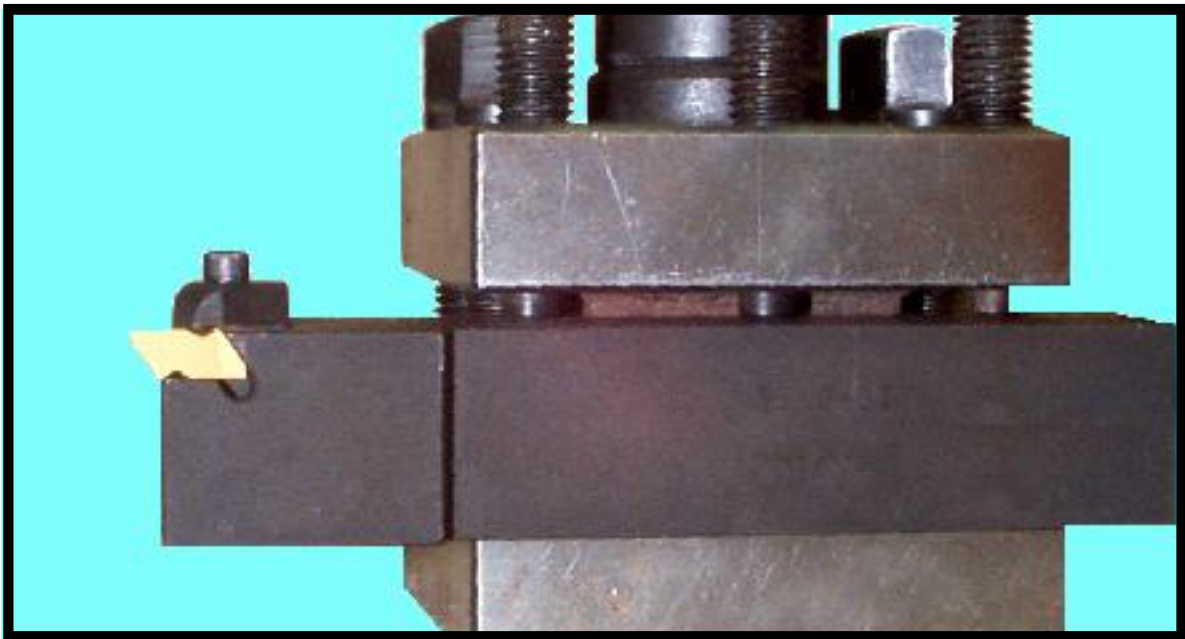


Baxter Carbide, Inc.

indexable carbide inserts since 1978



Made in the United States of America

Phone: 800 370-6960 or 912 375-3486 Fax: 912 375-3488

GUARANTEE

All our Products are free from defects in material and workmanship. Any part found to have defective material or workmanship will be replaced at no charge. We are not, however, responsible for parts that are abused or used incorrectly in accordance with standard machining practices.

ORDERING INFORMATION

Pricing:

All prices are confirmed at the time the order is accepted. Future prices are subject to change without notice.

Quotations:

All quotations are valid for 30 days unless otherwise specified.

Terms:

We accept Visa and MasterCard. We will ship only stock items COD. All invoices on open account may take 1% discount for less than 10 days payment or the net is due in 30 days. Any account not paid within 60 days will no longer be offered open credit. Open credit requires prior approval.

Returns:

All returns must have prior approval.

Freight:

Products will be shipped F.O.B Hazlehurst, GA. via United Parcel Service or in some cases U.S. Mail .

Blankets:

Blanket orders may be placed after 1st initial order of same product. It must have scheduled release dates and quantities. All items must be shipped in a maximum of 3 months. Blanket orders cannot be cancelled.

BAXTER CARBIDE, INC

P.O. Box 752

11 Latimer Street, Hazlehurst, GA 31539

PH# (912) 375-3486

FAX# (912)-375-3488

E-MAIL: baxter@baxtercarbide.com

About Baxter Carbide

Our company was formed in 1978 by Harvie Baxter under a franchise agreement with North American Carbide Corporation. Initially developed as a recycling service, we would downsize or regrind customer's used indexable inserts.

By the early 1980s, many of the large carbide companies began aggressively selling raw carbide blanks to fabricators. We were then able to purchase top quality American made material and began manufacturing new inserts. With the alliance of industrial leaders in hard metal coaters, we now offer finished products equal to those of the larger brand name companies (at considerable savings to our customers).

Through the years, we have developed a network of distributors, private label customers, and house accounts all over the country. Because of the competition with other North American franchisees, many of whom were our customers, we decided to incorporate in 1987 under the name Baxter Carbide.

Our specialty area is threading and grooving inserts including notch style, triangular on edge and v bottom. We also make many of the popular styles of turning and milling inserts. In addition, we make many custom parts for a variety of applications such as wear parts, textile cutters, form tools, seating tools, knife sharpeners, food processors, pallet grippers and circuit board cutters. Of course, we still do regrinding.

In the past few years we have added a large inventory of finished indexable inserts. These are all manufactured by us to industry standards. All the raw carbide is purchased from American ISO 9000 companies. You can now purchase our products on the internet at www.4carbide.com

We are committed to customer satisfaction. We produce quality products at prices below the competition. Every order is important to us and we will do all we can to quote, manufacture, fill and ship it in a timely manner.

Our offices and manufacturing facilities are located at 11 Latimer Street Hazlehurst, Georgia USA 31539.

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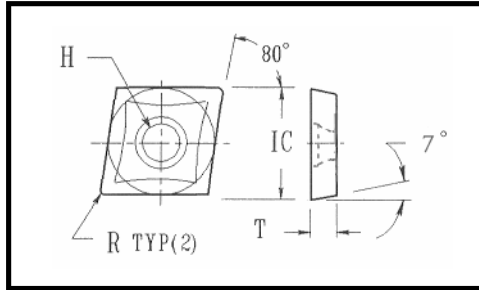
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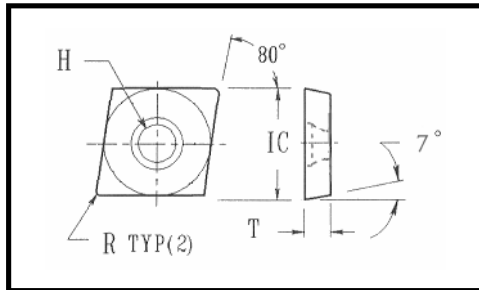
A. Stock Inserts

CCMT



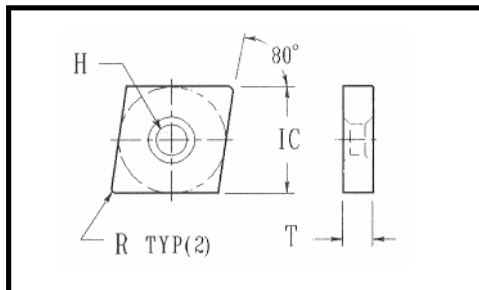
INSERT	ISO	IC	T	R	H	GRADES
CCMT-21.51	CCMT 06 02 04	.250	.094	.015	.110	CNC
CCMT-32.51	CCMT 09 T3 04	.375	.156	.015	.173	CNC
CCMT-32.52	CCMT 09 T3 08	.375	.156	.031	.173	CNC

CCMW



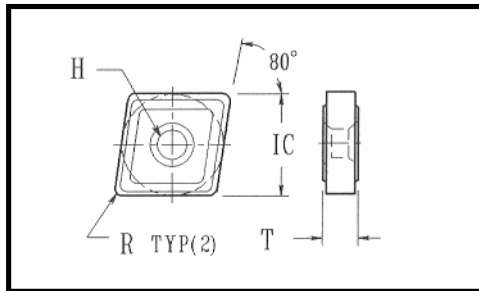
INSERT	ISO	IC	T	R	H	GRADES
CCGW-21.51	CCGW 06 02 04	.250	.094	.015	.110	BC2
CCGW-32.51	CCGW 09 T3 04	.375	.156	.031	.173	BC2

CNMA



INSERT	ISO	IC	T	R	H	GRADES
CNMA-432	CNMA 12 04 04	.375	.188	.031	.203	BC2

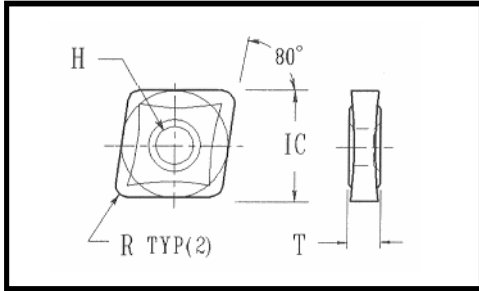
CNMG



INSERT	ISO	IC	T	R	H	GRADES
CNMG-431	CNMG 12 04 04	.500	.188	.015	.203	CNC
CNMG-432	CNMG 12 04 08	.500	.188	.031	.203	CNC
CNMG-433	CNMG 12 04 12	.500	.188	.047	.203	CNC
CNMG-543	CNMG 16 06 12	.625	.250	.047	.250	C5C

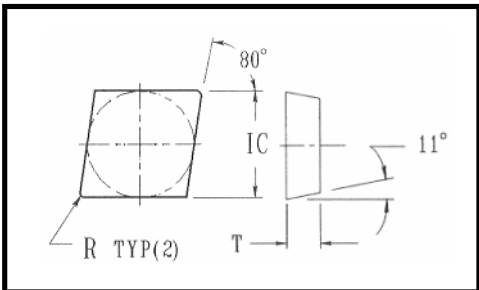
(A-1)

CNMP



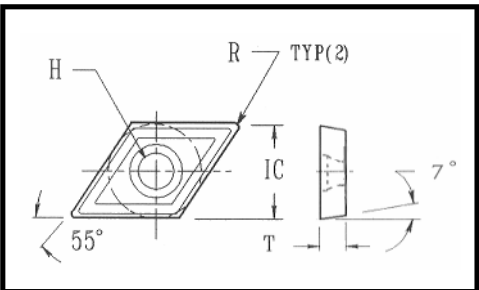
INSERT	ISO	IC	T	R	H	GRADES
CNMP-431	CNMP 12 04 04	.500	.188	.015	.203	CNC
CNMP-432	CNMP 12 04 08	.500	.188	.031	.203	CNC

CPG



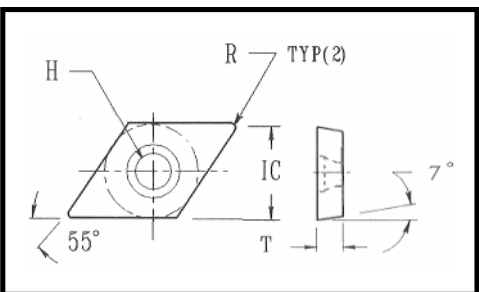
INSERT	ISO	IC	T	R	GRADES
CPG-421	CPGN 12 03 04	.500	.125	.015	BC2, C5C
CPG-422	CPGN 12 03 08	.500	.125	.031	BC2, C5C

DCMT



INSERT	ISO	IC	T	R	H	GRADES
DCMT-32.51	DCMT 11 T3 04	.375	.156	.015	.173	C5C

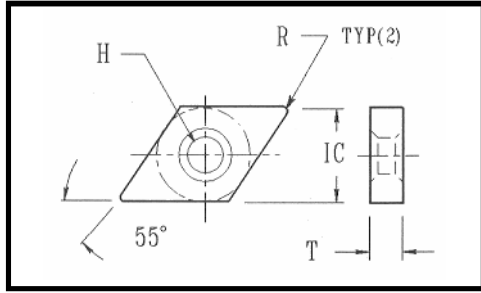
DCMW



INSERT	ISO	IC	T	R	H	GRADES
DCMW-32.51	DCMW 11 T3 04	.375	.156	.015	.173	BC2

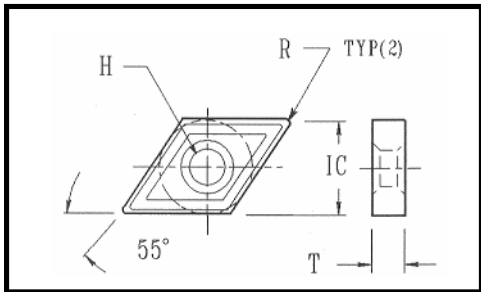
(A-2)

DNMA



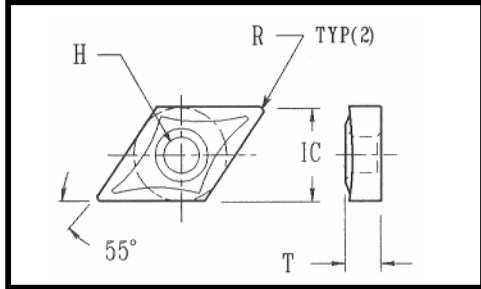
INSERT	ISO	IC	T	R	H		GRADES
DNMA-432	DNMA 15 04 08	.500	.188	.031	.203		BC2

DNMG



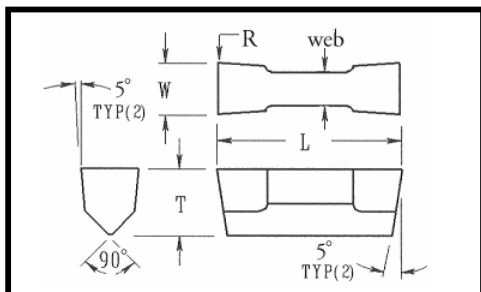
INSERT	ISO	IC	T	R	H		GRADES
DNMG-432	DNMG 15 04 08	.500	.188	.031	.203		CNC

DNMP



INSERT	ISO	IC	T	R	H		GRADES
DNMP-431	DNMP 15 04 04	.500	.188	.015	.203		CNC
DNMP-432	DNMP 15 04 08	.500	.188	.031	.203		CNC

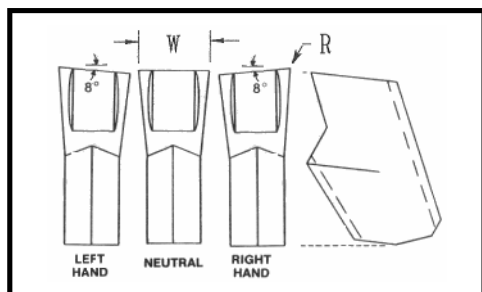
GC



INSERT		W	R	T	L	WEB	GRADES
GC-4125	—	.125	.012	.188	1.000	.093	BC2, C5C
GC-4187	—	.187	.012	.327	1.000	.144	BC2, C5C
GC-4250	—	.250	.012	.327	1.000	.144	BC2, C5C
GC-4312	—	.312	.012	.327	1.000	.202	BC2, C5C
GC-4375	—	.375	.012	.327	1.000	.275	BC2, C5C

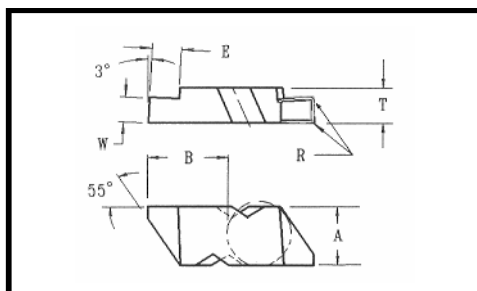
(A-3)

GT



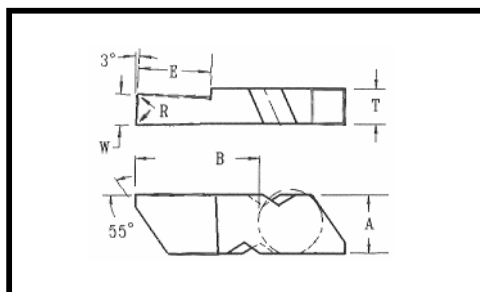
INSERT			W	R		GRADES
L.H.	NEUTRAL	R.H.				
GTR-2	GTN-2	GTR-2	.087	.006		BC2, C5C
GTR-3	GTN-3	GTR-3	.120	.006		BC2, C5C
GTR-4	GTN-4	GTR-4	.160	.006		BC2, C5C
GTR-5	GTN-5	GTR-5	.200	.006		BC2, C5C
GTR-6	GTN-6	GTR-6	.250	.006		BC2, C5C

NG



INSERTS								
LEFT HAND	RIGHT HAND	R	W	A	T	B	E	GRADE
NG-1062L	—	.007	.062	.100	.096	.143	.075	BC2, C5C
NG-1094L	—	.007	.094	.100	.096	.143	.075	BC2, C5C
NG-2031L	NG-2031R	.004	.031	.219	.150	.270	.050	CNC
NG-2062L	NG-2062R	.007	.062	.219	.150	.270	.110	BC2, CNC
NG-2125L	NG-2125R	.007	.125	.219	.150	.270	.110	BC2, CNC
NG-3031L	NG-3031R	.007	.031	.344	.195	.405	.075	CNC
NG-3047L	NG-3047R	.007	.047	.344	.195	.405	.075	CNC
NG-3062L	NG-3062R	.007	.062	.344	.195	.405	.094	BC2, CNC
NG-3094L	NG-3094R	.007	.094	.344	.195	.405	.150	BC2, CNC
NG-3125L	NG-3125R	.007	.125	.344	.195	.405	.150	BC2, CNC
NG-3189L	NG-3189R	.022	.189	.344	.195	.405	.150	BC2, CNC
NG-4125L	NG-4125R	.007	.125	.453	.255	.636	.150	CNC
NG-4189L	NG-4189R	.022	.189	.453	.255	.636	.250	BC2, CNC
NG-4250L	NG-4250R	.022	.250	.453	.255	.636	.250	BC2, CNC

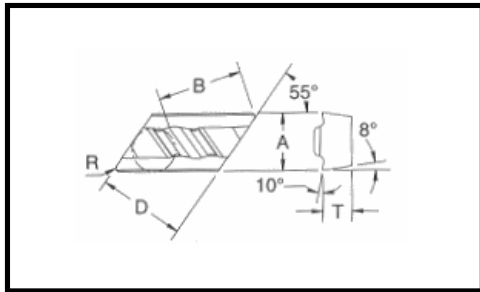
NGD



INSERTS								
LEFT HAND	RIGHT HAND	R	W	A	T	B	E	GRADE
NGD-3125L	NGD-3125R	.007	.125	.344	.195	.505	.250	BC2, C5C
NGD-3189L	NGD-3189R	.022	.189	.344	.195	.505	.250	BC2, C5C
NGD-4250L	NGD-4250R	.022	.250	.453	.255	.886	.500	BC2, C5C

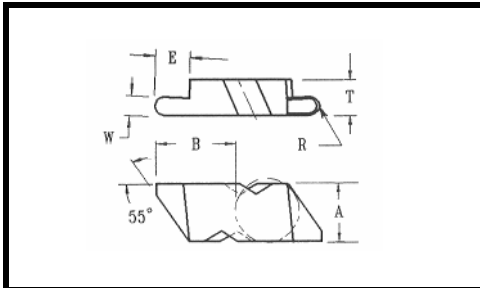
(A-4)

NP



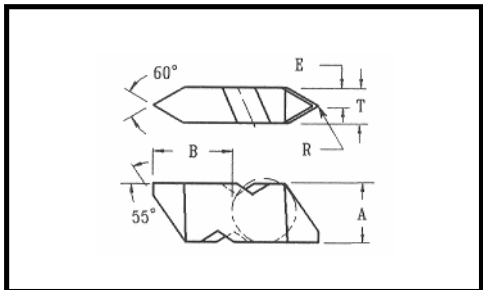
INSERTS							
LEFT HAND	RIGHT HAND	A	T	R	D	B	GRADES
NPL-51	NPR-51	.250	.125	.015	.375	.359	BC2, CNC

NR



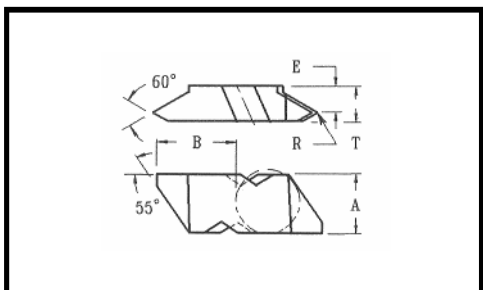
INSERTS								
LEFT HAND	RIGHT HAND	R	W	A	T	E	B	GRADE
NR-3031L	NR-3031R	.031	.062	.344	.195	.094	.403	BC2, CNC
NR-3047L	NR-3047R	.047	.094	.344	.195	.150	.402	BC2, CNC
NR-3062L	NR-3062R	.062	.124	.344	.195	.150	.402	BC2, CNC
NR-3094L	NR-3094R	.094	.188	.344	.195	.150	.400	BC2, CNC
NR-4125L	NR-4125R	.125	.250	.453	.255	.250	.629	BC2, CNC

NT



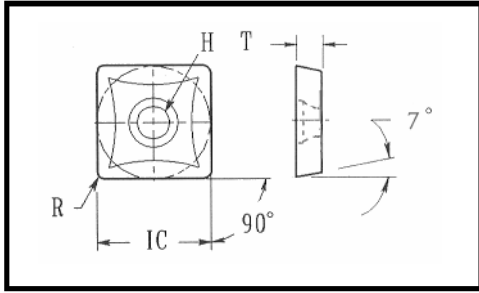
INSERTS								
LEFT HAND	RIGHT HAND	R	T	A	E	B	GRADES	
NT-1L	—	.003	.096	.100	.044	.140	BC2, C5C	
NT-2L	NT-2R	.004	.150	.219	.075	.266	BC2, CNC	
NT-3L	NT-3R	.006	.195	.344	.098	.400	BC2, CNC	
NT-4L	NT-4R	.007	.255	.453	.128	.629	BC2, CNC	

NTF



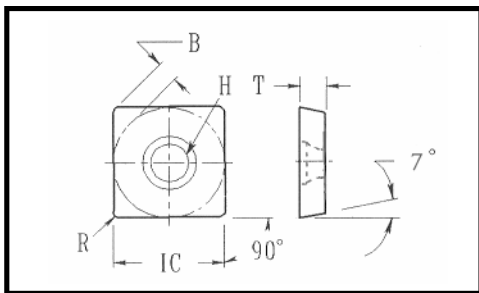
INSERTS								
LEFT HAND	RIGHT HAND	R	T	A	E	B	GRADES	
NTF-2L	NTF-2R	.003	.150	.219	.110	.266	BC2, CNC	
NTF-3L	NTF-3R	.003	.195	.344	.141	.402	BC2, CNC	

SCMT



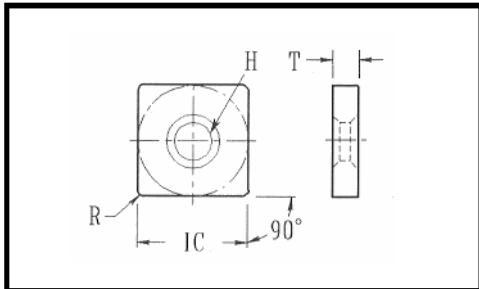
INSERT	ISO	IC	T	R	H		GRADES
SCMT-32.52	SCMT 09 T3 08	.375	.156	.031	.173		C5C

SCMW



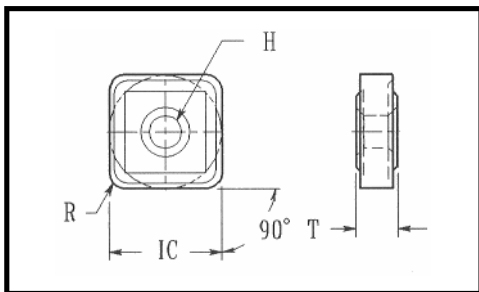
INSERT	ISO	IC	T	R	H	B	GRADES
SCMW-32.51	SCMW 09 T3 04	.375	.156	.015	.173	.071	BC2
SCMW-431	SCMW 12 04 04	.500	.188	.015	.216	.097	BC2

SNMA



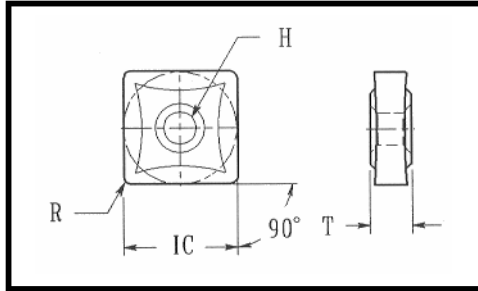
INSERT	ISO	IC	T	R	H		GRADES
SNMA-431	SNMA 12 04 04	.500	.188	.015	.203		BC2
SNMA-432	SNMA 12 04 08	.500	.188	.031	.203		BC2
SNMA-433	SNMA 12 04 12	.500	.188	.047	.203		BC2

SNMG



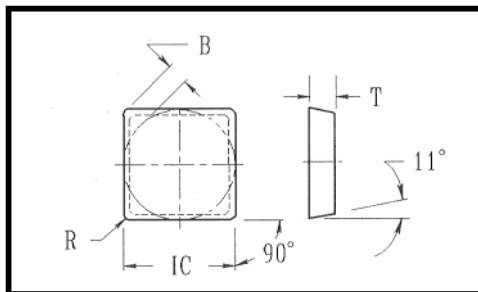
INSERT	ISO	IC	T	R	H		GRADES
SNMG-322	SNMG 09 03 08	.375	.125	.031	.150		CNC
SNMG-432	SNMG 12 04 08	.500	.188	.031	.203		CNC
SNMG-433	SNMG 12 04 12	.500	.188	.047	.203		CNC

SNMP



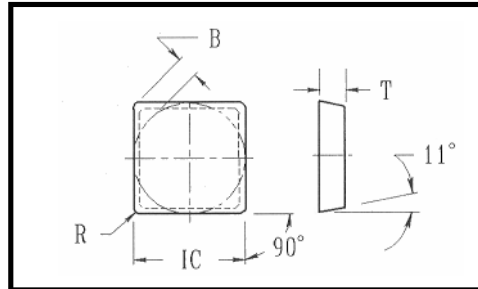
INSERT	ISO	IC	T	R	H		GRADES
SNMP-432	SNMP 12 04 08	.500	.188	.031	.203		CNC

SPG



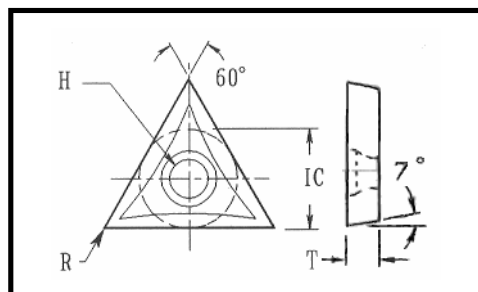
INSERT	ISO	IC	T	R	B		GRADES
SPG-322	SPGN 09 03 08	.375	.125	.031	.065		BC2, C5C
SPG-422	SPGN 12 03 08	.500	.125	.031	.091		BC2, C5C
SPG-423	SPGN 12 03 12	.500	.125	.047	.084		BC2, C5C
SPG-424	SPGN 12 03 16	.500	.125	.062	.078		C5C

SPU



INSERT	ISO	IC	T	R	B		GRADES
SPU-424	SPUN 12 03 16	.500	.125	.062	.078		BC5

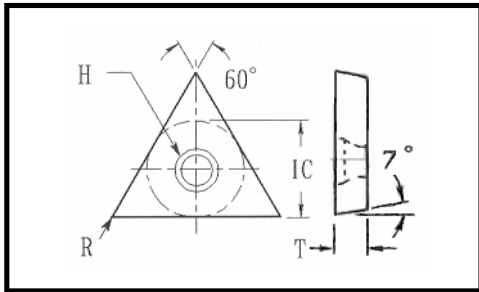
TCMT



INSERT	ISO	IC	T	R	H		GRADES
TCMT-21.51	TCMT 11 02 04	.250	.094	.015	.110		C5C
TCMT-32.51	TCMT 16 T3 04	.375	.156	.015	.173		C5C
TCMT-32.52	TCMT 16 T3 08	.375	.156	.031	.173		C5C

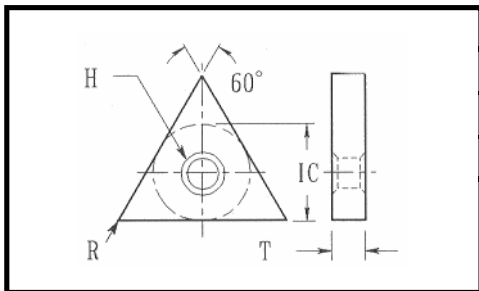
(A-7)

TCMW



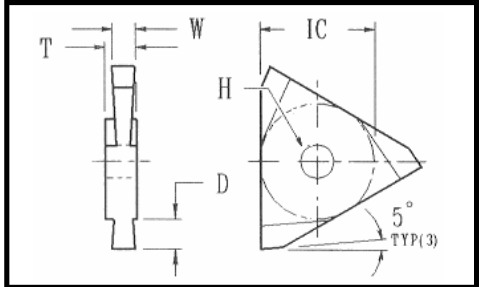
INSERT	ISO	IC	T	R	H		GRADES
TCMW-21.51	TCMW 11 02 04	.250	.094	.015	.110		BC2
TCMW-32.51	TCMW 16 T3 04	.375	.156	.015	.173		BC2

TNMA



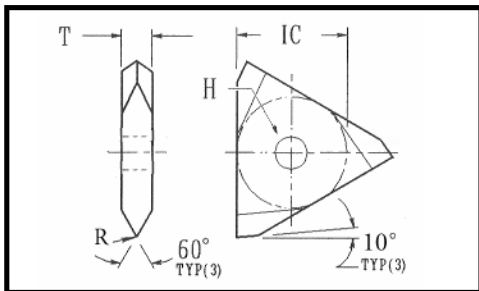
INSERT	ISO	IC	T	R	H		GRADES
TNMA-222	TNMA 11 03 08	.250	.125	.031	.093		BC2
TNMA-332	TNMA 16 04 08	.375	.188	.031	.150		BC2, C2A
TNMA-432	TNMA 22 04 08	.500	.188	.031	.203		BC2

TNMA - NG



INSERTS								
LEFT HAND	RIGHT HAND	W	IC	T	H	D	GRADE	
TNMA32NGL062	TNMA32NGR062	.062	.375	.127	.150	.160	BC2, CNC	
TNMA32NG125		.125	.375	.127	.150	.160	BC2, CNC	
TNMA43NGL094	TNMA43NGR094	.094	.500	.189	.202	.234	BC2, CNC	
TNMA43NGL125	TNMA43NGR125	.125	.500	.189	.202	.234	BC2, CNC	
TNMA43NG187		.187	.500	.189	.202	.234	BC2, CNC	
TNMA54NG250		.250	.625	.252	.251	.296	BC2, CNC	

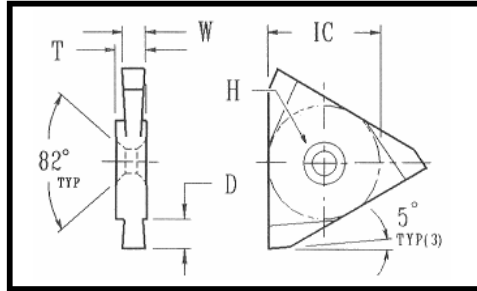
TNMA - NV



INSERT		IC	T	R	H		GRADES
TNMA32NV		.375	.127	.003	.150		BC2, CNC
TNMA43NV		.500	.189	.005	.202		BC2, CNC
TNMA54NV		.625	.252	.008	.251		BC2, CNC

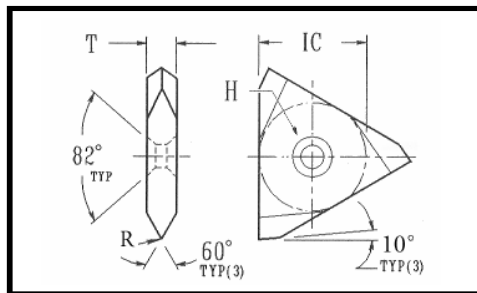
(A-8)

TNMC - NG



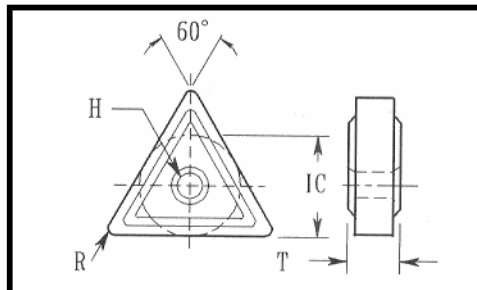
INSERTS								
LEFT HAND	RIGHT HAND	W	IC	T	H	D	GRADE	
TNMC32NGL062	TNMC32NGR062	.062	.375	.127	.150	.160	BC2, CNC	
TNMC32NG125		.125	.375	.127	.150	.160	BC2, CNC	
TNMC43NGL094	TNMC43NGR094	.094	.500	.189	.202	.234	BC2, CNC	
TNMC43NGL125	TNMC43NGR125	.125	.500	.189	.202	.234	BC2, CNC	
TNMC43NG187		.187	.500	.189	.202	.234	BC2, CNC	
TNMC54NG250		.250	.625	.252	.251	.296	BC2, CNC	

TNMC - NV



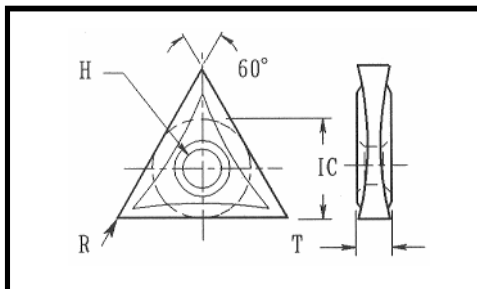
INSERT		IC	T	R	H		GRADES
TNMC32NV		.375	.127	.003	.150		BC2, CNC
TNMC43NV		.500	.189	.005	.202		BC2, CNC
TNMC54NV		.625	.252	.008	.251		BC2, CNC

TNMG



INSERT	ISO	IC	T	R	H		GRADES
TNMG-222	TNMG 11 03 08	.250	.125	.031	.093		C5C
TNMG-331	TNMG 16 04 04	.375	.188	.015	.150		CNC
TNMG-332	TNMG 16 04 08	.375	.188	.031	.150		CNC
TNMG-431	TNMG 22 04 04	.500	.188	.015	.203		CNC
TNMG-432	TNMG 22 04 08	.500	.188	.031	.203		CNC
TNMG-433	TNMG 22 04 12	.500	.188	.047	.203		CNC
TNMG-542	TNMG 27 06 08	.625	.250	.031	.250		C5C
TNMG-543	TNMG 27 06 12	.625	.250	.047	.250		C5C

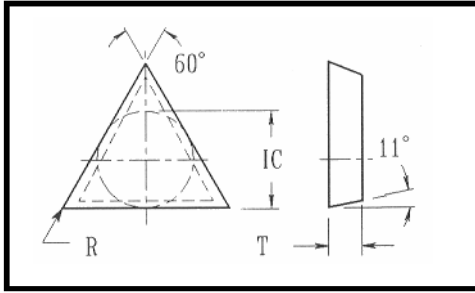
TNMP



INSERT	ISO	IC	T	R	H		GRADES
TNMP-332	TNMP 16 04 08	.375	.125	.031	.150		CNC
TNMP-431	TNMP 22 04 04	.500	.188	.015	.203		CNC
TNMP-432	TNMP 22 04 08	.500	.188	.031	.203		CNC

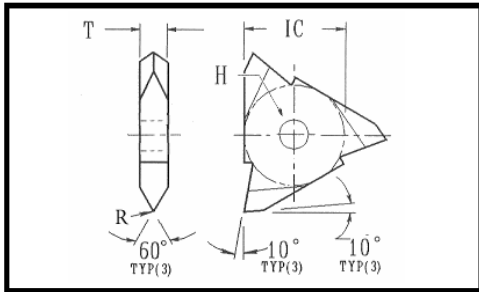
(A-9)

TPG



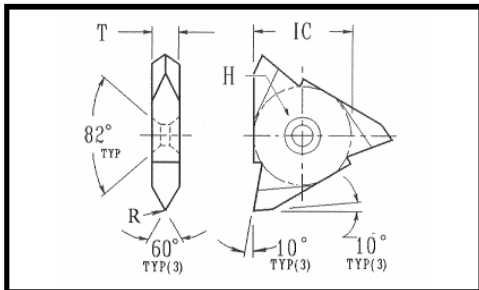
INSERT	ISO	IC	T	R			GRADES
TPG-221	TPGN 11 03 04	.250	.125	.015			BC2, C5C
TPG-321	TPGN 16 03 04	.375	.125	.015			BC2, C5C
TPG-322	TPGN 16 03 08	.375	.125	.031			BC2, C5C
TPG-323	TPGN 16 03 12	.375	.125	.047			BC2, C5C
TPG-431	TPGN 22 04 04	.500	.188	.015			BC2, C5C
TPG-432	TPGN 22 04 08	.500	.188	.031			BC2, C5C
TPG-433	TPGN 22 04 12	.500	.188	.047			BC2, C5C

TPMA - NV



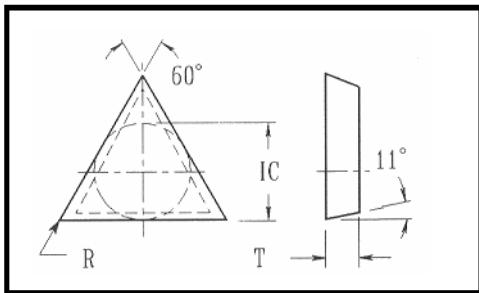
INSERT		IC	T	R	H		GRADES
TPMA32NV		.375	.127	.003	.150		BC2, CNC
TPMA43NV		.500	.189	.005	.202		BC2, CNC

TPMC - NV



INSERT		IC	T	R	H		GRADES
TPMC32NV		.375	.127	.003	.150		BC2, CNC
TPMC43NV		.500	.189	.005	.202		BC2, CNC

TPU

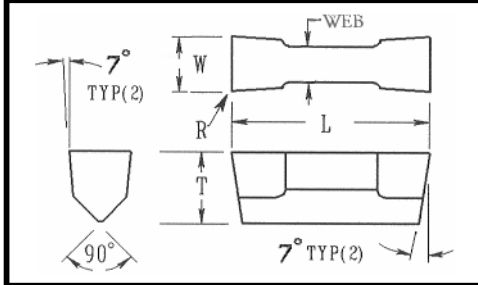


INSERT	ISO	IC	T	R			GRADES
TPU-321	TPUN 16 03 04	.375	.125	.015			BC5
TPU-322	TPUN 16 03 08	.375	.125	.031			BC2, BC5

VCGW

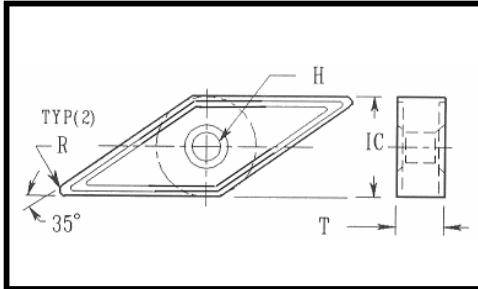
INSERT	ISO	IC	R	T	H	GRADES
VCGW-221	VCGW 11 03 04	.250	.015	.125	.110	BC2

VDB



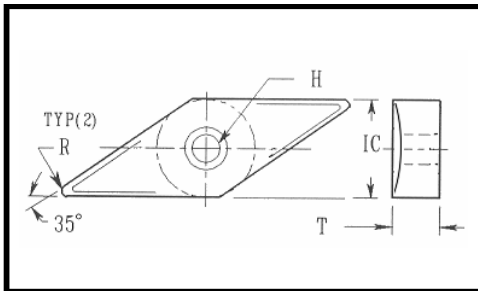
INSERT	W	R	T	WEB	L	GRADES
VDB-125A	.125	.012	.250	.106	1.125	BC2, C5C
VDB-188A	.188	.012	.250	.144	1.125	BC2, C5C
VDB-250A	.250	.012	.250	.144	1.125	BC2, C5C
VDB-375B	.375	.012	.337	.276	1.125	BC2, C5C

VNMG



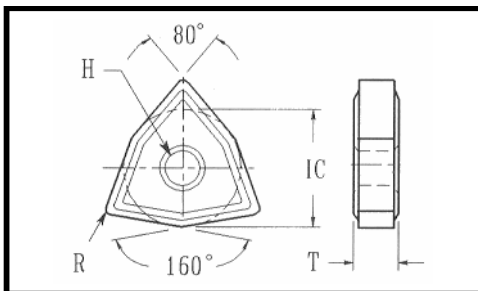
INSERT	ISO	IC	T	R	H	GRADES
VNMG-331	VNMG 16 04 04	.375	.188	.015	.150	CNC
VNMG-332	VNMG 16 04 08	.375	.188	.031	.150	CNC

VNMP



INSERT	ISO	IC	T	R	H	GRADES
VNMP-331	VNMP 16 04 04	.375	.188	.015	.150	CNC
VNMP-332	VNMP 16 04 08	.375	.188	.031	.150	CNC

WNMG



INSERT	ISO	IC	T	R	H	GRADES
WNMG-432	WNMG 08 04 08	.500	.188	.031	.203	CNC

(A-11)

B. Toolholders:

CSBP L/R

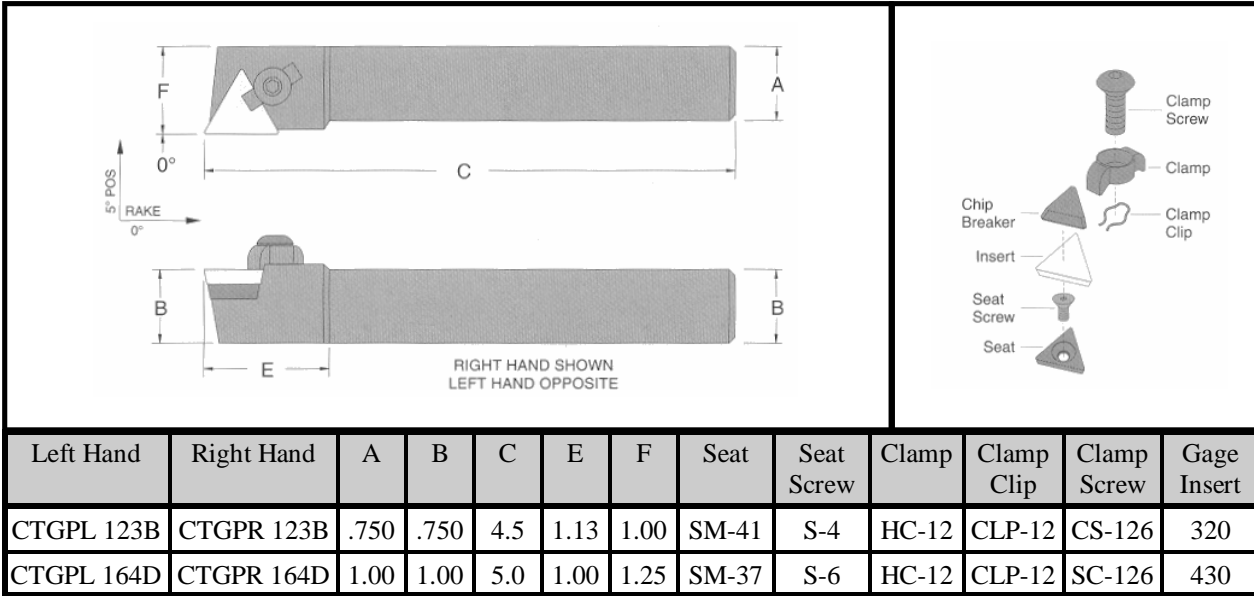
Left Hand	Right Hand	A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Clip	Clamp Screw	Gage Insert
CSBPL-124B	CSBPR-124B	.750	.750	4.5	1.25	.627	SM-40	S-4	HC-12	CLP-12	CS-126	420
CSBPL-164D	CSBPR-164D	1.00	1.00	6.00	1.25	.877	SM-40	S-4	HC-12	CLP-12	CS-126	420

CTFP L/R

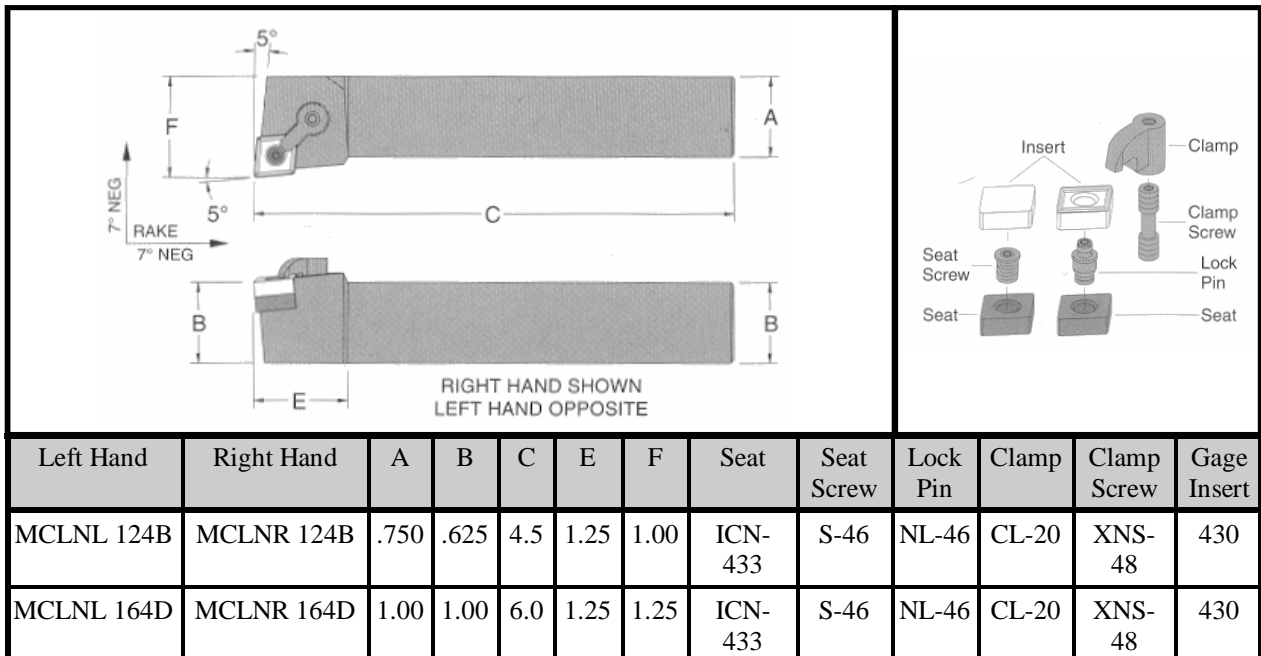
Left Hand	Right Hand	A	B	C	E	F	Seat	Seat Screw	Clamp	Clamp Clip	Clamp Screw	Gage Insert
CTFPL-123B	CTFPR-123B	.750	.750	4.5	1.12	1.00	SM-41	S-4	HC-12	CLP-12	CS-126	320
CTFPL-164D	CTFP-164D	1.00	1.00	6.00	1.00	1.25	SM-37	S-6	HC-12	CLP-12	CS-126	430

(B-1)

CTGPL L/R



MCLN L/R



(B-2)

MDJN L/R

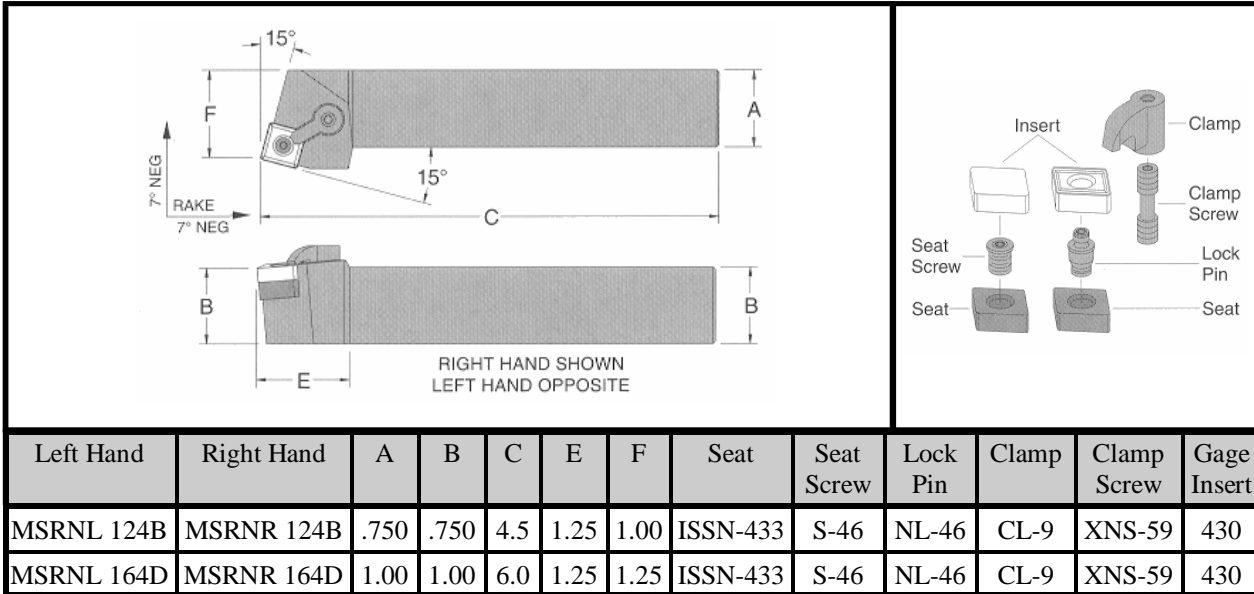
Left Hand	Right Hand	A	B	C	E	F	Seat	Seat Screw	Lock Pin	Clamp	Clamp Screw	Gage Insert
MDJNL 124B	MDJNR 124B	.750	.750	4.5	1.25	1.00	IDSN 433	S-46	NL-46	CL-6	XNS-36	430
MDJNL 164D	MDJNR 164D	1.00	1.00	6.0	1.25	1.25	IDSN-433	S-46	NL-46	CL-20	XNS-48	430

MSKN L/R

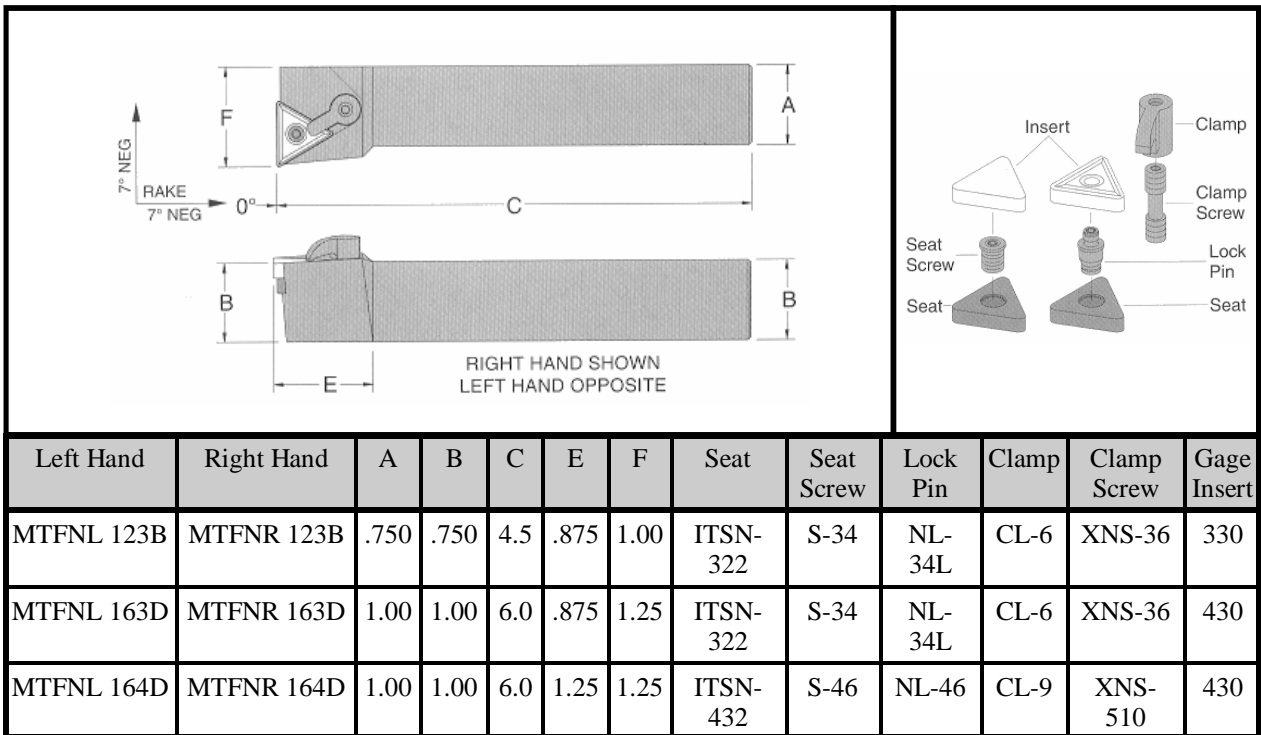
Left Hand	Right Hand	A	B	C	E	F	Seat	Seat Screw	Lock Pin	Clamp	Clamp Screw	Gage Insert
MSKNL 124B	MSKNR 124B	.750	.750	4.5	1.25	1.00	ISSN-322	S-34	NL-34	CL-6	XNS-36	430
MSKNL 164D	MSKNR 164D	1.00	1.00	6.0	1.25	1.25	ISSN-322	S-34	NL-34	CL-6	XNS-36	430

(B-3)

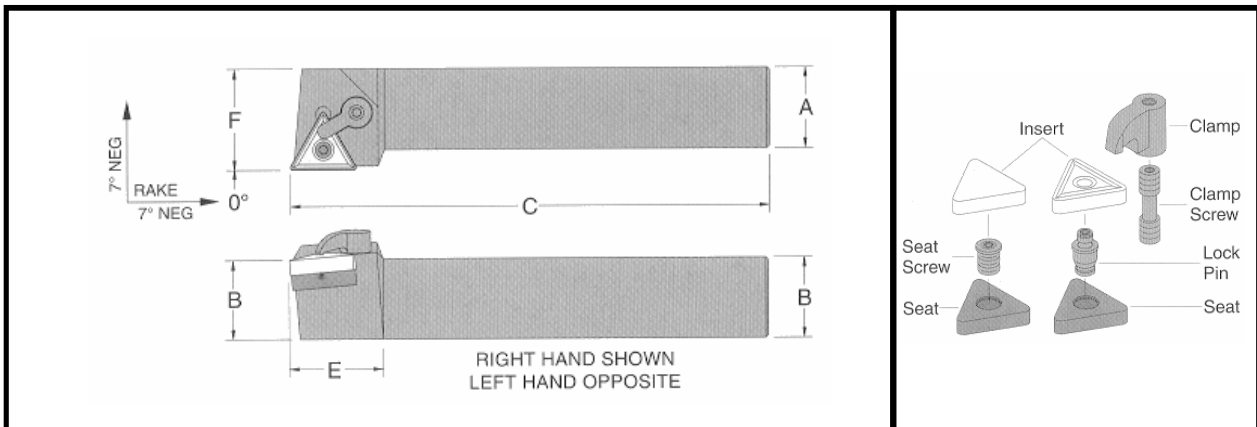
MSRN L/R



MTFN L/R

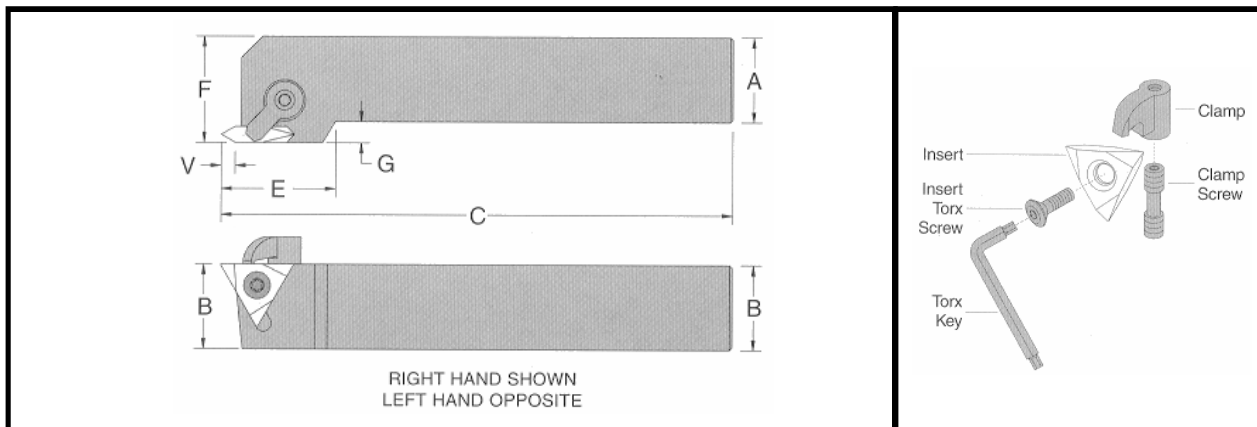


MTGN L/R



Left Hand	Right Hand	A	B	C	E	F	Seat	Seat Screw	Lock Pin	Clamp	Clamp Screw	Gage Insert
MTGNL 123B	MTGNR 123B	0.75	0.75	4.5	1.00	1.00	ITSN-322	S-34	NL-34L	CL-6	XNS-36	320
MTGNL 163D	MTGNR 163D	1.00	1.00	6.0	1.00	1.25	ITSN-322	S-34	NL-34L	CL-6	XNS-36	320
MTGNL 164D	MTGNR 164D	1.00	1.00	6.0	1.38	1.25	ITSN-432	S-46	NL-34L	CL-6	XNS-36	430

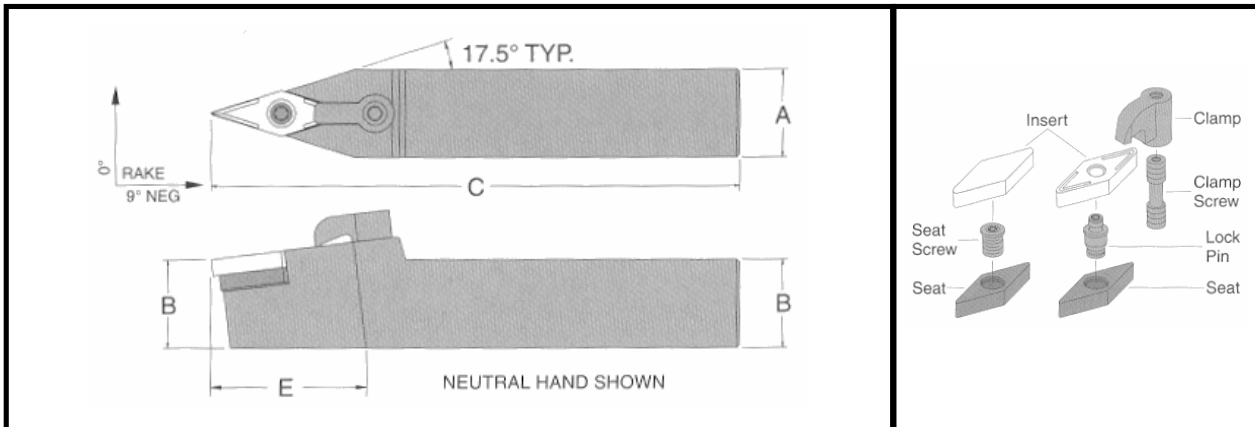
MTVO L/R



Left Hand	Right Hand	A	B	C	E	F	G	V	Insert Screw	Clamp	Clamp Screw	Gage Insert
MTVOL 123B	MTVOR 123B	.750	.750	4.50	1.02	.875	.125	.150	GTS-1	CL-6	XNS-35	320
MTVOL 163D	MTVOR 163D	1.00	1.00	6.0	1.16	1.25	.250	.150	GTS-1	CL-6	XNS-35	320
MTVOL 164D	MTVOR 164D	1.00	1.00	6.0	1.43	1.25	.250	.230	GTS-2	CL-7	XNS-38	430
MTVOL 165D	MTVOR 165D	1.00	1.00	6.0	1.50	1.25	.250	.292	GTS-3	CL-12	XNS-59	540

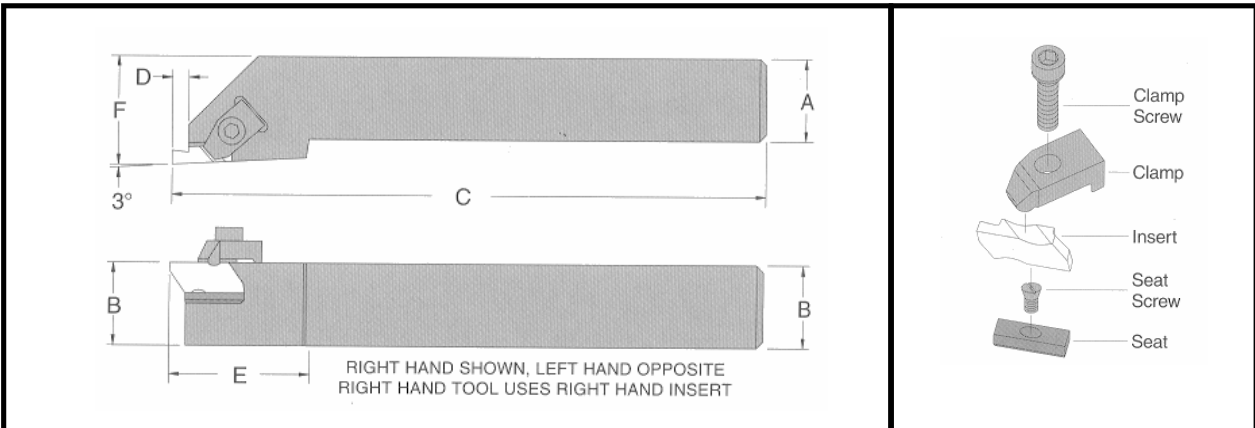
(B-5)

MVVN



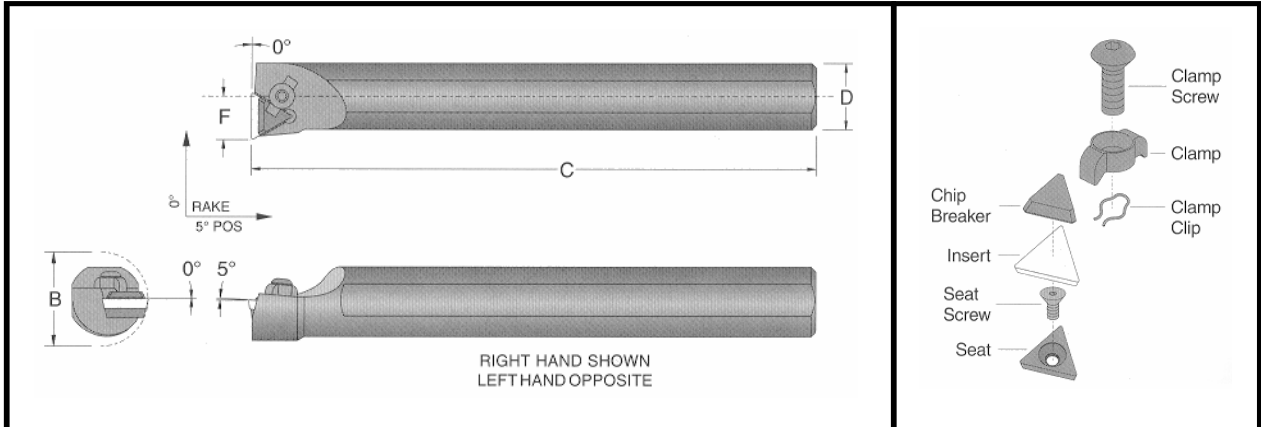
Neutral Hand	A	B	C	E		Seat	Seat Screw	Lock Pin	Clamp	Clamp Screw	Gage Insert
MVVN-163D	1.00	1.00	6.0	1.80		IVSN-322	S-34	NL-34L	CL-30	XNS-510	330

NS L/R



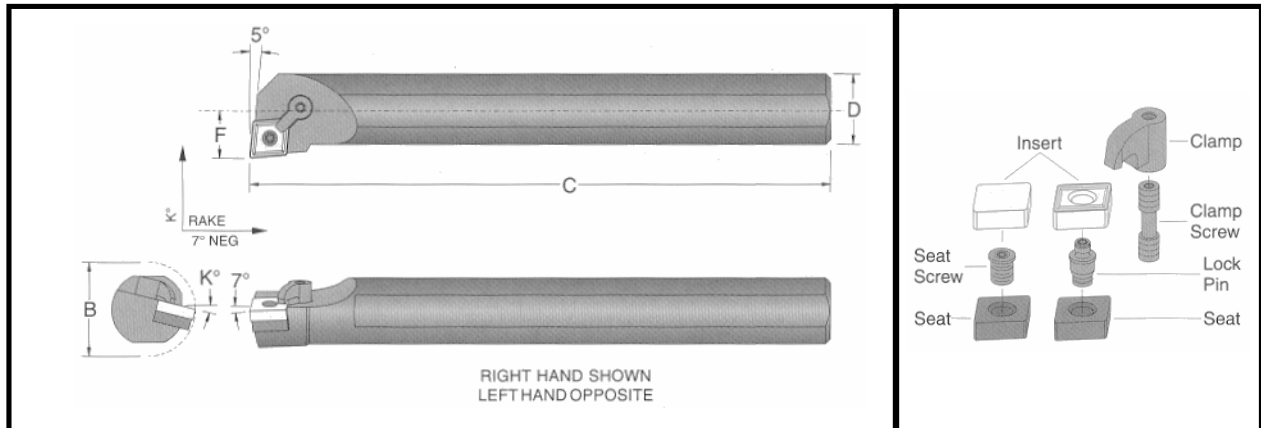
Left Hand	Right Hand	A	B	C	E	F	Seat	Seat Screw	Clamp L.H.	Clamp R.H.	Clamp Screw	Gage Insert
NSL 122B	NSR 122B	.750	.750	4.5	.75	1.00			CM-74	CM-75	S-310	NG-2
NSL 162D	NSR 162D	1.00	1.00	5.0	.138	.75			CM-74	CM-75	S-310	NG-2
NSL 123B	NSR 123B	.750	.750	4.5	1.25	1.00			CM-72	CM-73	S-412	NG-3
NSL 163D	NSR 163D	1.00	1.00	6.0	1.25	1.25			CM-72	CM-73	S-412	NG-3
NSL 164D	NSR 164D	1.00	1.00	6.0	1.38	1.25	SM-420	SL-344	CM-72	CM-73	S-412	NG-4

S-CTFP R



Right Hand	B	C	D	F		Seat	Seat Screw	Clamp	Clamp Clip	Clamp Screw	Gage Insert
S-CTFPR 123	1.00	10.0	.750	.500				HC-12	CLP-12	CS-126	330
S-CTFPR 163	1.28	12.0	1.00	.640		SM-41	S-4	HC-12	CLP-12	CS-126	330

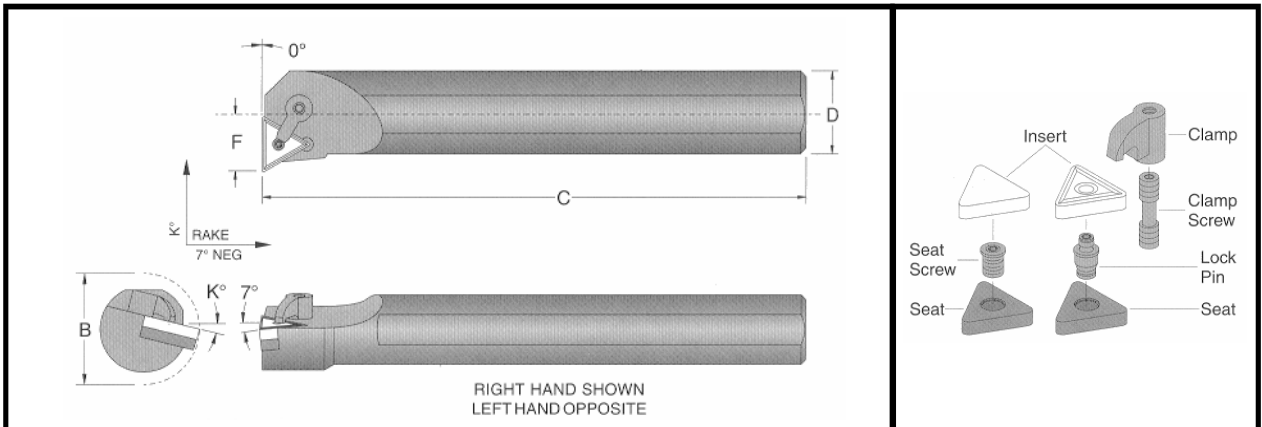
S-MCLN R



Right Hand	B	C	D	F	K	Seat	Seat Screw	Lock Pin	Clamp	Clamp Screw	Gage Insert
S-MCLNR 16-4	1.28	12.0	1.00	.640	14°			NL-44	CL-20	XNS-47	430

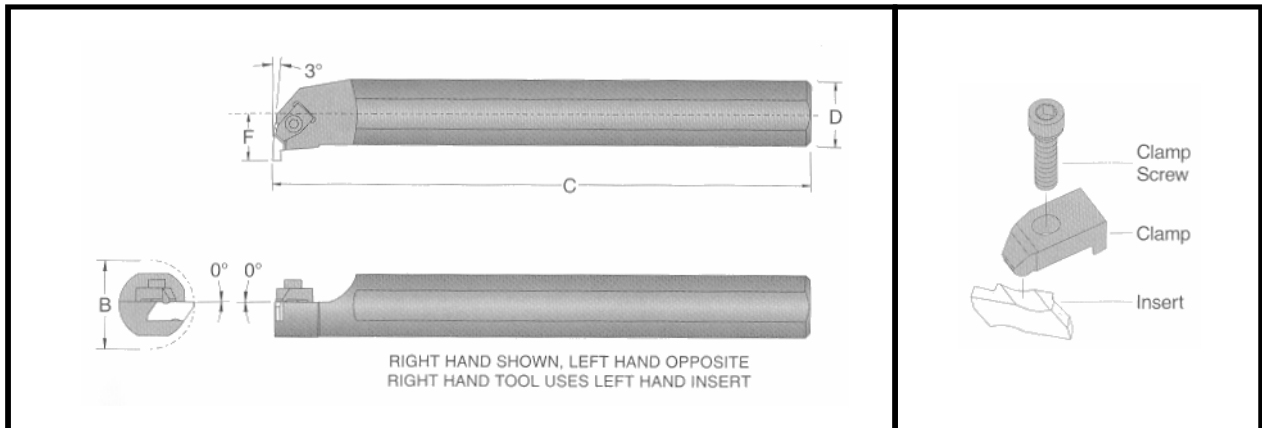
(B-7)

S-MTFN R



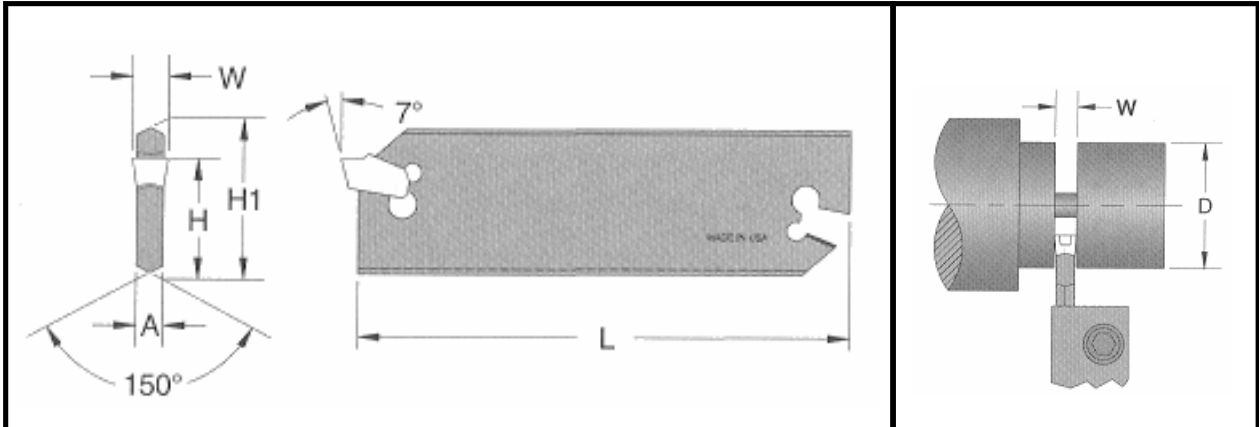
Right Hand	B	C	D	F	K	Seat	Seat Screw	Lock Pin	Clamp	Clamp Screw	Gage Insert
S-MTFNR 163	1.28	12.0	1.00	.640	14°	ITSN-322	S-34	NL-34L	CL-7	XNS-35	330

S-NER



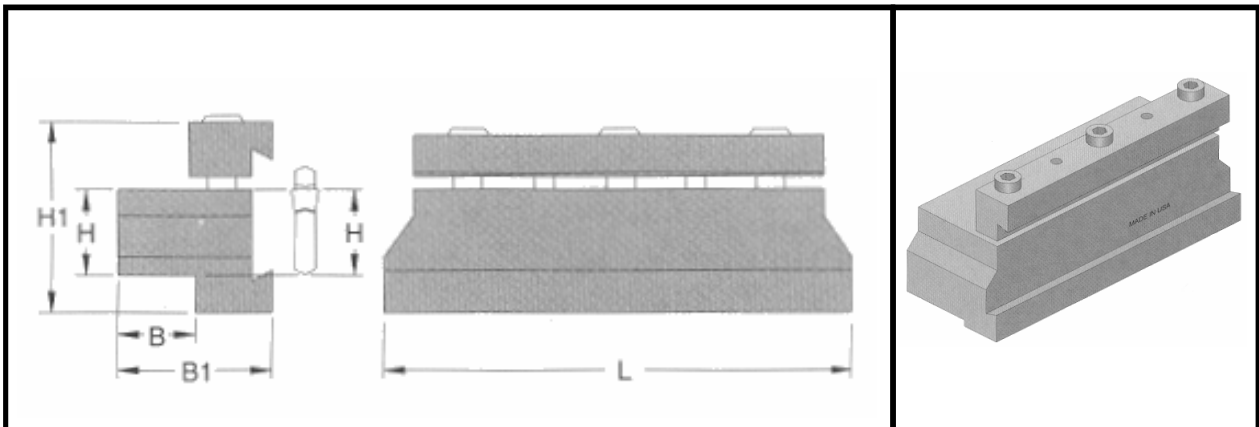
Left Hand	Right Hand	B	C	D	F				Clamp		Clamp Screw	Gage Insert
	S-NER 102	1.00	10.0	.625	.500				CM-75		S-310	NG-2L
	S-NER 122	1.13	10.0	.750	.562				CM-75		S-310	NG-2L
	S-NER 163	1.38	12.0	1.00	.688				CM-73		S-412	NG-3L

SGIH



Blade	W	D	A	L	H	H1	Insert
SGIH26-2	.087	3.0	.062	4.31	.828	.750	GT-2
SGIH26-3	.120	3.0	.094	4.31	.828	.750	GT-3
SGIH26-4	.160	3.0	.125	4.31	.828	.750	GT-4
SGIH26-5	.200	3.0	.156	4.31	.828	.750	GT-5
SGIH32-3	.120	4.0	.094	5.86	.984	1.25	GT-3
SGIH32-4	.160	4.0	.125	5.86	.984	1.25	GT-4
SGIH32-5	.200	5.0	.156	5.86	.984	1.25	GT-5
SGIH32-6	.250	5.0	.203	5.86	.984	1.25	GT-6

SGTB N

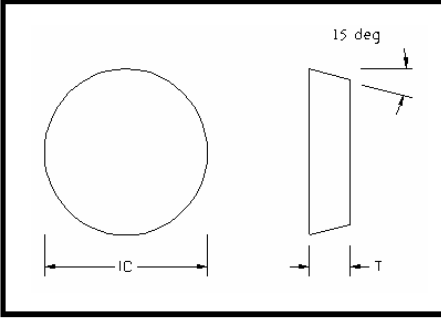


Blade	H	H1	B	B1	L	Blade	Screw
SGTBN19-5	.750	2.00	.750	1.38	3.5	SGIH26-2 thru 5	¼-20 x 1¼
SGTBN25-6	1.00	2.13	.875	1.50	4.5	SGIH32-3 thru 6	¼-20 x 1½

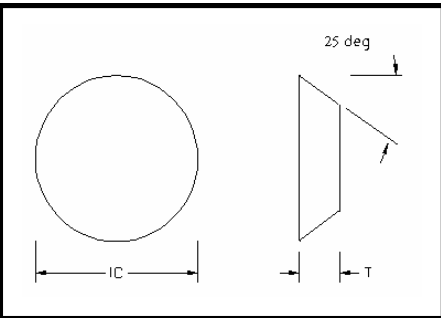
(B-9)

C. Milling Inserts

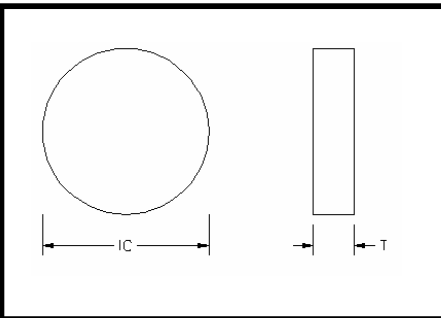
RDC (RDG, RDE)

	Insert	IC	T	Grades Available				
				BC2	BC5	C5C	C3N	C2A
	RDC-32	.375	.125	2	2	3	3	3
	RDC-42	.500	.125	2	2	3	3	3
	RDC-43	.500	.188	2	2	3	3	3
	RDC-53	.625	.188	2	2	3	3	3
	RDC-63	.750	.188	2	2	3	3	3

RFC (RFG, RFE)

	Insert	IC	T	Grades Available				
				BC2	BC5	C5C	C3N	C2A
	RFC-32	.375	.125	2	2	3	3	3
	RFC-42	.500	.125	2	2	3	3	3
	RFC-43	.500	.188	2	2	3	3	3
	RFC-53	.625	.188	2	2	3	3	3
	RFC-63	.750	.188	2	2	3	3	3

RNC (RNG, RNE)

	Insert	IC	T	Grades Available				
				BC2	BC5	C5C	C3N	C2A
	RNC-32	.375	.125	2	2	3	3	3
	RNC-42	.500	.125	2	2	3	3	3
	RNC-43	.500	.188	2	2	3	3	3
	RNC-53	.625	.188	2	2	3	3	3
	RNC-54	.625	.250	2	2	3	3	3
	RNC-63	.750	.188	2	2	3	3	3
	RNC-64	.750	.250	2	2	3	3	3

(C-1)

RPC (RPG, RPE)

	Insert	IC	T	Grades Available					
				BC2	BC5	C5C	C3N	C2A	
	RPC-32	.375	.125		2	2	3	3	3
	RPC-42	.500	.125		2	2	3	3	3
	RPC-43	.500	.188		2	2	3	3	3
	RPC-53	.625	.188		2	2	3	3	3
RPC-63	.750	.188		2	2	3	3	3	

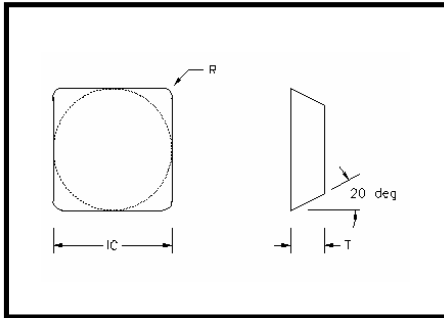
SDKT

	Insert	IC	T	F	Grades Available				
					BC2	BC5	C5C	C3N	C2A
	SDKT-42A3	.500	.125	.047		2	2	3	3
SCKT-53A3	.625	.188	.047		2	2	3	3	3

SEAN (SEKN)

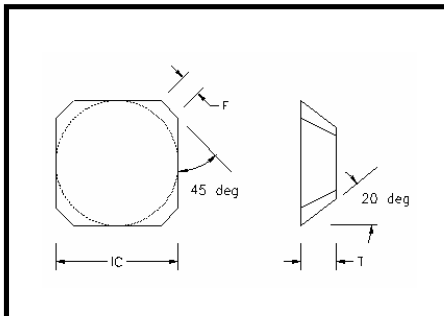
	Insert	IC	T	F	Grades Available				
					BC2	BC5	C5C	C3N	C2A
	SEAN-42AFN	.500	.125	.094		2	2	3	3
SEAN-53AFN	.625	.188	.094		2	2	3	3	3

SEC (SEG)



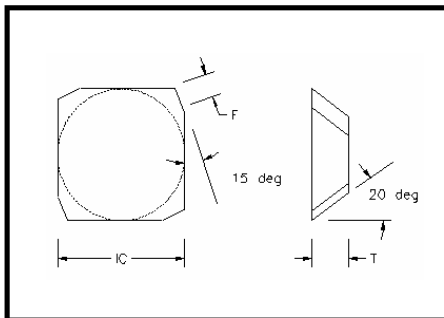
Insert	IC	T	R	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SEC-322	.375	.125	.031	2	2	3	3	3
SEC-422	.500	.125	.031	2	2	3	3	3
SEC-423	.500	.125	.047	2	2	3	3	3
SEC-424	.500	.125	.062	2	2	3	3	3
SEC-532	.625	.188	.031	2	2	3	3	3
SEC-533	.625	.188	.047	2	2	3	3	3
SEC-534	.625	.188	.062	2	2	3	3	3
SEC-536	.625	.188	.094	2	2	3	3	3
SEC-632	.750	.188	.031	2	2	3	3	3
SEC-633	.750	.188	.047	2	2	3	3	3
SEC-634	.750	.188	.062	2	2	3	3	3
SEC-636	.750	.188	.094	2	2	3	3	3

SEC-A



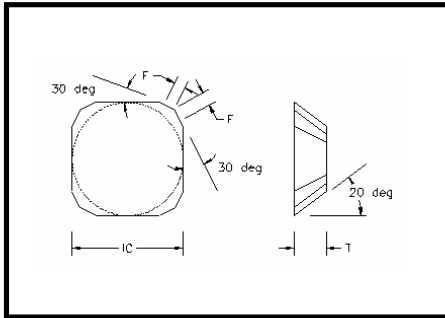
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SEC-63A8	.750	.188	.125	2	2	3	3	3

SEC-E



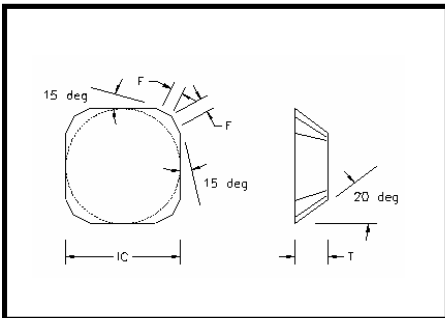
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SEC-42E4R	.500	.125	.062	2	2	3	3	3

SEC-K



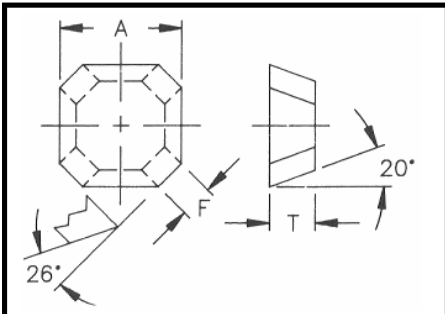
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SEC-53K4	.625	.188	.062	2	2	3	3	3
SEC-53K8	.625	.188	.125	2	2	3	3	3
SEC-63K8	.750	.188	.125	2	2	3	3	3

SEC-L



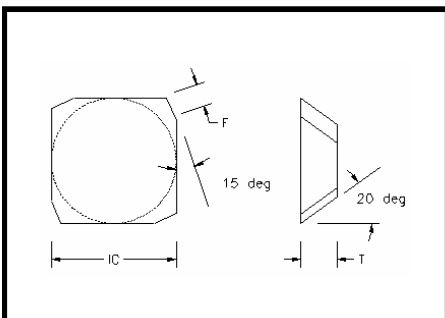
Insert	IC	T	F	Grades Available				
				BC	BC5	C5C	C3N	C2A
SEC-43L4	.500	.188	.062	2	2	3	3	3
SEC-53L8	.625	.188	.062	2	2	3	3	3
SEC-63L8	.750	.188	.125	2	2	3	3	3

SEK (SEM)



Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SEK-43A	.500	.188	.079	2	2	3	3	3
SEK-53A	.625	.188	.079	2	2	3	3	3

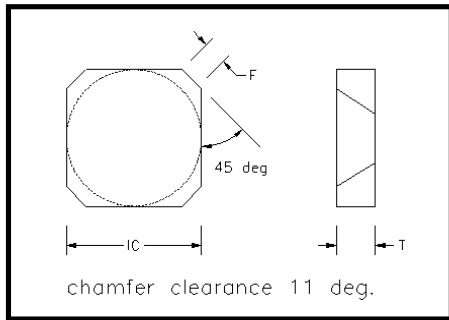
SFA-E



Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SFA-42E3R	.500	.125	.094	2	2	3	3	3
SFA-42E4R	.500	.125	.060	2	2	3	3	3
SFA-63E	.750	.188	.094	2	2	3	3	3

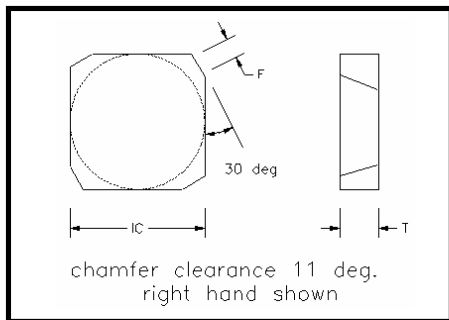
(C-4)

SHC-A (SNPC-A)



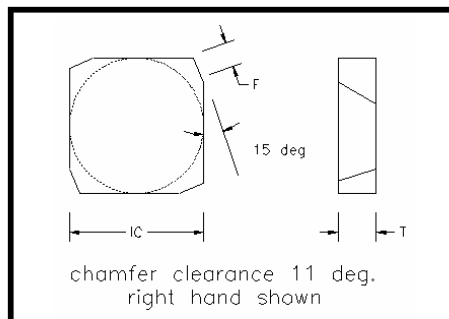
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SHC-63A7	.750	.188	.106	2	2	3	3	3

SHC-D (SNPC-D/G)



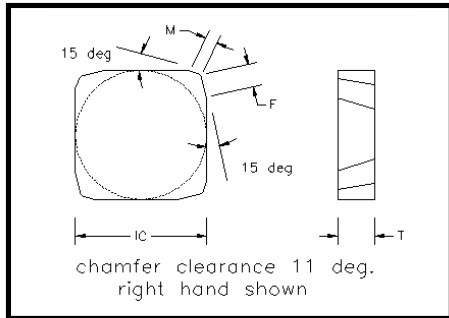
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SHC-43D5R	.500	.188	.078	2	2	3	3	3
SHC-43D5L	.500	.188	.078	2	2	3	3	3
SHC-63D6R	.750	.188	.094	2	2	3	3	3
SHC-63D6L	.750	.188	.094	2	2	3	3	3
SHC-63D7R	.750	.188	.106	2	2	3	3	3
SHC-63D7L	.750	.188	.106	2	2	3	3	3
SHC-63D8R	.750	.188	.125	2	2	3	3	3
SHC-63D8L	.750	.188	.125	2	2	3	3	3
SHC-63D9R	.750	.188	.140	2	2	3	3	3
SHC-63D9L	.750	.188	.140	2	2	3	3	3
SHC-63D10R	.750	.188	.156	2	2	3	3	3
SHC-63D10L	.750	.188	.156	2	2	3	3	3

SHC-E (SNPC-E/H)



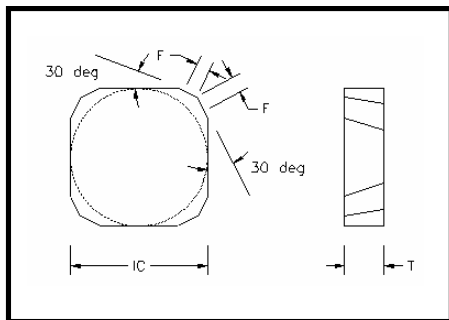
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SHC-63E7R	.750	.188	.106	2	2	3	3	3
SHC-63E7L	.750	.188	.106	2	2	3	3	3

SHC-H



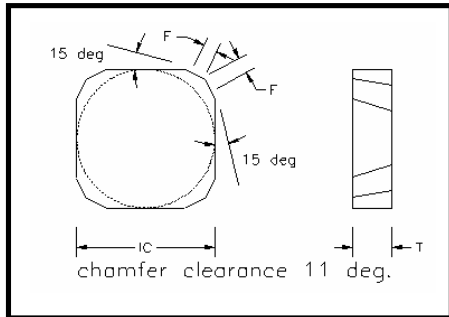
Insert	IC	T	F	M	Grades Available				
					BC2	BC5	C5C	C3N	C2A
SHC-63H8R	.750	.188	.125	.031	2	2	3	3	3

SHC-K



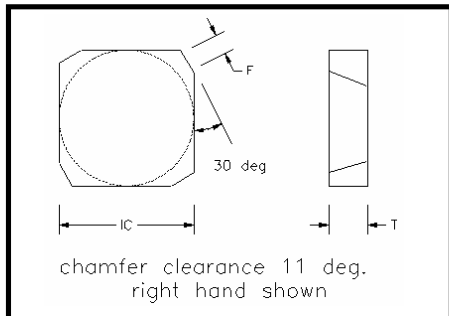
Insert	IC	T	F		Grades Available				
					BC2	BC5	C5C	C3N	C2A
SHC-63K4	.750	.188	.062		2	2	3	3	3
SHC-63K8	.750	.188	.125		2	2	3	3	3

SHC-L



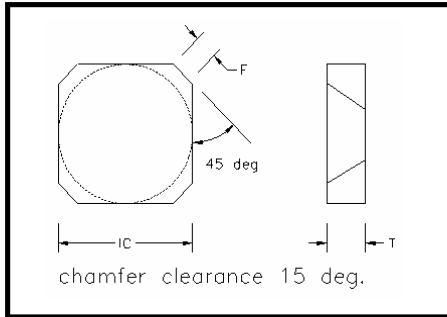
Insert	IC	T	F		Grades Available				
					BC2	BC5	C5C	C3N	C2A
SHC-63L8	.750	.188	.125		2	2	3	3	3

SHX-D



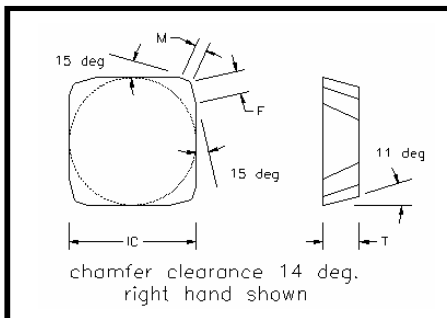
Insert	IC	T	F		Grades Available				
					BC2	BC5	C5C	C3N	C2A
SHX-63D5R	.750	.188	.078		2	2	3	3	3
SHX-63D5L	.750	.188	.078		2	2	3	3	3

SJC-A



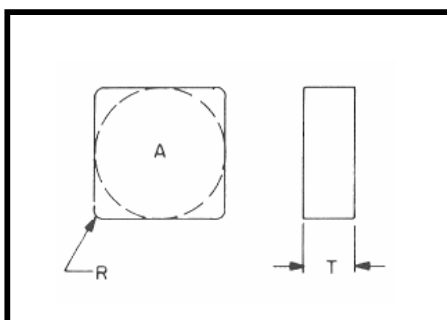
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SJC-43A6	.500	.188	.094	2	2	3	3	3
SJC-63A12	.750	.188	.188	2	2	3	3	3

SMK (SPKN)



Insert	IC	T	F	M	Grades Available				
					BC2	BC5	C5C	C3N	C2A
SMK-42E2R	.500	.125	.055	.039	2	2	3	3	3
SMK-42E2L	.500	.125	.055	.039	2	2	3	3	3
SMK-43E2R	.500	.188	.055	.039	2	2	3	3	3
SMK-43E2L	.500	.188	.055	.039	2	2	3	3	3
SMK-53E2R	.625	.188	.055	.039	2	2	3	3	3
SMK-53E2L	.625	.188	.055	.039	2	2	3	3	3
SMK-53E3R	.625	.188	.102	.039	2	2	3	3	3
SMK-53E3L	.625	.188	.102	.039	2	2	3	3	3
SMK-63E3R	.750	.188	.106	.039	2	2	3	3	3
SMK-63E3L	.750	.188	.106	.039	2	2	3	3	3

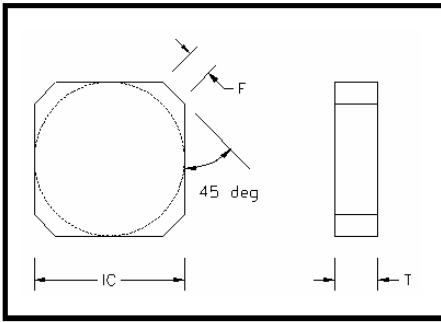
SNC (SNG, SNE)



Insert	IC	T	R	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SNC-322	.375	.125	.031	2	2	3	3	3
SNC-422	.500	.125	.031	2	2	3	3	3
SNC-424	.500	.125	.062	2	2	3	3	3
SNC-532	.625	.188	.031	2	2	3	3	3
SNC-534	.625	.188	.062	2	2	3	3	3
SNC-542	.625	.250	.031	2	2	3	3	3
SNC-544	.625	.250	.062	2	2	3	3	3
SNC-632	.750	.188	.031	2	2	3	3	3
SNC-634	.750	.188	.062	2	2	3	3	3
SNC-642	.750	.250	.031	2	2	3	3	3
SNC-644	.750	.250	.062	2	2	3	3	3
SNC-646	.750	.250	.094	2	2	3	3	3

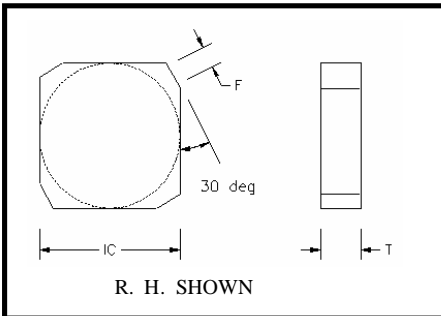
(C-7)

SNC-A (SNA-A, SNE-A)



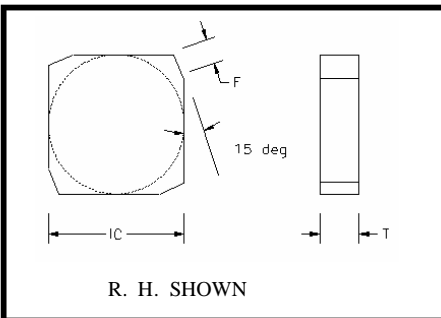
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SNC-43A2	.500	.188	.031	2	2	3	3	3
SNC-43A3	.500	.188	.047	2	2	3	3	3
SNC-43A4	.500	.188	.062	2	2	3	3	3
SNC-43A6	.500	.188	.094	2	2	3	3	3
SNC-53A6	.625	.188	.094	2	2	3	3	3
SNC-53A7	.625	.188	.106	2	2	3	3	3
SNC-63A2	.750	.188	.031	2	2	3	3	3
SNC-63A3	.750	.188	.047	2	2	3	3	3
SNC-63A4	.750	.188	.062	2	2	3	3	3
SNC-63A6	.750	.188	.094	2	2	3	3	3
SNC-63A7	.750	.188	.106	2	2	3	3	3
SNC-63A12	.750	.188	.188	2	2	3	3	3

SNC-D



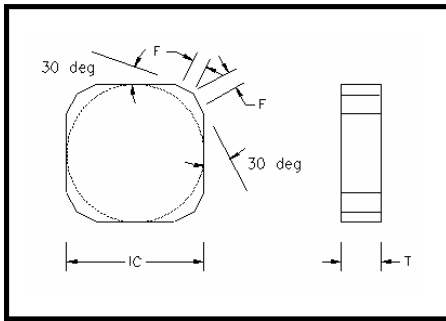
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SNC-63D6R	.750	.188	.094	2	2	3	3	3
SNC-63D6L	.750	.188	.094	2	2	3	3	3

SNC-E



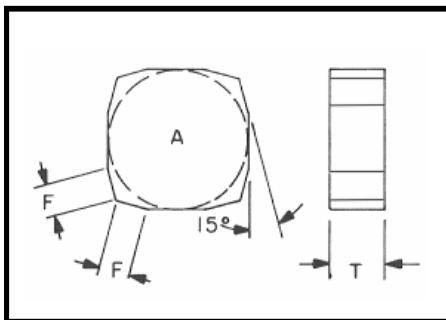
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SNC-63E6R	.750	.188	.094	2	2	3	3	3
SNC-63E6L	.750	.188	.094	2	2	3	3	3

SNC-K (SNA-K, SNE-A)



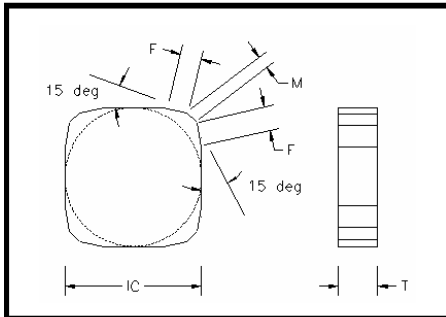
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SNC-43K4	.500	.188	.062	2	2	3	3	3
SNC-53K6	.625	.188	.094	2	2	3	3	3
SNC-63K5	.750	.188	.094	2	2	3	3	3
SNC-63K8	.750	.188	.125	2	2	3	3	3

SNC-L



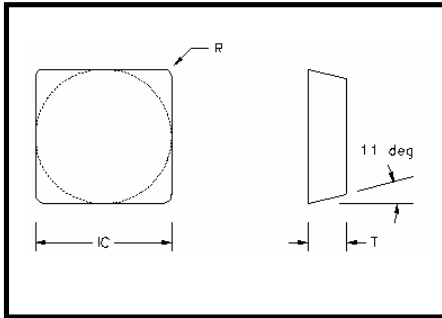
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SNC-53L8	.625	.188	.125	2	2	3	3	3
SNC-63L8	.750	.188	.125	2	2	3	3	3

SNK-E (SNKN-E)



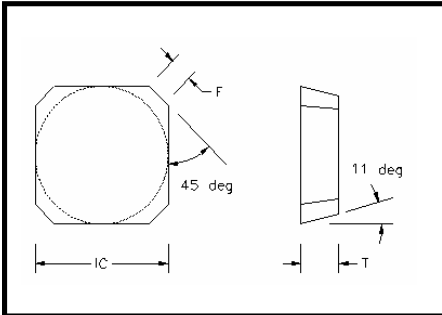
Insert	IC	T	F	M	Grades Available				
					BC2	BC5	C5C	C3N	C2A
SNK-43E2	.500	.188	.055	.039	2	2	3	3	3
SNK-53E2	.625	.188	.055	.039	2	2	3	3	3
SNK-63E3	.750	.188	.099	.039	2	2	3	3	3

SPC (SPG, SPE)



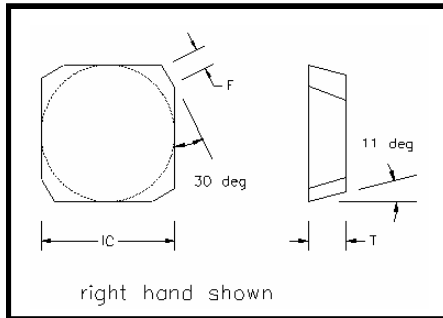
Insert	IC	T	R	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SPC-322	.375	.125	.031	2	2	3	3	3
SPC-422	.500	.125	.031	2	2	3	3	3
SPC-423	.500	.125	.047	2	2	3	3	3
SPC-424	.500	.125	.062	2	2	3	3	3
SPC-432	.500	.188	.031	2	2	3	3	3
SPC-434	.500	.188	.062	2	2	3	3	3
SPC-532	.625	.188	.031	2	2	3	3	3
SPC-533	.625	.188	.047	2	2	3	3	3
SPC-534	.625	.188	.062	2	2	3	3	3
SPC-536	.625	.188	.094	2	2	3	3	3
SPC-632	.750	.188	.031	2	2	3	3	3
SPC-633	.750	.188	.047	2	2	3	3	3
SPC-634	.750	.188	.062	2	2	3	3	3
SPC-636	.750	.188	.094	2	2	3	3	3

SPC-A (SPE-A)



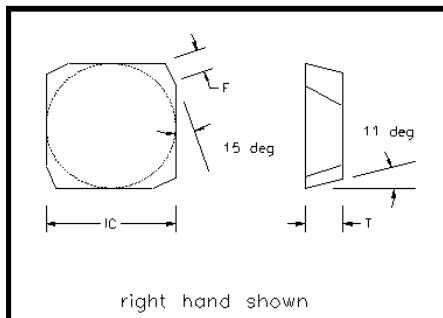
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SPC-42A2	.500	.125	.031	2	2	3	3	3
SPC-42A4	.500	.125	.062	2	2	3	3	3
SPC-43A2	.500	.188	.031	2	2	3	3	3
SPC-43A3	.500	.188	.047	2	2	3	3	3
SPC-43A4	.500	.188	.062	2	2	3	3	3
SPC-43A6	.500	.188	.094	2	2	3	3	3
SPC-53A6	.625	.188	.094	2	2	3	3	3
SPC-63A2	.750	.188	.031	2	2	3	3	3
SPC-63A3	.750	.188	.047	2	2	3	3	3
SPC-63A4	.750	.188	.062	2	2	3	3	3
SPC-63A6	.750	.188	.094	2	2	3	3	3
SPC-63A8	.750	.188	.125	2	2	3	3	3
SPC-63A12	.750	.188	.188	2	2	3	3	3

SPC-D (SPC-G, SPE-D))



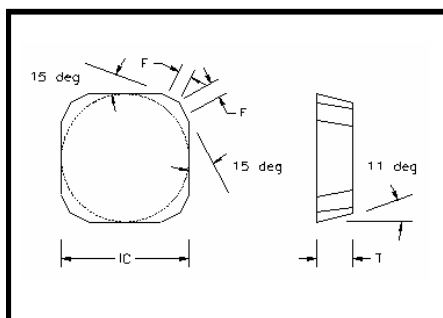
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SPC-42D4R	.500	.125	.062	2	2	3	3	3
SPC-42D4L	.500	.125	.062	2	2	3	3	3
SPC-53D6R	.750	.188	.094	2	2	3	3	3
SPC-53D6L	.750	.188	.094	2	2	3	3	3
SPC-63D6R	.750	.188	.094	2	2	3	3	3
SPC-63D6L	.750	.188	.094	2	2	3	3	3

SPC-E (SPC-H, SPE-E)



Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SPC-42E4R	.500	.125	.062	2	2	3	3	3
SPC-42E4L	.500	.125	.062	2	2	3	3	3
SPC-43E4R	.500	.188	.062	2	2	3	3	3
SPC-43E4L	.500	.188	.062	2	2	3	3	3
SPC-53E6R	.750	.188	.094	2	2	3	3	3
SPC-53E6L	.750	.188	.094	2	2	3	3	3
SPC-63E4R	.750	.188	.062	2	2	3	3	3
SPC-63E4L	.750	.188	.062	2	2	3	3	3
SPC-63E6R	.750	.188	.094	2	2	3	3	3
SPC-63E6L	.750	.188	.094	2	2	3	3	3
SPC-63E8R	.750	.188	.125	2	2	3	3	3
SPC-63E8L	.750	.188	.125	2	2	3	3	3
SPC-63E9R	.750	.188	.141	2	2	3	3	3
SPC-63E9L	.750	.188	.141	2	2	3	3	3

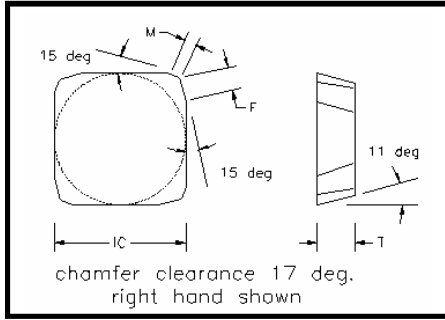
SPC-L



Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SPC-42L4	.500	.125	.062	2	2	3	3	3
SPC-43L2	.500	.188	.031	2	2	3	3	3
SPC-43L4	.500	.188	.062	2	2	3	3	3
SPC-53L4	.625	.188	.062	2	2	3	3	3
SPC-63L6	.750	.188	.094	2	2	3	3	3
SPC-63L8	.750	.188	.125	2	2	3	3	3

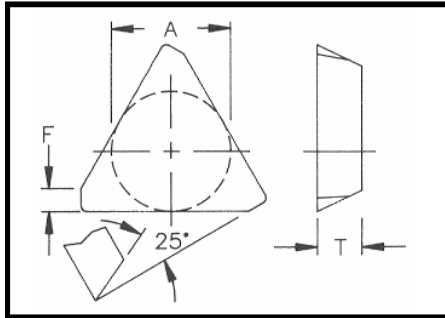
(C-11)

SRC-H



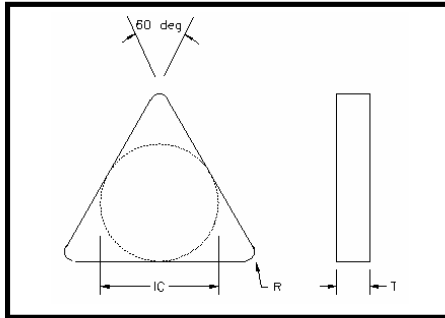
Insert	IC	T	F	M	Grades Available				
					BC2	BC5	C5C	C3N	C2A
SRC-43H2R	.500	.188	.031	.031	2	2	3	3	3
SRC-43H2L	.500	.188	.031	.031	2	2	3	3	3
SRC-43H4R	.500	.188	.062	.031	2	2	3	3	3
SRC-43H4L	.500	.188	.062	.031	2	2	3	3	3
SRC-53H4R	.625	.188	.062	.031	2	2	3	3	3
SRC-53H4L	.625	.188	.062	.031	2	2	3	3	3
SRC-63H4R	.750	.188	.062	.031	2	2	3	3	3
SRC-63H4L	.750	.188	.062	.031	2	2	3	3	3
SRC-63H8R	.750	.188	.125	.031	2	2	3	3	3
SRC-63H8L	.750	.188	.125	.031	2	2	3	3	3

TFA-P



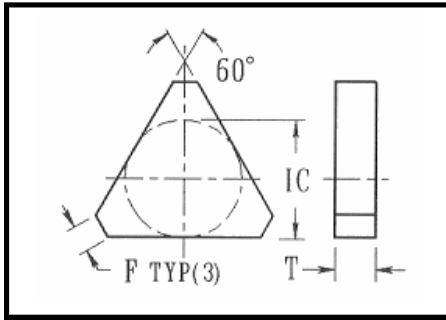
Insert	IC	T	F		Grades Available				
					BC2	BC5	C5C	C3N	C2A
TFA-42P3R	.500	.125	.028		2	2	3	3	3
TFA-42P3L	.500	.125	.028		2	2	3	3	3

TNC (TNG, TNE)



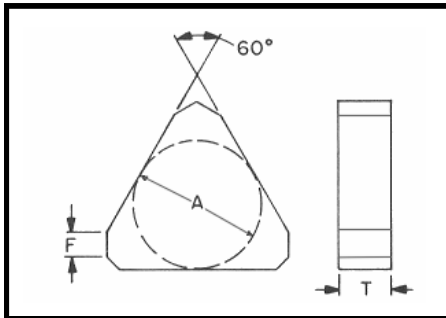
Insert	IC	T	F		Grades Available				
					BC2	BC5	C5C	C3N	C2A
TNC-222	.250	.125	.031		2	2	3	3	3
TNC-322	.375	.125	.031		2	2	3	3	3
TNC-324	.375	.125	.062		2	2	3	3	3
TNC-332	.375	.188	.031		2	2	3	3	3
TNC-333	.375	.188	.047		2	2	3	3	3
TNC-334	.375	.188	.062		2	2	3	3	3
TNC-432	.500	.188	.031		2	2	3	3	3
TNC-433	.500	.188	.047		2	2	3	3	3
TNC-434	.500	.188	.062		2	2	3	3	3
TNC-436	.500	.188	.094		2	2	3	3	3

TNC-N (TNE-N)



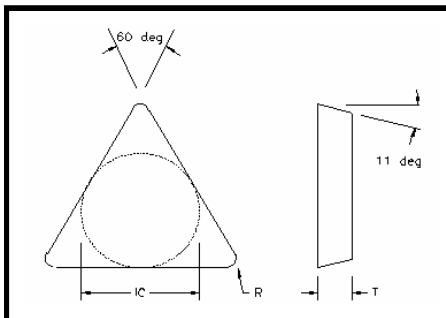
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
TNC-32N3	.375	.125	.094	2	2	3	3	3
TNC-33N3	.375	.188	.094	2	2	3	3	3
TNC-43N4	.500	.188	.125	2	2	3	3	3
TNC-53N4	.625	.188	.125	2	2	3	3	3

TNC-R (TNE-R)



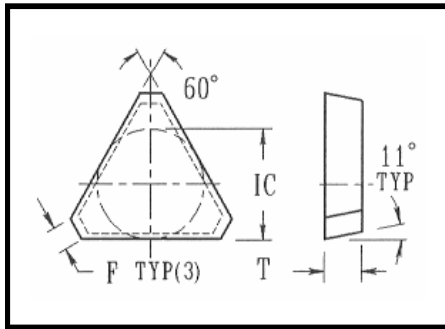
Insert	A	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
TNC-43R4	.500	.188	.062	2	2	3	3	3
TNC-53R4	.625	.188	.062	2	2	3	3	3

TPC (TPG, TPE)



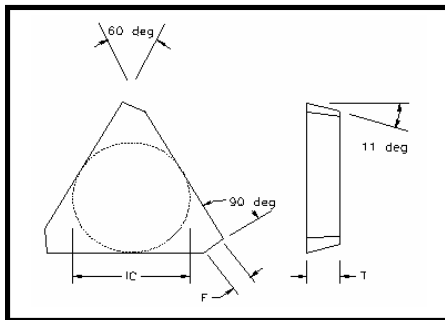
Insert	IC	T	R	Grades Available				
				BC2	BC5	C5C	C3N	C2A
TPC-222	.250	.125	.031	2	2	3	3	3
TPC-321	.375	.125	.015	2	2	3	3	3
TPC-322	.375	.125	.031	2	2	3	3	3
TPC-324	.375	.125	.062	2	2	3	3	3
TPC-431	.500	.188	.015	2	2	3	3	3
TPC-432	.500	.188	.031	2	2	3	3	3
TPC-433	.500	.188	.047	2	2	3	3	3
TPC-434	.500	.188	.062	2	2	3	3	3
TPC-436	.500	.188	.094	2	2	3	3	3
TPC-532	.625	.188	.031	2	2	3	3	3
TPC-534	.625	.188	.062	2	2	3	3	3
TPC-536	.625	.188	.094	2	2	3	3	3
TPC-542	.625	.250	.031	2	2	3	3	3
TPC-544	.625	.250	.062	2	2	3	3	3

TPC-N (TPCN-N, TPE-N)



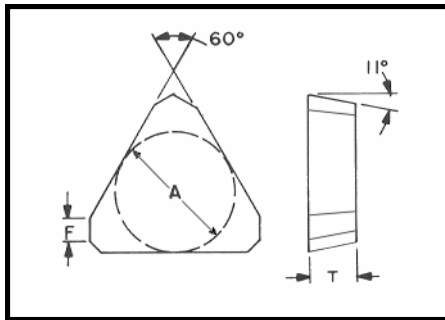
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
TPC-32N8	.500	.125	.125	2	2	3	3	3
TPC-43N8	.625	.188	.125	2	2	3	3	3
TPC-53N8	.625	.188	.125	2	2	3	3	3

TPC-P (TPE-P)



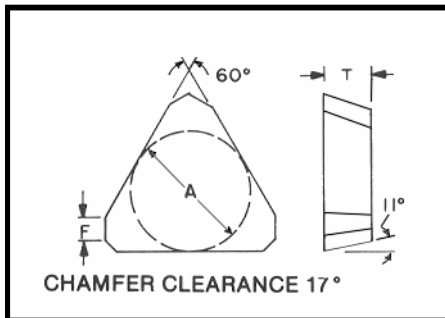
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
TPC-32P3R	.375	.125	.047	2	2	3	3	3
TPC-32P8R	.375	.125	.125	2	2	3	3	3
TPC-32P8L	.375	.125	.125	2	2	3	3	3
TPC-43P4R	.500	.188	.055	2	2	3	3	3
TPC-43P8R	.500	.188	.125	2	2	3	3	3
TPC-43P8L	.500	.188	.125	2	2	3	3	3

TPC-R (TPE-R, TNM-C)



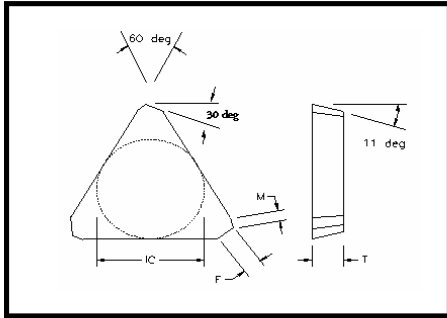
Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
TPC-43R4	.500	.188	.062	2	2	3	3	3
TPC-53R4	.625	.188	.062	2	2	3	3	3

TRC-R



Insert	IC	T	F	Grades Available				
				BC2	BC5	C5C	C3N	C2A
TRC-43R4	.500	.188	.062	2	2	3	3	3
TRC-53R4	.625	.188	.062	2	2	3	3	3

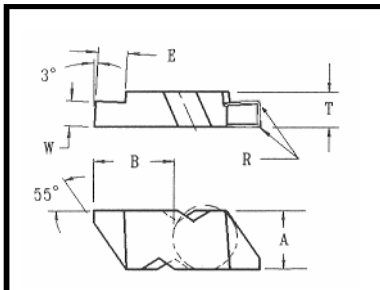
TPK-P (TPK-R)



Insert	IC	T	F	M	Grades Available				
					BC2	BC5	C5C	C3N	C2A
TPK-32P3R	.375	.125	.047	.039	2	2	3	3	3
TPK-43P4R	.500	.188	.055	.028	2	2	3	3	3
TPK-53P4R	.625	.188	.055	.028	2	2	3	3	3

D. Grooving & Threading Inserts

Notch Style - Grooving



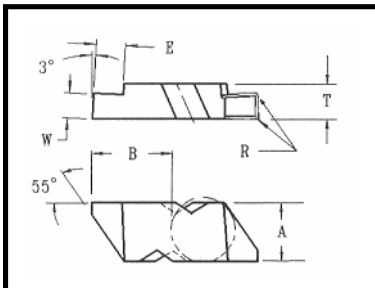
NG

INSERTS		DIMENSIONS						GRADES								
LEFT HAND	RIGHT HAND	R	W	B	T	E	A	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T	
NG-1047L	—	.006	.047	.143	.096	.075	.100		2	N	2	3	3	N	N	N
NG-1062L	—	.006	.062	.143	.096	.075	.100		S	N	2	3	S	N	N	N
NG-1094L	—	.006	.094	.143	.096	.075	.100		S	N	2	3	S	N	N	N
NG-2031L	NG-2031R	.004	.031	.270	.150	.050	.219		2	2	2	N	3	3	3	3
NG-2041L	NG-2041R	.004	.041	.270	.150	.050	.219		2	2	2	N	3	3	3	3
NG-2047L	NG-2047R	.004	.047	.270	.150	.050	.219		2	2	2	N	3	3	3	3
NG-2058L	NG-2058R	.007	.058	.270	.150	.050	.219		2	2	2	N	3	3	3	3
NG-2062L	NG-2062R	.007	.062	.270	.150	.110	.219		S	2	2	N	3	S	3	3
NG-2094L	NG-2094R	.007	.094	.270	.150	.110	.219		2	2	2	N	3	3	3	3
NG-2125L	NG-2125R	.007	.125	.270	.150	.110	.219		S	2	2	N	3	S	3	3
NG-3047L	NG-3047R	.007	.047	.405	.195	.075	.344		2	2	2	N	3	3	3	3
NG-3062L	NG-3062R	.007	.062	.405	.195	.094	.344		S	2	2	N	3	S	3	3
NG-3072L	NG-3072R	.007	.072	.405	.195	.094	.344		2	2	2	N	3	3	3	3
NG-3078L	NG-3078R	.007	.078	.405	.195	.094	.344		2	2	2	N	3	3	3	3
NG-3088L	NG-3088R	.007	.088	.405	.195	.094	.344		2	2	2	N	3	3	3	3
NG-3094L	NG-3094R	.007	.094	.405	.195	.150	.344		S	2	2	N	3	S	3	3
NG-3097L	NG-3097R	.012	.097	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NG-3105L	NG-3105R	.007	.105	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NG-3110L	NG-3110R	.012	.110	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NG-3122L	NG-3122R	.007	.122	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NG-3125L	NG-3125R	.007	.125	.405	.195	.150	.344		S	2	2	N	3	S	3	3
NG-3142L	NG-3142R	.012	.142	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NG-3156L	NG-3156R	.007	.156	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NG-3178L	NG-3178R	.007	.178	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NG-3185L	NG-3185R	.022	.185	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NG-3189L	NG-3189R	.022	.189	.405	.195	.150	.344		S	2	2	N	3	S	3	3

(D-1)

NG (continued)

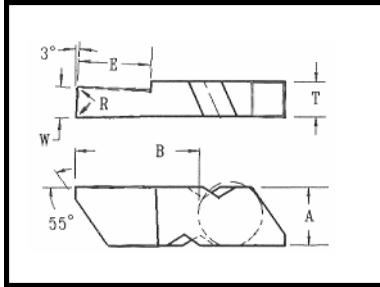
INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A		B C 2	B 2 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NG-4125L	NG-4125R	.007	.125	.636	.255	.150	.453		2	2	2	N	3	3	3	3
NG-4189L	NG-4189R	.022	.189	.636	.255	.250	.453		S	2	2	N	3	S	3	3
NG-4213L	NG-4213R	.007	.213	.636	.255	.250	.453		2	2	2	N	3	3	3	3
NG-4219L	NG-4219R	.022	.219	.636	.255	.250	.453		2	2	2	N	3	3	3	3
NG-4250L	NG-4250R	.022	.250	.636	.255	.250	.453		S	2	2	N	3	S	3	3
NG-5250L	NG-5250R	.022	.250	.952	.380	.375	.688		2	2	2	N	3	3	3	3
NG-5281L	NG-5281R	.032	.281	.952	.380	.375	.688		2	2	2	N	3	3	3	3
NG-5312L	NG-5312R	.032	.312	.952	.380	.375	.688		2	2	2	N	3	3	3	3
NG-5344L	NG-5344R	.032	.344	.952	.380	.375	.688		2	2	2	N	3	3	3	3
NG-5375L	NG-5375R	.032	.375	.952	.380	.375	.688		2	2	2	N	3	3	3	3
NG-6281L	NG-6281R	.032	.281	.636	.383	.250	.453		2	2	2	N	3	3	3	3
NG-6312L	NG-6312R	.032	.312	.636	.383	.250	.453		2	2	2	N	3	3	3	3
NG-6344L	NG-6344R	.032	.344	.636	.383	.250	.453		2	2	2	N	3	3	3	3
NG-6375L	NG-6375R	.032	.375	.636	.383	.250	.453		2	2	2	N	3	3	3	3



NG (metric)

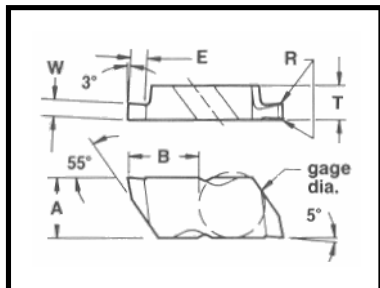
INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A		B C 2	B 2 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NG-210L	NG-210R	.003	1mm	.270	.150	.050	.219		2	2	2	N	3	3	3	3
NG-220L	NG-220R	.007	2mm	.270	.150	.110	.219		2	2	2	N	3	3	3	3
NG-230L	NG-230R	.007	3mm	.270	.150	.110	.219		2	2	2	N	3	3	3	3
NG-330L	NG-330R	.007	3mm	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NG-340L	NG-340R	.012	4mm	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NG-450L	NG-450R	.012	5mm	.636	.255	.250	.453		2	2	2	N	3	3	3	3
NG-460L	NG-460R	.012	6mm	.636	.255	.250	.453		2	2	2	N	3	3	3	3

(D-2)



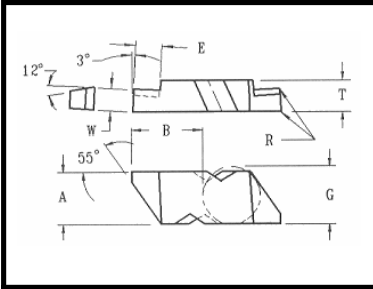
NGD

INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A		B C 2	B 2 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NGD-3125L	NGD-3125R	.022	.125	.505	.195	.250	.344		S	2	2	N	S	N	3	3
NGD-3189L	NGD-3189R	.022	.189	.505	.195	.250	.344		S	2	2	N	S	N	3	3
NGD-4250L	NGD-4250R	.022	.250	.866	.255	.500	.453		S	2	2	N	S	N	3	3



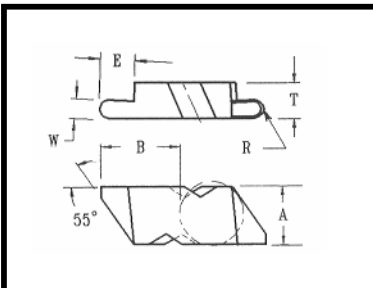
NGP

INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A		B C 2	B 2 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NGP-2031L	NGP-2031R	.004	.031	.270	.150	.050	.219		2	2	2	N	3	3	3	3
NGP-2062L	NGP-2062R	.007	.062	.270	.150	.110	.219		2	2	2	N	3	3	3	3
NGP-2125L	NGP-2125R	.007	.125	.270	.150	.110	.219		2	2	2	N	3	3	3	3
NGP-3088L	NGP-3088R	.007	.088	.405	.195	.094	.344		2	2	2	N	3	3	3	3
NGP-3125L	NGP-3125R	.007	.125	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NGP-3156L	NGP-3156R	.007	.156	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NGP-3189L	NGP-3189R	.022	.189	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NGP-4189L	NGP-4189R	.022	.189	.636	.255	.250	.453		2	2	2	N	3	3	3	3
NGP-4250L	NGP-4250R	.022	.250	.636	.255	.250	.453		2	2	2	N	3	3	3	3



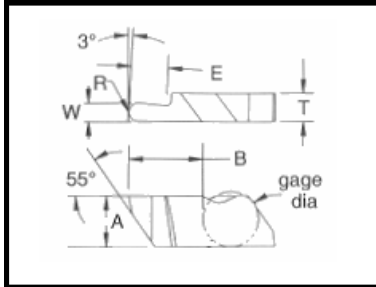
NF

INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A		B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NF-3125L	NF-3125R	.007	.125	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NF-3156L	NF-3156R	.007	.156	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NF-3188L	NF-3188R	.022	.188	.405	.195	.150	.344		2	2	2	N	3	3	3	3
NF-6218L	NF-6218R	.032	.218	.636	.383	.250	.453		2	2	2	N	3	3	3	3
NF-6250L	NF-6250R	.032	.250	.636	.383	.250	.453		2	2	2	N	3	3	3	3
NF-6375L	NF-6375R	.032	.375	.636	.383	.250	.453		2	2	2	N	3	3	3	3



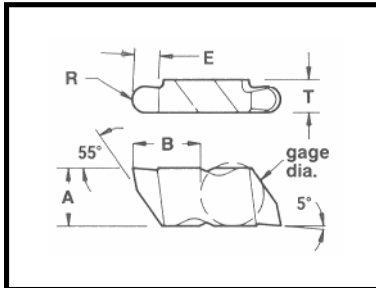
NR

INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A		B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NR-3031L	NR-3031R	.031	.062	.403	.195	.094	.344		S	2	2	N	3	S	3	3
NR-3047L	NR-3047R	.047	.094	.403	.195	.150	.344		S	2	2	N	3	S	3	3
NR-3062L	NR-3062R	.062	.124	.402	.195	.150	.344		S	2	2	N	3	S	3	3
NR-3078L	NR-3078R	.078	.156	.401	.195	.150	.344		2	2	2	N	3	3	3	3
NR-3094L	NR-3094R	.094	.188	.400	.195	.150	.344		S	2	2	N	3	S	3	3
NR-4062L	NR-4062R	.062	.124	.633	.255	.150	.453		2	2	2	N	3	3	3	3
NR-4094L	NR-4094R	.094	.188	.631	.255	.250	.453		2	2	2	N	3	3	3	3
NR-4125L	NR-4125R	.125	.250	.629	.255	.250	.453		S	2	2	N	3	S	3	3



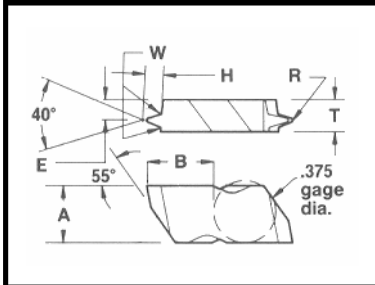
NRD

INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A		B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NRD-3062L	NRD-3062R	.062	.124	.502	.195	.250	.344		2	2	2	N	3	3	3	3
NRD-4094L	NRD-4094R	.094	.188	.881	.255	.500	.453		2	2	2	N	3	3	3	3
NRD-4125L	NRD-4125R	.125	.250	.880	.255	.500	.453		2	2	2	N	3	3	3	3



NRP

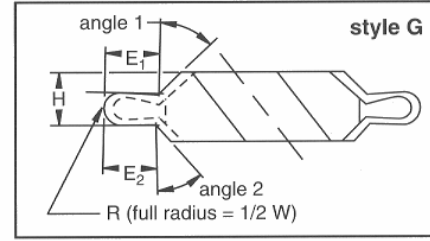
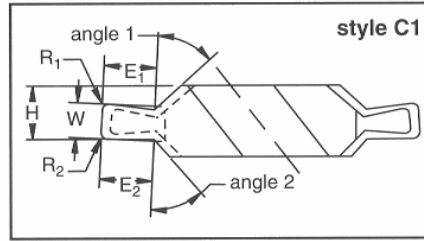
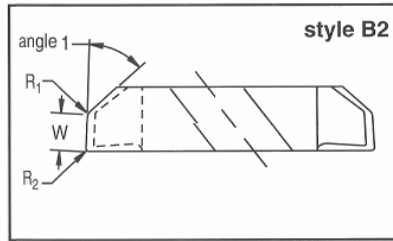
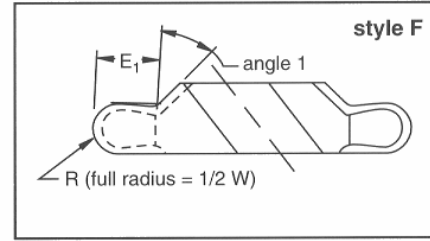
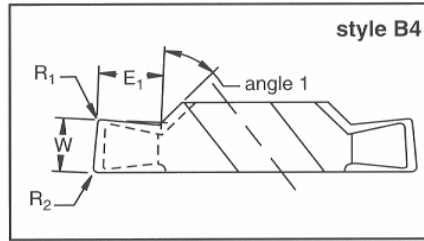
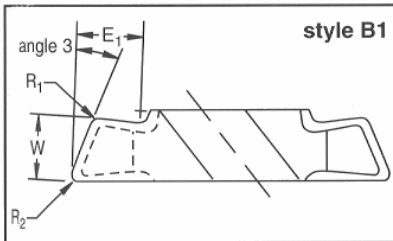
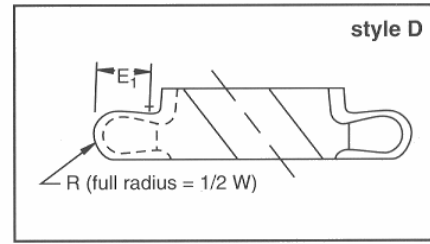
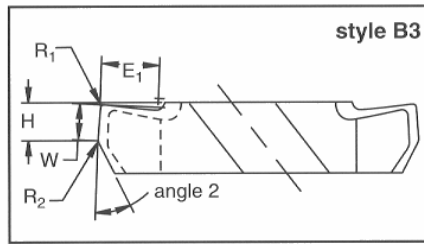
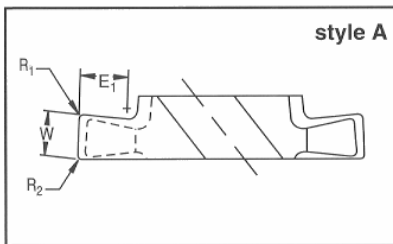
INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A		B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NRP-3031L	NRP-3031R	.031	.062	.403	.195	.094	.344		2	2	2	N	3	3	3	3
NRP-3047L	NRP-3047R	.047	.094	.403	.195	.150	.344		2	2	2	N	3	3	3	3
NRP-3062L	NRP-3062R	.062	.124	.402	.195	.150	.344		2	2	2	N	3	3	3	3
NRP-3078L	NRP-3078R	.078	.156	.401	.195	.150	.344		2	2	2	N	3	3	3	3
NRP-3094L	NRP-3094R	.094	.188	.400	.195	.150	.344		2	2	2	N	3	3	3	3
NRP-4062L	NRP-4062R	.062	.124	.633	.255	.150	.453		2	2	2	N	3	3	3	3
NRP-4094L	NRP-4094R	.094	.188	.631	.255	.250	.453		2	2	2	N	3	3	3	3
NRP-4125L	NRP-4125R	.125	.250	.629	.255	.250	.453		2	2	2	N	3	3	3	3



NV-J/L

INSERTS		DIMENSIONS						GRADES						
LEFT HAND	RIGHT HAND	R	W	B	T	E	A	B	B	B	C	C	C	C
								C	2	C	1	C	5	C
NV-3RJ	NV-3LJ	.012	.008	.401	.195	.125	.344	2	2	2	N	3	3	3
NV-4RJ	NV-4LJ	.012	.015	.629	.255	.118	.453	2	2	2	N	3	3	3

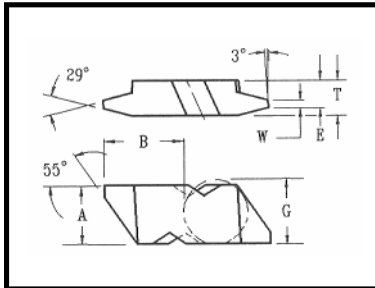
Special Shaped Groovers



Right Hand shown, Left hand also available. Please send sketch, grade and quantity information for price and delivery quote.

(D-6)

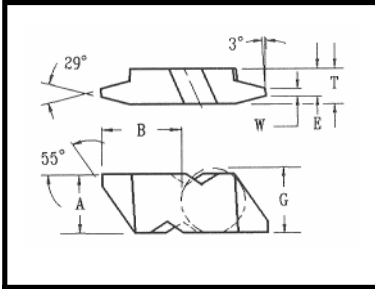
Notch Style - Threading



NA

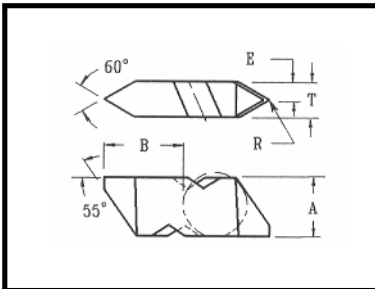
INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A		B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NA-3L16	NA-3R16		.021	.403	.195	.149	.344		2	2	2	N	3	3	3	3
NA-3L14	NA-3R14		.024	.403	.195	.149	.344		2	2	2	N	3	3	3	3
NA-3L12	NA-3R12		.028	.403	.195	.149	.344		2	2	2	N	3	3	3	3
NA-3L10	NA-3R10		.032	.403	.195	.149	.344		2	2	2	N	3	3	3	3
NA-3L8	NA-3R8		.041	.403	.195	.149	.344		2	2	2	N	3	3	3	3
NA-3L6	NA-3R6		.057	.403	.195	.149	.344		2	2	2	N	3	3	3	3
NA-3L5	NA-3R5		.069	.403	.195	.149	.344		2	2	2	N	3	3	3	3
NA-4L16	NA-4R16		.021	.633	.255	.202	.453		2	2	2	N	3	3	3	3
NA-4L14	NA-4R14		.024	.633	.255	.202	.453		2	2	2	N	3	3	3	3
NA-4L12	NA-4R12		.028	.633	.255	.202	.453		2	2	2	N	3	3	3	3
NA-4L10	NA-4R10		.032	.633	.255	.202	.453		2	2	2	N	3	3	3	3
NA-4L8	NA-4R8		.041	.633	.255	.202	.453		2	2	2	N	3	3	3	3
NA-4L6	NA-4R6		.057	.633	.255	.202	.453		2	2	2	N	3	3	3	3
NA-4L5	NA-4R5		.069	.633	.255	.202	.453		2	2	2	N	3	3	3	3
NA-4L4	NA-4R4		.088	.633	.255	.202	.453		2	2	2	N	3	3	3	3
NA-6L6	NA-6R6		.057	.631	.383	.283	.453		2	2	2	N	3	3	3	3
NA-6L5	NA-6R5		.069	.631	.383	.283	.453		2	2	2	N	3	3	3	3
NA-6L4	NA-6R4		.088	.631	.383	.283	.453		2	2	2	N	3	3	3	3
NA-6L3	NA-6R3		.118	.631	.383	.283	.453		2	2	2	N	3	3	3	3
NA-6L2.5	NA-6R2.5		.143	.631	.383	.283	.453		2	2	2	N	3	3	3	3
NA-6L2	NA-6R2		.180	.631	.383	.283	.453		2	2	2	N	3	3	3	3

(D-7)



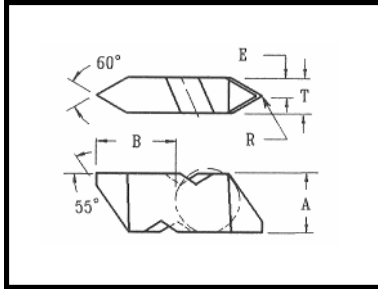
NAS

INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T	
NAS-3L16	NAS-3R16		.024	.403	.195	.149	.344		2	2	2	N	3	3	3	3
NAS-3L14	NAS-3R14		.028	.403	.195	.149	.344		2	2	2	N	3	3	3	3
NAS-3L12	NAS-3R12		.033	.403	.195	.149	.344		2	2	2	N	3	3	3	3
NAS-3L10	NAS-3R10		.037	.403	.195	.149	.344		2	2	2	N	3	3	3	3
NAS-3L8	NAS-3R8		.048	.403	.195	.149	.344		2	2	2	N	3	3	3	3
NAS-3L6	NAS-3R6		.065	.403	.195	.149	.344		2	2	2	N	3	3	3	3
NAS-3L5	NAS-3R5		.079	.403	.195	.149	.344		2	2	2	N	3	3	3	3



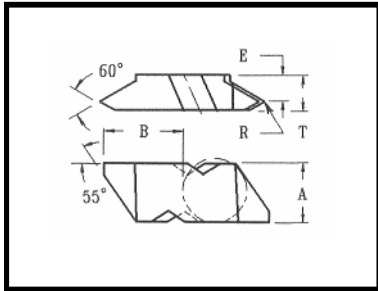
ND

INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T	
ND-3040L	ND-3040R	.017		.399	.195	.082	.344		2	2	2	N	3	3	3	3
ND-3038L	ND-3038R	.035		.399	.195	.082	.344		2	2	2	N	3	3	3	3
ND-4038L	ND-4038R	.035		.629	.255	.128	.453		2	2	2	N	3	3	3	3
ND-4040L	ND-4040R	.017		.629	.255	.128	.453		2	2	2	N	3	3	3	3
ND-4050L	ND-4050R	.022		.629	.255	.128	.453		2	2	2	N	3	3	3	3



NJ

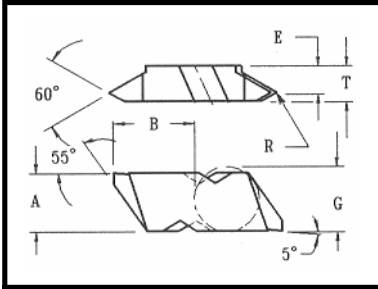
INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A	TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NJ-3020L8	NJ-3020R8	.019		.400	.195	.098	.344	8	2	2	2	N	3	3	3	3
NJ-3014L12	NJ-3014R12	.013		.400	.195	.098	.344	12	2	2	2	N	3	3	3	3
NJ-3010L16	NJ-3010R16	.010		.400	.195	.098	.344	16	2	2	2	N	3	3	3	3



NJF

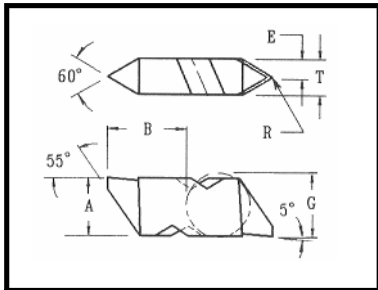
INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A	TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NJF-3012L14	NJF-3012R14	.011		.402	.195	.141	.344	14	2	2	2	N	3	3	3	3
NJF-3010L16	NJF-3010R16	.010		.402	.195	.141	.344	16	2	2	2	N	3	3	3	3
NJF-3009L18	NJF-3009R18	.009		.402	.195	.141	.344	18	2	2	2	N	3	3	3	3
NJF-3008L20	NJF-3008R20	.008		.402	.195	.141	.344	20	2	2	2	N	3	3	3	3
NJF-3007L24	NJF-3007R24	.007		.402	.195	.141	.344	24	2	2	2	N	3	3	3	3
NJF-3006L28	NJF-3006R28	.006		.402	.195	.141	.344	28	2	2	2	N	3	3	3	3
NJF-3005L32	NJF-3005R32	.005		.402	.195	.141	.344	32	2	2	2	N	3	3	3	3

(D-9)



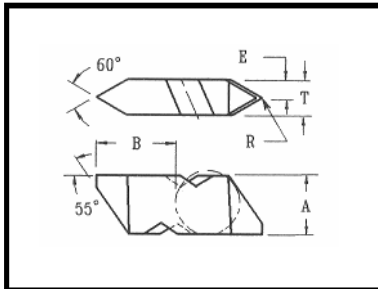
NJK

INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A	TPI	B	B	B	C	C	C	C	
									C	2	C	1	5	N	3	C
NJK-3012L14	NJK-3012R14	.011		.402	.195	.141	.344	14	2	2	2	N	3	3	3	3
NJK-3010L16	NJK-3010R16	.010		.402	.195	.141	.344	16	2	2	2	N	3	3	3	3
NJK-3009L18	NJK-3009R18	.009		.402	.195	.141	.344	18	2	2	2	N	3	3	3	3
NJK-3008L20	NJK-3008R20	.008		.402	.195	.141	.344	20	2	2	2	N	3	3	3	3
NJK-3007L24	NJK-3007R24	.007		.402	.195	.141	.344	24	2	2	2	N	3	3	3	3
NJK-3006L28	NJK-3006R28	.006		.402	.195	.141	.344	28	2	2	2	N	3	3	3	3
NJK-3005L32	NJK-3005R32	.005		.402	.195	.141	.344	32	2	2	2	N	3	3	3	3



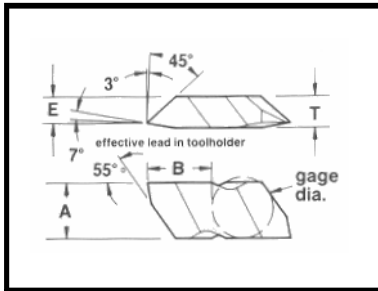
NJP

INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A	TPI	B	B	B	C	C	C	C	
									C	2	C	1	5	N	3	C
NJP-3020L8	NJP-3020R8	.019		.400	.195	.098	.344	8	2	2	2	N	3	3	3	3
NJP-3014L12	NJP-3014R12	.013		.400	.195	.098	.344	12	2	2	2	N	3	3	3	3
NJP-3010L16	NJP-3010R16	.010		.400	.195	.098	.344	16	2	2	2	N	3	3	3	3



NT

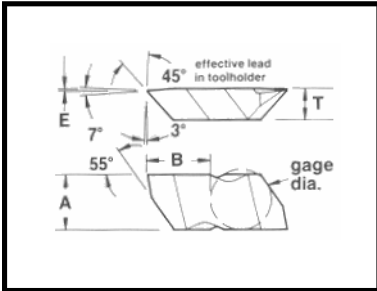
INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	B	T	E	A	J	TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NT-1L	—	.003	.140	.140	.096	.044	.100		S	2	2	3	S	N	3	3
NT-2L	NT-2R	.004	.266	.266	.150	.075	.219		S	2	2	N	3	S	3	3
NT-3L	NT-3R	.006	.400	.400	.195	.098	.344		S	2	2	N	3	S	3	3
NT-4L	NT-4R	.006	.629	.629	.255	.128	.453		S	2	2	N	3	S	3	3



NTB-A

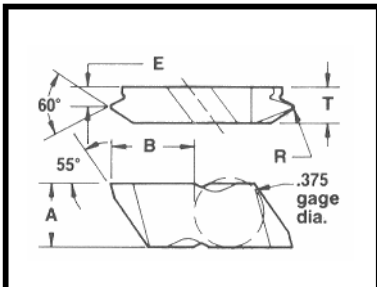
INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	B	T	E	A	J	TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C C C	C 3 N	C N T
NTB-2LA	NTB-2RA	.003	.269	.269	.150	.126	.219		2	2	2	N	3	3	3	3
NTB-3LA	NTB-3RA	.006	.403	.403	.195	.164	.344		2	2	2	N	3	3	3	3
NTB-4LA	NTB-4RA	.010	.633	.633	.255	.206	.453		2	2	2	N	3	3	3	3

(D-11)



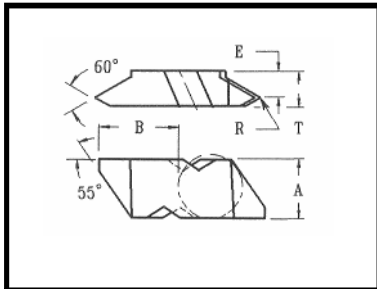
NTB-B

INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A	B	B	B	C	C	C	C	C	
								C	2	2	1	5	N	3	3	N
NTB-2LB	NTB-2RB	.003		.263	.150	.010	.219		2	2	2	N	3	3	3	3
NTB-3LB	NTB-3RB	.006		.395	.195	.012	.344		2	2	2	N	3	3	3	3
NTB-4LB	NTB-4RB	.010		.624	.255	.016	.453		2	2	2	N	3	3	3	3



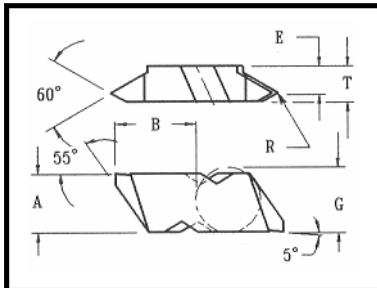
NTC

INSERTS		DIMENSIONS							GRADES							
LEFT HAND	RIGHT HAND	R	B	T	E	A	J	TPI	B	B	B	C	C	C	C	C
									C	2	2	1	5	N	3	3
NTC-3L12E	NTC-3R12E	.010	.403	.195	.148	.195	.061	12	2	2	2	N	3	3	3	3
NTC-3L12I	NTC-3R12I	.004	.403	.195	.148	.195	.052	12	2	2	2	N	3	3	3	3
NTC-3L13E	NTC-3R13E	.009	.403	.195	.148	.195	.058	13	2	2	2	N	3	3	3	3
NTC-3L13I	NTC-3R13I	.004	.403	.195	.148	.195	.050	13	2	2	2	N	3	3	3	3
NTC-3L14E	NTC-3R14E	.009	.403	.195	.148	.195	.054	14	2	2	2	N	3	3	3	3
NTC-3L14I	NTC-3R14I	.003	.403	.195	.148	.195	.044	14	2	2	2	N	3	3	3	3
NTC-3L16E	NTC-3R16E	.008	.403	.195	.148	.195	.046	16	2	2	2	N	3	3	3	3
NTC-3L16I	NTC-3R16I	.003	.403	.195	.148	.195	.040	16	2	2	2	N	3	3	3	3
NTC-3L18E	NTC-3R18E	.007	.403	.195	.148	.195	.041	18	2	2	2	N	3	3	3	3
NTC-3L18I	NTC-3R18I	.003	.403	.195	.148	.195	.036	18	2	2	2	N	3	3	3	3
NTC-3L20E	NTC-3R20E	.006	.403	.195	.148	.195	.037	20	2	2	2	N	3	3	3	3
NTC-3L20I	NTC-3R20I	.003	.403	.195	.148	.195	.031	20	2	2	2	N	3	3	3	3
NTC-3L24E	NTC-3R24E	.005	.403	.195	.148	.195	.031	24	2	2	2	N	3	3	3	3
NTC-3L24I	NTC-3R24I	.003	.403	.195	.148	.195	.026	24	2	2	2	N	3	3	3	3
NTC-3L28	NTC-3R28	.003	.403	.195	.148	.195	.023	28	2	2	2	N	3	3	3	3
NTC-3L32	NTC-3R32	.003	.403	.195	.148	.195	.021	32	2	2	2	N	3	3	3	3



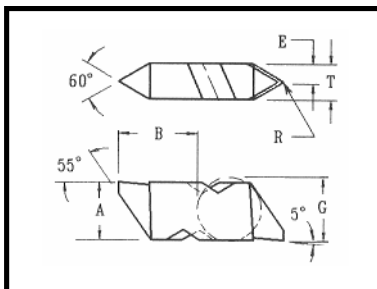
NTF

INSERTS		DIMENSIONS						GRADE							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A	B C 2	B 2 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NTF-2L	NTF-2R	.003		.266	.150	.075	.219	S	2	2	N	3	S	3	3
NTF-3L	NTF-3R	.003		.402	.195	.098	.344	S	2	2	N	3	S	3	3
NTF-4L	NTF-4R	.003		.633	.255	.128	.453	S	2	2	N	3	S	3	3



NTK

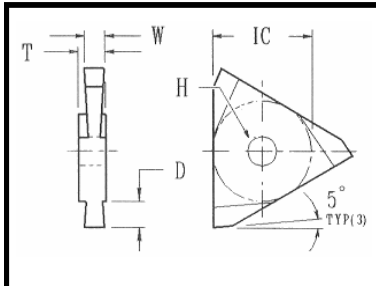
INSERTS		DIMENSIONS						GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A	B C 2	B 2 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NTK-2L	NTK-2R	.003		.266	.150	.075	.219	2	2	2	N	3	3	3	3
NTK-3L	NTK-3R	.003		.402	.195	.098	.344	2	2	2	N	3	3	3	3
NTK-4L	NTK-4R	.003		.633	.255	.128	.453	2	2	2	N	3	3	3	3



NTP

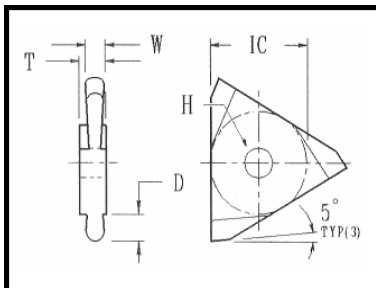
INSERTS		DIMENSIONS						GRADES							
LEFT HAND	RIGHT HAND	R	W	B	T	E	A	B C 2	B 2 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
NT-2L	NT-2R	.004		.266	.150	.075	.219	2	2	2	N	3	3	3	3
NT-3L	NT-3R	.006		.400	.195	.098	.344	2	2	2	N	3	3	3	3
NT-4L	NT-4R	.006		.629	.255	.128	.453	2	2	2	N	3	3	3	3

Triangular - Grooving



TNMA-NG

INSERTS		DIMENSIONS						GRADES							
LEFT HAND	RIGHT HAND	W	D	T	IC	H	R	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C 3 T
TNMA-32NGL.031	TNMA-32NGR.031	.031	.050	.127	.375	.150	*	2	2	2	N	3	3	3	3
TNMA-32NGL.062	TNMA-32NGR.062	.062	.100	.127	.375	.150	*	S	2	2	N	3	S	3	3
TNMA-32NGL.094	TNMA-32NGR.094	.094	.150	.127	.375	.150	*	2	2	2	N	3	3	3	3
TNMA-32NG.125		.125	.150	.127	.375	.150	*	S	2	2	N	3	S	3	3
TNMA-43NGL.062	TNMA-43NGR.062	.062	.100	.190	.500	.202	*	2	2	2	N	3	3	3	3
TNMA-43NGL.094	TNMA-43NGR.094	.094	.150	.190	.500	.202	*	S	2	2	N	3	S	3	3
TNMA-43NGL.125	TNMA-43NGR.125	.125	.230	.190	.500	.202	*	S	2	2	N	3	S	3	3
TNMA-43NGL.156	TNMA-43NGR.156	.156	.230	.190	.500	.202	*	2	2	2	N	3	3	3	3
TNMA-43NG.187		.187	.230	.190	.500	.202	*	S	2	2	N	3	S	3	3
TNMA-54NGL.125	TNMA-54NGR.125	.125	.230	.252	.625	.312	*	2	2	2	N	3	3	3	3
TNMA-54NGL.187	TNMA-54NGR.187	.187	.300	.252	.625	.312	*	2	2	2	N	3	3	3	3
TNMA-54NG.250		.250	.300	.252	.625	.312	*	S	2	2	N	3	S	3	3



TNMA-NR

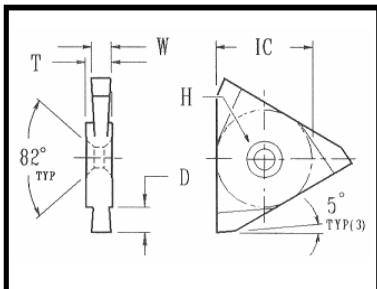
INSERTS		DIMENSIONS						GRADES							
LEFT HAND	RIGHT HAND	W	D	T	IC	H	R	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C 3 T
TNMA-32NRL.062	TNMA-32NRR.062	.062	.100	.127	.375	.150	.031	2	2	2	N	3	3	3	3
TNMA-32NRL.094	TNMA-32NRR.094	.094	.150	.127	.375	.150	.047	2	2	2	N	3	3	3	3
TNMA-32NR.125		.125	.150	.127	.375	.150	.062	2	2	2	N	3	3	3	3

*Corner radii available upon request.

(D-15)

TNMA-NR (continued)

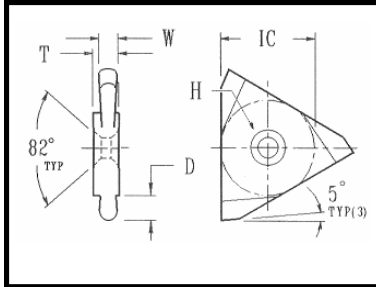
INSERTS		DIMENSIONS						GRADES							
LEFT HAND	RIGHT HAND	W	E	T	IC	H	R	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
TNMA-43NRL.062	TNMA-43NRR.062	.062	.100	.190	.500	.202	.031	2	N	2	N	3	3	3	3
TNMA-43NRL.094	TNMA-43NRR.094	.094	.150	.190	.500	.202	.047	2	N	2	N	3	3	3	3
TNMA-43NRL.125	TNMA-43NRR.125	.125	.230	.190	.500	.202	.062	2	N	2	N	3	3	3	3
TNMA-43NR.188		.188	.230	.190	.500	.202	.094	2	N	2	N	3	3	3	3
TNMA-54NRL.125	TNMA-54NRR.125	.125	.230	.252	.625	.312	.062	2	N	2	N	3	3	3	3
TNMA-54NRL.188	TNMA-54NRR.188	.188	.300	.252	.625	.312	.094	2	N	2	N	3	3	3	3
TNMA-54NR.250		.250	.300	.252	.625	.312	.125	2	N	2	N	3	3	3	3



TNMC-NG

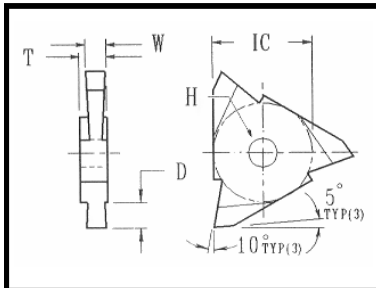
INSERTS		DIMENSIONS						GRADES							
LEFT HAND	RIGHT HAND	W	E	T	IC	H	R	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
TNMC-32NGL.031	TNMC-32NGR.031	.031	.050	.127	.375	.150	*	2	N	2	N	3	3	3	3
TNMC-32NGL.062	TNMC-32NGR.062	.062	.100	.127	.375	.150	*	S	N	2	N	3	S	3	3
TNMC-32NGL.094	TNMC-32NGR.094	.094	.150	.127	.375	.150	*	2	N	2	N	3	3	3	3
TNMC-32NG.125		.125	.150	.127	.375	.150	*	S	N	2	N	3	S	3	3
TNMC-43NGL.062	TNMC-43NGR.062	.062	.100	.190	.500	.202	*	2	N	2	N	3	3	3	3
TNMC-43NGL.094	TNMC-43NGR.094	.094	.150	.190	.500	.202	*	S	N	2	N	3	S	3	3
TNMC-43NGL.125	TNMC-43NGR.125	.125	.230	.190	.500	.202	*	S	N	2	N	3	S	3	3
TNMC-43NGL.156	TNMC-43NGR.156	.156	.230	.190	.500	.202	*	2	N	2	N	3	3	3	3
TNMC-43NG.187		.187	.230	.190	.500	.202	*	S	N	2	N	3	S	3	3
TNMC-54NGL.125	TNMC-54NGR.125	.125	.230	.252	.625	.312	*	2	N	2	N	3	3	3	3
TNMC-54NGL.187	TNMC-54NGR.187	.187	.300	.252	.625	.312	*	2	N	2	N	3	3	3	3
TNMC-54NG.250		.250	.300	.252	.625	.312	*	S	N	2	N	3	S	3	3

*Corner radii available upon request.



TNMC-NR

INSERTS		DIMENSIONS						GRADES							
LEFT HAND	RIGHT HAND	W	E	T	IC	H	R	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
TNMC-32NRL.062	TNMC-32NRR.062	.062	.100	.127	.375	.150	.031	2	N	2	N	3	3	3	3
TNMC-32NRL.094	TNMC-32NRR.094	.094	.150	.127	.375	.150	.047	2	N	2	N	3	3	3	3
TNMC-32NR.125		.125	.150	.127	.375	.150	.062	2	N	2	N	3	3	3	3
TNMC-43NRL.062	TNMC-43NRR.062	.062	.100	.190	.500	.202	.031	2	N	2	N	3	3	3	3
TNMC-43NRL.094	TNMC-43NRR.094	.094	.150	.190	.500	.202	.047	2	N	2	N	3	3	3	3
TNMC-43NRL.125	TNMC-43NRR.125	.125	.230	.190	.500	.202	.062	2	N	2	N	3	3	3	3
TNMC-43NR.188		.188	.230	.190	.500	.202	.094	2	N	2	N	3	3	3	3
TNMC-54NRL.125	TNMC-54NRR.125	.125	.230	.252	.625	.312	.062	2	N	2	N	3	3	3	3
TNMC-54NRL.188	TNMC-54NRR.188	.188	.300	.252	.625	.312	.094	2	N	2	N	3	3	3	3
TNMC-54NR.250		.250	.300	.252	.625	.312	.125	2	N	2	N	3	3	3	3



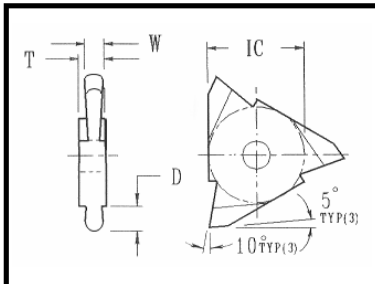
TPMA-NG

INSERTS		DIMENSIONS						GRADES							
LEFT HAND	RIGHT HAND	W	E	T	IC	H	R	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
TPMA-32NGL.031	TPMA-32NGR.031	.031	.050	.127	.375	.150	*	2	N	2	N	3	3	3	3
TPMA-32NGL.062	TPMA-32NGR.062	.062	.100	.127	.375	.150	*	2	N	2	N	3	3	3	3
TPMA-32NGL.094	TPMA-32NGR.094	.094	.150	.127	.375	.150	*	2	N	2	N	3	3	3	3
TPMA-32NG.125		.125	.150	.127	.375	.150	*	2	N	2	N	3	3	3	3

*Corner radii available upon request.

TPMA-NG (continued)

INSERTS		DIMENSIONS						GRADES							
LEFT HAND	RIGHT HAND	W	E	T	IC	H	R	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
TPMA-43NGL.062	TPMA-43NGR.062	.062	.100	.190	.500	.202	*	2	N	2	N	3	3	3	3
TPMA-43NGL.094	TPMA-43NGR.094	.094	.150	.190	.500	.202	*	2	N	2	N	3	3	3	3
TPMA-43NGL.125	TPMA-43NGR.125	.125	.230	.190	.500	.202	*	2	N	2	N	3	3	3	3
TPMA-43NGL.156	TPMA-43NGR.156	.156	.230	.190	.500	.202	*	2	N	2	N	3	3	3	3
TPMA-43NG.187		.187	.230	.190	.500	.202	*	2	N	2	N	3	3	3	3
TPMA-54NGL.125	TPMA-54NGR.125	.125	.230	.252	.625	.312	*	2	N	2	N	3	3	3	3
TPMA-54NGL.187	TPMA-54NGR.187	.187	.300	.252	.625	.312	*	2	N	2	N	3	3	3	3
TPMA-54NG.250		.250	.300	.252	.625	.312	*	2	N	2	N	3	3	3	3

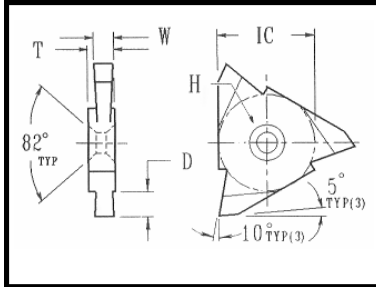


TPMA-NR

INSERTS		DIMENSIONS						GRADES							
LEFT HAND	RIGHT HAND	W	E	T	IC	H	R	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
TPMA-32NRL.062	TPMA-32NRR.062	.062	.100	.127	.375	.150	.031	2	N	2	N	3	3	3	3
TPMA-32NRL.094	TPMA-32NRR.094	.094	.150	.127	.375	.150	.047	2	N	2	N	3	3	3	3
TPMA-32NR.125		.125	.150	.127	.375	.150	.062	2	N	2	N	3	3	3	3
TPMA-43NRL.062	TPMA-43NRR.062	.062	.100	.190	.500	.202	.031	2	N	2	N	3	3	3	3
TPMA-43NRL.094	TPMA-43NRR.094	.094	.150	.190	.500	.202	.047	2	N	2	N	3	3	3	3
TPMA-43NRL.125	TPMA-43NRR.125	.125	.230	.190	.500	.202	.062	2	N	2	N	3	3	3	3
TPMA-43NR.188		.188	.230	.190	.500	.202	.094	2	N	2	N	3	3	3	3
TPMA-54NRL.125	TPMA-54NRR.125	.125	.230	.252	.625	.312	.062	2	N	2	N	3	3	3	3
TPMA-54NRL.188	TPMA-54NRR.188	.188	.300	.252	.625	.312	.094	2	N	2	N	3	3	3	3
TPMA-54NR.250		.250	.300	.252	.625	.312	.125	2	N	2	N	3	3	3	3

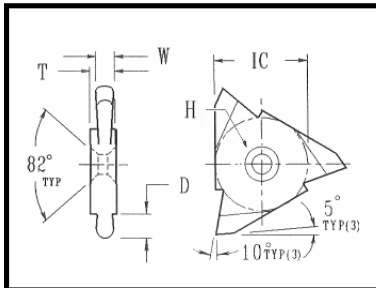
*Corner radii available upon request.

(D-18)



TPMC-NG

INSERTS		DIMENSIONS						GRADES							
LEFT HAND	RIGHT HAND	W	E	T	IC	H	R	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
TPMC-32NGL.031	TPMC-32NGR.031	.031	.050	.127	.375	.150	*	2	N	2	N	3	3	3	3
TPMC-32NGL.062	TPMC-32NGR.062	.062	.100	.127	.375	.150	*	2	N	2	N	3	3	3	3
TPMC-32NGL.094	TPMC-32NGR.094	.094	.150	.127	.375	.150	*	2	N	2	N	3	3	3	3
TPMC-32NG.125		.125	.150	.127	.375	.150	*	2	N	2	N	3	3	3	3
TPMC-43NGL.062	TPMC-43NGR.062	.062	.100	.190	.500	.202	*	2	N	2	N	3	3	3	3
TPMC-43NGL.094	TPMC-43NGR.094	.094	.150	.190	.500	.202	*	2	N	2	N	3	3	3	3
TPMC-43NGL.125	TPMC-43NGR.125	.125	.230	.190	.500	.202	*	2	N	2	N	3	3	3	3
TPMC-43NGL.156	TPMC-43NGR.156	.156	.230	.190	.500	.202	*	2	N	2	N	3	3	3	3
TPMC-43NG.187		.187	.230	.190	.500	.202	*	2	N	2	N	3	3	3	3
TPMC-54NGL.125	TPMC-54NGR.125	.125	.230	.252	.625	.312	*	2	N	2	N	3	3	3	3
TPMC-54NGL.187	TPMC-54NGR.187	.187	.300	.252	.625	.312	*	2	N	2	N	3	3	3	3
TPMC-54NG.250		.250	.300	.252	.625	.312	*	2	N	2	N	3	3	3	3



TPMC-NR

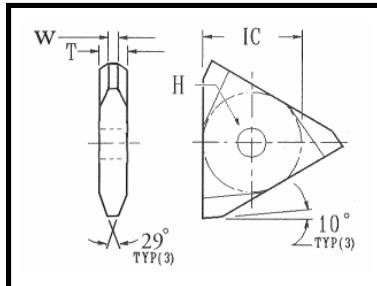
INSERTS		DIMENSIONS						GRADES							
LEFT HAND	RIGHT HAND	W	E	T	IC	H	R	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
TPMC-32NRL.062	TPMC-32NRR.062	.062	.100	.127	.375	.150	.031	2	N	2	N	3	3	3	3
TPMC-32NRL.094	TPMC-32NRR.094	.094	.150	.127	.375	.150	.047	2	N	2	N	3	3	3	3
TPMC-32NR.125		.125	.150	.127	.375	.150	.062	2	N	2	N	3	3	3	3

*Corner radii available upon request.

TPMC-NR (continued)

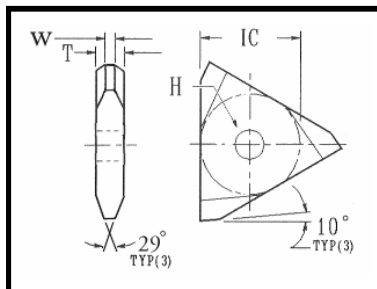
INSERTS		DIMENSIONS						GRADES							
LEFT HAND	RIGHT HAND	W	E	T	IC	H	R	B C 2	B 2 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
TPMC-43NRL.062	TPMC-43NRR.062	.062	.100	.190	.500	.202	.031	2	N	2	N	3	3	3	3
TPMC-43NRL.094	TPMC-43NRR.094	.094	.150	.190	.500	.202	.047	2	N	2	N	3	3	3	3
TPMC-43NRL.125	TPMC-43NRR.125	.125	.230	.190	.500	.202	.062	2	N	2	N	3	3	3	3
TPMC-43NR.188		.188	.230	.190	.500	.202	.094	2	N	2	N	3	3	3	3
TPMC-54NRL.125	TPMC-54NRR.125	.125	.230	.252	.625	.312	.062	2	N	2	N	3	3	3	3
TPMC-54NRL.188	TPMC-54NRR.188	.188	.300	.252	.625	.312	.094	2	N	2	N	3	3	3	3
TPMC-54NR.250		.250	.300	.252	.625	.312	.125	2	N	2	N	3	3	3	3

Triangular - Threading



TNMA-NST

INSERTS	DIMENSIONS							GRADES							
	W	E	T	IC	H	R	TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
29° Stub Acme Threading															
TNMA-32NST-12P	.032	.045	.127	.375	.150	*	12	2	N	2	N	3	3	3	3
TNMA-32NST-14P	.028	.042	.127	.375	.150	*	14	2	N	2	N	3	3	3	3
TNMA-32NST-16P	.024	.039	.127	.375	.150	*	16	2	N	2	N	3	3	3	3
TNMA-43NST-6P	.065	.070	.190	.500	.202	*	6	2	N	2	N	3	3	3	3
TNMA-43NST-8P	.048	.058	.190	.500	.202	*	8	2	N	2	N	3	3	3	3
TNMA-43NST-10P	.037	.050	.190	.500	.202	*	10	2	N	2	N	3	3	3	3
TNMA-54NST-3P	.119	.187	.252	.625	.312	*	3	2	N	2	N	3	3	3	3

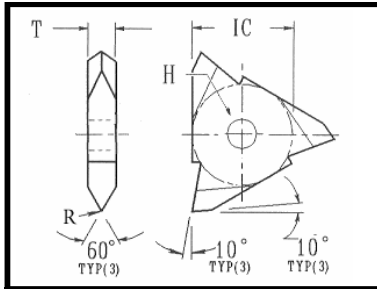


TNMA-NT

INSERTS	DIMENSIONS							GRADES							
	W	E	T	IC	H	R	TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
29° Acme Threading															
TNMA-32NT-8P	.041	.083	.127	.375	.150	*	8	2	N	2	N	3	3	3	3
TNMA-32NT-10P	.032	.070	.127	.375	.150	*	10	2	N	2	N	3	3	3	3
TNMA-32NT-12P	.028	.062	.127	.375	.150	*	12	2	N	2	N	3	3	3	3
TNMA-32NT-14P	.030	.056	.127	.375	.150	*	14	2	N	2	N	3	3	3	3
TNMA-32NT-16P	.021	.052	.127	.375	.150	*	16	2	N	2	N	3	3	3	3
TNMA-43NT-6P	.088	.145	.190	.500	.202	*	6	2	N	2	N	3	3	3	3
TNMA-43NT-8P	.070	.120	.190	.500	.202	*	8	2	N	2	N	3	3	3	3
TNMA-43NT-10P	.057	.104	.190	.500	.202	*	10	2	N	2	N	3	3	3	3
TNMA-54NT-3P	.119	.187	.252	.625	.312	*	3	2	N	2	N	3	3	3	3

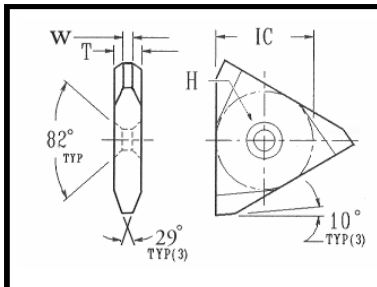
*Corner radii available upon request.

(D-21)



TNMA-NV

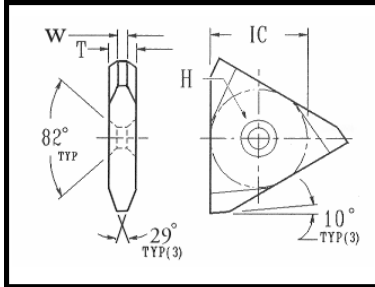
INSERTS	DIMENSIONS							GRADES							
	R		T	IC	H		TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
60° V (Unified National) Threading	R		T	IC	H		TPI	2	3	5	C	C	C	C	C
TNMA-32NV	.003		.127	.375	.150			S	N	2	N	3	S	3	3
TNMA-43NV	.005		.190	.500	.202			S	N	2	N	3	S	3	3
TNMA-54NV	.008		.252	.625	.312			S	N	2	N	3	S	3	3



TNMC-NST

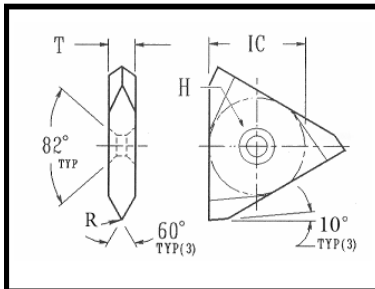
INSERTS	DIMENSIONS							GRADES							
	W	E	T	IC	H	R	TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
29° Stub Acme Threading	W	E	T	IC	H	R	TPI	2	3	5	C	C	C	C	C
TNMC-32NST-12P	.032	.045	.127	.375	.150	*	12	2	N	2	N	3	3	3	3
TNMC-32NST-14P	.028	.042	.127	.375	.150	*	14	2	N	2	N	3	3	3	3
TNMC-32NST-16P	.024	.039	.127	.375	.150	*	16	2	N	2	N	3	3	3	3
TNMC-43NST-6P	.065	.070	.190	.500	.202	*	6	2	N	2	N	3	3	3	3
TNMC-43NST-8P	.048	.058	.190	.500	.202	*	8	2	N	2	N	3	3	3	3
TNMC-43NST-10P	.037	.050	.190	.500	.202	*	10	2	N	2	N	3	3	3	3
TNMC-54NST-3P	.119	.187	.252	.625	.312	*	3	2	N	2	N	3	3	3	3

*Corner radii available upon request.



TNMC-NT

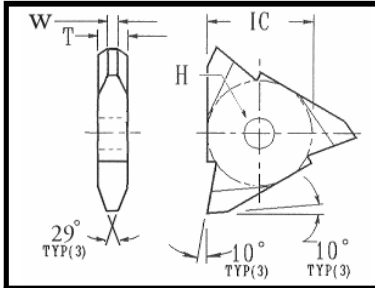
INSERTS	DIMENSIONS							GRADES							
	W	E	T	IC	H	R	TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
29° Acme Threading															
TNMC-32NT-8P	.041	.083	.127	.375	.150	*	8	2	N	2	N	3	3	3	3
TNMC-32NT-10P	.032	.070	.127	.375	.150	*	10	2	N	2	N	3	3	3	3
TNMC-32NT-12P	.028	.062	.127	.375	.150	*	12	2	N	2	N	3	3	3	3
TNMC-32NT-14P	.030	.056	.127	.375	.150	*	14	2	N	2	N	3	3	3	3
TNMC-32NT-16P	.021	.052	.127	.375	.150	*	16	2	N	2	N	3	3	3	3
TNMC-43NT-6P	.088	.145	.190	.500	.202	*	6	2	N	2	N	3	3	3	3
TNMC-43NT-8P	.070	.120	.190	.500	.202	*	8	2	N	2	N	3	3	3	3
TNMC-43NT-10P	.057	.104	.190	.500	.202	*	10	2	N	2	N	3	3	3	3
TNMC-54NT-3P	.119	.187	.252	.625	.312	*	3	2	N	2	N	3	3	3	3



TNMC-NV

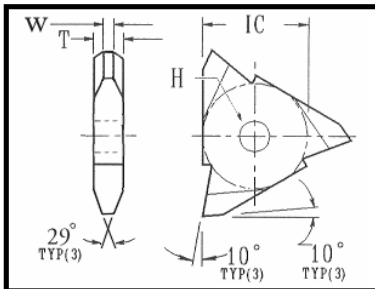
INSERTS	DIMENSIONS							GRADES							
	R		T	IC	H		TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
60° V (Unified National) Threading															
TNMC-32NV	.003		.127	.375	.150			S	N	2	N	3	S	3	3
TNMC-43NV	.005		.190	.500	.202			S	N	2	N	3	S	3	3
TNMC-54NV	.008		.252	.625	.312			S	N	2	N	3	S	3	3

*Corner radii available upon request.



TPMA-NST

INSERTS	DIMENSIONS							GRADES							
29° Stub Acme Threading	W	E	T	IC	H	R	TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
TPMA-32NST-12P	.032	.045	.127	.375	.150	*	12	2	N	2	N	3	3	3	3
TPMA-32NST-14P	.028	.042	.127	.375	.150	*	14	2	N	2	N	3	3	3	3
TPMA-32NST-16P	.024	.039	.127	.375	.150	*	16	2	N	2	N	3	3	3	3
TPMA-43NST-6P	.065	.070	.190	.500	.202	*	6	2	N	2	N	3	3	3	3
TPMA-43NST-8P	.048	.058	.190	.500	.202	*	8	2	N	2	N	3	3	3	3
TPMA-43NST-10P	.037	.050	.190	.500	.202	*	10	2	N	2	N	3	3	3	3
TPMA-54NST-3P	.119	.187	.252	.625	.312	*	3	2	N	2	N	3	3	3	3

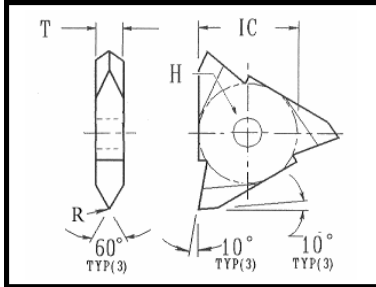


TPMA-NT

INSERTS	DIMENSIONS							GRADES							
29° Acme Threading	W	E	T	IC	H	R	TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
TPMA-32NT-8P	.041	.083	.127	.375	.150	*	8	2	N	2	N	3	3	3	3
TPMA-32NT-10P	.032	.070	.127	.375	.150	*	10	2	N	2	N	3	3	3	3
TPMA-32NT-12P	.028	.062	.127	.375	.150	*	12	2	N	2	N	3	3	3	3
TPMA-32NT-14P	.030	.056	.127	.375	.150	*	14	2	N	2	N	3	3	3	3
TPMA-32NT-16P	.021	.052	.127	.375	.150	*	16	2	N	2	N	3	3	3	3
TPMA-43NT-6P	.088	.145	.190	.500	.202	*	6	2	N	2	N	3	3	3	3
TPMA-43NT-8P	.070	.120	.190	.500	.202	*	8	2	N	2	N	3	3	3	3
TPMA-43NT-10P	.057	.104	.190	.500	.202	*	10	2	N	2	N	3	3	3	3
TPMA-54NT-3P	.119	.187	.252	.625	.312	*	3	2	N	2	N	3	3	3	3

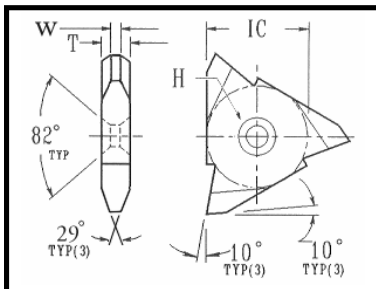
*Corner radii available upon request.

(D-24)



TPMA-NV

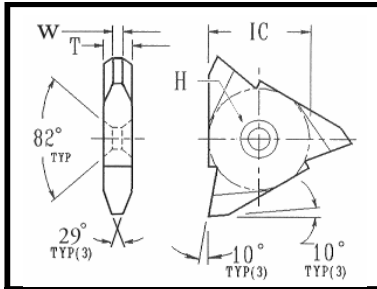
INSERTS	DIMENSIONS							GRADES							
	R		T	IC	H		TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
60° V (Unified National) Threading	R		T	IC	H		TPI								
TPMA-32NV	.003		.127	.375	.150			S	N	2	N	3	S	3	3
TPMA-43NV	.005		.190	.500	.202			S	N	2	N	3	S	3	3
TPMA-54NV	.008		.252	.625	.312			2	N	2	N	3	3	3	3



TPMC-NST

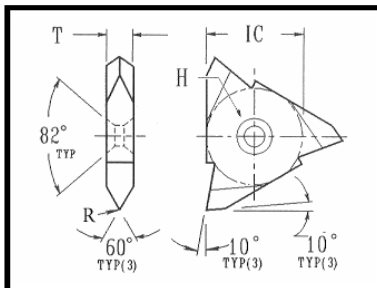
INSERTS	DIMENSIONS							GRADES							
	W	E	T	IC	H	R	TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
29° Stub Acme Threading	W	E	T	IC	H	R	TPI								
TPMC-32NST-12P	.032	.045	.127	.375	.150	*	12	2	N	2	N	3	3	3	3
TPMC-32NST-14P	.028	.042	.127	.375	.150	*	14	2	N	2	N	3	3	3	3
TPMC-32NST-16P	.024	.039	.127	.375	.150	*	16	2	N	2	N	3	3	3	3
TPMC-43NST-6P	.065	.070	.190	.500	.202	*	6	2	N	2	N	3	3	3	3
TPMC-43NST-8P	.048	.058	.190	.500	.202	*	8	2	N	2	N	3	3	3	3
TPMC-43NST-10P	.037	.050	.190	.500	.202	*	10	2	N	2	N	3	3	3	3
TPMC-54NST-3P	.119	.187	.252	.625	.312	*	3	2	N	2	N	3	3	3	3

*Corner radii available upon request.



TPMC-NT

INSERTS	DIMENSIONS							GRADES							
	W	E	T	IC	H	R	TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C 3 T
29° Acme Threading															
TPMC-32NT-8P	.041	.083	.127	.375	.150	*	8	2	N	2	N	3	3	3	3
TPMC-32NT-10P	.032	.070	.127	.375	.150	*	10	2	N	2	N	3	3	3	3
TPMC-32NT-12P	.028	.062	.127	.375	.150	*	12	2	N	2	N	3	3	3	3
TPMC-32NT-14P	.030	.056	.127	.375	.150	*	14	2	N	2	N	3	3	3	3
TPMC-32NT-16P	.021	.052	.127	.375	.150	*	16	2	N	2	N	3	3	3	3
TPMC-43NT-6P	.088	.145	.190	.500	.202	*	6	2	N	2	N	3	3	3	3
TPMC-43NT-8P	.070	.120	.190	.500	.202	*	8	2	N	2	N	3	3	3	3
TPMC-43NT-10P	.057	.104	.190	.500	.202	*	10	2	N	2	N	3	3	3	3
TPMC-54NT-3P	.119	.187	.252	.625	.312	*	3	2	N	2	N	3	3	3	3

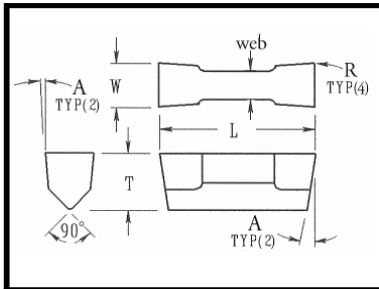


TPMC-NV

INSERTS	DIMENSIONS							GRADES							
	R		T	IC	H		TPI	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C 3 T
60° V (Unified National) Threading															
TPMC-32NV	.003		.127	.375	.150			S	N	2	N	3	S	3	3
TPMC-43NV	.005		.190	.500	.202			S	N	2	N	3	S	3	3
TPMC-54NV	.008		.252	.625	.312			2	N	2	N	3	3	3	3

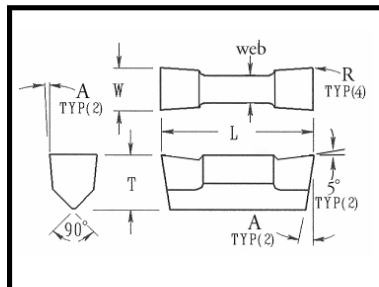
*Corner radii available upon request.

V-Bottom - Deep Grooving



GC

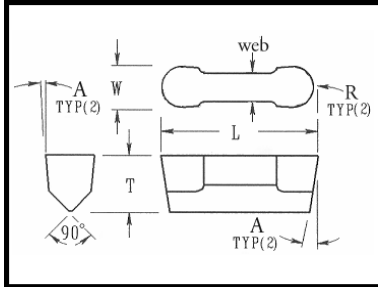
INSERTS	DIMENSIONS						GRADES							
	W	R	T	L	A	web	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
Fits Kennametal Holders														
GC-4125	.125	.012	.188	1.000	4°	.093	S	N	2	N	S	N	3	N
GC-4187	.187	.012	.327	1.000	5°	.144	S	N	2	N	S	N	3	N
GC-4250	.250	.012	.327	1.000	5°	.144	S	N	2	N	S	N	3	N
GC-4312	.312	.012	.327	1.000	5°	.202	2	N	2	N	3	N	3	N
GC-4375	.375	.012	.327	1.000	5°	.275	S	N	2	N	S	N	3	N



GCP

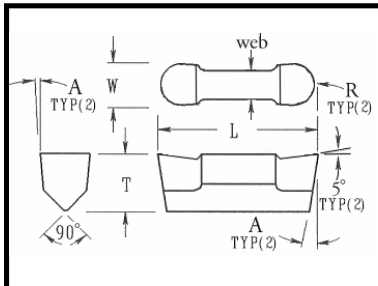
INSERTS	DIMENSIONS						GRADES							
	W	R	T	L	A	web	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
Fits Kennametal Holders														
GCP-4125	.125	.012	.188	1.000	4°	.093	2	N	2	N	3	N	3	N
GCP-4187	.187	.012	.327	1.000	5°	.144	2	N	2	N	3	N	3	N
GCP-4250	.250	.012	.327	1.000	5°	.144	2	N	2	N	3	N	3	N

(D-27)



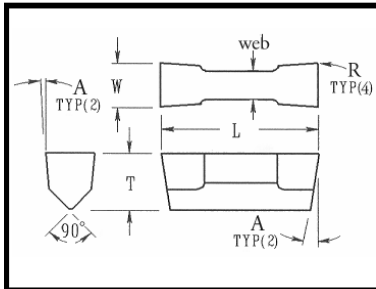
GR

INSERTS	DIMENSIONS						GRADES							
Fits Kennametal Holders	W	R	T	L	A	web	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
GR-4125	.125	.062	.188	1.000	4°	.093	2	N	2	N	3	N	3	N
GR-4187	.187	.094	.327	1.000	5°	.144	2	N	2	N	3	N	3	N
GR-4250	.250	.125	.327	1.000	5°	.144	2	N	2	N	3	N	3	N



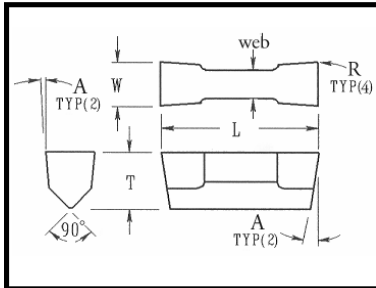
GRP

INSERTS	DIMENSIONS						GRADES							
Fits Kennametal Holders	W	R	T	L	A	web	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
GRP-4125	.125	.062	.188	1.000	4°	.093	2	N	2	N	3	N	3	N
GRP-4187	.187	.094	.327	1.000	5°	.144	2	N	2	N	3	N	3	N
GRP-4250	.250	.125	.327	1.000	5°	.144	2	N	2	N	3	N	3	N



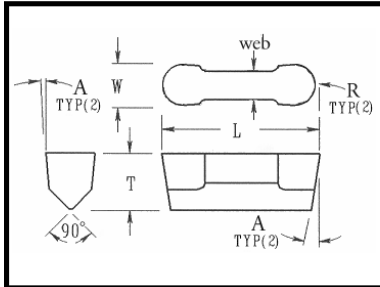
VDB-A or B

INSERTS	DIMENSIONS						GRADES							
	W	R	T	L	A	web	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
Fits Valenite Holders														
VDB125-A015	.125	.012	.250	1.125	7°	.106	S	N	2	N	S	N	3	N
VDB156-A015	.156	.012	.250	1.125	7°	.144	2	N	2	N	3	N	3	N
VDB188-A015	.188	.012	.250	1.125	7°	.144	S	N	2	N	S	N	3	N
VDB218-A015	.218	.012	.250	1.125	7°	.144	2	N	2	N	3	N	3	N
VDB250-A015	.250	.012	.250	1.125	7°	.144	S	N	2	N	S	N	3	N
VDB250-B015	.250	.012	.337	1.125	7°	.144	2	N	2	N	3	N	3	N
VDB312-B015	.312	.012	.337	1.125	7°	.202	2	N	2	N	3	N	3	N
VDB375-B015	.375	.012	.337	1.125	7°	.276	S	N	2	N	S	N	3	N



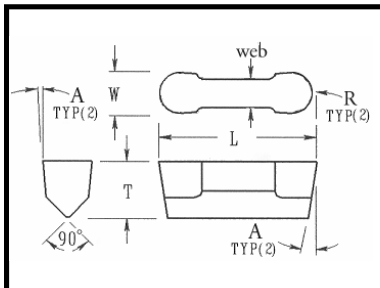
VDB-A or B (Metric)

INSERTS	DIMENSIONS						GRADES							
	W	R	T	L	A	web	B C 2	B C 3	B C 5	C 1 C	C 5 C	C N C	C 3 N	C N T
Fits Valenite Holders														
VDB-4A	4mm	.012	.250	1.125	7°	.106	2	N	2	N	3	N	3	N
VDB-5A	5mm	.012	.250	1.125	7°	.144	2	N	2	N	3	N	3	N
VDB-6A	6mm	.012	.250	1.125	7°	.144	2	N	2	N	3	N	3	N
VDB-6B	6mm	.012	.337	1.125	7°	.170	2	N	2	N	3	N	3	N
VDB-8B	8mm	.012	.337	1.125	7°	.276	2	N	2	N	3	N	3	N
VDB-9B	9mm	.012	.337	1.125	7°	.276	2	N	2	N	3	N	3	N



VDB-RA or RB

INSERTS	DIMENSIONS						GRADES							
	W	R	T	L	A	web	B C 2	B C 3	B C 5	C C 1	C C 5	C C N	C C 3	C C N
Fits Valenite Holders														
VDB125-RA	.125	.062	.250	1.125	7°	.106	2	N	2	N	3	N	3	N
VDB156-RA	.156	.078	.250	1.125	7°	.144	2	N	2	N	3	N	3	N
VDB188-RA	.188	.094	.250	1.125	7°	.144	2	N	2	N	3	N	3	N
VDB218-RA	.218	.109	.250	1.125	7°	.144	2	N	2	N	3	N	3	N
VDB250-RA	.250	.125	.250	1.125	7°	.144	2	N	2	N	3	N	3	N
VDB250-RB	.250	.125	.337	1.125	7°	.144	2	N	2	N	3	N	3	N
VDB312-RB	.312	.156	.337	1.125	7°	.202	2	N	2	N	3	N	3	N
VDB375-RB	.375	.188	.337	1.125	7°	.276	2	N	2	N	3	N	3	N

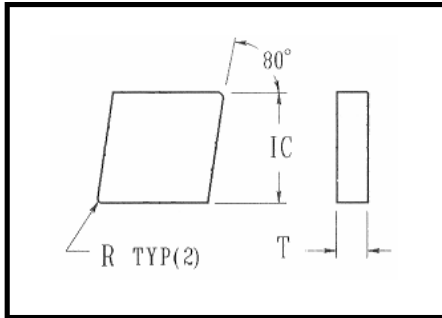


VDB-RA or RB (Metric)

INSERTS	DIMENSIONS						GRADES							
	W	R	T	L	A	web	B C 2	B C 3	B C 5	C C 1	C C 5	C C N	C C 3	C C N
Fits Valenite Holders														
VDB4-RA	4mm	2mm	.250	1.125	7°	.106	2	N	2	N	3	N	3	N
VDB6-RA	6mm	3mm	.250	1.125	7°	.144	2	N	2	N	3	N	3	N
VDB6-RB	6mm	3mm	.337	1.125	7°	.170	2	N	2	N	3	N	3	N
VDB8-RB	8mm	4mm	.337	1.125	7°	.276	2	N	2	N	3	N	3	N

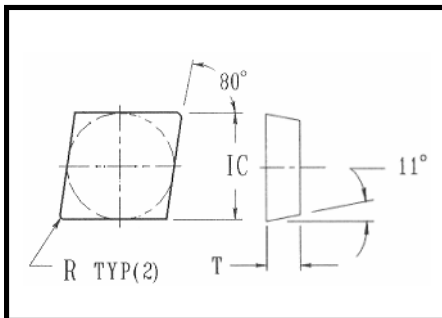
E. Turning - Precision Ground

CNG



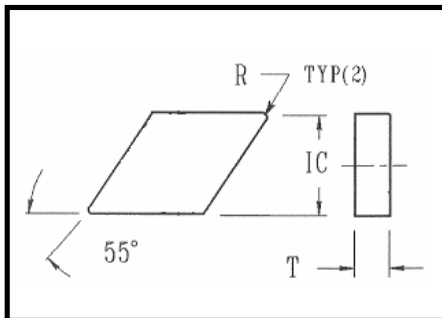
Insert	IC	T	R	Grades Available				
				BC2	BC5	C5C	C3N	C2A
CNG-321	.375	.125	.015	2	2	3	3	3
CNG-322	.375	.125	.031	2	2	3	3	3
CNG-431	.500	.188	.015	2	2	3	3	3
CNG-432	.500	.188	.031	2	2	3	3	3
CNG-433	.500	.188	.047	2	2	3	3	3

CPG



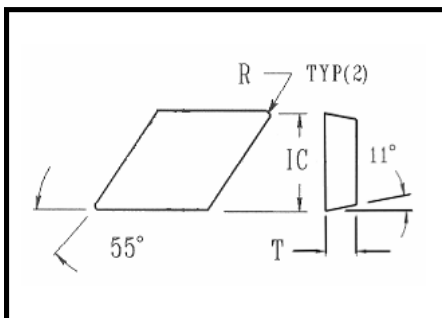
Insert	IC	T	R	Grades Available				
				BC2	BC5	C5C	C3N	C2A
CPG-321	.375	.125	.015	2	2	3	3	3
CPG-322	.375	.125	.031	2	2	3	3	3
CPG-421	.500	.125	.015	S	3	S	4	4
CPG-422	.500	.125	.031	S	3	S	4	4
CPG-431	.500	.188	.015	2	2	3	3	3
CPG-432	.500	.188	.031	2	2	3	3	3
CPG-433	.500	.188	.047	2	2	3	3	3

DNG



Insert	IC	T	R	Grades Available				
				BC2	BC5	C5C	C3N	C2A
DNG-442	.500	.250	.031	2	2	3	3	3

DPG



Insert	IC	T	R	Grades Available				
				BC2	BC5	C5C	C3N	C2A
DPG-321	.375	.125	.015	2	2	3	3	3
DPG-432	.500	.188	.031	2	2	3	3	3

(E-1)

RNG

Insert	IC	T	Grades Available					
			BC2	BC5	C5C	C3N	C2A	
RNG-32	.375	.125		2	2	3	3	3
RNG-42	.500	.125		2	2	3	3	3
RNG-43	.500	.188		2	2	3	3	3
RNG-53	.625	.188		2	2	3	3	3
RNG-54	.625	.250		2	2	3	3	3
RNG-63	.750	.188		2	2	3	3	3
RNG-64	.750	.250		2	2	3	3	3

RPG

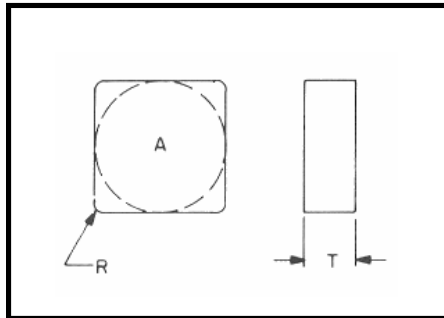
Insert	IC	T	Grades Available					
			BC2	BC5	C5C	C3N	C2A	
RPG-32	.375	.125		2	2	3	3	3
RPG-42	.500	.125		2	2	3	3	3
RPG-43	.500	.188		2	2	3	3	3
RPG-53	.625	.188		2	2	3	3	3
RPG-63	.750	.188		2	2	3	3	3

SNG

Insert	IC	T	R	Grades Available				
				BC2	BC5	C5C	C3N	C2A
SNG-221	.250	.125	.015	2	2	3	3	3
SNG-222	.250	.125	.031	2	2	3	3	3
SNG-2.521	.312	.125	.015	2	2	3	3	3
SNG-2.522	.312	.125	.031	2	2	3	3	3
SNG-2.523	.312	.125	.047	2	2	3	3	3
SNG-2.524	.312	.125	.062	2	2	3	3	3
SNG-321	.375	.125	.015	2	2	3	3	3
SNG-322	.375	.125	.031	2	2	3	3	3
SNG-323	.375	.125	.047	2	2	3	3	3
SNG-324	.375	.125	.062	2	2	3	3	3
SNG-325	.375	.125	.078	2	2	3	3	3
SNG-326	.375	.125	.094	2	2	3	3	3

(E-2)

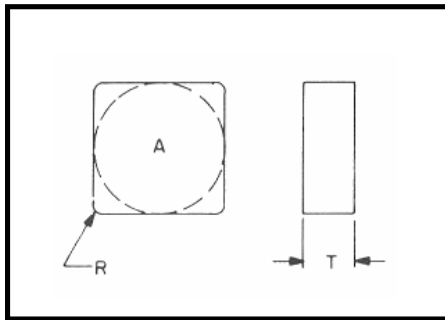
SNG - (continued)



Insert	IC	T	R		Grades Available				
					BC2	BC5	C5C	C3N	C2A
SNG-421	.500	.125	.015		2	2	3	3	3
SNG-422	.500	.125	.031		2	2	3	3	3
SNG-423	.500	.125	.047		2	2	3	3	3
SNG-424	.500	.125	.062		2	2	3	3	3
SNG-425	.500	.125	.078		2	2	3	3	3
SNG-426	.500	.125	.094		2	2	3	3	3
SNG-427	.500	.125	.109		2	2	3	3	3
SNG-428	.500	.125	.125		2	2	3	3	3
SNG-429	.500	.125	.140		2	2	3	3	3
SNG-42(10)	.500	.125	.156		2	2	3	3	3
SNG-431	.500	.188	.015		2	2	3	3	3
SNG-432	.500	.188	.031		2	2	3	3	3
SNG-433	.500	.188	.047		2	2	3	3	3
SNG-434	.500	.188	.062		2	2	3	3	3
SNG-435	.500	.188	.078		2	2	3	3	3
SNG-436	.500	.188	.094		2	2	3	3	3
SNG-437	.500	.188	.109		2	2	3	3	3
SNG-438	.500	.188	.125		2	2	3	3	3
SNG-439	.500	.188	.140		2	2	3	3	3
SNG-43(10)	.500	.188	.156		2	2	3	3	3
SNG-531	.625	.188	.015		2	2	3	3	3
SNG-532	.625	.188	.031		2	2	3	3	3
SNG-533	.625	.188	.047		2	2	3	3	3
SNG-534	.625	.188	.062		2	2	3	3	3
SNG-535	.625	.188	.078		2	2	3	3	3
SNG-536	.625	.188	.094		2	2	3	3	3
SNG-537	.625	.188	.109		2	2	3	3	3
SNG-538	.625	.188	.125		2	2	3	3	3
SNG-539	.625	.188	.140		2	2	3	3	3
SNG-53(10)	.625	.188	.156		2	2	3	3	3
SNG-53(11)	.625	.188	.171		2	2	3	3	3
SNG-53(12)	.625	.188	.188		2	2	3	3	3

(E-3)

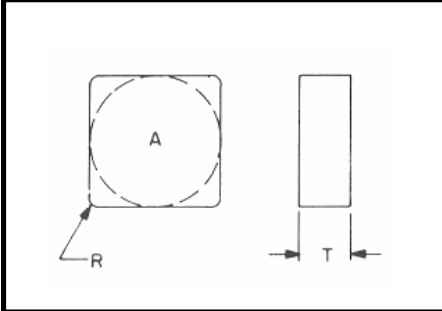
SNG - (continued)



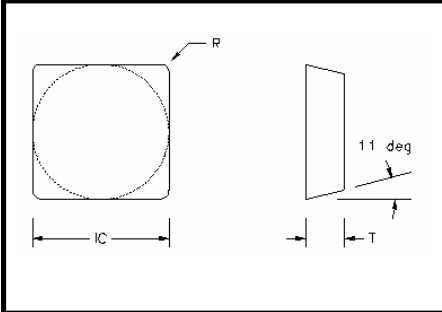
Insert	IC	T	R	Grades Available					
				BC2	BC5	C5C	C3N	C2A	
SNG-53(13)	.625	.188	.203		2	2	3	3	3
SNG-53(14)	.625	.188	.219		2	2	3	3	3
SNG-541	.625	.250	.015		2	2	3	3	3
SNG-542	.625	.250	.031		2	2	3	3	3
SNG-543	.625	.250	.047		2	2	3	3	3
SNG-544	.625	.250	.062		2	2	3	3	3
SNG-545	.625	.250	.078		2	2	3	3	3
SNG-546	.625	.250	.094		2	2	3	3	3
SNG-547	.625	.250	.109		2	2	3	3	3
SNG-548	.625	.250	.125		2	2	3	3	3
SNG-549	.625	.250	.140		2	2	3	3	3
SNG-54(10)	.625	.250	.156		2	2	3	3	3
SNG-54(11)	.625	.250	.171		2	2	3	3	3
SNG-54(12)	.625	.250	.188		2	2	3	3	3
SNG-54(13)	.625	.250	.203		2	2	3	3	3
SNG-54(14)	.625	.250	.219		2	2	3	3	3
SNG-631	.750	.188	.015		2	2	3	3	3
SNG-632	.750	.188	.031		2	2	3	3	3
SNG-633	.750	.188	.047		2	2	3	3	3
SNG-634	.750	.188	.062		2	2	3	3	3
SNG-636	.750	.188	.094		2	2	3	3	3
SNG-637	.750	.188	.109		2	2	3	3	3
SNG-638	.750	.188	.125		2	2	3	3	3
SNG-639	.750	.188	.140		2	2	3	3	3
SNG-63(10)	.750	.188	.156		2	2	3	3	3
SNG-63(11)	.750	.188	.171		2	2	3	3	3
SNG-63(12)	.750	.188	.188		2	2	3	3	3
SNG-63(13)	.750	.188	.203		2	2	3	3	3
SNG-63(14)	.750	.188	.219		2	2	3	3	3
SNG-63(15)	.750	.188	.234		2	2	3	3	3
SNG-63(16)	.750	.188	.250		2	2	3	3	3
SNG-63(17)	.750	.188	.266		2	2	3	3	3
SNG-63(18)	.750	.188	.281		2	2	3	3	3

(E-4)

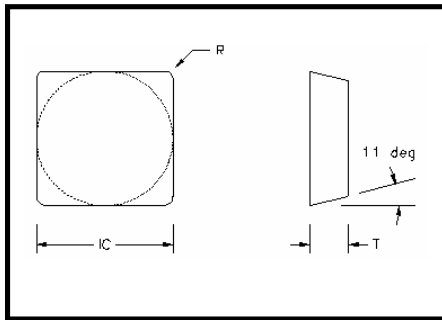
SNG - (continued)

	Insert	IC	T	R	Grades Available				
					BC2	BC5	C5C	C3N	C2A
SNG-641	.750	.250	.015		2	2	3	3	3
SNG-642	.750	.250	.031		2	2	3	3	3
SNG-643	.750	.250	.047		2	2	3	3	3
SNG-644	.750	.250	.062		2	2	3	3	3
SNG-646	.750	.250	.094		2	2	3	3	3
SNG-647	.750	.250	.109		2	2	3	3	3
SNG-648	.750	.250	.125		2	2	3	3	3
SNG-649	.750	.250	.140		2	2	3	3	3
SNG-64(10)	.750	.250	.156		2	2	3	3	3
SNG-64(11)	.750	.250	.171		2	2	3	3	3
SNG-64(12)	.750	.250	.188		2	2	3	3	3
SNG-64(13)	.750	.250	.203		2	2	3	3	3
SNG-64(14)	.750	.250	.219		2	2	3	3	3
SNG-64(15)	.750	.250	.234		2	2	3	3	3
SNG-64(16)	.750	.250	.250		2	2	3	3	3
SNG-64(17)	.750	.250	.266		2	2	3	3	3
SNG-64(18)	.750	.250	.281		2	2	3	3	3

SPG

	Insert	IC	T	F	Grades Available				
					BC2	BC5	C5C	C3N	C2A
SPG-321	.375	.125	.015		2	2	3	3	3
SPG-322	.375	.125	.031		2	2	3	3	3
SPG-323	.375	.125	.047		2	2	3	3	3
SPG-324	.375	.125	.062		2	2	3	3	3
SPG-325	.375	.125	.078		2	2	3	3	3
SPG-326	.375	.125	.094		2	2	3	3	3

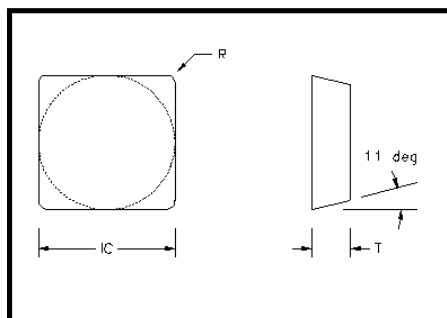
SPG - (continued)



Insert	IC	T	F		Grades Available				
					BC2	BC5	C5C	C3N	C2A
SPG-421	.500	.125	.015		2	2	3	3	3
SPG-422	.500	.125	.031		2	2	3	3	3
SPG-423	.500	.125	.047		2	2	3	3	3
SPG-424	.500	.125	.062		2	2	3	3	3
SPG-425	.500	.125	.078		2	2	3	3	3
SPG-426	.500	.125	.094		2	2	3	3	3
SPG-427	.500	.125	.109		2	2	3	3	3
SPG-428	.500	.125	.125		2	2	3	3	3
SPG-429	.500	.125	.140		2	2	3	3	3
SPG-42(10)	.500	.125	.156		2	2	3	3	3
SPG-431	.500	.188	.015		2	2	3	3	3
SPG-432	.500	.188	.031		2	2	3	3	3
SPG-433	.500	.188	.047		2	2	3	3	3
SPG-434	.500	.188	.062		2	2	3	3	3
SPG-435	.500	.188	.078		2	2	3	3	3
SPG-436	.500	.188	.094		2	2	3	3	3
SPG-437	.500	.188	.109		2	2	3	3	3
SPG-438	.500	.188	.125		2	2	3	3	3
SPG-439	.500	.188	.140		2	2	3	3	3
SPG-43(10)	.500	.188	.156		2	2	3	3	3
SPG-531	.625	.188	.015		2	2	3	3	3
SPG-532	.625	.188	.031		2	2	3	3	3
SPG-533	.625	.188	.047		2	2	3	3	3
SPG-534	.625	.188	.062		2	2	3	3	3
SPG-535	.625	.188	.078		2	2	3	3	3
SPG-536	.625	.188	.094		2	2	3	3	3
SPG-537	.625	.188	.109		2	2	3	3	3
SPG-538	.625	.188	.125		2	2	3	3	3
SPG-539	.625	.188	.140		2	2	3	3	3
SPG-53(10)	.625	.188	.156		2	2	3	3	3
SPG-53(11)	.625	.188	.171		2	2	3	3	3

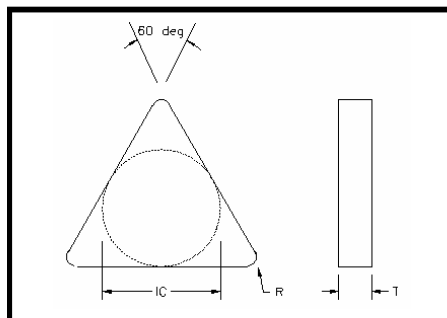
(E-6)

SPG - (continued)



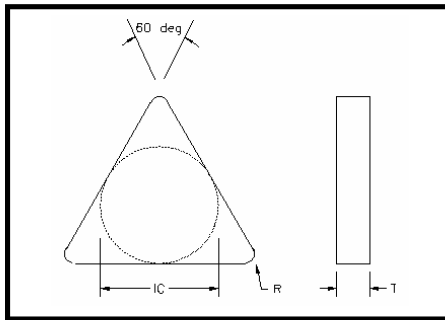
Insert	IC	T	F		Grades Available				
					BC2	BC5	C5C	C3N	C2A
SPG-53(12)	.625	.188	.188		2	2	3	3	3
SPG-53(13)	.625	.188	.203		2	2	3	3	3
SPG-53(14)	.625	.188	.219		2	2	3	3	3
SPG-631	.750	.188	.015		2	2	3	3	3
SPG-632	.750	.188	.031		2	2	3	3	3
SPG-633	.750	.188	.047		2	2	3	3	3
SPG-634	.750	.188	.062		2	2	3	3	3
SPG-636	.750	.188	.094		2	2	3	3	3
SPG-637	.750	.188	.109		2	2	3	3	3
SPG-638	.750	.188	.125		2	2	3	3	3
SPG-639	.750	.188	.140		2	2	3	3	3
SPG-63(10)	.750	.188	.156		2	2	3	3	3
SPG-63(11)	.750	.188	.171		2	2	3	3	3
SPG-63(12)	.750	.188	.188		2	2	3	3	3
SPG-63(13)	.750	.188	.203		2	2	3	3	3
SPG-63(14)	.750	.188	.219		2	2	3	3	3
SPG-63(15)	.750	.188	.234		2	2	3	3	3
SPG-63(16)	.750	.188	.250		2	2	3	3	3
SPG-63(17)	.750	.188	.266		2	2	3	3	3
SPG-63(18)	.750	.188	.281		2	2	3	3	3

TNG



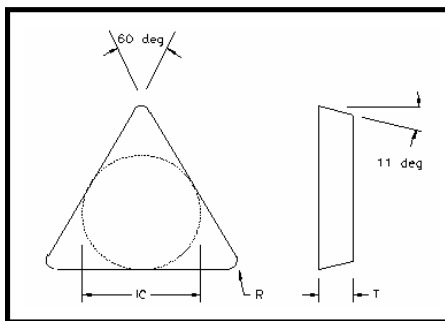
Insert	IC	T	F		Grades Available				
					BC2	BC5	C5C	C3N	C2A
TNG-221	.250	.125	.015		2	2	3	3	3
TNG-222	.250	.125	.031		2	2	3	3	3
TNG-223	.250	.125	.047		2	2	3	3	3
TNG-2.521	.312	.125	.015		2	2	3	3	3
TNG-2.522	.312	.125	.031		2	2	3	3	3
TNG-2.523	.312	.125	.047		2	2	3	3	3
TNG-2.524	.312	.125	.062		2	2	3	3	3

TNG - (continued)



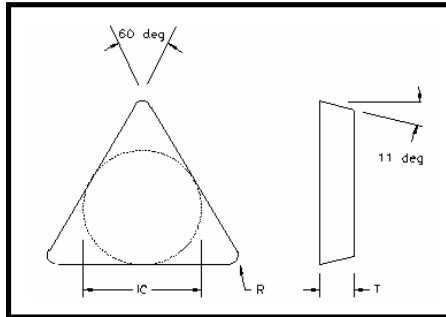
Insert	IC	T	F	Grades Available					
				BC2	BC5	C5C	C3N	C2A	
TNG-321	.375	.125	.015		2	2	3	3	3
TNG-322	.375	.125	.031		2	2	3	3	3
TNG-323	.375	.125	.047		2	2	3	3	3
TNG-324	.375	.125	.062		2	2	3	3	3
TNG-325	.375	.125	.078		2	2	3	3	3
TNG-326	.375	.125	.094		2	2	3	3	3
TNG-331	.375	.188	.015		2	2	3	3	3
TNG-332	.375	.188	.031		2	2	3	3	3
TNG-333	.375	.188	.047		2	2	3	3	3
TNG-334	.375	.188	.062		2	2	3	3	3
TNG-335	.375	.188	.078		2	2	3	3	3
TNG-336	.375	.188	.094		2	2	3	3	3
TNG-431	.500	.188	.015		2	2	3	3	3
TNG-432	.500	.188	.031		2	2	3	3	3
TNG-433	.500	.188	.047		2	2	3	3	3
TNG-434	.500	.188	.062		2	2	3	3	3
TNG-435	.500	.188	.078		2	2	3	3	3
TNG-436	.500	.188	.094		2	2	3	3	3
TNG-437	.500	.188	.109		2	2	3	3	3
TNG-438	.500	.188	.125		2	2	3	3	3
TNG-439	.500	.188	.140		2	2	3	3	3
TNG-43(10)	.500	.188	.156		2	2	3	3	3

TPG



Insert	IC	T	R	Grades Available					
				BC2	BC5	C5C	C3N	C2A	
TPG-221	.250	.125	.015		2	2	3	3	3
TPG-222	.250	.125	.031		2	2	3	3	3
TPG-223	.250	.125	.047		2	2	3	3	3

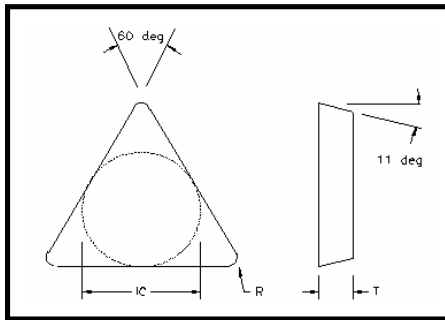
TPG - (continued)



Insert	IC	T	R	Grades Available				
				BC2	BC5	C5C	C3N	C2A
TPG-2.521	.312	.125	.015	2	2	3	3	3
TPG-2.522	.312	.125	.031	2	2	3	3	3
TPG-2.523	.312	.125	.047	2	2	3	3	3
TPG-2.524	.312	.125	.062	2	2	3	3	3
TPG-321	.375	.125	.015	2	2	3	3	3
TPG-322	.375	.125	.031	2	2	3	3	3
TPG-323	.375	.125	.047	2	2	3	3	3
TPG-324	.375	.125	.062	2	2	3	3	3
TPG-325	.375	.125	.078	2	2	3	3	3
TPG-326	.375	.125	.094	2	2	3	3	3
TPG-431	.500	.188	.015	2	2	3	3	3
TPG-432	.500	.188	.031	2	2	3	3	3
TPG-433	.500	.188	.047	2	2	3	3	3
TPG-434	.500	.188	.062	2	2	3	3	3
TPG-435	.500	.188	.078	2	2	3	3	3
TPG-436	.500	.188	.094	2	2	3	3	3
TPG-437	.500	.188	.109	2	2	3	3	3
TPG-438	.500	.188	.125	2	2	3	3	3
TPG-439	.500	.188	.140	2	2	3	3	3
TPG-43(10)	.500	.188	.156	2	2	3	3	3
TPG-531	.625	.188	.015	2	2	3	3	3
TPG-532	.625	.188	.031	2	2	3	3	3
TPG-533	.625	.188	.047	2	2	3	3	3
TPG-534	.625	.188	.062	2	2	3	3	3
TPG-535	.625	.188	.078	2	2	3	3	3
TPG-536	.625	.188	.094	2	2	3	3	3
TPG-537	.625	.188	.109	2	2	3	3	3
TPG-538	.625	.188	.125	2	2	3	3	3
TPG-539	.625	.188	.140	2	2	3	3	3
TPG-53(10)	.625	.188	.156	2	2	3	3	3
TPG-53(11)	.625	.188	.172	2	2	3	3	3
TPG-53(12)	.625	.188	.188	2	2	3	3	3
TPG-53(13)	.625	.188	.203	2	2	3	3	3
TPG-53(14)	.625	.188	.219	2	2	3	3	3

(E-9)

TPG - (continued)



Insert	IC	T	R	Grades Available				
				BC2	BC5	C5C	C3N	C2A
TPG-541	.625	.250	.015	2	2	3	3	3
TPG-542	.625	.250	.031	2	2	3	3	3
TPG-543	.625	.250	.047	2	2	3	3	3
TPG-544	.625	.250	.062	2	2	3	3	3
TPG-545	.625	.250	.078	2	2	3	3	3
TPG-546	.625	.250	.094	2	2	3	3	3
TPG-547	.625	.250	.109	2	2	3	3	3
TPG-548	.625	.250	.125	2	2	3	3	3
TPG-549	.625	.250	.140	2	2	3	3	3
TPG-54(10)	.625	.250	.156	2	2	3	3	3
TPG-54(11)	.625	.250	.172	2	2	3	3	3
TPG-54(12)	.625	.250	.188	2	2	3	3	3
TPG-54(13)	.625	.250	.203	2	2	3	3	3
TPG-54(14)	.625	.250	.219	2	2	3	3	3

F. TOOLMAKERS SECTION

QUALIFIED BLANKS

Notch Style

INSERTS		DIMENSIONS				GRADES				
LEFT HAND	RIGHT HAND	A	T			B C 2	B 2 3	B C 5	B 1 5	B C N
NB-1L		.100	.096			1		1	1	
NB-2L	NB-2R	.219	.150			1	1	1		1
NB-3L	NB-3R	.344	.195			1	1	1		1
NB-4L	NB-4R	.453	.255			1	1	1		1
NB-5L	NB-5R	.688	.380			1		1		
NB-6L	NB-6R	.453	.383			1	1	1		

Triangular

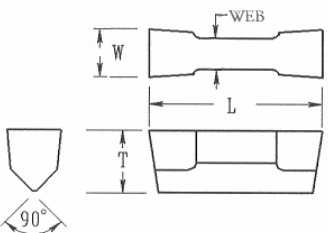
INSERTS		DIMENSIONS				GRADES				
A hole		IC	T	H		B C 2	B 2 3	B C 5	B C 1	B C N
TNGA-320		.375	.127	.150		1		1		1
TNGA-320 w/5° apex flat		.375	.127	.150		1		1		1
TNGA-430		.500	.190	.202		1		1		1
TNGA-540		.625	.252	.312		1		1		1

Triangular

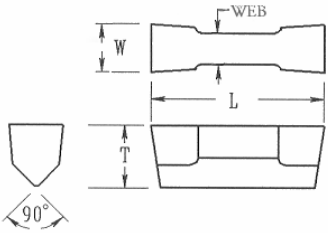
INSERTS		DIMENSIONS				GRADES				
C hole		A	T	H		B C 2	B 2 3	B C 5	B 1 5	B C N
TNGC-320		.375	.127	.150		1		1		1
TNGC-320 w/5° apex flat		.375	.127	.150		1		1		1
TNGC-430		.500	.190	.202		1		1		1
TNGC-540		.625	.252	.312		1		1		1

(F-1)

Dogbone

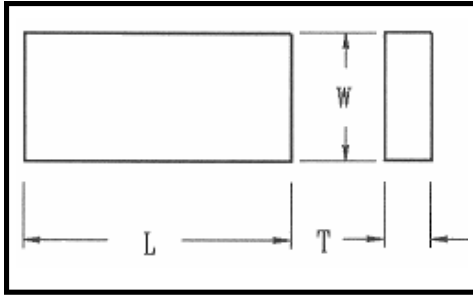
	INSERTS	DIMENSIONS				GRADES				
	Kennametal Style	W	L	T	Web	B C 2	B C 3	B C 5	B C 1 5	B C N
	GC-4125 (Blank)	.14	1.02	.188	.093	1		1		
	GC-4187 (Blank)	.20	1.02	.327	.144	1		1		
	GC-4250 (Blank)	.26	1.02	.327	.144	1		1		
	GC-4312 (Blank)	.33	1.02	.327	.202	1		1		
	GC-4375 (Blank)	.39	1.02	.327	.275	1		1		

Dogbone

	INSERTS	DIMENSIONS				GRADES				
	Valenite Style	W	L	T	Web	B C 2	B C 3	B C 5	B C 1 5	B C N
	VDB-125A (Blank)	.14	1.14	.250	.106	1		1		
	VDB-156A (Blank)	.17	1.14	.250	.144	1		1		
	VDB-188A (Blank)	.20	1.14	.250	.144	1		1		
	VDB-250A (Blank)	.26	1.14	.250	.144	1		1		
	VDB-250B (Blank)	.26	1.14	.327	.144	1		1		
	VDB-312B (Blank)	.33	1.14	.327	.276	1		1		
	VDB-375B (Blank)	.39	1.14	.327	.276	1		1		

(F-2)

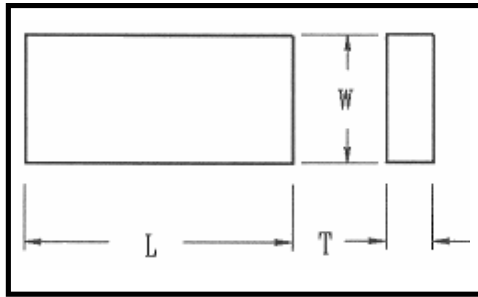
Unground Rectuangular Blanks



Style	Thickness	Width	Length	Grades Available
1030	.063	.250	.312	BC2,BC5
1080	.094	.312	.375	BC2,BC5
1090	.094	.375	.375	BC2,BC5
1110	.125	.188	.750	BC2,BC5
1120	.125	.250	.500	BC2,BC5
1140	.125	.250	.750	BC2,BC5
1180	.125	.375	.500	BC2,BC5
1190	.125	.375	.750	BC2,BC5
1200	.125	.500	.500	BC2,BC5
1210	.125	.500	.750	BC2,BC5
1240	.125	.625	.625	BC2,BC5
1250	.156	.312	.438	BC2,BC5
1260	.188	.312	.625	BC2,BC5
1270	.188	.375	.500	BC2,BC5
1290	.188	.375	.750	BC2,BC5
1340	.188	.750	.750	BC2,BC5
1360	.250	.375	.750	BC2,BC5
1380	.250	.500	.750	BC2,BC5
1410	.250	.750	1.000	BC2,BC5
1440	.312	.500	.750	BC2
1470	.312	.750	.750	BC2
1480	.312	.750	1.250	BC2
1490	.375	.500	.750	BC2
1500	.375	.500	1.000	BC2
1510	.375	.625	1.000	BC2
1520	.375	.750	1.250	BC2

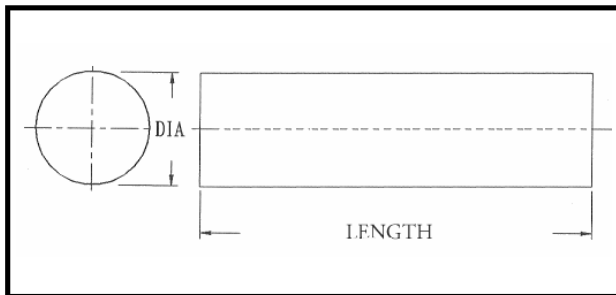
(F-3)

Unground Rectuangular Blanks - (continued)



Style	Thickness	Width	Length	Grades Available
STB-316	.094	.500	6.000	BC1,BC2
STB-320	.094	.625	6.000	BC1,BC2
STB-412C	.125	.375	6.000	BC1,BC2
STB-416	.125	.500	6.000	BC1,BC2
STB-420	.125	.625	6.000	BC1,BC2
STB-424	.125	.750	6.000	BC1,BC2
STB-428	.125	.825	6.000	BC1,BC2
STB-432	.125	1.000	6.000	BC1,BC2
STB-616	.188	.500	6.000	BC1,BC2
STB-620	.188	.625	6.000	BC1,BC2
STB-816	.250	.500	6.000	BC1,BC2
STB-820	.250	.625	6.000	BC1,BC2
STB-824	.250	.750	6.000	BC1,BC2

Centerless Ground Rod



Diameter	Length	Grades Available
.125	1.500	BC1
.188	1.125	BC1
.250	2.500	BC1
.313	2.500	BC1
.375	2.500	BC1
.500	3.000	BC1
.625	3.500	BC1
.750	4.000	BC1
.750	6.000	BC1
1.000	4.000	BC1
1.000	6.000	BC1

(F-4)

Grinding Services

We also do blank and finish grinding to your carbide for both new and re-grind inserts. We can take the raw blank all the way to a finished packaged product or any portion thereof. Here are the different services we provide: (see price list for typical sizes and styles)

1. Thickness

Done on vertical rotary surface grinders for excellent flatness and parallelism. Standard tolerance is + or - .001”.

2. Periphery

Done on Wendt Numerically Controlled grinders. Standard tolerance is + or - .001”. A tolerance of + or - .0005” is also available.

3. Profiling

We specialize in radius (internal and external), threading and grooving inserts. We can modify or duplicate most industry standards. Also, we can make many different specials from samples or prints.

4. Creep Feed / Form

Done on Wheel Truing Precision creep feed. Plated diamond wheels are required. Each job must be quoted separately.

5. Edge Prep.

We offer various T-lands and Hones. Most honing is done with abrasive wheels. But also have Almco honing machines for heavy machine hones on inserts with holes.

6. Clean and Box

Ultrasonic cleaning and hot air drying are very important. Not only for appearance, but the removal of body oils and salts. Uncleaned inserts can develop corrosion and surface leeching. We use modern packaging that protect the inserts and aid the end user in dispensing the products.

Note - Regrinding used carbide inserts can save you money. To be successful, implement a regrind program to include the following:

- a.) pull used inserts from operation before they damaged to the point of tool failure.
- b.) save used inserts in boxes that prevent chipping The original boxes work well. There is nothing worse than a scrap bucket.
- c.) keep inserts separate by grade if more than one grade is used.
- d.) remember it may take a different set of tooling to run the regrind inserts. Operators must be clear on any adjustments or tool changes necessary.

G. Technical Section

Grade Selection

Uncoated:

B15- Heavy-duty machining at low speeds and interrupted cuts. For applications where high strength is required.

BC2- Excellent grade for machining short chip material. Has good wear resistance and edge strength. Recommended for machining cast iron, non ferrous materials, fibers and high temperature alloys.

B23- Micro-grain structure provides higher hardness for improved resistance to edge deformation and works well at high temperatures. Recommended for turning nickel, iron and cobalt based high temperature alloys. Also turning titanium base alloys, gray cast iron and aluminum.

BC5- Designed for general purpose turning, milling, threading and grooving of steel and steel alloys. Also works well for heavy rough machining with good shock resistance for interrupted cuts.

Coated:

C1C- TiC/TiC-N/TiN coating on the best heavy shock substrate available. Use in operations of low to moderate speed for heavy roughing of stainless steels, high temperature alloys and cast irons.

C2A- TiC/Al₂O₃ ceramic coated grade engineered to have excellent abrasion resistance. Use in high-speed finishing and light roughing operations of carbon steel, alloy steels, tool steels, and cast irons.

C3N- PVD coated substrate, especially suited for aerospace materials, high temperature alloys, 200 and 300 series stainless steel and refractory metals. Grade offers good wear resistance, while reducing edge buildup. Excellent for difficult to machine materials and aluminum.

C5C- TiC/TiC-N/TiN coated inserts for general purpose machining of carbon steels, alloy steels and tool steels. Use at moderate speed for finishing or moderate roughing. Grade displays a good balance of wear resistance and strength.

CNC- TiC/TiC-N/TiN coating on an extra strong, thermal-deformation-resistant substrate. Use for moderate speeds and heavy cuts on a wide variety of materials. Grade developed to give maximum edge strength.

CNT- Composite/TiN - PVD coated grade used for high speed finishing of steels, ferritic and martensitic stainless steels and irons. Tough substrate offers high strength at the cutting edge. High resistance to crater and abrasive wear leads to long tool life. Replaces TiAlN and TiCN coated inserts.

(G-1)

Baxter Carbide Grade Application

ISO	ANSI	UNCOATED	COATED	
K10	C3	B23	C3N	HEAT RESISTANT ALLOYS (INCONEL, HASTALOY, WASPALLOY, ETC.) TITANIUM ALLOYS 120 TO 450 BHN LESS THAN 48 HRC
K20	C2	BC2	C3N	
K30	C1	BC1	C2A	
K40	C1	B15	C1C	
M10	—	B23	C3N	DUCTILE AND MALLEABLE CAST IRON GREY CAST IRON 340 TO 450 BHN 36 TO 48 HRC
M20	—	BC2	C3N	
M30	—	B55	CNC	
M40	—	B55	C1C	
P10	C7	BC7	CNT	FREE MACHINING AND LOW SILICON ALUMINUM ALLOYS ALLOY TOOL STEELS 340 TO 450 BHN 36 TO 48 HRC
P20	C6	BC6	CNC	
P30	C5	BC5	CNC	
P40	C5	B50	C5C	
P50	C5	B55	CHC	FREE MACHINING AND LOW CARBON STEEL 100 TO 225 BHN / LESS THAN 20 HRC
				AUSTENITIC STAINLESS STEEL (200 & 300) 135 TO 275 BHN / LESS THAN 28 HRC MEDIUM AND HIGH CARBON STEELS 135 TO 330 BHN / LESS THAN 35 HRC ALLOY AND TOOL STEELS
				FERRITIC AND MARTENSITIC STAINLESS STEEL (400 & 500) 135 TO 425 BHN LESS THAN 45 HRC

Baxter Carbide Grade Description

UNCOATED		COATED	
B15	ANSI class C1, 11% cobalt, 89.7 HRA	C1C	B15 with TiN/TiC/TiCN/TiN CVD coating
BC1	ANSI class C1, 10% cobalt, submicron grain structure, 91.8 HRA		
BC2	ANSI class C2, 5.5% cobalt, 92.4 HRA	C2A	BC2 with Al ₂ O ₃ CVD coating
B23	ANSI class C3, 6% cobalt, submicron grain structure, 92.7 HRA	C3N	B23 with TiN PVD coating
B55	ANSI class C5, 11% cobalt, 10% TiC/TaC alloys 90.5 HRA	CHC	B55 with TiN/TiC/TiCN/TiN CVD coating
BCN	ANSI class C5, 7.0% cobalt, 9.0% TiC/TaC alloys 91.1 HRA (coatable substrate)	CNC	BCN with TiN/TiC/TiCN/TiN CVD coating
		CNT	BCN with Composite/TiN PVD coating
B50	ANSI class C5, 10% cobalt, 21% TiC/TaC alloys 91.2 HRA		
BC5	ANSI class C5, 8.5% cobalt, 20% TiC/TaC alloys 91.4 HRA	C5C	BC5 with TiN/TiC/TiCN/TiN CVD coating
BC6	ANSI class C6, 7.0% cobalt, 12.5% TiC/TaC alloys 92.0 HRA	C6C	BC6 with TiN/TiC/TiCN/TiN CVD coating
BC7	ANSI class C7, 5.0% cobalt, 27.7% TiC/TaC alloys 92.5 HRA		

(G-3)

New Grade Designation

NEW GRADE	OLD GRADE
BC1	BC1
B15	B15
BC2	BC2
B23	B23
BC5	BC5
B50	BCM
B55	JYD
BCN	SUBSTRATE
BC6	BC6
BC7	BC7
C1C	B250
C1N	B210
C2A	B910
C3N	B730
CHC	B400
CNC	B850
CNT	B950 (improved)
C5C	B810
C6C	B810

(G-4)

General Feeds and Speeds (in SFPM)

GRADE	TURNING			MILLING			GROOVING & PARTING
	FINISHING .004-.010 IPR	GENERAL .008-.025 IPR	ROUGHING .020+ IPR	FINISHING .003-.012 IPT	GENERALD .006-.012 IPT	ROUGHING .008-.016 IPT	
B15		60-90	50-70		80-150	60-100	60-90
BC2	I	600-1500	400-600	500-1000	400-1000	300-600	300-900
	II	300-500	180-270	350-500	250-400	200-300	180-300
BC5	IV		70-120	50-90	80-150	70-100	70-120
		250-400	200-300	150-250	250-350	200-300	200-350
C1C			250-400	150-300	300-500	150-400	150-400
		600-1500	500-1200	400-1000	500-1200	400-1000	500-1200
C3N	I	400-600	300-450	250-350	350-500	300-400	300-500
	II	400-600	300-450	250-350	350-500	300-400	300-500
	III	400-600	300-450	250-350	350-500	300-400	300-500
	IV		100-300	70-150	150-350	100-200	100-250
C5C		400-750	350-600	300-450	400-650	350-500	300-700
CNC				450-800			
CNT		500-1200	400-900	500-1000	400-1000		400-1000

- I Non - ferrous metals
- II Austenitic stainless steels
- III Free machining steels / martensitic stainless steels
- IV Super alloys / refractory metals

(G-5)

Grade Cross Reference

UNCOATED

ISO	ANSI	BAXTER	CARBOLOY	F. STERLING	GREENLEAF	ISCAR	KENNAMETAL
K10	C3	B23	895	H36/GH1			K313
K20	C2	BC2	883	H21	G25	IC20	K68
K30	C1	BC1	820	H17		IC28	KF310
K40	C1	B15	HX	H91			K94
M10	—	B23	895	H36/GH1			K313
M20	—	BC2	883	H21	G25	IC20	K68
M30	—	B55	S60M	TO4/S37X		IC54	K21
M40	—	B55	S60M	TO4/S37X		IC54	K21
P10	C7	BC7	350	T25		IC6	K45
P20	C6	BC6	S10M	T22		IC70	K940
P30	C5	BC5	370	NTA	G50	IC5	K420
P40	C5	B50	S25M	T14	G55	IC50M	K2885
P50	C5	B55	S60M	TO4/S37X		IC54	K21

COATED

ISO	ANSI	BAXTER	CARBOLOY	F. STERLING	GREENLEAF	ISCAR	KENNAMETAL
K10	C3	C3N	CP20	SFZ		IC220	KC730
K20	C2	C3N	CP20	SFZ		IC220	KC730
K30	C1	C2A	TP100	MP37		IC848	KC910
K40	C1	C1C	523	MP21		IC520 M	KC210
M10	—	C3N	CP20	SFZ		IC220	KC730
M20	—	C3N	CP20	SFZ		IC220	KC730
M30	—	CNC	TP30	NL30	GA60	IC825	KC850
M40	—	C1C		NL20		IC635	KC250
P10	C7	CNT	TP200	NL92		IC815	KC950
P20	C6	CNC	TP30	NL30	GA60	IC825	KC850
P30	C5	CNC	TP30	NL30	GA60	IC825	KC850
P40	C5	C5C	TP35	NL25	GA5		KC810
P50	C5	CHC	TP40	MP51	Ti5	IC656	

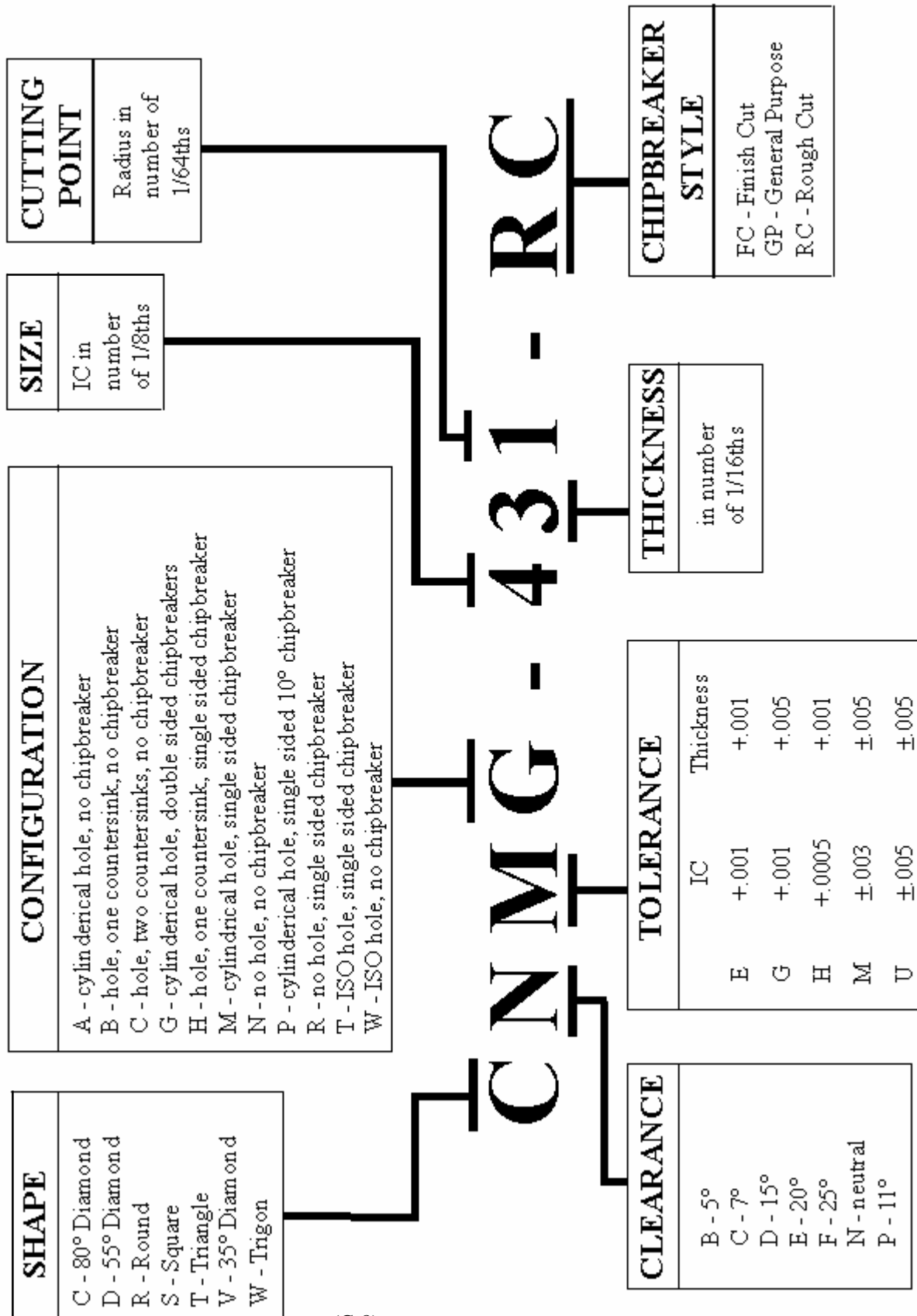
(G-6)

MITSUBISHI	NEWCOMMER	RTW	SANDVIK	SUMITOMO	TOOLFLO	TOSHIBA	VALENITE
UTi10T	NP32	CQ3	H10A	U10E	C3	TU10	VC29
HTi10	N22	CQ2	H13A	G10E	C2	TH10	VC2
	NP45	CQ22	H10F		C22		VC101
	N10	CQ14	R4		GFI		VC111
UTi10T	NP32	CQ3	H10A	U10E	C3	TU10	VC29
HTi10	N22	CQ2	H13A	G10E	C2	TH10	VC2
STi40T	N52	CY55	S6	ST40E	C54H	TX40	VC56
STi40T	N52	CY55	S6	ST40E	C54H	TX40	VC56
STi10T	N70	CY14	S10	ST10P	C7H	TX10D	VC7
STi20	N60		S1P	ST20E	C6H	TX20	VC6
UTi20T	N55	CY16	S10M		C5H	UX25	VC5
	N50	CY5	SMA		C56H	UX30	VC52
STi40T	N52	CY55	S6	ST40E	C54H	TX40	VC56

MITSUBISHI	NEWCOMMER	RTW	SANDVIK	SUMITOMO	TOOLFLO	TOSHIBA	VALENITE
UP20M	PV32		GC1015	EH20Z	GP3	GH330	VC929
UP20M	PV32		GC1015	EH20Z	GP3	GH330	VC929
U410	NP400	918	GC320	AC105	GP25	T5010	VC830
	NN21		GC215				VN2
UP20M	PV32		GC1015	EH20Z	GP3	GH330	VC929
UP20M	PV32		GC1015	EH20Z	GP3	GH330	VC929
F515	NN60	718	GC425	AC211	GP50	T380	VN8
U510	NN311		GC235	AC10G	GP4	T530	V1N
U625	AC25		GC4025		AG50	T7025	SV3
F515	NN60	718	GC425	AC211	GP50	T380	VN8
F515	NN60	718	GC425	AC211	GP50	T380	VN8
	NN50		GC435		GP5		VN5
	NN52	755				T370	SV4

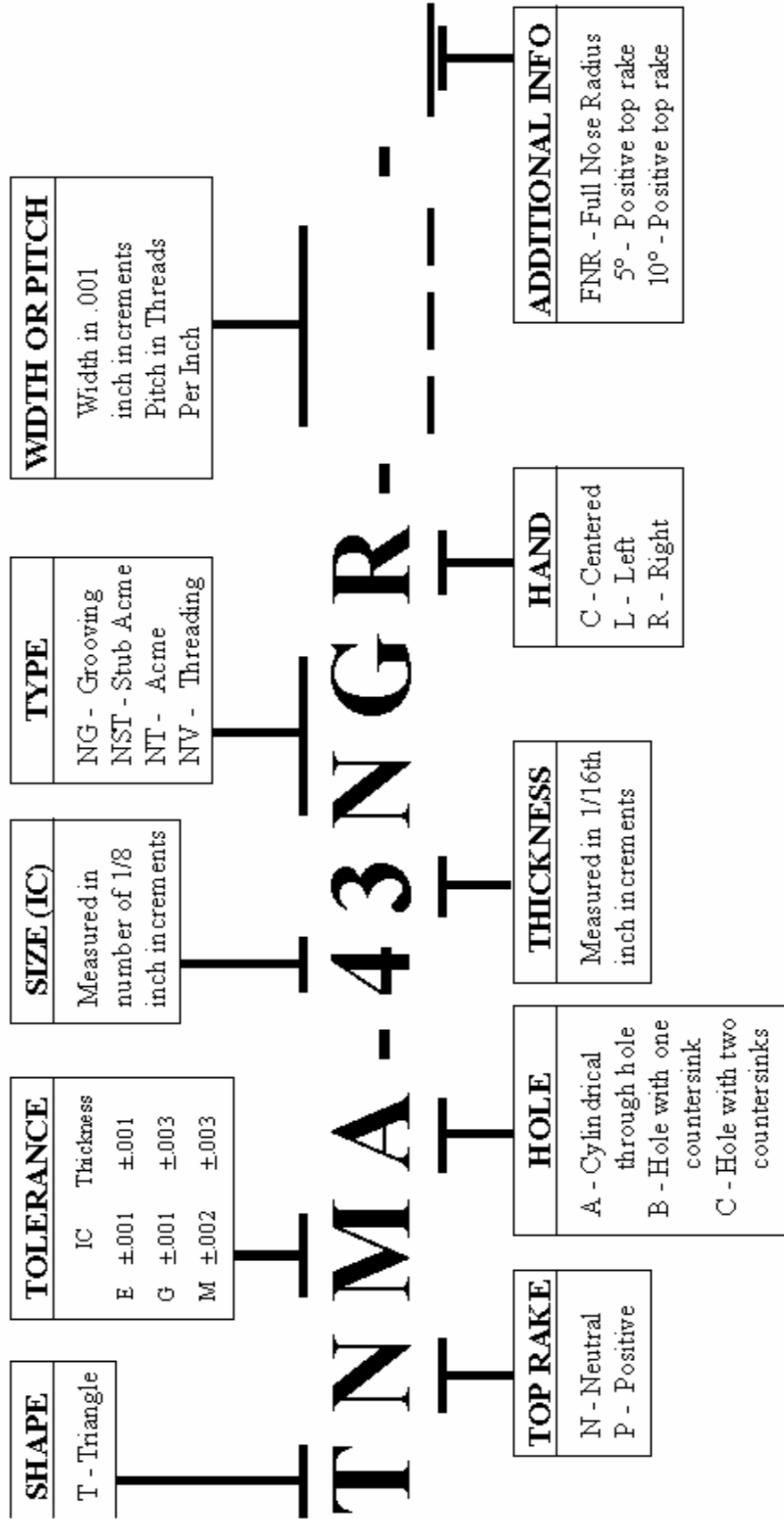
(G-7)

Turning, Facing, Boring, and Profiling Insert Identification



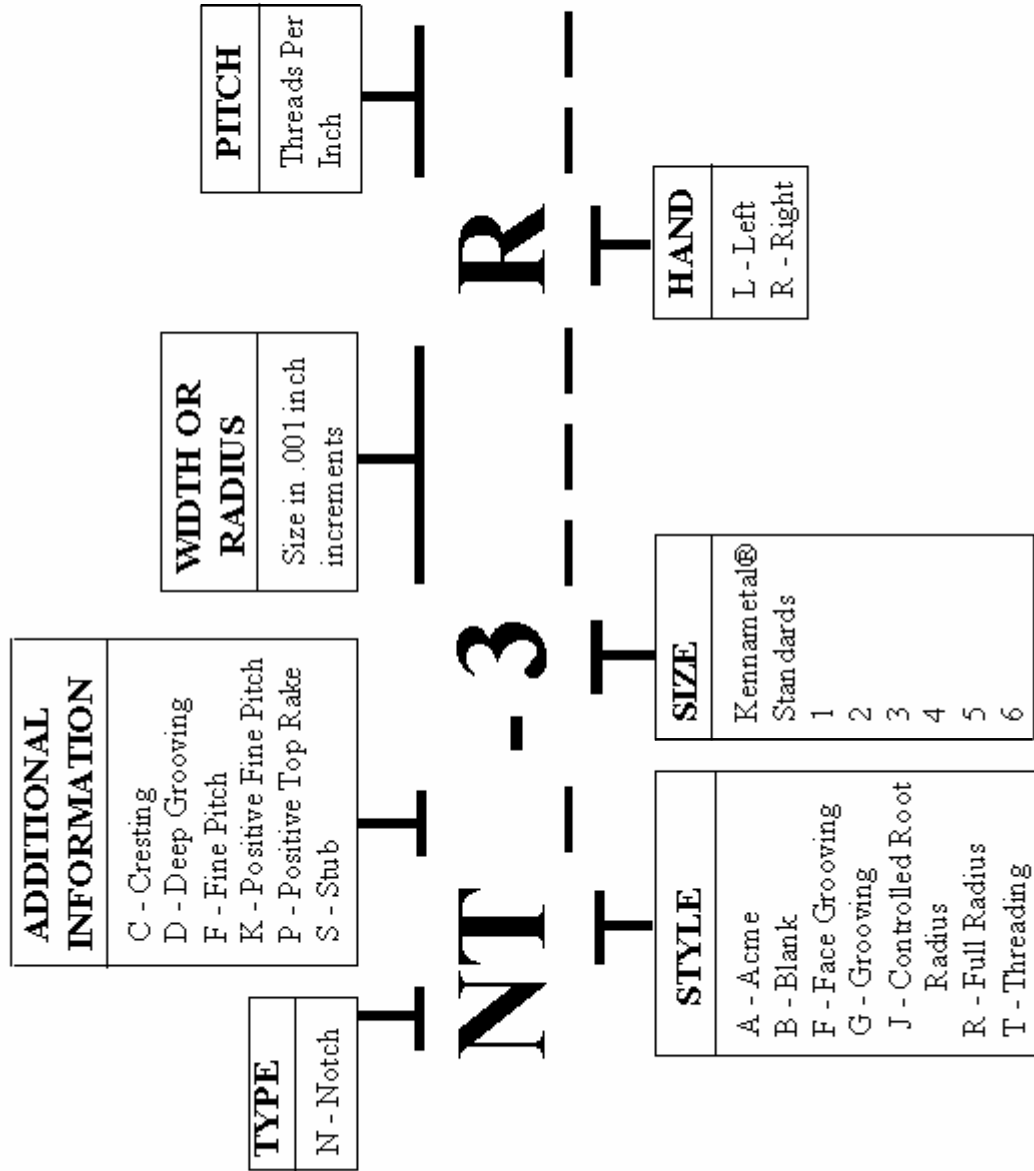
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Triangular On Edge Threading and Grooving Insert Identification



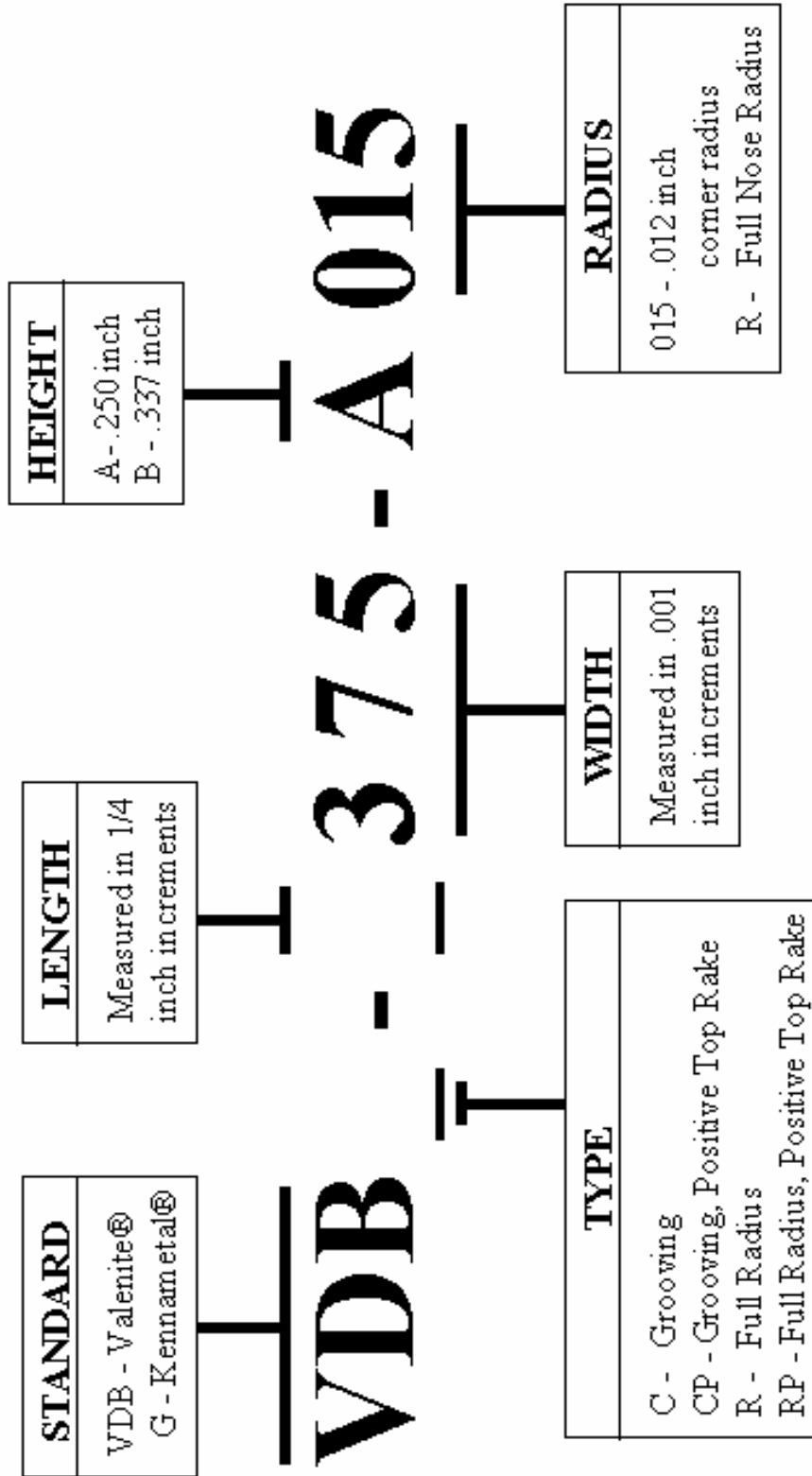
(G-9)

Notch Style Threading and Grooving Insert Identification



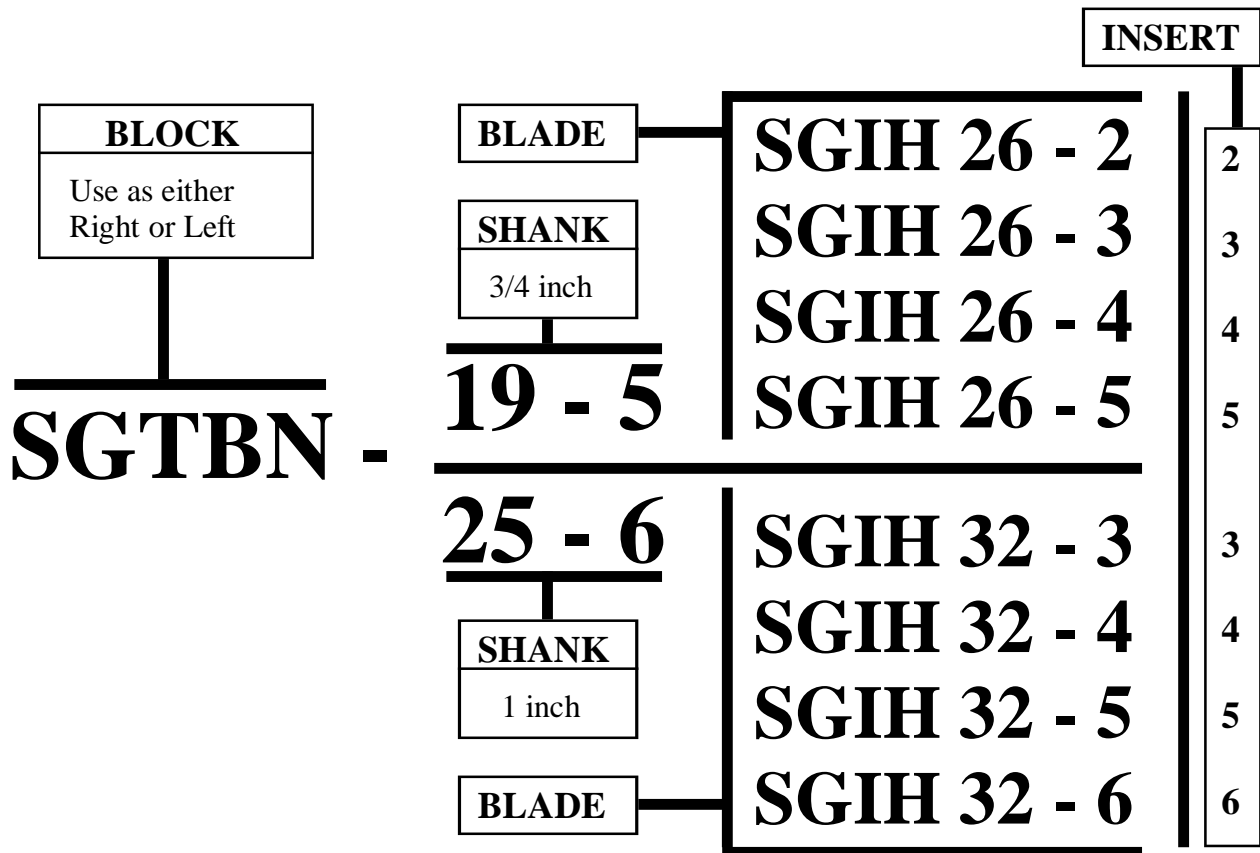
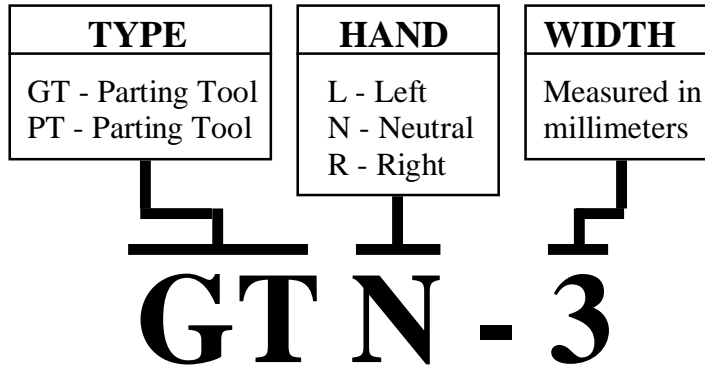
(G-10)

V - Bottom Deep Grooving Insert Identification

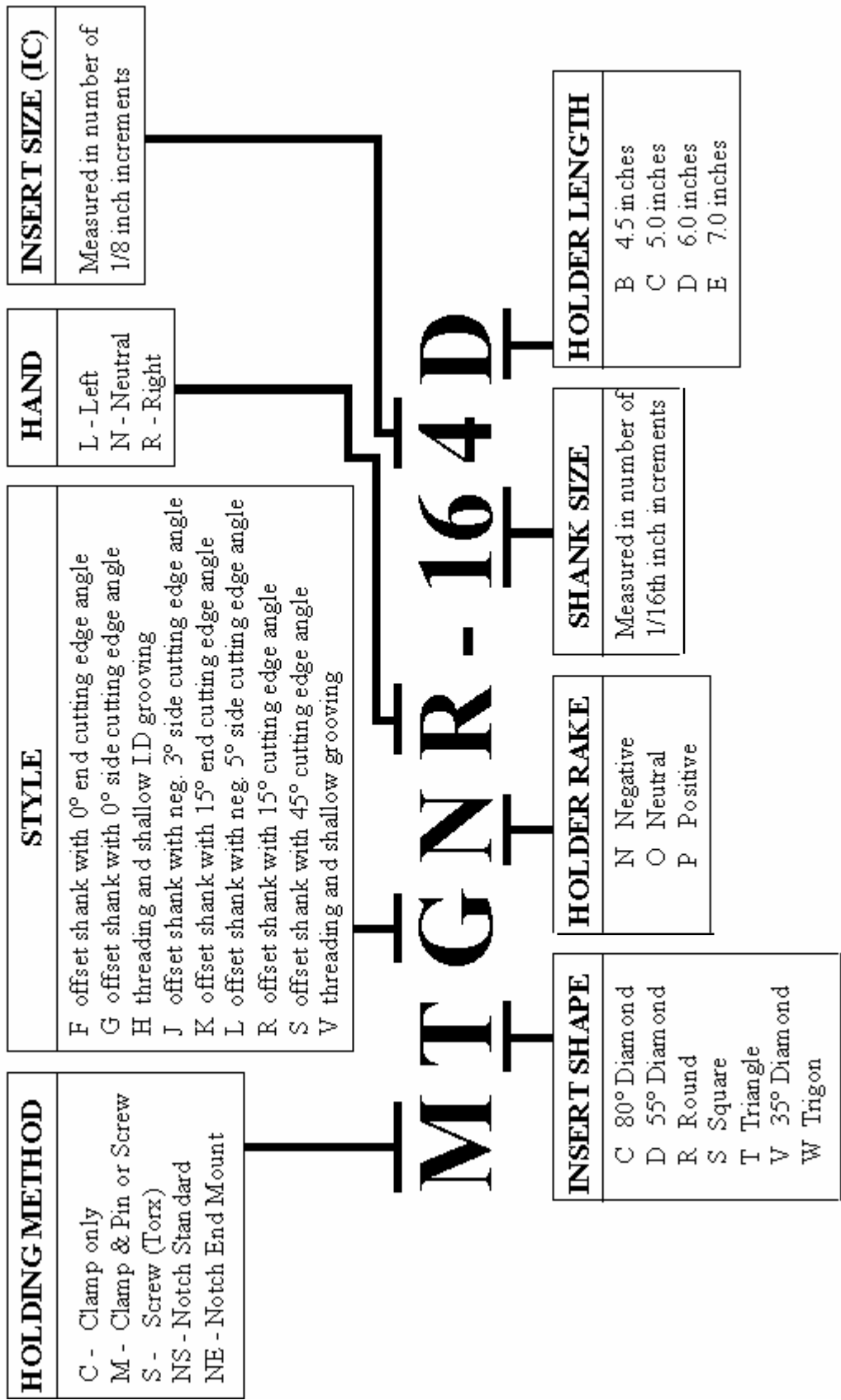


(G-11)

Parting System, Block, Blade, & Insert Identification



Toolholder Identification System



(G-13)

Trouble Shooting Guide

<u>Problem</u>	<u>Probable Causes</u>	<u>Possible Solutions</u>
Breakage	Excessive feed Lack of rigidity Improperly applied coolant Chipbreaker too narrow Dull insert	Reduce the feed and/or the depth of cut Make tool or work rigid Increase coolant flow Use a wider chipbreaker or single sided insert Re-index or replace insert
Built-up Edge	Improperly applied coolant Speed and feed too slow Rake angle too slight	Increase coolant flow Increase cutting speed/Increase feed Select a positive geometry
Chatter	Incorrect feed Too large a nose radius Lack of rigidity Improper angles	Reduce feed rate - check actual horsepower consumption Reduce nose radius Check system rigidity Decrease rake angle/increase relief and clearance angle
Chip Clogging	Chips too long Excessive feed	Use a narrower chipbreaker/Increase chip wells Reduce feed
Chipping	Chipbreaker too narrow Improper angles Excessive feed Sharp edges Carbide grade	Use a wider chipbreaker Use negative rake angles/Use small relief angles/ Use larger nose radius/Use pre-honed inserts Reduce feed Make tool or work rigid Use a more shock resistant grade
Cratering	Excessive speed, feed or both-eroding top of tool Rake angle too slight	Reduce speed to obtain a lower temperature, then the feed/Use a Coated Grade Select a positive geometry
Deformation	High temperature at cutting edge Large volume metal removal	Reduce cutting speed/Reduce feed/ Apply coolant Reduce tool angles/Increase nose radius/ Use positive rake tools
Excessive Wear	Speed too high or feed too light Carbide too soft Improper angle	Reduce speed/Increase feed Use more wear resistant carbide Increase side cutting angle/Use larger relief angle
Notching	Highly abrasive surface scale or a work hardened previously machined surface	Increase side cutting edge angle/Reduce feed/ Use a larger radius/Reduce speed
Poor finish	Feed rate too high Surface speed low Lack of rigidity Dull insert	Decrease feed, increase nose radius Increase speed Make tool or work rigid Re-Index or replace insert