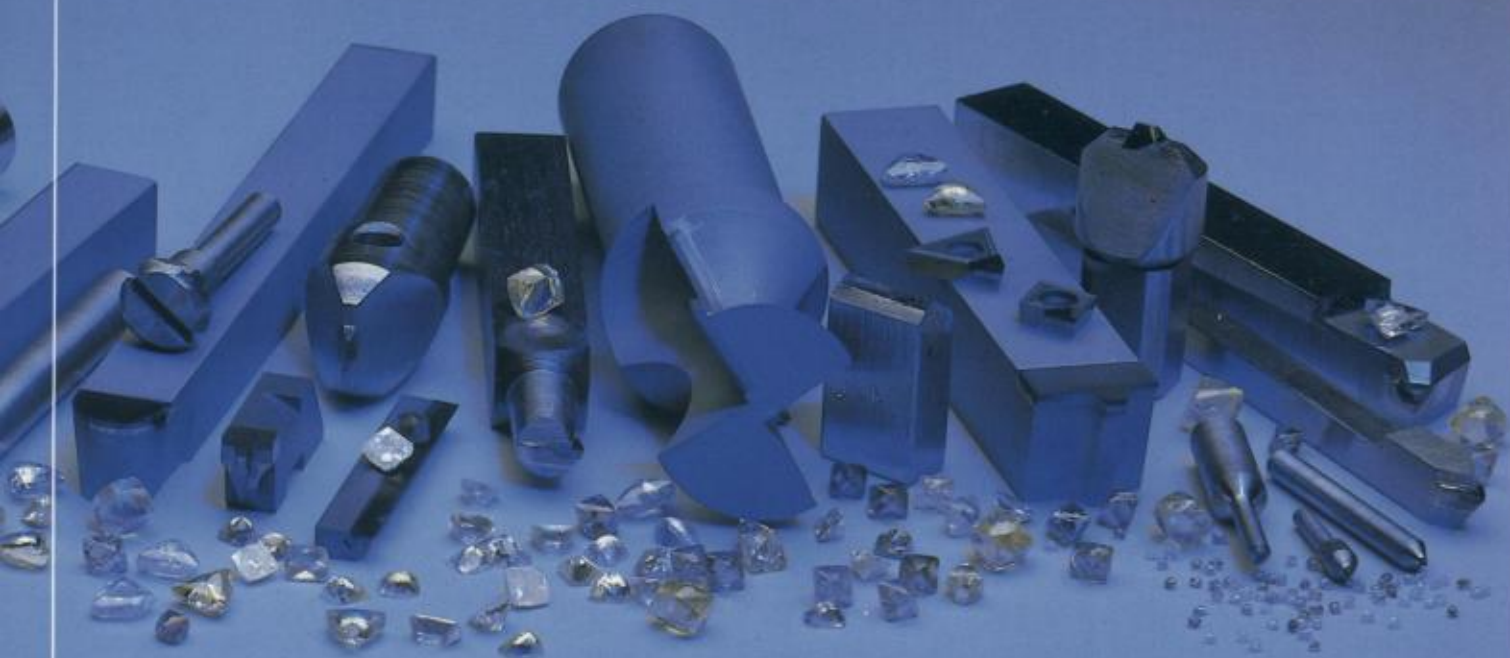


DIAMOND CUTTING TOOLS

J&M

DIAMOND TOOL, INC.





Skilled craftsmen grinding, lapping and polishing natural diamond tools.



Exact geometries are ground on PCD tools with our sophisticated tool grinders.

About J & M

J & M Diamond Tool, Inc. specializes in the design and manufacture of polycrystalline and natural diamond tooling, diamond dressing and cleaving tools, diamond scribes and engravers, and miniature carbide tooling.

In addition to our regular lines, we are constantly engaged in designing and manufacturing custom parts for many applications. From semiconductors to fiber-optics, our depth of experience and involvement in high technology make us uniquely qualified to solve unusual and challenging tool problems.

When J & M Diamond Tool, Inc. was established in 1972, our principals already possessed an extensive background in the diamond tool industry. As the company and our customer base has grown, we have aggressively stayed at the forefront of technology to manufacture better tooling. Our modern 18,000 square foot plant includes the most advanced Agie Wire EDM systems and the G.A.C. automatic laboratory vacuum furnace, supported by extensive quality control equipment and a full complement of high caliber, cost efficient machine tools.

Our Coneset affiliate, located on-site, specializes in vacuum bonded diamond/steel adherence, and the manufacture of small diamond styli.

All this experience and technology is focused on promptly meeting our customers' needs in the production of high quality parts and tools at reasonable prices. On request we are happy to provide engineering design assistance and alternative design suggestions. Please ask us for a quotation.



Quality control is insured by optical inspection, mechanical measuring and dedicated people.



Precision cutting of polycrystalline diamond form tools, routers and grooving tools. Design engineers operate our CNC wire EDM systems.



For phono points and stylii, we handset diamonds, then permanently bond them to steel in our specialized vacuum furnace.

J & M

DIAMOND TOOL, INC.

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Composition of PCD

Polycrystalline Diamond (PCD) is a synthetic diamond product that is produced by sintering together selected diamond particles with a metal matrix using sophisticated technology. The diamond and matrix, when sintered together under high temperatures and pressures, creates a PCD tool blank that is high in uniform hardness and is abrasive resistant in all directions. This PCD diamond layer is then bonded to a tungsten carbide substrate, which provides strength and a brazable base to permit bonding to other metals.

Polycrystalline tipped tools are exceptionally resistant to wear compared to tungsten carbide or ceramic tools. In certain applications, PCD tool life can exceed carbide cutting tool life 50 to 100 times.

In certain applications, polycrystalline tipped tools have several advantages over natural diamond.

SHOCK RESISTANCE: PCD is more shock resistant over natural diamond because of its random orientation structure of the diamond particles, and is backed by a carbide substrate.

CONSISTENCY: PCD is more constant in wear. Again because of the random orientation of diamond particles. Natural diamond is a single crystal in nature and has soft and hard grains. Depending on the shape of the natural diamonds and the tool being manufactured, it is sometimes not practical to have the hardest grain on the cutting edge.

AVAILABILITY: PCD is readily available in a large variety of shapes and sizes. Discs as large as 50mm in diameter are now available. Natural diamond is limited to what is formed in nature. Diamond, even with only an 8mm long cutting edge is extremely difficult to find and is very costly.

FLEXIBILITY: PCD is a conductor. This allows us to routinely produce complex form tools and grooving tools with our wire EDM machines. Such tools are impossible to produce in natural diamond.

COST: PCD blank costs are considerably lower than the cost of natural diamond stones, and the availability of different shape PCD blanks reduce manufacturing cost significantly. The longer of a cutting edge required, the larger the savings of PCD over natural diamond due to the rarity of larger stones.

Natural diamond and PCD diamond compliment each other. Natural diamond is denser than its PCD counterpart and consequently can be polished to a keener cutting edge.

Natural diamond is best suited to produce very fine finishes and precise tolerances as required in the manufacturing of jewelry, plastic contact lens, computer memory discs, and aluminum camera parts. See natural diamond tools (Pages 14 to 17).

Polycrystalline diamond tooling can be used in a wide range of machining operations such as milling, grooving, turning, facing and boring. They are recommended for machining non ferrous metals and abrasive non metallics.

Materials recommended for cutting with PCD:

- Aluminum and aluminum alloys
- Copper, brass and bronze alloys
- Zinc and magnesium alloys
- Gold and silver
- Tungsten carbide, presintered and sintered
- Carbon and graphite
- Ceramics, unfired
- Epoxy resins
- Plastics and rubber
- Fiberglass composites
- Graphite composites
- Phenolics
- Chipboard and fibreboard

PCD cutting tools are available in various grades, depending on the application.

Composition of CBN

Cubic Boron Nitride

Cubic boron nitride (CBN) is an artificially synthesized material exceeded in hardness only by diamond. Unlike diamond, however, CBN is stable under conditions of high temperature (up to 1000°C) normally seen when machining hardened ferrous or super alloy materials.

Like polycrystalline diamond, CBN is available in a large variety of shapes and sizes. Discs are available up to 42mm diameter. CBN is also available in several different grades, depending on the application.

CBN tools permit metal cutting at feeds and speeds much higher than conventional cutting tools materials. CBN tools are also being used to turn, bore and face hard materials, which previously could be formed only by grinding. Because CBN tools maintain a sharp cutting edge, part surface finishes are excellent, close tolerances are easy to maintain, and dramatic productivity increases can be expected.

Materials recommended for cutting with CBN:

Alloy steels (45-68 RC)
Carbon tool steels (45-68 RC)
Die steel (45-68 RC)
High speed steel (45-68 RC)
Chilled cast iron
Ni Hard
Forged steel
Meehanite iron
Moly chrome steel rolls
Inconel 600
Rene
Incoloy
Monel
Stellite
Colmonoy
Waspoly

Recommended Speeds and Feeds

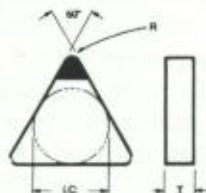
PCD Material	Speed (SFM)	Feed Rate (IPR)	Depth of Cut (INCH)	CBN Material	Speed (SFM)	Feed Rate (IPR)	Depth of Cut (INCH)
Aluminum	3000-5000	.005-.008	.005-.020	Carbon Steel	200-500	.008 MAX.	.020 MAX.
Aluminum (5-8% Si)	4000-6000	.010-.020	.005-.020	Bearing Steel	200-500	.008 MAX.	.020 MAX.
Aluminum (8-12% Si)	3000-5000	.005-.015	.005-.020	Alloy Steel	200-500	.008 MAX.	.020 MAX.
Aluminum (14-18% Si)	1000-3000	.002-.010	.003-.015	Die Steel	160-350	.008 MAX.	.020 MAX.
Copper	750-1500	.003-.008	.005-.020	Tool Steel	160-350	.008 MAX.	.020 MAX.
Bronze	1000-1250	.003-.008	.005-.020	HighTensileCast Iron	200-500	.060 MAX.	.100 MAX.
Brass	2000-4000	.003-.010	.005-.020	Chilled Cast Iron	130-260	.032 MAX.	.100 MAX.
Babbitt	800-1200	.003-.010	.005-.020	Grey Cast Iron	1000-2600	.020 MAX.	.040 MAX.
Carbon	500-1000	.005-.015	.005-.030	Powdered Metal	500-650	.016 MAX.	.120 MAX.
Glass Fiber	750-1000	.001-.010	.001-.002	Inconel	500-650	.006 MAX.	.125 MAX.
Carbon Composites	500-2000	.005-.015	.010-.100	Rene 41	500-650	.006 MAX.	.125 MAX.
Sintered Carbide	30-50	.004-.006	.0005-.005	Rene 77	450-550	.006 MAX.	.015 MAX.
High Aluminum Ceramics	1200-2400	.001-.004	.0005-.005	Incoloy	750-900	.006 MAX.	.125 MAX.
Wood and Composites	8000-13000	.010-.100	.010-.100	Monel	550-650	.006 MAX.	.125 MAX.
				Stellite	550-650	.006 MAX.	.125 MAX.
				Colmonoy	550-650	.003 MAX.	.125 MAX.
				Waspoly	550-650	.003 MAX.	.060 MAX.

Inserts

PCD or CBN

TNG

negative



Insert	Dimensions		
	I.C.	T	R
TNG-221	.250	.125	.016
TNG-222	.250	.125	.031
TNG-321	.375	.125	.016
TNG-322	.375	.125	.031
TNG-323	.375	.125	.047
TNG-324	.375	.125	.063
TNG-432	.500	.188	.031
TNG-433	.500	.188	.047
TNG-434	.500	.188	.063

SNG

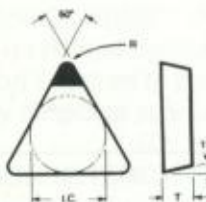
negative



Insert	Dimensions		
	I.C.	T	R
SNG-322	.375	.125	.031
SNG-323	.375	.125	.047
SNG-422	.500	.125	.031
SNG-423	.500	.125	.047
SNG-424	.500	.125	.063
SNG-432	.500	.188	.031
SNG-433	.500	.188	.047
SNG-434	.500	.188	.063
SNG-633	.750	.188	.047
SNG-634	.750	.188	.063

TPG

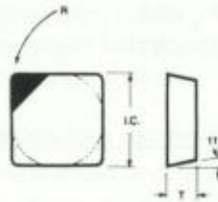
positive



Insert	Dimensions		
	I.C.	T	R
TPG-221	.250	.125	.016
TPG-222	.250	.125	.031
TPG-223	.250	.125	.047
TPG-224	.250	.125	.063
TPG-321	.375	.125	.016
TPG-322	.375	.125	.031
TPG-323	.375	.125	.047
TPG-324	.375	.125	.063
TPG-431	.500	.188	.016
TPG-432	.500	.188	.031
TPG-433	.500	.188	.047
TPG-434	.500	.188	.063

SPG

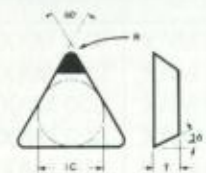
positive



Insert	Dimensions		
	I.C.	T	R
SPG-321	.375	.125	.016
SPG-322	.375	.125	.031
SPG-323	.375	.125	.047
SPG-324	.375	.125	.063
SPG-422	.500	.125	.031
SPG-423	.500	.125	.047
SPG-424	.500	.125	.063
SPG-432	.500	.188	.031
SPG-433	.500	.188	.047
SPG-434	.500	.188	.063
SPG-533	.625	.188	.047
SPG-632	.750	.188	.031
SPG-633	.750	.188	.047
SPG-634	.750	.188	.063

TEG

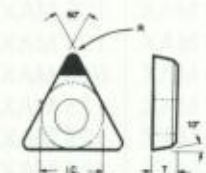
hi-positive



Insert	Dimensions		
	I.C.	T	R
TEG-2.521	.313	.125	.016
TEG-2.522	.313	.125	.031
TEG-321	.375	.125	.016
TEG-322	.375	.125	.031
TEG-422	.500	.125	.031
TEG-423	.500	.125	.047

TP

positive



Insert	Dimensions		
	I.C.	T	R
TP-40	.250	.094	*
TP-41	.250	.094	.016
TP-42	.250	.094	.031
TP-61	.375	.125	.016
TP-62	.375	.125	.031

SPECIFY (PCD) or (CBN)

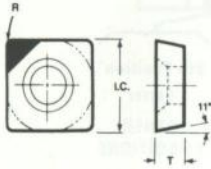
All inserts available 1/8" long
or 1/4" long cutting edge.

Inserts

PCD or CBN

SD-P

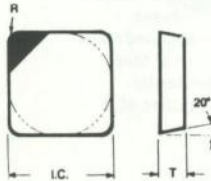
positive



Insert	Dimensions		
	I.C.	T	R
SD-6P	.375	.125	.031
SD-7P	.438	.125	.031
SD-8P	.500	.125	.031
SD-9P	.563	.125	.031
SD-12P	.750	.188	.047
SD-322D	.375	.125	.031
SD-322P	.375	.125	.031
SD-422P	.500	.125	.031
SD-532P	.625	.188	.031

SEC

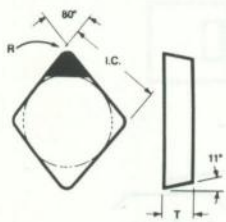
hi-positive
±.0005



Insert	Dimensions		
	I.C.	T	R
SEC-322	.375	.125	.031
SEC-422	.500	.125	.031
SEC-424	.500	.125	.063
SEC-533	.625	.188	.047
SEC-632	.750	.188	.031
SEC-633	.750	.188	.047

CPG

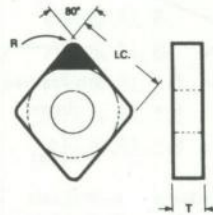
positive



Insert	Dimensions		
	I.C.	T	R
CPG-420	.500	.125	0
CPG-421	.500	.125	.016
CPG-422	.500	.125	.031
CPG-4622	.464	.125	.031
CPG-633	.750	.188	.047

CNMA

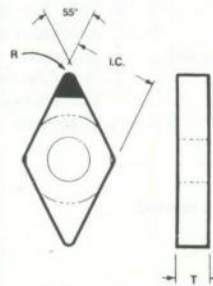
negative



Insert	Dimensions		
	I.C.	T	R
CNMA-322	.375	.125	.031
CNMA-422	.500	.125	.031
CNMA-432	.500	.188	.031
CNMA-433	.500	.188	.047
CNMA-434	.500	.188	.063
CNMA-542	.625	.250	.031
CNMA-543	.625	.250	.047
CNMA-642	.750	.250	.031
CNMA-643	.750	.250	.047
CNMA-644	.750	.250	.063

DNGA

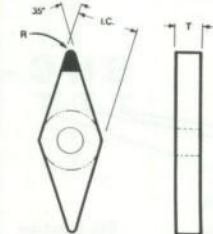
negative



Insert	Dimensions		
	I.C.	T	R
DNGA-2.522	.313	.125	.031
DNGA-431	.500	.188	.016
DNGA-432	.500	.188	.031
DNGA-433	.500	.188	.047
DNGA-531	.625	.188	.016
DNGA-542	.625	.250	.031
DNGA-532	.625	.188	.031
DNGA-533	.625	.188	.047

VNMA

negative



Insert	Dimensions		
	I.C.	T	R
VNMA-331	.375	.188	.016
VNMA-332	.375	.188	.031
VNMA-432	.500	.188	.031
VNMA-442	.500	.250	.031
VNMA-443	.500	.250	.047

SPECIFY (PCD) or (CBN)

All inserts available 1/8" long
or 1/4" long cutting edge

Designation Symbols

For Indexable Insert Numbers

T N M G - 4 3 4 E							
1st Position Letter	2nd Position Letter	3rd Position Letter	4th Position* Letter	5th Position Number	6th Position Number	7th Position Number or Letter	8th Position* Letter
SHAPE	CLEARANCE	CLASS	TYPE	SIZE	THICKNESS	CUTTING POINT Radius or Flats	OTHER CONDITIONS
R—Round	N—0°	Cutting Point	A—With hole	Size 1/4" and over use—	Size 1/4" and over use—	0—Sharp corner	A—Ground all over
S—Square	A—3°	A ±.0002 ±.001	B—With hole and one countersink	Number of 1/8ths in size.	Number of 1/16ths in thickness	1—1/64 Radius	—light honed
T—Triangle	B—5°	B ±.0002 ±.005	C—With hole and two countersinks			2—1/32 Radius	B—Ground all over
P—Pentagon	C—7°	C ±.0005 ±.001	F—Clamp-on type with chipbreaker	For Rectangular and Parallelogram use two digits; number of 1/8ths in width and 1/4ths in length		3—3/64 Radius	—heavy honed
D—Diamond 55°	P—11°	D ±.0005 ±.005	G—With hole and chipbreaker			4—1/16 Radius	C—Ground top and bottom only—light honed
C—Diamond 80°	Q—15°	E ±.001 ±.001	H—With hole, one countersink and chipbreaker			6—3/32 Radius	D—Ground top and bottom only—heavy honed
O—Octagon	E—20°	G ±.001 ±.005	J—With hole, two countersinks and chipbreaker			8—1/8 Radius	E—Unground insert—honed
H—Hexagon	F—25°	±.002				A—Square insert with 45° chamfer	F—Unground insert—not honed
L—Rectangle	G—30°	**M to ±.005					T—Chamfer-cutting edge
M—Diamond 86°		±.005					
A—Parallelogram 85°		±.005					
B—Parallelogram 82°		**U to ±.012					
E—Parallelogram 55°							
F—Parallelogram 70°							
V—Diamond 35°							

*Shall be used only when required.

**Exact tolerance is determined by size of insert.

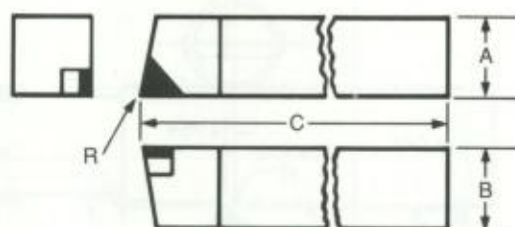
For Milling Cutter Indexable Inserts

S N C - 6 6 A 8							
1st Position Letter	2nd Position Letter	3rd Position Letter	4th Position Letter	5th Position Number	6th Position Number	7th Position Number or Letter	8th Position Number
SHAPE	CLEARANCE	TOLERANCE	TYPE	SIZE	THICKNESS	CORNER CONDITION	RADIUS OR CHAMFER SIZE
M—Diamond 86°	N—0°	Cutting Point	Unassigned	Number of 1/8ths in I.C. size	Number of 1/32nds in thickness	R—Radius	Number of 1/64ths in size
S—Square	P—11°	Thick-ness				A—45° Chamfer	
H—Hexagon	H—0° Sides and 11° Chamfers	C ±.0005 ±.001				D—30° Chamfer—R.H.	
	E—20°	E ±.001 ±.001				E—15° Chamfer—R.H.	
		G ±.001 ±.005				G—30° Chamfer—L.H.	
		N +.014 ±.001				H—15° Chamfer—L.H.	
		+0.020				K—30° Double Chamfer	
						L—15° Double Chamfer	
						W—3° Double Chamfer	

Turning Tools

PCD, CBN or
Natural Diamond

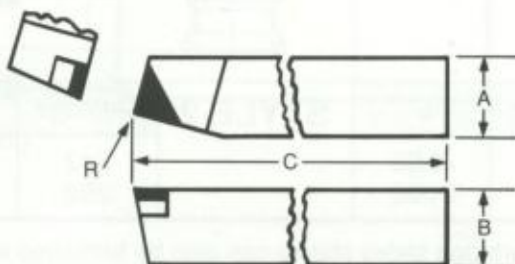
STYLE A



Right hand tool shown

Tool number	A	B	C	R
AR & AL 4	.250	.250	2.000	.016
AR & AL 6	.375	.375	2.500	.016
AR & AL 8	.500	.500	3.500	.031
AR & AL 10	.625	.625	4.000	.031
AR & AL 12	.750	.750	4.500	.031
AR & AL 16	1.000	1.000	7.000	.031

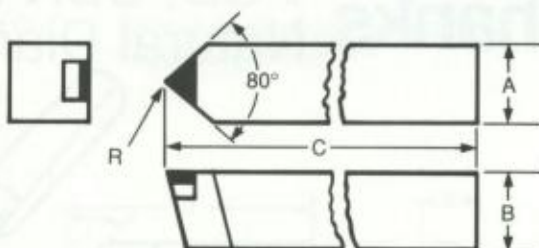
STYLE B



Right hand tool shown

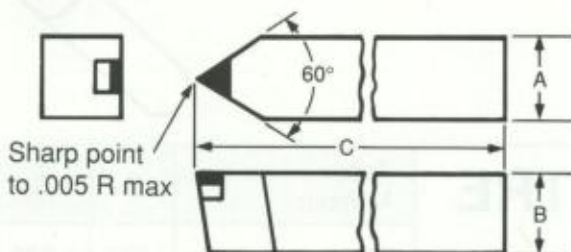
Tool number	A	B	C	R
BR & BL 4	.250	.250	2.000	.016
BR & BL 6	.375	.375	2.500	.016
BR & BL 8	.500	.500	3.500	.031
BR & BL 10	.625	.625	4.000	.031
BR & BL 12	.750	.750	4.500	.031

STYLE D



Tool number	A	B	C	R
D-4	.250	.250	2.000	.016
D-6	.375	.375	2.500	.016
D-8	.500	.500	3.500	.031
D-10	.625	.625	4.000	.031
D-12	.750	.750	4.500	.031
D-16	1.000	1.000	7.000	.031

STYLE E



Tool number	A	B	C	R
E-4	.250	.250	2.000	-
E-6	.375	.375	2.500	-
E-8	.500	.500	3.500	-
E-10	.625	.625	4.000	-
E-12	.750	.750	4.500	-

SPECIFY (PCD) or (CBN)

All tools available 1/8" long or 1/4" long cutting edge

Adjustable Boring Cartridges PCD or CBN

STYLE 1	Cartridge	L	STYLE 2L	Cartridge	L	STYLE 2	Cartridge	L
	2A1	25/32		2A2L	25/32		2A2	25/32
	2B1	21/32		2B2L	21/32		2B2	21/32

Cartridge size #2 shown available in sizes #1 to #9

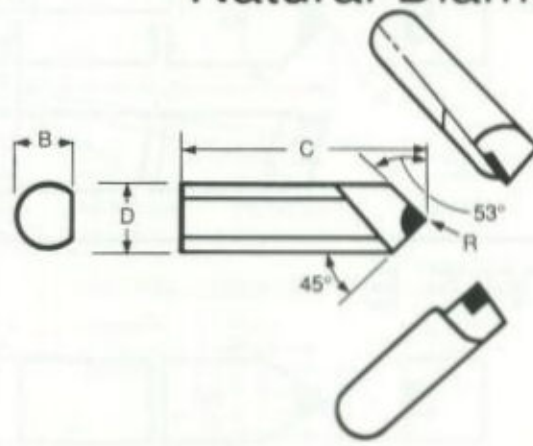
Specify PCD or CBN

Cartridge styles shown can also be furnished with 12° top rake for cutting Aluminum and Magnesium

Specify by adding 12 to end of cartridge number
Example: 2A212

Boring Tools-Round Shanks PCD, CBN or Natural Diamond

Specify PCD or CBN
Available In Natural Diamond



TRC	Tool Number	D	B	C	R
	TRC5	.313	.297	1.500	.005
	TRC6	.375	.344	1.750	.005
	TRC7	.438	.406	2.500	.005
	TRC8	.500	.469	2.500	.005

TRE	Tool Number	D	B	C	R
	TRE5	.313	.297	1.500	.005
	TRE6	.375	.344	1.750	.005
	TRE7	.438	.406	2.500	.005
	TRE8	.500	.469	2.500	.005

PCD Endmills



Center Cutting



Side Cutting



Staggered Cut

Special design used for cutting edges longer than 1".

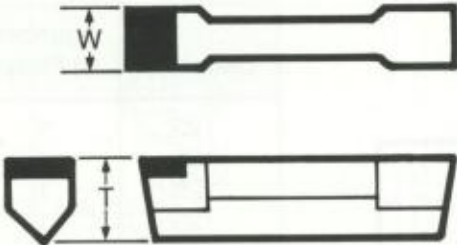
Diameter	Number Of Flutes	Flute Length	Center or Side Cutting
.125	1	.156	center cutting
.125	1	.250	center cutting
.125	1	.313	center cutting
.125	1	.313	side cut only
.188	2	.156	center cutting
.188	2	.250	center cutting
.188	2	.500	center cutting
.250	2	.156	center cutting
.250	2	.250	center cutting
.250	2	.375	center cutting
.250	2	.500	center cutting
.250	2	.500	side cut only
.313	2	.250	center cutting
.313	2	.375	center cutting
.313	2	.500	center cutting
.313	2	.500	side cut only
.375	2	.250	center cutting
.375	2	.375	center cutting
.375	2	.500	center cutting
.375	2	.500	side cut only
.438	2	.250	center cutting
.438	2	.375	center cutting
.438	2	.500	center cutting
.438	2	.500	side cut only
.438	2	1.000	side cut only
.500	2	.250	center cutting
.500	2	.500	center cutting
.500	2	1.000	center cutting
.500	2	1.000	side cut only
.563	2	.250	center cutting
.563	2	.500	center cutting
.563	2	1.000	center cutting
.563	2	1.000	side cut only
.625	2	.250	center cutting
.625	2	.500	center cutting
.625	2	1.000	center cutting
.625	2	1.000	side cut only
.750	2	.250	center cutting
.750	2	.500	center cutting
.750	2	1.000	center cutting
.750	2	1.000	side cut only

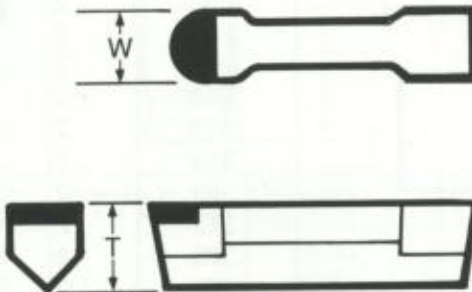
Other sizes and flute lengths available

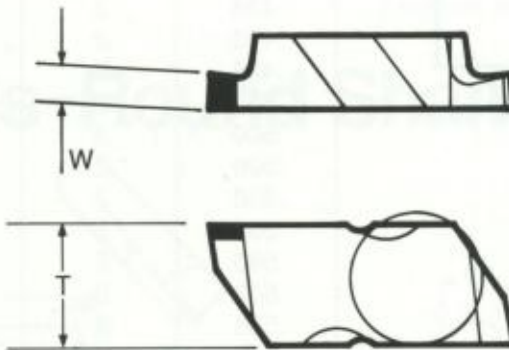
When ordering, specify: diameter, number of flutes, flute length and if center cutting or side cut only.

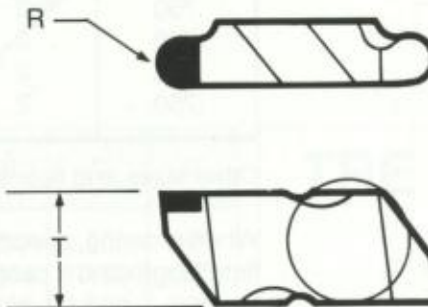
Grooving Tools

PCD or CBN

VDB - A & B 	Insert Number	W	T
	VDB-125-A-015	.125	.250
	VDB-156-A-015	.156	.250
	VDB-188-A-015	.188	.250
	VDB-250-A-015	.250	.250
	VDB-250-B-015	.250	.337
	VDB-312-B-015	.312	.337
	VDB-375-B-015	.375	.337

VDB - RA & RB 	Insert Number	W	T
	VDB-125-RA	.125	.250
	VDB-156-RA	.156	.250
	VDB-188-RA	.188	.250
	VDB-218-RA	.218	.250
	VDB-250-RA	.250	.250
	VDB-250-RB	.250	.337
	VDB-281-RB	.281	.337
	VDB-312-RB	.312	.337
	VDB-344-RB	.344	.337
VDB-375-RB	.375	.337	

NG (Right and Left)  Right Hand Shown. Left Hand Opposite.	Insert Number	W	T
	NG-2031-R&L	.031	.219
	NG-2047-R&L	.047	.219
	NG-2062-R&L	.062	.219
	NG-2094-R&L	.094	.219
	NG-2125-R&L	.125	.219
	NG-3047-R&L	.047	.344
	NG-3062-R&L	.062	.344
	NG-3094-R&L	.094	.344
	NG-3125-R&L	.125	.344
	NG-3189-R&L	.189	.344
	NG-4125-R&L	.125	.375
	NG-4189-R&L	.189	.375
	NG-4250-R&L	.250	.375

NR (Right and Left)  Right Hand Shown. Left Hand Opposite.	Insert Number	R	T
	NR-3031-R&L	.031	.344
	NR-3047-R&L	.047	.344
	NR-3062-R&L	.062	.344
	NR-3078-R&L	.078	.344
	NR-3094-R&L	.094	.344
	NR-4062-R&L	.062	.375
	NR-4094-R&L	.094	.375
NR-4125-R&L	.125	.375	

Other sizes and styles of grooving tools available.

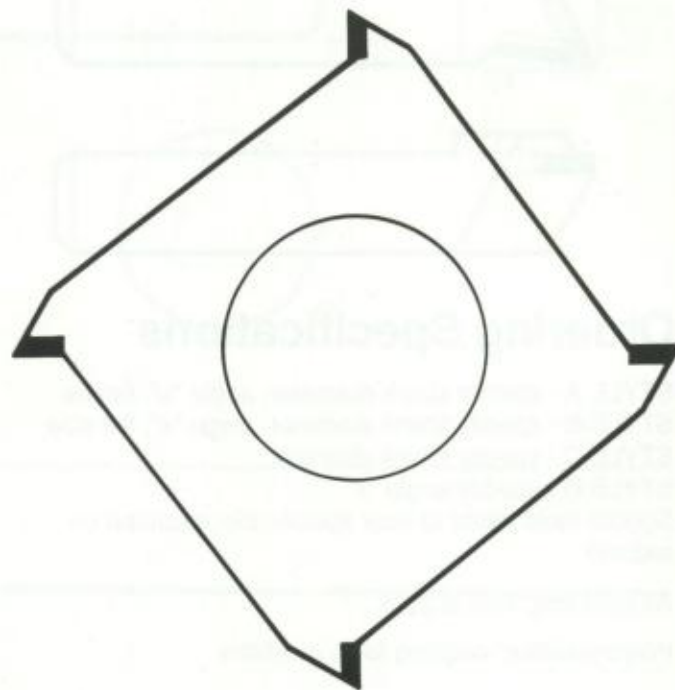
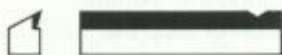
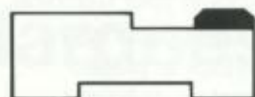
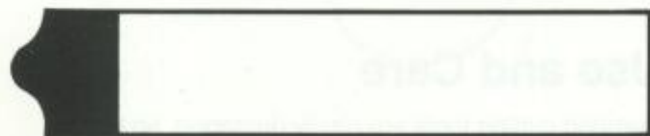
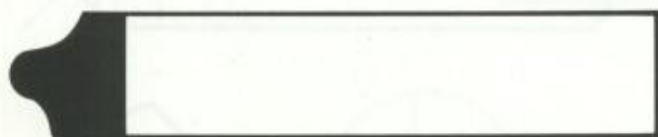
Other Standard Inserts

CCMM	CPGM	DNGP	EPMT	SCMT	SNE	TBEA	TFG	TPGA	VCMW
CCMT	CPMA	DNMG	NPL	SCMW	SNEA	TBEE	TM	TPGM	VNGA
CCMW	CPMT	DNMM	NPR	SDE	SNMA	TBGD	TNC	TPMA	VNGP
CDCD	CPMW	DNMP	NPT	SDEB	SNMG	TBGE	TNEA	TPMC	VNMG
CNG	DCMM	DPG	NT	SEEN	SNMM	TCMM	TNMA	TPMM	VNMP
CNGA	DCMT	DPGA	NTB	SEG	SPC	TCMT	TNMC	TPMT	VPGA
CNMG	DCMW	DPGR	PM	SFA	SPCE	TCMW	TNMG	TPMW	VPGR
CNMM	DDG	DPGT	PNC	SFE	SPE	TD	TPC	TPV	VPMA
CNMP	DDGA	DPMT	PNG	SFG	SPEA	TDED	TPCE	TX	VPMT
CPGA	DDGB	DPMW	PPC	SM	SPMA	TEC	TPEA	U3	VTGA
CPGB	DNEA	DTGA	PPG	SNC	SPMW	TEEN	TPEE	VCMT	

Other Grooving Inserts

CC	TLG	TLRP
NGP	TLGP	TNMC
NRP	TLR	

Form Tools, Routers and Cutters

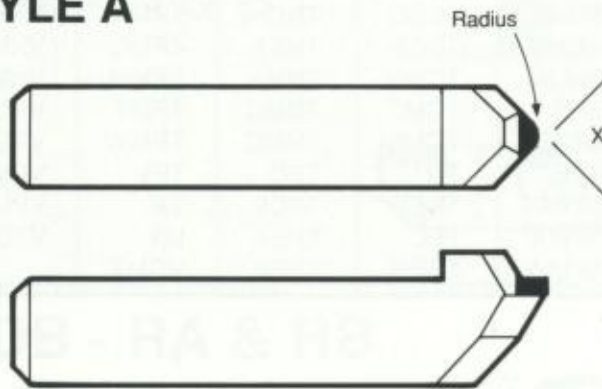


Special miscellaneous form tools and cutters shown are made to your specifications.

Tooth detail of various cutter shapes available.

Lens Turning Tools

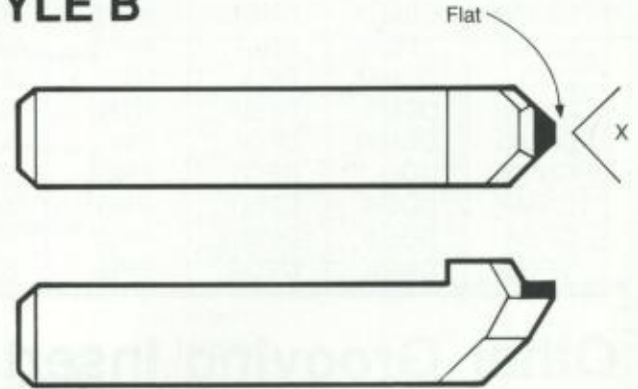
STYLE A



Above tools available in 3/16, 1/4, 5/16 and 3/8" square shanks

Included angle "x" available 60°, 70°, 80°, 90°

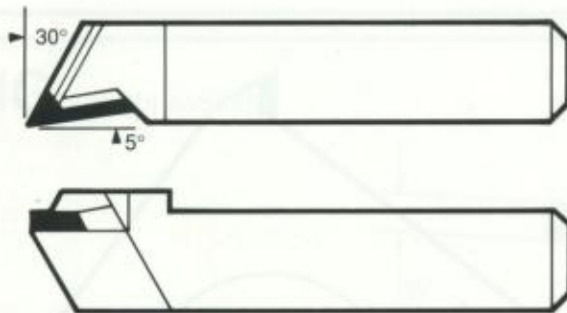
STYLE B



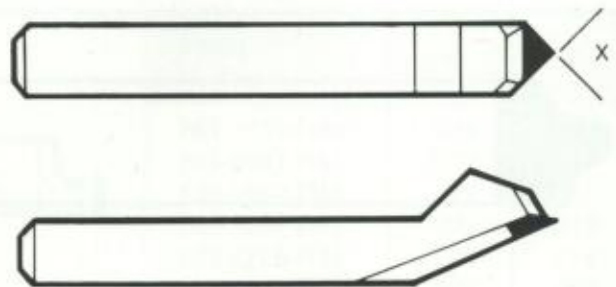
STYLE A Radius available - .005, .010, .015, .020, .030

STYLE B Flat available - .010, .015, .020, .030

STYLE C



STYLE D



Ordering Specifications

STYLE A - specify shank diameter, angle "x", radius
 STYLE B - specify shank diameter, angle "x", flat size
 STYLE C - specify shank diameter
 STYLE D - specify angle "x"

Special tools made to your specifications quoted on request

All tools chip free at 250x

Polycrystalline roughing tools available

Use and Care

Diamond cutting tools are easily damaged, so the cutting edges should be covered with rubber or plastic caps when they are not in use. Store them in separate containers when they are not in your machine.

When inspecting and setting up, use optical instruments if possible. Use copper shimstock or plastic between the cutting tool and micrometers or height gauges, if these are used, to avoid breaking the cutting edge. Don't bring the diamond into contact with the work in a stationary position or stop the machine during the cut.

High speed reduces cutting edge pressure; low speed increases it, causing diamonds to break down more rapidly.

Vibration also shortens tool life, so machine tools should be in good condition.

Commutator Turning Tools

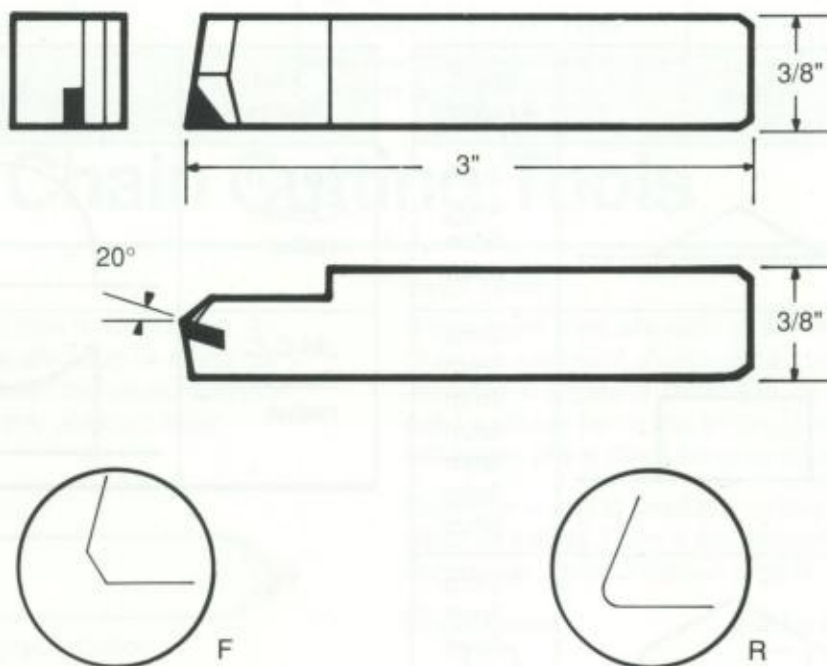
Commutator Turning

Diamond tools are used for turning the commutators of fractional horsepower electric motors, such as motors used for vacuum cleaners, electric power tools, etc. The tool is traversed at a feed rate of .0005" to .0015" per revolution, taking a depth of cut from .001" to .005". A controlled finish can be produced.

Tool type

CT-N-F	Natural diamond with flat
CT-N-R	Natural diamond with radius
CT-S-F	Synthetic diamond with flat
CT-S-R	Synthetic diamond with radius

Custom-made tools to your specifications quoted on request



Hardness Testers



For use with Rockwell method

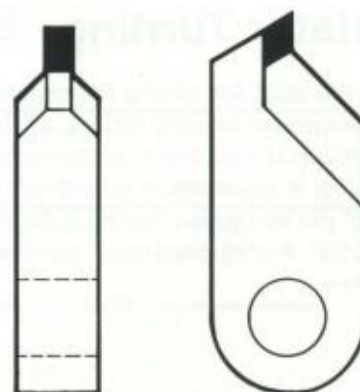
Available in "A" "C" or "N" scale

Flycutting Faceting Tools

For decorative finishing of all kinds of jewelry such as rings, bracelets, earrings, charms, cigarette lighters, etc. They can also be used for the faceting of gold chain on automatic milling machines.

When ordering specify part number, angle or radius and diamond width

Special sizes and shapes available
All tools available in carbide
Serrated carbide background tools available

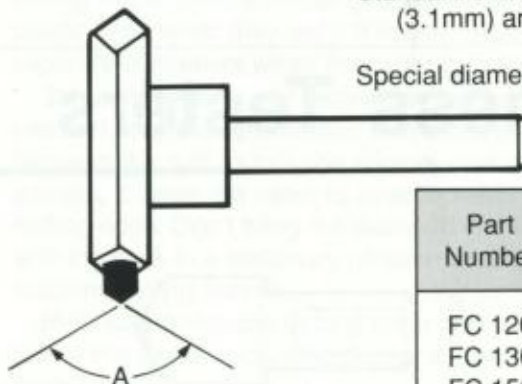


Part Number	Style	Width Available
JM-2-F two edges		3mm 4mm 5mm 6mm
JM-3-F three flat edges		1/2mm 1mm 2mm 3mm 4mm 5mm 6mm
JM-4-F four edges straight sides	 available 90° to 160° Inc	1/2mm 1mm 2mm 3mm 4mm 5mm

Part Number	Style	Width Available
JM-C-R Convex radius		1mm 2mm 3mm 4mm
JM-C-C Concave radius		1mm 2mm 3mm 4mm

Diamond Flywheels

Create brilliant diamond cuts for stone settings and designing. Anyone can diamond facet a variety of jewelry items by using a flexible shaft motorized machine. Create your own designs on earrings, charms, pendants, wedding rings, and many more items.

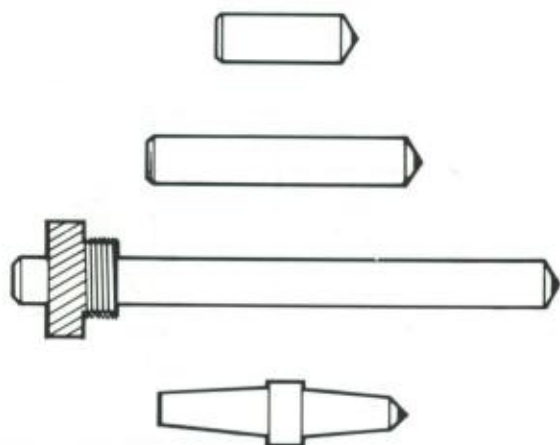


Standard shank diameter 1/8" (3.1mm) and 5/32" (4mm).

Special diameters available

Part Number	Angle
FC 120	120°
FC 130	130°
FC 150	150°
FC 180	180° flat

Diamond Engravers



Drag engravers

Part Number	Shank Size
DR-125-5	1/8 x 1/2
DR-125-1	1/8 x 1-1/8
DR-125-4	1/8 x 4
DR-156	4mm x 110mm
DR-171	11/64 x 6
DR-236	6mm x 160mm
DR-250-15	1/4 x 1-1/2
DR-250-6	1/4 x 6
DR-PRTS	Preis Taper

Angles available 90° to 160°

Rotating engravers

Part Number	Shank Size
RT-250-15	1/4 x 1-1/2
RT-156	4mm x 110mm
RT-187	3/16 x 1-1/2

Angles available 100° to 150°

Number of facets 4 or 6

Special shanks available

Specify part number and angle when ordering

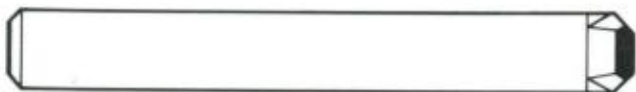
Diamond Chain Cutting Tools

Ice Lathe Tools

For use on the Ice-diamond Lathe to facet chain. A polycrystalline diamond is usually used as a first cut to remove the ice and is followed by natural diamond finish tools to produce the highly polished finish required of fine quality chain.



ICE LATHE ROUGHING Polycrystalline
Part number ICER-60



ICE LATHE FINISHING Natural

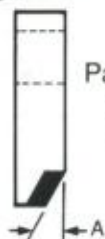
Part Number	Diamond Width
ICE-3mm	3mm
ICE-4mm	4mm
ICE-5mm	5mm
ICE-6mm	6mm

Bevel Tools

Single bevel tools are used to bevel the edges of chain on automatic chain milling machines. They are available in angles of 15° to 45°. J&M has also developed a double bevel tool which allows you to bevel two edges of the chain simultaneously.

Eccentric - used to produce ornamental designs on chain by milling. Point is cut off-center by varying degrees to produce various effects.

Single Bevel



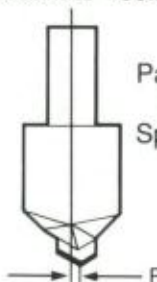
Part number
SBV-RH
SBV-LH

Double Bevel



Part number DBV
Special order

Eccentric Tools



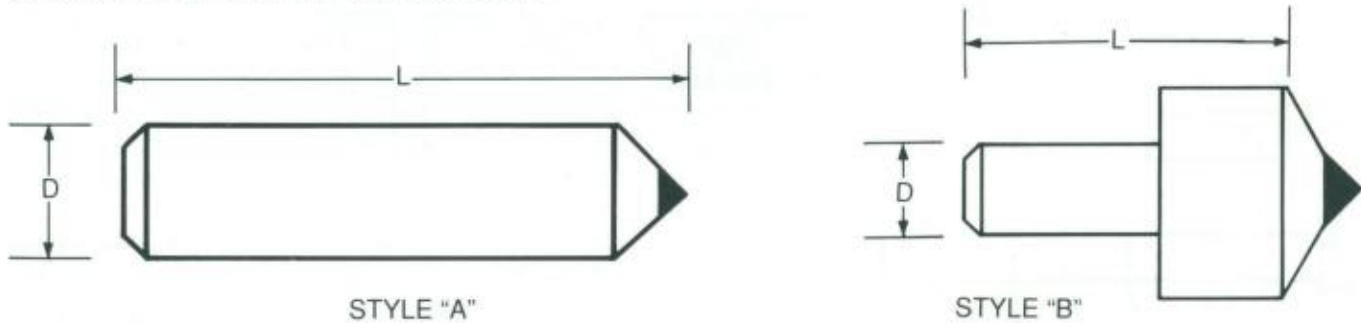
Part number
E-CC
Special order

When ordering single bevel tools, specify:
LEFT hand (LH)
or RIGHT hand (RH)

Specify Angle "A" 15°, 20°, 25°, 30°, 45°

Single Point Natural Dressers

Natural Point Diamonds



When ordering please specify Style "A" or "B". Specify - Diameter "D" and Length "L".



GRADE A

Specially selected diamonds for shape and structure. These diamonds, because of their many points, may be reset several times which more than pays for the higher initial cost.



GRADE B

These diamonds are less expensive initially because they have fewer cutting edges. Grade B stones approximate grade A quality, but have fewer points and therefore cannot be reset as many times.



GRADE C

These stones, although in some cases may be reset, are referred to as "throw aways". These are lesser quality stones than A or B and therefore have less dressing time expectancy.

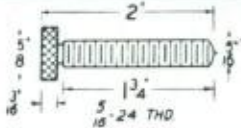
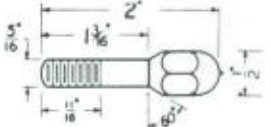
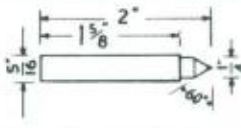
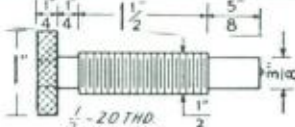
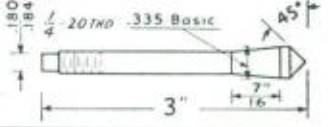
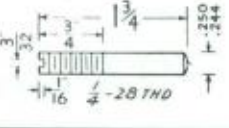
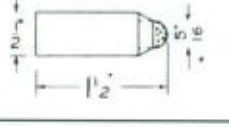
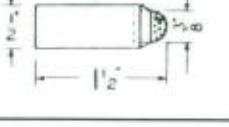
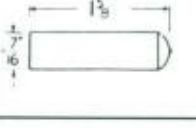
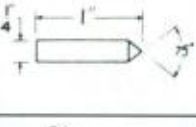
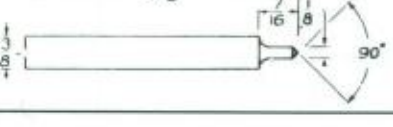
CARAT WEIGHT	GRADE (A)	GRADE (B)	GRADE (C)
1/4 ct.	Cat. # 25SPA	Cat. # 25SPB	Cat. # 25SPC
1/3 ct.	Cat. # 33SPA	Cat. # 33SPB	Cat. # 33SPC
1/2 ct.	Cat. # 50SPA	Cat. # 50SPB	Cat. # 50SPC
3/4 ct.	Cat. # 75SPA	Cat. # 75SPB	Cat. # 75SPC
1 ct.	Cat. # 100SPA	Cat. # 100SPB	Cat. # 100SPC
1 1/2 ct.	Cat. # 150SPA	Cat. # 150SPB	Cat. # 150SPC
2 ct.	Cat. # 200SPA	Cat. # 200SPB	Cat. # 200SPC
3 ct.	Cat. # 300SPA	Cat. # 300SPB	Cat. # 300SPC

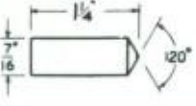
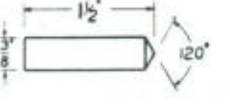
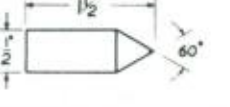
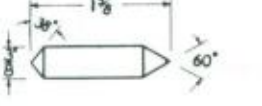
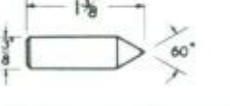
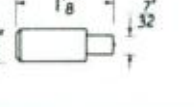
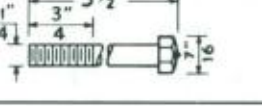
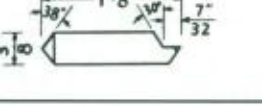
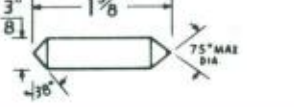
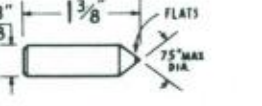
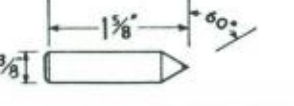
WHEEL DIAMETER										
WHEEL WIDTH	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
1/2"	.25		.33		.50		.75	1.00	1.25	1.50
1"	.25	.33		.50		.75		1.25		1.50
1-1/2"			.50		.75		1.00		1.50	
2-1/4"	.33			.75		1.00		1.50	1.75	2.00
2-1/2"		.50		.75		1.00				
3"			.75		1.00		1.50		2.00	
4"										3.00

POINT SIZE SELECTION CHART

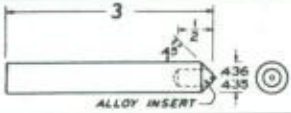


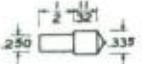

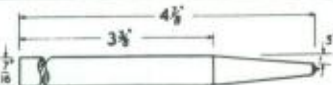
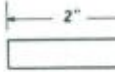
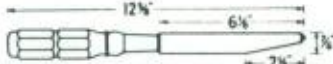
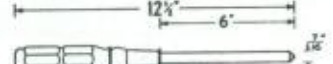

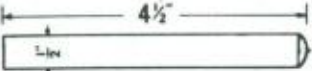
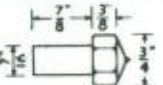
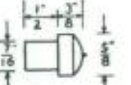
Shows optimum size diamond point (carats) for various combinations of wheel diameter and width.

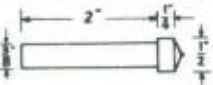
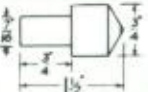
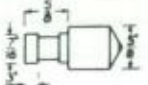
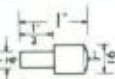

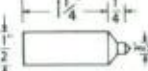
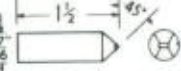
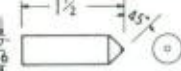

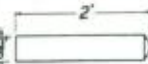
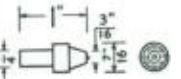
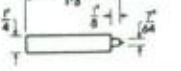
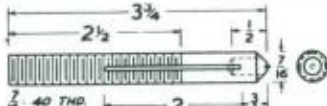
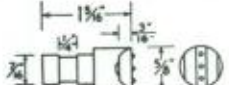
Standard Diamond Dresser Shanks

DRESSER TYPE	TOOL NO.
	HALL
	DETROIT CENTERLESS
	VINCO
	KWIK-WAY
	PRATT & WHITNEY GEAR GRINDER
	P & W GEAR grinder
	CARBOLOY 3C NIB
	CARBOLOY 4D NIB
	No. 14 CINCINNATI
	J & L NX-574-75
	BROWN & SHARPE SHAPER GRINDER

DRESSER TYPE	TOOL NO.
	EX-CELLO L-26-A76
	EX-CELLO 40-426
	EX-CELLO 46-52
	EX-CELLO 48-4105
	EX-CELLO 48-4105-1
	EX-CELLO 48-3014
	EX-CELLO 48-3212
	EX-CELLO 48-4126
	EX-CELLO 48-4128
	EX-CELLO 48-4128-1
	EX-CELLO 48-356-50

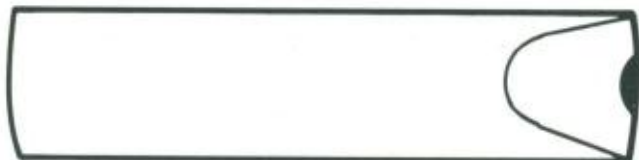
Standard Diamond Dresser Shanks

DRESSER TYPE	TOOL NO.
	No. 100-240 ROTOREX
	MULTI-STONE
	HYATT
	BLACK DIAMOND DRILL GRINDER
	No. 67 HEALD
	No. 68 HEALD
	No. 69 CINCINNATI
	No. 72 LATHE TOOL
	No. 73 HAND TOOL
	No. 74 HEALD
	No. 76 NORTON HEALD B & S
	No. 77 HEALD
	No. 78 LANDIS

DRESSER TYPE	TOOL NO.
	No. 80 HEALD
	No. 82
	No. 83
	NO. 60 LANDIS
	NO. 61 NORTON
	NO. 62 PERMASET
	NO. 63 CHISEL EDGE
	NO. 64 CONICAL DIAMOND
	NO. 65
	NO. 66
	BRYANT CHUCKING GRINDER
	No. 81 HEALD BORE GRINDER
	No. 100-125A ROTOREX
	MULTI-STONE

Lapped Chisels and Form Dressers

CHISEL



Ct. Weight	90° angle	60° angle
1/5 ct.	Cat. # CH2090	Cat. # CH2060
1/4 ct.	Cat. # CH2590	Cat. # CH2560
1/3 ct.	Cat. # CH3390	Cat. # CH3360
1/2 ct.	Cat. # CH5090	Cat. # CH5060

DIAFORM

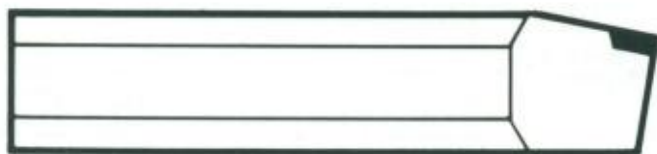


Length	
1 3/8"	Cat. # DF1375
1 3/4"	Cat. # DF1750
2 1/4"	Cat. # DF2250

Inc Angles (40°, 60°)

Radius (.005 to .025)

HOGLUND

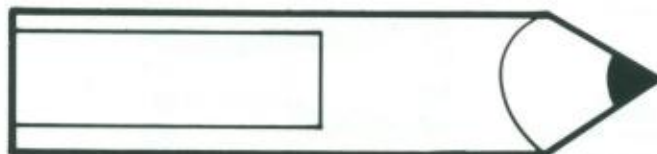


Length	
1 1/2"	Cat. # HG1500
1 5/8"	Cat. # HG1625
1 3/4"	Cat. # HG1750

Inc Angles (42°, 48°, 60°, 72°)

Radius (.005 to .025)

MOORE



Cat. # MR1562

Inc Angles (40°, 60°)

Radius (.005 to .025)

Radius Forming Tools

FB TOOLS



For plunge-forming a concave radius in the center of a grinding wheel. Featuring a 180° perfect ball point, it is possible to form an accurate, concave radius even after the diamond has worn just by merely turning the tool in its holder. Designed to save set-up time!

TOOL # RADIUS

FB-10	.010
FB-15	.015
FB-20	.020
FB-25	.025
FB-31	.031
FB-62	.062

RV TOOLS



For dressing a concave radius in the center of a grinding wheel. Uniquely shaped for fast, efficient performance it is recommended that this tool be used together with a radius dresser. The distance from the point of the diamond to the center line of the shank determines the radius that can be formed in the grinding wheel.

TOOL # RADIUS

RV-31	.031
RV-62	.062
RV-94	.094
RV-125	.125

R TOOLS



For dressing a concave radius into the corner of a grinding wheel. The "R" SERIES has a natural maacle diamond with its point concentric with the shank to form the desired radius as stamped on the tool.

TOOL # RADIUS

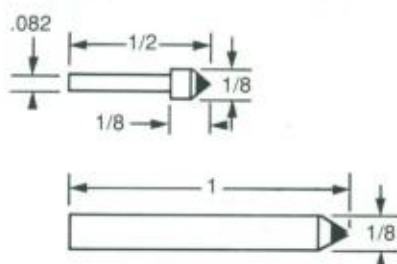
R-10	.010
R-15	.015
R-20	.020
R-25	.025
R-31	.031
R-62	.062
R-125	.125

Cone Point Dressers



Ct Weight	90° angle	75° angle	60° angle
1/10	CP1090	CP1075	CP1060
1/8	CP1590	CP1575	CP1560
1/4	CP2590	CP2575	CP2560
1/3	CP3390	CP3375	CP3360
1/2	CP5090	CP5075	CP5060

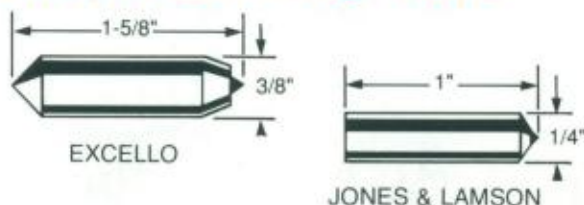
Phono Points



Shank	90°	75°	60°
.082 x 1/2	PD-190	PD-175	PD-160
1/8 x 5/8	PD-290	PD-275	PD-260
1/8 x 1	PD-390	PD-375	PD-360
3/16 x 1	PD-490	PD-475	PD-460
1/4 x 1	PD-590	PD-575	PD-560

Special size shanks and special angles available

Thread Grinding Tools



Excello	48-4128-1
J & L	NX 574-75
J & L Reject	NX 574RJ

Single Layer Clusters



Type	Standard	Premium
3 Stone	Cat. # 3CLST	Cat. # 3CLPR
5 Stone	Cat. # 5CLST	Cat. # 5CLPR
7 Stone	Cat. # 7CLST	Cat. # 7CLPR

Multi-point Impregnated Dressers

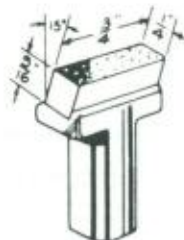
Available Shapes



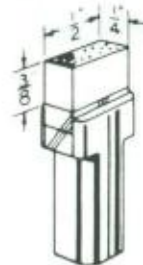
Shape 10 (1A)



Shape 10 (1A-B)



Shape 10 (1A-C)



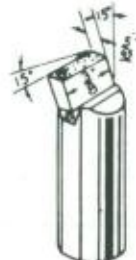
Shape 11 (2A-D)



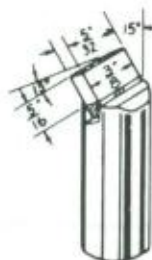
Shape 11 (2A-E)



Shape 12 (3A-F)



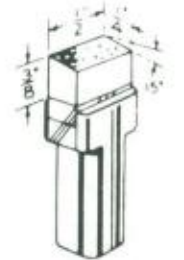
Shape 12 (3A-G)



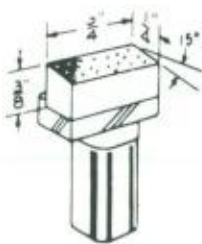
Shape 12 (3A-H)



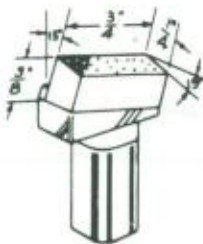
Shape 13 (1B-E)



Shape 13 (1B-D)



Shape 14 (2B-A)



Shape 14 (2B-B)



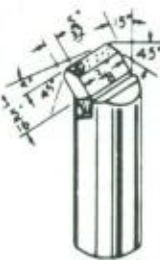
Shape 14 (2B-C)



Shape 15 (1E-F)



Shape 15 (1E-G)



Shape 15 (1E-H)



Shape 16 (2E-D)



Shape 16 (2E-E)



Shape 17 (1R-J)



Shape 17 (2R-K)

Multi-point Impregnated Dressers

Specification Sheet

Tool Number	Diamond Section Size			Shank Diameter Mounting Length	Recommended Use
	W	L	D		
Shape 10 (1A)	1/4 x 3/4 x 5/16"			7/16 x 15/16"	Centerless, cylindrical and surface grinders. For grinding wheels 20 x 3 and larger. Straight traverse truing.
Shape 10 (1A-B)	1/4 x 3/4 x 5/16"			7/16 x 15/16"	Centerless, cylindrical and surface grinders with angular truing post where traverse stroke is limited. For grinding wheels 20 x 3 and larger.
Shape 10 (1A-C)	1/4 x 3/4 x 5/16"			7/16 x 15/16"	Use on 20 x 3 and larger cylindrical, centerless and surface grinding wheels. Straight traverse truing.
Shape 11 (2A-D)	1/4 x 1/2 x 3/8"			7/16 x 1-1/4"	Centerless, cylindrical and surface grinders. For grinding wheels 12 x over 1 to 20 x 2-1/2". Straight traverse truing.
Shape 11 (2A-E)	1/4 x 1/2 x 3/8"			7/16 x 3/4"	Centerless, cylindrical and surface grinders with angular truing post. For grinding wheels 12 x over 1 to 20 x 2-1/2".
Shape 12 (3A-F)	5/32 x 3/8 x 1/4"			7/16 x 1-1/4"	Centerless and cylindrical grinders profile or form truing. Also straight traverse and general tool room wheels 12 x over 1 to 20 x 2-1/2".
Shape 12 (3A-G)	5/32 x 3/8 x 1/4"			7/16 x 1-1/4"	Centerless and cylindrical grinders angular truing post. Profile or form truing. Also straight traverse and general tool room wheels 12 x over 1 to 20 x 2-1/2".
Shape 12 (3A-H)	5/32 x 3/8 x 1/4"			7/16 x 1-1/4"	Centerless and cylindrical grinders with angular truing post for shoulder truing.
Shape 13 (1B-E)	1/4 x 1/2 x 3/8"			7/16 x 3/4"	Centerless, cylindrical and surface grinders with angular truing post. For grinding wheels 12 x over 1 to 20 x 2-1/2". Straight traverse truing.
Shape 13 (1B-D)	1/4 x 1/2 x 3/8"			7/16 x 3/4"	Use on 12 x 1-1/4 to 20 x 2-1/2" cylindrical, centerless or surface grinding wheels 46 through 220 grit. Straight traverse truing.
Shape 14 (2B-A)	1/4 x 3/4 x 3/8"			7/16 x 15/16"	Centerless, cylindrical and surface grinders with angular truing post. For grinding wheels 20 x 3 and larger. Straight traverse truing.
Shape 14 (2B-B)	1/4 x 3/4 x 3/8"			7/16 x 15/16"	Use on 20 x over 2-1/2" thickness and larger cylindrical centerless or surface grinding wheels 46 grit through 180. Straight traverse truing.
Shape 14 (2B-C)	1/4 x 3/4 x 3/8"			7/16 x 15/16"	Use on 20 x over 2-1/2" thickness and larger cylindrical, centerless or surface grinding wheels. 46 grit through 180. Straight traverse truing.
Shape 15 (1E-F)	5/32 x 3/8 x 5/16"			7/16 x 1-1/4"	Cylindrical grinders 45° angular wheel slide. Also step and right angle shoulder dressing on centerless and cylindrical grinders. Wheels to 20 x 2-1/2".
Shape 15 (1E-G)	5/32 x 3/8 x 5/16"			7/16 x 1-1/4"	Cylindrical grinders 45° angular wheel slide and truing post. Also for step and truing post. Also for step and right angle shoulder dressing on centerless and cylindrical grinders. For grinding wheels up to 20 x 2-1/2".
Shape 15 (1E-H)	5/32 x 3/8 x 5/16"			7/16 x 1-1/4"	Use on angular wheel slide cylindrical grinding machines and for shoulder or step truing of wheels in grit sizes 54 through 220. Form, shape, or angular truing.
Shape 16 (2E-D)	1/4 x 1/2 x 1/2"			7/16 x 3/4"	Cylindrical grinders 45° angular wheel slide. Also step and right angle shoulder dressing on centerless and cylindrical grinders. Wheels 20 x 3 and larger.
Shape 16 (2E-E)	1/4 x 1/2 x 1/2"			7/16 x 3/4"	Use on angular wheel slide machines, angular face wheels or side and face truing of cylindrical or surface grinding wheels 20 x 2" and larger in grit sizes 46 and finer. Form, shape, or angular truing.
Shape 17 (1R-J)	1/4 dia. x 1/4"			7/16 x 1-3/16"	For general tool room applications.
Shape 17 (2R-K)	3/8 dia. x 3/8"			7/16 x 1-3/16"	General purpose nib for centerless, cylindrical and surface grinders. For grinding wheels to 20 x 2-1/2".

For all specifications and prices not listed, please ask for special quotations.

Diamond Lapping Compound

The highest quality diamond compound available for rapid, accurate lapping, polishing and super-finishing.

The diamonds have been tested for purity, quality, shape and accuracy of sizing. They are uniformly dispersed in our oil and water soluble lubricant.

Color coding is for easy identification. Water may be used as an extender or thinner for water soluble compound, and kerosene or a light oil for oil soluble compound.

USED FOR	COLOR	ORDERS BY THESE NUMBERS	U.S. STANDARD CS261-63 MICRON SIZE	CONCENTRATION
FINEST FINISHES	GREY	¼	0-½	LIGHT MEDIUM
SUPER-FINISHING METALLOGRAPHIC SPECIMENS	WHITE	½	0-1	LIGHT MEDIUM
METALLOGRAPHIC SPECIMENS, EXTRA-HIGH FINISH	IVORY	1	0-2	LIGHT MEDIUM HEAVY
FINAL FINISHING FOR MOST LAPPING APPLICATIONS	YELLOW	3	2-4	LIGHT MEDIUM HEAVY
	ORANGE	6	4-8	LIGHT MEDIUM HEAVY
	GREEN	9	8-12	LIGHT MEDIUM HEAVY
FINISHING	BLUE	15	12-22	LIGHT MEDIUM HEAVY
LIGHT STOCK REMOVAL	RED	30	22-36	LIGHT MEDIUM HEAVY
MEDIUM STOCK REMOVAL	BROWN	45	36-54	LIGHT MEDIUM HEAVY
STOCK REMOVAL	PURPLE	60	54-80	LIGHT MEDIUM HEAVY
FAST STOCK REMOVAL	PURPLE	230/325	MESH	HEAVY
FAST STOCK REMOVAL	BLACK	170	MESH	HEAVY

RECOMMENDED CONCENTRATIONS ARE INDICATED IN **BOLD TYPE**



JARS: Screwtop, keeps compound pure. Permits addition of thinner or lubricant before use if desirable.



SYRINGE: Disposable plastic dispenser, convenient and safe from outside impurities.

TO ORDER SPECIFY:

- **NUMBER AND COLOR:** For example No. 1 Ivory, No. 3 Yellow, No. 30 Red, 230/325 mesh Purple, Etc.
- **CONCENTRATION:** Light, Medium, or Heavy.
- **QUANTITY:** Five 5 gram, two 25 gram, etc.
- **PACKAGING:** Jars or Syringes (disposable plastic dispensers). If you prefer 5 gram containers (either Jars or Syringes) you may take advantage of the 25 gram price by ordering five of the same specifications.
- **VEHICLE:** Water soluble, oil soluble, or universal (soluble in oil or water).

Diamond Scribing Tools

60° Included Cone Angles Are Standard - Others Available

PVS 700 Custom Series For Use With Pin Vise or Custom Holders



No. 701



No. 702



No. 703



No. 704



No. 705



No. 706

Hand Scribing Tools



Part # JMP-100



Part # JMP-100 Refill



Part # HS-110
Shank Dia. .0625 O.A. Length 7"
Shank Protrudes 1" Handle 1/4 x 6"



Part # HS-315
Shank Dia. .125 O.A. Length 6"
Shank Protrudes 1/4" Handle 1/4 x 5-3/4"



Part # HS-115
Shank Dia. .0625 O.A. Length 7"
Shank Protrudes 1" Handle 1/4 x 6"



Part # HS-410
Shank Dia. .0625 O.A. Length 4-7/8"
Shank Protrudes 3/8" Handle 3/16 x 4"



Part # HS-120
Shank Dia. .0625 O.A. Length 6-1/2"
Shank Protrudes 1/2" Handle 1/4 x 6"



Part # HS-415
Shank Dia. .0625 O.A. Length 4-5/16"
Shank Protrudes 5/16" Handle 3/16 x 4"



Part # HS-125
Shank Dia. .0625 O.A. Length 6-1/2"
Shank Protrudes 1/2" Handle 1/4 x 6"



MHS 500 Series - Large Handles
1/4 x 6" not including shank portion

MHS 600 Series - Small Handles
3/16 x 4" not including shank portion

Front
Diameter
.028"

FIBER OPTIC SCRIBES

THESE FIBER OPTIC SCRIBES ARE SPECIFICALLY MADE FOR THE “SCRATCH AND PULL” TECHNIQUE OF CLEAVING OPTICAL FIBERS. THE CHISEL SHAPE PROVIDES A MORE DURABLE EDGE FOR LONGER LIFE.

STANDARD FIBER OPTIC SCRIBES



AVAILABLE POINTS

	EC60- Natural Diamond with a 60 degree conepoint set in a plastic housing with a protective cap.		WD-DIAMOND-75MM Ground natural diamond chisel .75mm long edge, set in a plastic housing with a protective cap.
	WD-DIAMOND-1.5MM Lapped natural diamond chisel 1.5mm long edge, set in a plastic housing with a protective cap.		WD-CARBIDE-4MM Lapped carbide chisel with a 4mm long edge, set in a plastic housing with a protective cap.

DELUXE RETRACTABLE FIBER OPTIC SCRIBES



AVAILABLE POINTS

	DR60 Natural Diamond with a 60 degree conepoint, set in a deluxe retractable metal pen		DR90 Natural Diamond with a 90 degree conepoint, set in a deluxe retractable metal pen
	WDDR-DIAMOND-1MM Lapped natural diamond chisel 1mm long edge, set in a deluxe retractable metal pen.		WDDR-SAPPHIRE-2MM Lapped sapphire chisel with a 2mm long edge, set in a deluxe retractable metal pen.

REPLACEMENT REFILLS FOR RETRACTABLE PEN



AVAILABLE POINTS

	DR60 Refill 60 degree refill for deluxe retractable scribe		DR90 Refill 90 degree refill for deluxe retractable scribe
	WDDR-DIAMOND-1MM Refill Natural diamond chisel with a 1mm long edge refill for deluxe retractable scribe		WDDR-SAPPHIRE-2MM Refill Sapphire chisel with a 2mm long edge refill for deluxe retractable scribe

Terms and Conditions

TERMS: Net 30 days, to credit approved customers.
FOB East Providence, RI.

PRICES: All catalog prices are subject to change
without notice based on diamond market conditions.

QUOTES: All written quotes are good for 30 days
except in the case of large natural diamond tools.
These tools are priced as to our current inventory of
diamonds and are subject to prior sale if not ordered
immediately.

RETURNS: Returned merchandise is subject to a
restocking charge. We cannot accept merchandise
that has been used or damaged. Special made items
cannot be returned.

BLANKET ORDERS: In order to obtain the maxi-
mum quantity price bracket, blanket orders will be
accepted based on the following conditions.

- All blanket orders will be billed and shipped
upon release.
- All blanket orders must be in writing, and must
contain a statement guaranteeing complete shipment
of order.
- All blanket orders must be completed within
one year from the date of the order.

ORDER CANCELLATION: Purchase orders cannot
be canceled or amended without our consent.
Canceled orders can be subject to a cancellation
charge.



DIAMOND TOOL, INC.

43 Roger Williams Avenue
P.O. Box 16099
East Providence
Rhode Island 02916 USA

(401) 431-2220 (800) 777-6813 Fax (401) 431-2222



Some Industries We Serve

AUTOMOTIVE

Machining of engine blocks, heads, covers, pistons, valve bodies, brake cylinders, transmission cases, ceramic spark plugs and hard turning of gears.

AIRCRAFT

Machining of parts made of composites, super alloys and other difficult to machine materials.

MARINE ENGINES

Machining of all silica aluminum components.

JEWELRY

Flycutting and engraving on chains, watchcases, charms, rings and other jewelry.

WOODWORKING

For machining particle board, medium density fiberboard, composite materials such as plywood and laminates like melamine.

PLASTICS

Turning and forming of contact lens, plastic eyeglass lens and other plastic components requiring fine finishes.

RUBBER

Machining of abrasive rubber parts.

SPECIAL TOOLING TO YOUR SPECIFICATIONS

ARMATURE

Machining of armatures for fractional horsepower motors.

CERAMICS

Machining of presintered ceramic parts.

CARBIDE

Machining of presintered carbide parts and turning of hardened carbide header dies.

CARBON & GRAPHITE & COMPOSITES

Machining of abrasive carbon, graphite and composite components.

GRINDING & LAPPING

All types of wheel dressers for trueing and forming of grinding wheels and diamond compounds for finish lapping.

SEMICONDUCTOR

Tools for scribing, bonding and chip removal for the semiconductor industry.

SPECIAL SERVICES

Wire EDM

Ram EDM

Vacuum bonding

Conventional machine shop and braising

DIAMOND CUTTING TOOLS

J&M

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www.diamondtool.com e-mail: jm@diamondtool.com

