stock		Dimensions (inch)								Spare Parts		
	R	L	H1=h	H3	B	L1	L2	F1	L3	T	Clamp	Clamp Screw	
KKCE R/L 12-3B	●	●	.750	.465	.750	4.500	.750	1.125	2.000	.210	CKC-3R/L	SKC-3	LW-156
16-3D	●	●	1.000		1.000	6.000		1.250					
20-3D	●	●	1.250		1.250	6.000		1.500					

Note- Right hand bars require left hand inserts and clamps; left hand bars require right hand inserts and clamps

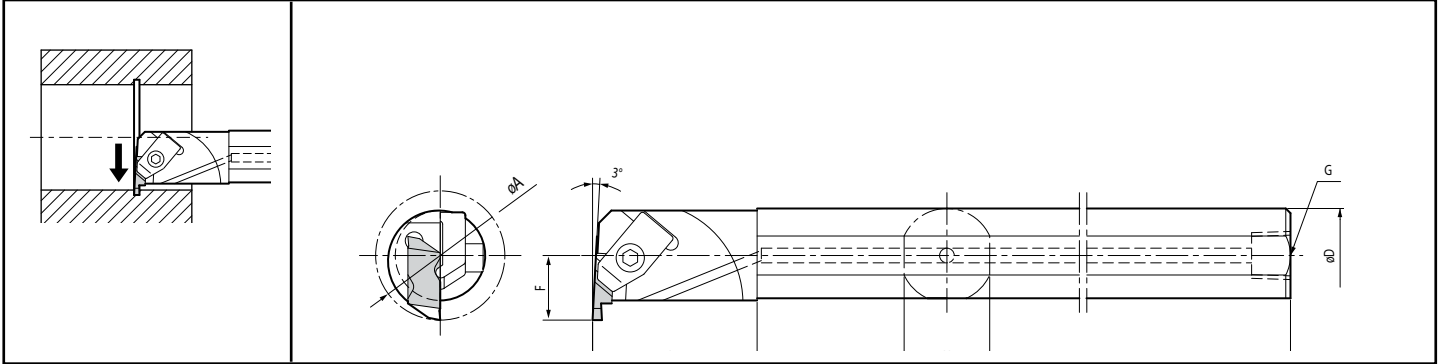
Toolholder	Applicable Insert
KKCE...3	KCF_3...

Face Grooving Limits		
Insert Description	Maximum Groove Depth	Minimum Groove Diameter
KCFP3...	0.060	0.94
	0.094	1.20
	0.125	1.42
	0.150	1.63

■ Steel (Internal Grooving)

A-KKC

ID Grooving Steel Shank Bar - through coolant



Description	Stock		Dimensions					Spare Parts		
	R	L	φA*	φD	L1	F	G	Clamp	Clamp Screw	
A10M-KKCR-2	●		1.000	.625	6.00	.500	1/8-27NPT	CKC-2L	SKC-2	(7/64 hex)
A10S-KKCR-2	●		1.000	.625	10.00	.500				
A12R-KKCR-2	●		1.125	.750	8.00	.562				
A12S-KKCR-2	●		1.125	.750	10.00	.562				
A16T-KKCR/L-2	●	●	1.375	1.000	12.00	.688	1/4-18NPT	CKC-2L/R	SKC-3	(LW-156)
A16X-KKCR-3	●		1.375	1.000	9.00	.688				
A16T-KKCR/L-3	●	●	1.375	1.000	12.00	.688	1/4-18NPT	CKC-3R/L		
A20U-KKCR/L-3	●	●	1.750	1.250	14.00	.875				
A24U-KKCR/L-3	●	●	2.000	1.500	14.00	1.000				
A28U-KKCR-3	●		2.250	1.750	14.00	1.125				
A32V-KKCR/L-3	●	●	2.500	2.000	16.00	1.250				
A28U-KKCR/L-4	●	●	2.500	1.750	14.00	1.250				
A32V-KKCR/L-4	●	●	2.750	2.000	16.00	1.375				

Note- Right hand bars require left hand inserts and clamps; left hand bars require right hand inserts and clamps

Items marked in () are not included with toolholder

* Minimum bore varies with groove depth. See chart on page 12 for details.

Toolholder	Applicable Insert
KKC...2	KC_2...
KKC...3	KC_3...
KKC...4	KC_4...

Lightning Fast Cera-Notch



LFC Customization Program



Cera-notch inserts made to your custom specifications

- Shipment within 3 weeks!
- 7 different groover styles in size “3” insert.
- Available in the following material grades:
 - » TC40 Cermet
 - » TC60 Cermet
 - » PR930 PVD Coated Carbide
 - » KW10 Uncoated Carbide

Customization Ordering Procedures

1. Refer to pages 10 and 11 in this brochure for customization information requirements.
2. Photocopy the appropriate pages - this will be your order form.
3. Fill in the required information - one groover type only per order form.
4. Complete purchase order information.



KYOCERA Industrial Ceramics Corp. ■ Cutting Tool Division
ph. 800-823-7284 ■ fax 828-823-7284
www.kyocera.com/cuttingtools ■ kyoceracuttingtools@kyocera.com

Distributor: _____
 Dist PO#: _____
 Grade (see pricing): _____
 Quantity: _____
 Date: _____
 Signature: _____
 Print Name: _____

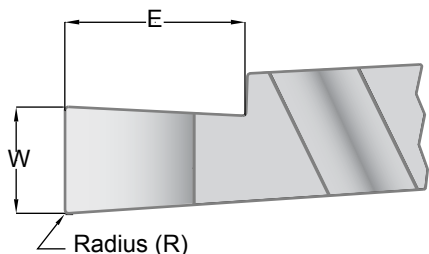
*Note - Only one type per order sheet.
 Right hand shown.
 Left hand mirror inverted.
 All Groovers are "3" size.

PRICING				
GRADE	10 PC	30 PC	50 PC	100+ PC
TC40	15.39	14.42	13.46	12.90
TC60	15.39	14.42	13.46	12.90
KW10	15.39	14.42	13.46	12.90
PR930	16.38	15.39	13.86	13.33

TOLERANCES	
A° ± 30'	F ± .002
C° ± 30'	G ± .002
B ± .001	W ± .001
E +.010 - 0	R ± .003

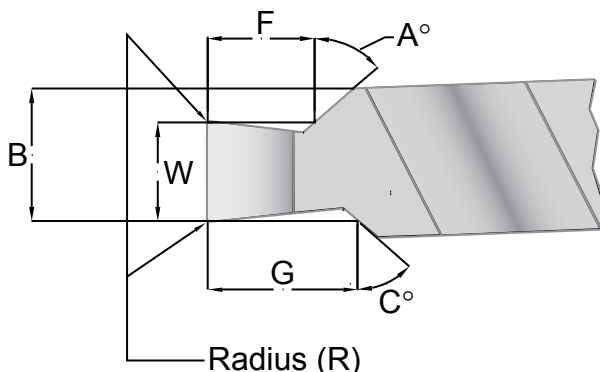
TABLE 1	
W+D	* Max E
.047	.075
.048 - .093	.094
.094 - .189	.150

Type A:



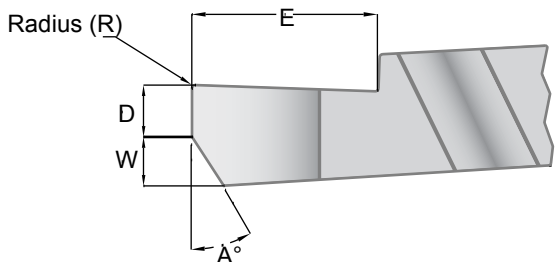
W _____ (.047" Min - .189" Max)
 E* _____ (Refer to Table 1)
 R _____ (2 places)
 Hand _____ (R or L)

Type C:



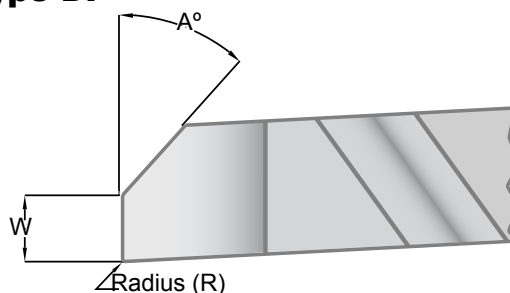
W _____ G _____
 R _____ (2 places) C° _____
 F _____ A° _____
 B _____ Hand _____ (R or L)

Type B:



W _____ (.047" Min. - .189" Max)
 D _____
 A° _____
 E* _____ (Refer to Table 1)
 R _____ (2 places)
 Hand _____ (R or L)

Type D:



W _____ (.189" Max)
 R _____ (2 places)
 A° _____
 Hand _____ (R or L)

Fax to (828)692-1344
Email to LFC@kyocera.com

LFC# _____
 (Assigned by Kyocera)

Distributor: _____
 Dist PO#: _____
 Grade (see pricing): _____
 Quantity: _____
 Date: _____
 Signature: _____
 Print Name: _____

***Note - Only one type per order sheet.**
 Right hand shown.
 Left hand mirror inverted.
 All Groovers are "3" size.

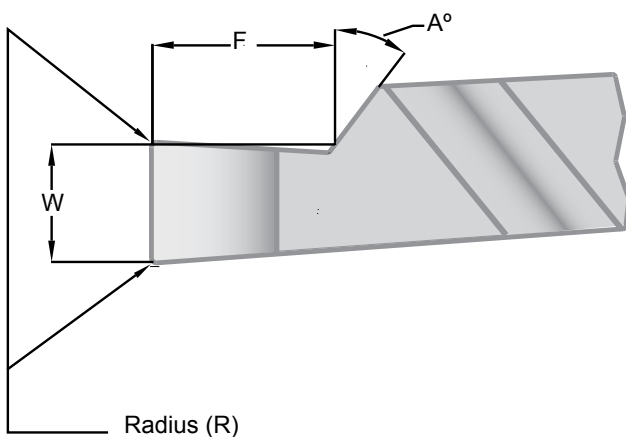
PRICING				
GRADE	10 PC	30 PC	50 PC	100+ PC
TC40	15.39	14.42	13.46	12.90
TC60	15.39	14.42	13.46	12.90
KW10	15.39	14.42	13.46	12.90
PR930	16.38	15.39	13.86	13.33

TOLERANCES	
$A^\circ \pm 30'$	$F \pm .002$
$C^\circ \pm 30'$	$G \pm .002$
$B \pm .001$	$W \pm .001$
$E +.010$ $- 0$	$R \pm .003$

TABLE 1	
W+D	* Max E
.047	.075
.048 - .093	.094
.094 - .189	.150

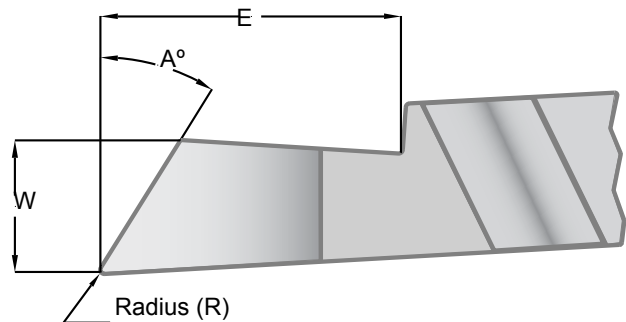
Table 2	
W	* Max E
.062 - .093	.094
.094 - .189	.150

Type E:



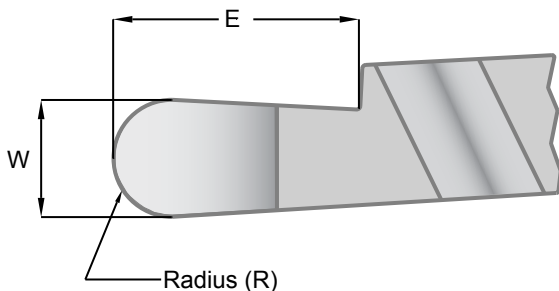
W _____ F _____
 R _____ (2 places) A° _____
 Hand _____ (R or L)

Type G:



W _____
 A° _____
 E* _____ (Refer to Table 1)
 R _____ (2 places)
 Hand _____ (R or L)

Type F:



W _____ (.062" Min - .189" Max)
 E* _____ (Refer to Table 2)
 Hand _____ (R or L)

Fax to (828)692-1344
Email to LFC@kyocera.com

LFC# _____
 (Assigned by Kyocera)

■ Technical Data

● Maximum Internal Groove Depth and Corresponding Minimum Bore Diameter

Insert	Maximum Groove Depth	Minimum Bore Diameter
KCGP 2031~2047	0.050	0.730
KCGP 2058~2125	0.110	2.500
	0.102	1.750
	0.098	1.500
	0.080	1.000
	0.055	0.730
KCGP 3047~3088	0.094	1.750
	0.090	1.625
	0.075	1.375
KCGP 3094~3189	0.150	2.375
	0.145	2.125
	0.138	1.875
	0.125	1.625
KCGP 4125	0.110	1.375
	0.150	2.750
KCGP 4189~4250	0.250	5.750
	0.245	5.000
	0.240	4.500
	0.218	3.250
	0.200	2.500

● Cera-Notch Machining Conditions

Work Material	Cermet Feeds (ipr)	Carbide Feeds (ipr)	Insert Grade (SFM)						
			TC40	TC60	PR660	PR930	KW10	A65	KBN10B
Stainless Steel	.002~.005	.002~.010	-	200~600	100~500	100~550	-	-	-
Carbon Steel	.002~.005	.002~.010	300~900	250~900	200~550	250~650	-	-	-
Alloy Steel	.002~.005	.002~.010	250~800	250~800	100~500	150~550	-	-	-
Tool Steel	.002~.005	.002~.010	200~650	200~650	-	100~550	-	-	-
Hardened Steel (>45Rc)	-	-	-	-	-	-	-	250~500*	250~500*
Gray Cast Iron	.003~.006	.002~.012	200~700	-	-	-	125~450	500~1000	-
Ductile Iron	.003~.006	.002~.012	-	150~600	-	-	125~500	500~1000	-
Aluminum	.002~.008	.002~.012	150~1600	-	-	-	500~1300	-	-

Note: Speeds/feeds listed are for external grooving. Reduce parameters by 10% for internal grooving.

*Feeds = .003~.008ipr



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