

\$21.93

HTC[®]

TOOL-CUTTER & MFG.

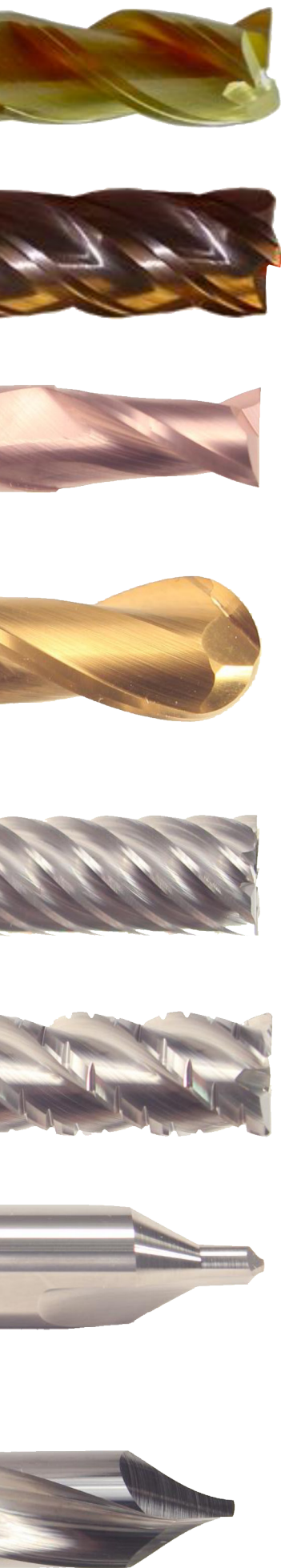
14TH EDITION



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DISTRI BUTOR LIST PRICING



T O O L - C U T T E R M A N U F A C T U R I N G

Our Promise:

What is your definition of the word quality? Is it high endurance? Outstanding performance? Here at HTC we craft our tools to uphold and maintain that interpretation of quality. We implement only the best raw use of complex geometries and specialized coatings ensures satisfaction for both you and your customer.

Corporations recognize the excellence of HTC's product not only across the continent but around the world as well.

Quality can also be defined as excellence, which is attributed to our customer service team. Our experienced and knowledgeable staff members are ready and eager to advise and assist our customers expediently.

We greatly appreciate the support afforded to us by our customers, and every day we do what we can to reciprocate it back. HTC encourages all customers to take advantage of our open door policy, and all visits to our facility are welcome with no appointment necessary.

HTC believes in building strong working relationships with our customers and keeping an open pathway for any comments or concerns, because part of perpetuating quality is a willingness to constantly improve. Forward thinking is on the daily agenda for the staff at HTC, but we are here to listen to our customers as well and take into account what you'd like to see from us. Supporting our customers is at the base of our company.

HTC, like most companies and corporations, arose from humble beginnings. It is for that reason that we offer our superior product at affordable prices, making it possible for every company, to be able to supply their customers with the best tool the market has to offer.

We take pride in our work here at HTC, and it is our pleasure to help facilitate the needs our customers whether it be a special tool, technical advice or economical pricing. You can depend on HTC, because quality is our foundation.

Thank you for your trust!

PROUDLY MADE IN THE U.S.A....



... A NAME YOU CAN TRUST.

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TOOL - CUTTER MANUFACTURING

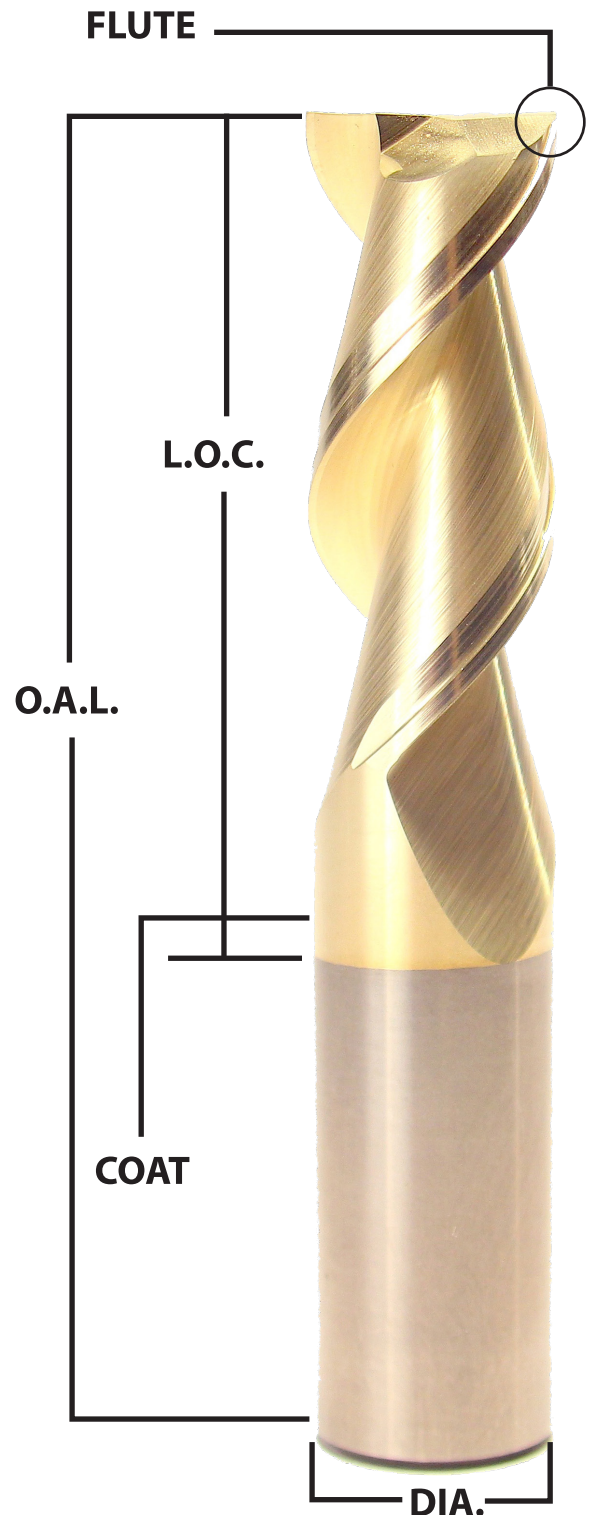
HTC is a company that attracts customers from not only the United States but also countries across the globe as well. It's a simple the fact that HTC has an inventory of over 19,000 product lines and a 98% fill rate right from stock. HTC can boast international prominence because of the quality of our tools, our efficiency and ever advancing technology.

Here at HTC, we manufacture tools made of only 100% American made materials. We are dedicated to our customers and uphold only the best quality products; we implement advanced geometries in the creation of every single cutting tool. Our experienced engineers are hands on in every single step of manufacturing process and ensure that our customers can rely upon.

We have a wide range and an abundance of machinery at our Michigan based facility. Considering that we have over 170 CNC machines and five coating machines, we have the capability to take an existing tool, spin a radius on it, coat and ship it all in one day. Because of this, HTC's efficiency has improved within the past year by 19.62% therefore; our customers also have the luxury of being able to order tools to their special specifications and received that tool in unprecedented time.

It is our mission at HTC to provide our customers with an experience that is both pleasant and convenient. Our website is readily available to all of the clientele with all full catalog, current pricing and online ordering capability. Our customer service team is also available and equipped to handle any need or concern that might arise Monday through Friday from 8:00am to 5:30 pm.

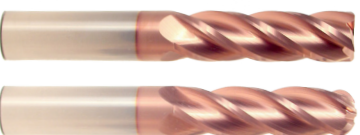
HTC is a company who prides itself on its superior quality and takes great measures to ensure that every customer has a premium tool they too can be proud of as well.



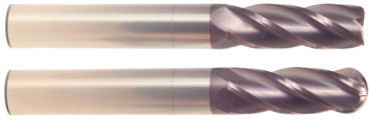
HTC is always inspecting our top of the line quality. We are holding and will continue maintaining the word “high quality” under our name. Whichever cutting tool for whatever application you may be looking for, we will always deliver a quality made cutting tool. This is why our line, HTC, is one of the most popular line of cutting tools in the world.



	TiN	HTC-Progressive	TiAlN	HTC Hard Coat	ZrN
Molecule	TiN-Titanium Nitride	TiCN-Titanium Carbo-Nitride	TiAlN-Titanium Alum-Nitride	AlTiN-Alum Titanium Nitride	ZrN-Zirconium Nitride
Nanohardness (Gpa)	24	32	32	38	20
Coefficient of Friction	0.55	0.2	0.6	0.7	0.4
Coating Thickness	1-7µm	1-8µm	2-0µm	2-2µm	1-9µm
Thermal Threshold	600°C	400°C	750°C	900°C	550°C
Color	Gold	Bronze	Dark Gray	Black	White-Gold
Characteristics and Primary Applications	cutting, forming, injection molding, tribological applications	interrupted cutting, milling and tapping, forming, stamping and punching	drilling, milling, reaming, turning, for stable finishing and roughing, for interrupted cuts	high heat resistance, for dry high speed machining, hard machining	reduces build up edges when machining aluminum and titanium alloys

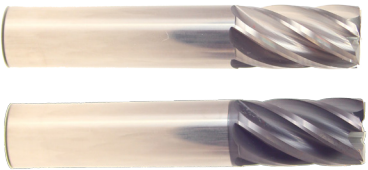
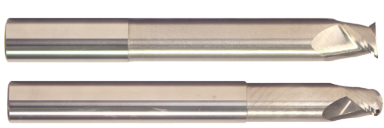
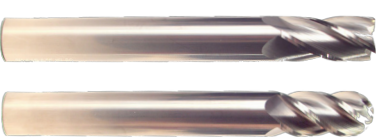
SERIES	IMAGE	PAGE	COATING	DESCRIPTION
120		1-2	UNCOATED	2-3-4 FLUTE STANDARD SQUARE END MILL
125		3-4	TiN COAT	2-3-4 FLUTE STANDARD SQUARE END MILL
127		5-6	HTC-PROGRESSIVE TiCN	2-3-4 FLUTE STANDARD SQUARE END MILL
130		7-8	HTC-HARD COAT AlTiN	2-3-4 FLUTE STANDARD SQUARE END MILL
135		9-10	UNCOATED	2-4 FLUTE STANDARD BALL NOSE END MILL
140		11-12	TiN COAT	2-4 FLUTE STANDARD BALL NOSE END MILL
143		13-14	HTC-PROGRESSIVE TiCN	2-4 FLUTE STANDARD BALL NOSE END MILL
145		15-16	HTC-HARD COAT AlTiN	2-4 FLUTE STANDARD BALL NOSE END MILL
150/155		17	UNCOATED	2-4 FLUTE LONG SQUARE AND LONG BALL NOSE END MILL
152/157		18	TiN COAT	2-4 FLUTE LONG SQUARE AND LONG BALL NOSE END MILL
154/159		19	HTC-PROGRESSIVE TiCN	2-4 FLUTE LONG SQUARE AND LONG BALL NOSE END MILL

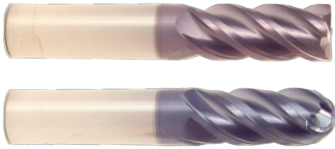
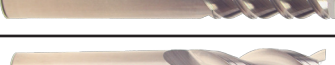
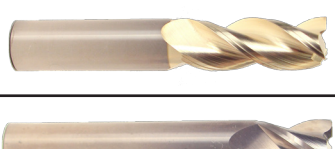
SOLID CARBIDE END MILLS

SERIES	IMAGE	PAGE	COATING	DESCRIPTION
160/165		20	HTC-HARD COAT AlTiN	2-4 FLUTE LONG END MILL-SQUARE AND BALL
170/175		21-22	UNCOATED	2-4 FLUTE EXTRA LONG END MILL SQUARE AND BALL
172/177		23-24	TiN COAT	2-4 FLUTE EXTRA LONG END MILL SQUARE AND BALL
174/179		25-26	HTC-PROGRESSIVE TiCN	2-4 FLUTE EXTRA LONG END MILL SQUARE AND BALL
180/185		27-28	HTC-HARD COAT AlTiN	2-4 FLUTE EXTRA LONG END MILL SQUARE AND BALL
100		29	UNCOATED	2-3-4 FLUTE STUB END MILL-SQUARE
105		30	UNCOATED	2-3-4 FLUTE STUB END MILL-BALL
107		31	TiN COAT	2-3-4 FLUTE STUB END MILL-SQUARE
109		32	TiN COAT	2-3-4 FLUTE STUB END MILL-BALL

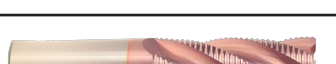
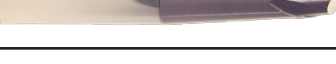
SOLID CARBIDE END MILLS

SERIES	IMAGE	PAGE	COATING	DESCRIPTION
SOLID CARBIDE END MILLS	111	33	HTC- PROGRESSIVE TiCN	2-3-4 FLUTE STUB END MILL-SQUARE
	110	34	HTC- HARD COAT AlTiN	2-3-4 FLUTE STUB END MILL-SQUARE
	115	35	HTC- HARD COAT AlTiN	2-3-4 FLUTE STUB END MILL-BALL
	190/195	36	UNCOATED	2-4 FLUTE DOUBLE END-STUB LENGTH SQUARE AND BALL
	197/199	37	TiN COAT	DOUBLE END-STUB LENGTH SQUARE AND BALL
	192/194	38	HTC- PROGRESSIVE TiCN	2-4 FLUTE DOUBLE END-STUB LENGTH SQUARE AND BALL
	200/205	39	HTC- HARD COAT AlTiN	2-4 FLUTE DOUBLE END-STUB LENGTH SQUARE AND BALL
	210/215	40	UNCOATED	2-4 FLUTE DOUBLE END-W/WELDON FLATS SQUARE AND BALL
	212/217	41	HTC- HARD COAT AlTiN	2-4 FLUTE DOUBLE END-W/WELDON FLAT SQUARE AND BALL

SERIES	IMAGE	PAGE	COATING	DESCRIPTION
SOLID CARBIDE END MILLS		42	UNCOATED	2-4 FLUTE SINGLE END-EXTRA-EXTRA LONG LENGTH SQUARE
			HTC-HARD COAT AITiN	
		43	UNCOATED	2-4 FLUTE SINGLE END-EXTRA-EXTRA LONG LENGTH BALL END
			HTC-HARD COAT AITiN	
		44	UNCOATED	2-4 FLUTE SINGLE END-STRAIGHT FLUTE
		44	UNCOATED	4 FLUTE SINGLE END-SQUARE END LEFT HAND
		45	UNCOATED	6 FLUTE SINGLE END- SQUARE
			HTC-HARD COAT AITiN	
		46	UNCOATED	2 FLUTE SINGLE END-LONG REACH-SQUARE AND BALL
			HTC-HARD COAT AITiN	
		47	UNCOATED	4 FLUTE SINGLE END-LONG REACH-4 FLUTE SQUARE AND BALL
			HTC-HARD COAT AITiN	
		48	UNCOATED	2-4 FLUTE SINGLE END-EXTRA LONG REACH - SQUARE AND BALL

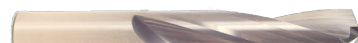
SOLID CARBIDE END MILLS	SERIES	IMAGE	PAGE	COATING	DESCRIPTION
	800/810		51-52	HTC-HARD COAT AlTiN	HTC HOT MILL SQUARE AND BALL
	815/820		53-54	HTC-HARD COAT AlTiN	HTC STUB HOT MILL SQUARE AND BALL
	822		55	HTC-HARD COAT AlTiN	HTC LONG REACH HOT MILL SQUARE
	782/783		56	UNCOATED	2 FLUTE BEEFY END MILL-SQUARE & BALL
	416		57	UNCOATED	2 FLUTE SPOON CUTTER-45°HELIX
				ZrN COAT	
	418		58	UNCOATED	2 FLUTE SPOON CUTTER- BALL END-45° HELIX
				ZrN COAT	
	422		58	UNCOATED	3-4 FLUTE SPOON CUTTER-60° HELIX
	410		59	UNCOATED	3 FLUTE SPOON CUTTER -38° HELIX
				ZrN COAT	
	412		60	UNCOATED	3 FLUTE SPOON CUTTER-35° HELIX
	414		60	HTC-HARD COAT AlTiN	3 FLUTE SPOON CUTTER-35° HELIX
	650		61-63	UNCOATED	3 FLUTE TAPERED END MILLS-C/C, SE

TOOL - CUTTER MANUFACTURING

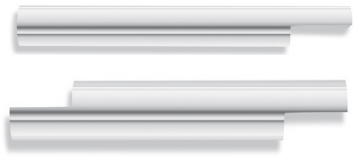
SERIES	IMAGE	PAGE	COATING	DESCRIPTION
		64	UNCOATED	5,8 & 12 FLUTE TOUGH MILL- 45° HELIX
350		65	UNCOATED	2-4 FLUTE CORNER RADIUS, .015,.032,.062,.093,.125
360		66	HTC-HARD COAT AlTiN	2-4 FLUTE CORNER RADIUS, .015,.032,.062,.093,.125
300		67	UNCOATED	4 FLUTE ROUGHING "HOG" HTC TURBO MILL
307		68	HTC- PROGRESSIVE TiCN	4 FLUTE ROUGHING "HOG" HTC TURBO MILL
310		69	HTC-HARD COAT AlTiN	4 FLUTE ROUGHING "HOG" HTC TURBO MILL
830		70	UNCOATED	3 FLUTE ROUGHING 45° HELIX- SINGLE END SQUARE
850		70	HTC-HARD COAT AlTiN	2 FLUTE PROFILING-SINGLE END BALL
833		71	UNCOATED HTC-HARD COAT AlTiN	3,4,6 FLUTE HOG MILL-MEDIUM PITCH KNUCKLE ROUGHER-25° HELIX
835		71	UNCOATED HTC-HARD COAT AlTiN	3 FLUTE HOG MILL-FINE KNUCKLE ROUGHER FOR ALUMINUM-35° HELIX
836		72	UNCOATED HTC-HARD COAT AlTiN	3,4,6 FLUTE HOG MILL-45° HELIX TRUNCATED ROUGHER FOR TITANIUM
837		72	UNCOATED HTC-HARD COAT AlTiN	5 FLUTE HOG MILL-45° HELIX FINE KNUCKLE ROUGHER FOR TITANIUM
380		73	HTC-HARD COAT AlTiN	5,6 FLUTE HIGH PERFORMANCE-45° HELIX SINGLE END
390		74	UNCOATED	HIGH PERFORMANCE 60° 3 FLUTE 45° 3 FLUTE 45° 2 FLUTE

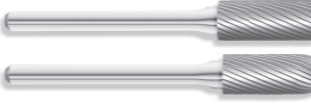
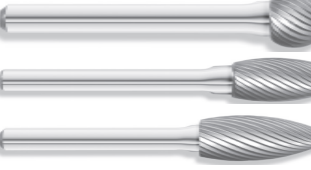
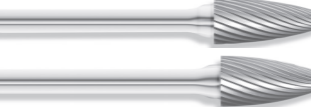
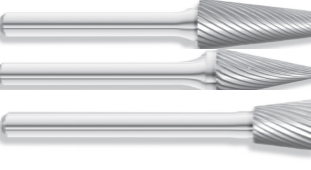
SOLID CARBIDE END MILLS

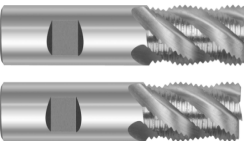
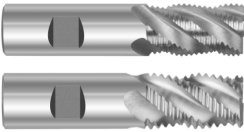
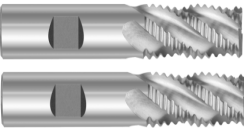
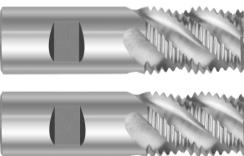
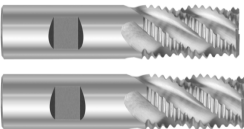
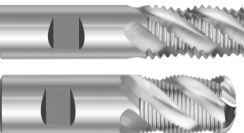
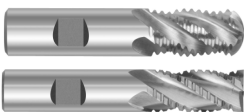
SERIES	IMAGE	PAGE	COATING	DESCRIPTION
SOLID CARBIDE END MILLS		75	UNCOATED	MINI MILL - 2 FLUTE, C/C, SE, 30° HELIX MICRO-MINIATURE 1/8" SHANK END MILLS
		76	UNCOATED	2-3-4 FLUTE METRIC END MILL- STANDARD LENGTH SINGLE END SQUARE
		77	TiN COAT	2-3-4 FLUTE METRIC END MILL- STANDARD LENGTH SINGLE END SQUARE
		78	HTC-PROGRESSIVE TiCN	2-3-4 FLUTE METRIC END MILL- STANDARD LENGTH SINGLE END SQUARE
		79	HTC-HARD COAT AlTiN	2-3-4 FLUTE METRIC END MILL- STANDARD LENGTH SINGLE END SQUARE
		80	UNCOATED	2-4 FLUTE METRIC END MILL-STANDARD LENGTH SINGLE END BALL
		81	TiN COAT	2-4 FLUTE METRIC END MILL-STANDARD LENGTH SINGLE END BALL
		82	HTC-PROGRESSIVE TiCN	2 -4 FLUTE METRIC END MILL-STANDARD LENGTH SINGLE END BALL
		83	HTC-HARD COAT AlTiN	2-4 FLUTE METRIC END MILL-STANDARD LENGTH SINGLE END BALL
		84	UNCOATED	2 -4 FLUTE METRIC END MILL-LONG & EXTRA LONG SINGLE END SQUARE
		85	TiN COAT	2-4 FLUTE METRIC END MILL-LONG & EXTRA LONG SINGLE END SQUARE
		86	HTC-HARD COAT AlTiN	2-4 FLUTE METRIC END MILL-LONG & EXTRA LONG SINGLE END SQUARE
		87	UNCOATED	JOBBER LENGTH-METRIC - 2 FLUTE
		88	UNCOATED	SCREW MACHINE - 135° POINT - METRIC
585 586 587		89	UNCOATED	SOLID CARBIDE CENTER DRILLS-60°,82°,90°

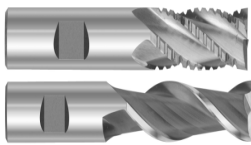
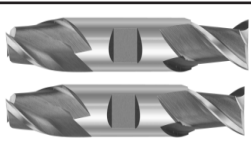
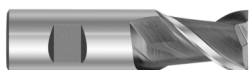
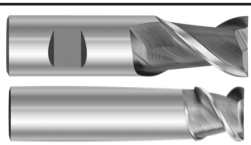
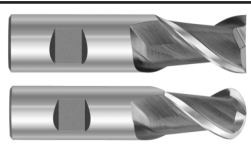
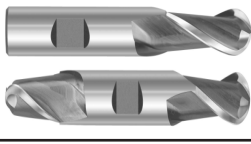
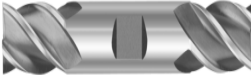
SERIES	IMAGE	PAGE	COATING	DESCRIPTION	
SOLID CARBIDE DRILLS	590 595		90	UNCOATED	SPADE DRILL/SPOTTING DRILL-60°-90°-120°
	500 505		91	UNCOATED HTC-HARD COAT AlTiN	2-4 FLUTE DRILL MILL-90° POINT
	550		92	UNCOATED	JOBBER LENGTH- FRACTIONAL SIZES
	552		93	UNCOATED	3 FLUTE JOBBER LENGTH-150° POINT -FRACTIONAL SIZES
	555		94	UNCOATED	JOBBER LENGTH -LETTER SIZES
	553		95	UNCOATED	3 FLUTE JOBBER LENGTH-150° POINT -LETTER SIZES
	560		96	UNCOATED	JOBBER LENGTH-NUMBER SIZES
	554		97	UNCOATED	3 FLUTE JOBBER LENGTH-150° POINT- NUMBER SIZES
	565		98	UNCOATED	SCREW MACHINE-135° SPLIT POINT- FRACTIONAL SIZES
	570		99	UNCOATED	SCREW MACHINE-135° SPLIT POINT- LETTER SIZES
	575		100	UNCOATED	SCREW MACHINE -135°SPLIT POINT- NUMBER SIZES
	580		101	UNCOATED	STRAIGHT FLUTE-140° POINT- FRACTIONAL SIZES
REAMERS	600		102	UNCOATED	CHUCKING REAMER- FRACTIONAL SIZES
	605		103	UNCOATED	CHUCKING REAMER- LETTER SIZES

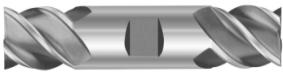
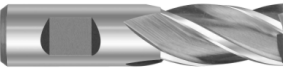
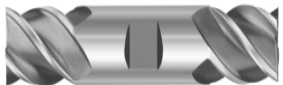
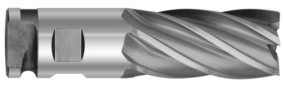
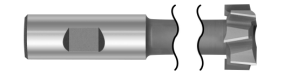
TOOL - CUTTER MANUFACTURING

SERIES	IMAGE	PAGE	COATING	DESCRIPTION
610		104	UNCOATED	REAMERS-CHUCKING-UNCOATED NUMBER SIZES
COUNTERSINKS & BURRS		105-106		SOLID CARBIDE BURRS
		107-113		BLUEPRINTS
		115-116		GENERAL INFORMATION
		117		CARBIDE ROUTERS
		118	UNCOATED	CENTERLESS GROUND CARBIDE ROUNDS
		119	UNCOATED	CENTER LAPS/BORING TOOLS
		120	UNCOATED	CARBIDE SLITTING SAWS
		121	UNCOATED	CARBIDE THREAD MILLS/THIN DISCS
		122	UNCOATED	CARBIDE KEYSSET CUTTERS
		123	UNCOATED	CARBIDE SINGLE FLUTE COUNTERSINKS
		124	UNCOATED	CARBIDE 3 FLUTE COUNTERSINKS
		125	UNCOATED	CARBIDE 6 FLUTE COUNTERSINKS
		126	UNCOATED	H.S.S. CHATTERLESS COUNTERSINKS SINGLE FLUTE
		127	UNCOATED	H.S.S. CHATTERLESS COUNTERSINKS 3 FLUTE

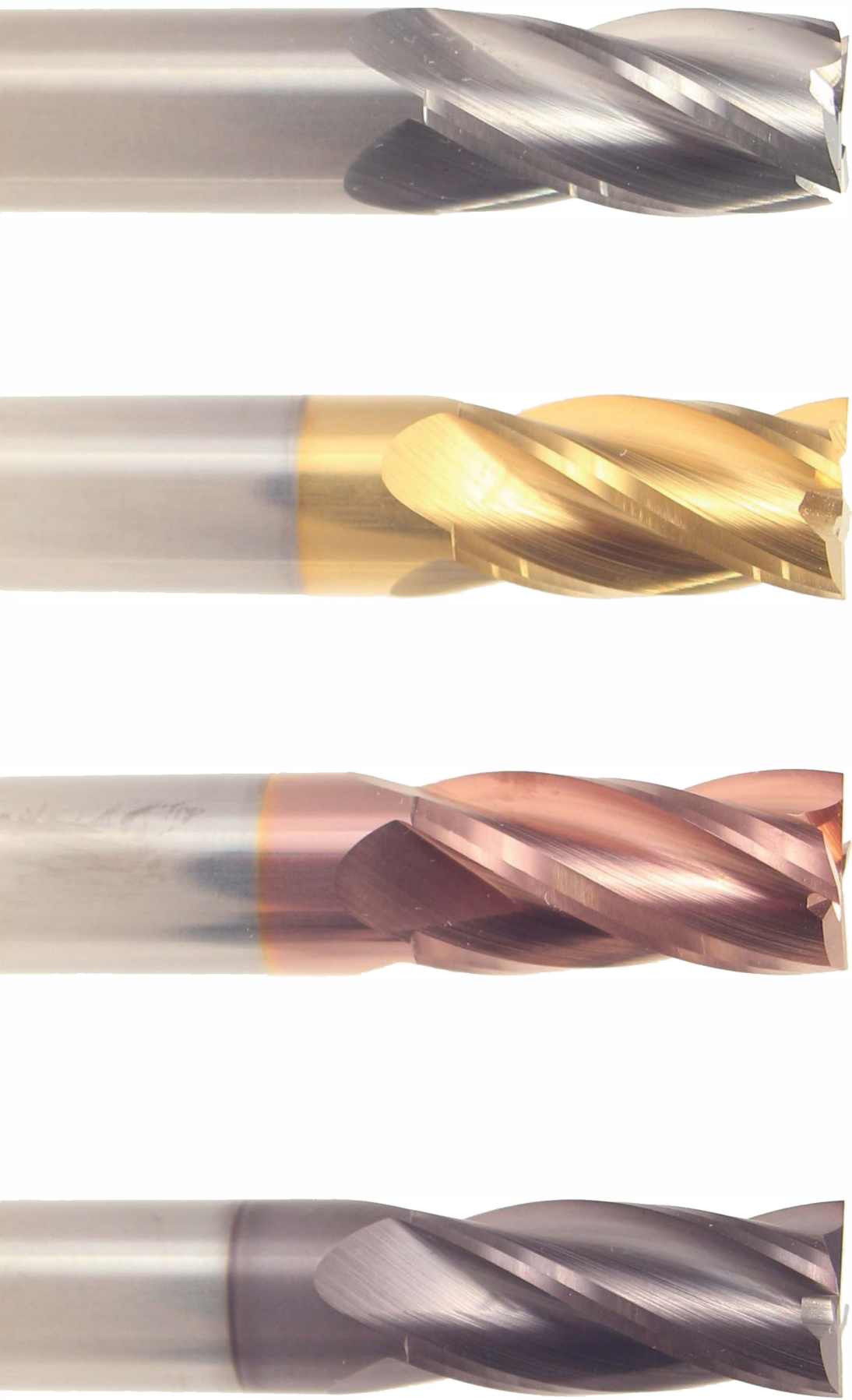
SERIES	IMAGE	PAGE	COATING	DESCRIPTION
COUNTERSINKS & BURRS		128-129	UNCOATED	H.S.S. CHATTERLESS COUNTERSINKS 6 FLUTE DOUBLE END CARBIDE
		130	UNCOATED	MICRO STOP COUNTERSINKS
		131	UNCOATED	OUTSIDED CHAMFERING MILLS & SHANKS STRAIGHT THREADED
		132	UNCOATED	ASSORTED CARBIDE BURRS 1/8 SHANK
		133	UNCOATED	CARBIDE BURRS 1/4" DIAMETER/1/8" SHANK
		133	UNCOATED	CARBIDE BURRS 3/16 DIAMETER & SHANK 2" OAL
		134	UNCOATED	CARBIDE BURRS-CYLINDRIAL SHAPE & CYLINDRICAL RADIUS SHAPE
		135	UNCOATED	CARBIDE BURRS BALL SHAPE/EGG SHAPE/FLAME SHAPE
		136	UNCOATED	CARBIDE BURRS TREE-RADIUS SHAPE/ TREE-POINTED SHAPE
		137	UNCOATED	CARBIDE BURRS CONE-RADIUS END/ CONE-FLAT END & INVERTED CONE
		138	UNCOATED	CARBIDE BURRS TAPERS 60°/ 90° INCLUDED ANGLE CARBIDE GRINDING BURRS 45° LEAD ANGLE
		139	UNCOATED	SOLID CARBIDE STEADY CUT BURRS, CYLINDER SHAPE, CYLINDER RADIUS END, BALL SHAPE, OVAL SHAPE, TREE RADIUS, 14° TAPER RADIUS END
		140-142	UNCOATED	H.S.S. BURRS 1/4" SHANK, CYLINDRICAL SHAPE A, BALL SHAPE B, SHAPE N, CYLINDRICAL RADIUS END C, OLIVE SHAPE Q, TREE ROUNDED SHAPER, TREE POINTED SHAPE T, FLAME SHAPE FL, FLATE SHAPE H, RADIUS CONE

SERIES	IMAGE	PAGE	COATING	DESCRIPTION
COBALT / H.S.S.		143	UNCOATED	H.S.S. 1/8 ROTARY CUTTERS, HSS 1/4" SHANK • BI SHAPE, 4" OAL, INTERNAL DEBURRING CUTTERS
		144-145	UNCOATED	H.S.S. 1/8 SHANK CUTTERS & 1 1/2" OAL
		146	UNCOATED	ROTARY CUTTER SETS
		148	UNCOATED	FEED & SPEED SELECTOR FINISHING & ROUGHING END MILL
		149	UNCOATED	COBALT-3 FLUTE ALUMINUM COARSE KNUCKLE
		150-151	UNCOATED *	COBALT -FINE PITCH KNUCKLE NON C/C M-42
		151	UNCOATED *	FINE & COARSE COBALT- PITCH KNUCKLE CENTER CUTTING
		152	UNCOATED *	COBALT-COARSE PITCH KNUCKLE C/C & NON C/C "M-42 COBALT
		153	UNCOATED *	COBALT-COARSE PITCH KNUCKLE NON C/C M-42 COBALT
		154	UNCOATED *	COBALT-COARSE PITCH KNUCKLE NON C/C-M-42 & M-7 HSS
		155	UNCOATED *	COARSE PITCH KNUCKLE NON C/C M-7 HSS/BALL END FINE PITCH KNUCKLE M-42 COBALT
		156	UNCOATED *	COARSE PITCH KNUCKLE-BALL END , ROUGH & FINISH TRUNCATED NON C/C M-42 COBALT

SERIES	IMAGE	PAGE	COATING	DESCRIPTION
COBALT / H.S.S.		157	UNCOATED *	ROUGH & FINISH TRUNCATED NON C/C M 42 COBALT & 2 FLUTE ALUMINUM 37° HELIX HSS
		158	UNCOATED *	2 FLUTE ALUMINUM 37° HELIX M-7 HSS SQUARE & BALL END
		159	UNCOATED *	DOUBLE END-2 FLUTE M-42 COBALT & M-7 HSS
		160	UNCOATED *	2 FLUTE HEAVY DUTY W. SURE LOCK SHANK M-7 HSS & 2 FLUTE "METRIC DIA. M-7 HSS & 2 FLUTE SPIRAL M-7 HSS
		161	UNCOATED *	2 FLUTE STANDARD M-42COBALT & M-7 HSS
		162-163	UNCOATED *	2 FLUTE STANDARD-M-7 HSS
		164	UNCOATED *	2 FLUTE STANDARD M-7 HSS , M-42 COBALT & 2 FLUTE LONG & EXTRA LONG REACH, M-7 HSS, M-42 COBALT
		165	UNCOATED *	2 FLUTE KEYWAY TOLERANCE M-7 HSS & 2 FLUTE STANDARD BALL END M-7 HS, M-42 COBALT
		166	UNCOATED *	2 FLUTE-STANDARD BALL END M-42 COBALT & 2 FLUTE DOUBLE END BALLM-7 HSS & 2 FLUTE BRIDGEPORT END MILL M-7 HSS
		167	UNCOATED *	4 FLUTE DOUBLE END NON C/C M-7 HSS & 4,6 FLUTE STANDARD-CENTER CUTTING M-7 HSS

SERIES	IMAGE	PAGE	COATING	DESCRIPTION
COBALT / H.S.S.		168	UNCOATED *	4 FLUTE DOUBLE END -CENTER CUTTING M-7 HSS & 4,6 FLUTE STANDARD-CENTER CUTTING M-7 HSS
		169-170	UNCOATED *	4 OR MORE FLUTE STANDARD-C/C M-7 HSS & M-42 COBALT
		171	UNCOATED *	4 FLUTE DOUBLE END-CENTER CUTTING M-42 COBALT & 4 FLUTE-METRIC FLUTES NON C/C M-42 COBALT
		172-173	UNCOATED *	4 OR MORE FLUTES-HEAVY DUTY SURE LOCK M-7 HSS & M-42 COBALT CENTER CUTTING
		173-174	UNCOATED *	4 & 6 FLUTE-BALL END-M-7 HSS, M-42 COBALT
		175	UNCOATED *	4 FLUTE DOUBLE END BALL M-7 HSS & 4 OR MORE FLUTE NON C/C M-7 HSS
		176-178	UNCOATED *	4 OR MORE FLUTE STANDARD- NON C/C M-7 HSS, M-42 COBALT
		178	UNCOATED *	RIGHT HAND CUT- LEFT HAND SPIRAL
		179	UNCOATED *	TOP OF PAGE 4,6 & 8 FLUTE BRIGEPORT NON C/C M-7 HSS
		179	UNCOATED *	MIDDLE OF PAGE T-SLOT CUTTERS M-7 HSS & M-42 COBALT
		179	UNCOATED *	BOTTOM OF PAGE 4 FLUTE DOUBLE END MINATURE PM-30 COBALT
		180-181	UNCOATED *	4 FLUTE & 2FLUTE DOUBLE END MINIA-TURE PM-30 COBALT
		181	UNCOATED *	CORNER ROUNDERS "FRACTIONAL RADIUS" M-7 HSS & M-42 COBALT
		182-187	UNCOATED *	TAPERED END MILL M-7 HSS
		188		DECIMAL CHART
		189-190		FEED & SPEEDS

HTG-[®]END MILLS



SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END SQUARE

2-3-4 FLUTE

UNCOATED



	CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8	1/64"	1/16"	1-1/2"	120-2015	120-3015	120-4015	\$11.20
	1/32"	3/32"	1-1/2"	120-2031	120-3031	120-4031	\$6.00
	3/64"	1/8"	1-1/2"	120-2046	120-3046	120-4046	\$6.00
	1/16"	3/16"	1-1/2"	120-2062	120-3062	120-4062	\$4.80
	5/64"	1/4"	1-1/2"	120-2078	120-3078	120-4078	\$4.50
	3/32"	3/8"	1-1/2"	120-2093	120-3093	120-4093	\$4.20
	7/64"	3/8"	1-1/2"	120-2109	120-3109	120-4109	\$4.20
	1/8"	1/2"	1-1/2"	120-2125	120-3125	120-4125	\$4.00
3/16	9/64"	9/16"	2"	120-2140	120-3140	120-4140	\$9.30
	5/32"	9/16"	2"	120-2156	120-3156	120-4156	\$8.90
	11/64"	9/16"	2"	120-2171	120-3171	120-4171	\$9.30
	3/16"	5/8"	2"	120-2187	120-3187	120-4187	\$8.60
1/4	13/64"	5/8"	2-1/2"	120-2203	120-3203	120-4203	\$11.78
	7/32"	5/8"	2-1/2"	120-2218	120-3218	120-4218	\$10.40
	15/64"	3/4"	2-1/2"	120-2234	120-3234	120-4234	\$11.78
	1/4"	3/4"	2-1/2"	120-2250	120-3250	120-4250	\$8.50

	CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
5/16	17/64"	7/8"	2-1/2"	120-2265	120-3265	120-4265	\$14.10
	9/32"	7/8"	2-1/2"	120-2281	120-3281	120-4281	\$12.90
	19/64"	7/8"	2-1/2"	120-2296	120-3296	120-4296	\$14.10
	5/16"	7/8"	2-1/2"	120-2312	120-3312	120-4312	\$11.50
3/8	21/64"	7/8"	2-1/2"	120-2328	120-3328	120-4328	\$16.30
	11/32"	7/8"	2-1/2"	120-2343	120-3343	120-4343	\$15.00
	23/64"	7/8"	2-1/2"	120-2359	120-3359	120-4359	\$16.30
	3/8"	7/8"	2-1/2"	120-2375	120-3375	120-4375	\$14.60
7/16	25/64"	7/8"	2-1/2"	120-2390	120-3390	120-4390	\$25.50
	13/32"	7/8"	2-1/2"	120-2406	120-3406	120-4406	\$25.00
	27/64"	7/8"	2-1/2"	120-2421	120-3421	120-4421	\$24.00
	7/16"	1"	2-1/2"	120-2437	120-3437	120-4437	\$21.00
1/2	29/64"	1"	3"	120-2453	120-3453	120-4453	\$28.20
	15/32"	1"	3"	120-2468	120-3468	120-4468	\$27.50
	31/64"	1"	3"	120-2484	120-3484	120-4484	\$26.50
	1/2"	1"	3"	120-2500	120-3500	120-4500	\$25.00

SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END SQUARE

2-3-4 FLUTE

UNCOATED



	CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
9/16	33/64"	1-1/4"	3-1/2"	120-2515	120-3515	120-4515	\$56.30
	17/32"	1-1/4"	3-1/2"	120-2531	120-3531	120-4531	\$55.90
	35/64"	1-1/4"	3-1/2"	120-2546	120-3546	120-4546	\$53.00
	9/16"	1-1/4"	3-1/2"	120-2562	120-3562	120-4562	\$49.00
5/8	37/64"	1-1/4"	3-1/2"	120-2578	120-3578	120-4578	\$58.20
	19/32"	1-1/4"	3-1/2"	120-2593	120-3593	120-4593	\$56.00
	39/64"	1-1/4"	3-1/2"	120-2609	120-3609	120-4609	\$54.00
	5/8"	1-1/4"	3-1/2"	120-2625	120-3625	120-4625	\$51.00
3/4	41/64"	1-1/2"	4"	120-2640	120-3640	120-4640	\$85.72
	21/32"	1-1/2"	4"	120-2656	120-3656	120-4656	\$85.00
	43/64"	1-1/2"	4"	120-2671	120-3671	120-4671	\$84.00
	11/16"	1-1/2"	4"	120-2687	120-3687	120-4687	\$74.00
	45/64"	1-1/2"	4"	120-2703	120-3703	120-4703	\$79.00
	23/32"	1-1/2"	4"	120-2718	120-3718	120-4718	\$79.00
	47/64"	1-1/2"	4"	120-2734	120-3734	120-4737	\$79.00
	3/4"	1-1/2"	4"	120-2750	120-3750	120-4750	\$71.00

	CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
7/8	49/64"	1-1/2"	4"	120-2765	120-3765	120-4765	\$143.00
	25/32"	1-1/2"	4"	120-2781	120-3781	120-4781	\$143.00
	51/64"	1-1/2"	4"	120-2796	120-3796	120-4796	\$143.00
	13/16"	1-1/2"	4"	120-2812	120-3812	120-4812	\$143.00
1"	53/64"	1-1/2"	4"	120-2828	120-3828	120-4828	\$138.60
	27/32"	1-1/2"	4"	120-2843	120-3843	120-4843	\$138.60
	55/64"	1-1/2"	4"	120-2859	120-3859	120-4859	\$138.60
	7/8"	1-1/2"	4"	120-2875	120-3875	120-4875	\$126.00
1"	57/64"	1-1/2"	4"	120-2890	120-3890	120-4890	\$147.20
	29/32"	1-1/2"	4"	120-2906	120-3906	120-4906	\$147.20
	59/64"	1-1/2"	4"	120-2921	120-3921	120-4921	\$147.20
	15/16"	1-1/2"	4"	120-2937	120-3937	120-4937	\$140.80
	61/64"	1-1/2"	4"	120-2953	120-3953	120-4953	\$140.80
	31/32"	1-1/2"	4"	120-2968	120-3968	120-4968	\$140.80
	63/64"	1-1/2"	4"	120-2984	120-3984	120-4984	\$140.80
	1"	1-1/2"	4"	120-2100	120-3100	120-4100	\$128.00

SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END SQUARE

2-3-4 FLUTE

TIN COATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/64"	1/16"	1-1/2"	125-2015	125-3015	125-4015	\$7.30
1/32"	3/32"	1-1/2"	125-2031	125-3031	125-4031	\$6.90
3/64"	1/8"	1-1/2"	125-2046	125-3046	125-4046	\$6.90
1/16"	3/16"	1-1/2"	125-2062	125-3062	125-4062	\$5.70
5/64"	1/4"	1-1/2"	125-2078	125-3078	125-4078	\$5.08
3/32"	3/8"	1-1/2"	125-2093	125-3093	125-4093	\$5.10
7/64"	3/8"	1-1/2"	125-2109	125-3109	125-4109	\$5.00
1/8"	1/2"	1-1/2"	125-2125	125-3125	125-4125	\$4.90
9/64"	9/16"	2"	125-2140	125-3140	125-4140	\$10.34
5/32"	9/16"	2"	125-2156	125-3156	125-4156	\$10.20
11/64"	9/16"	2"	125-2171	125-3171	125-4171	\$10.22
3/16"	5/8"	2"	125-2187	125-3187	125-4187	\$9.90
13/64"	5/8"	2-1/2"	125-2203	125-3203	125-4203	\$13.66
7/32"	5/8"	2-1/2"	125-2218	125-3218	125-4218	\$12.70
15/64"	3/4"	2-1/2"	125-2234	125-3234	125-4234	\$13.50
1/4"	3/4"	2-1/2"	125-2250	125-3250	125-4250	\$12.50

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
17/64"	7/8"	2-1/2"	125-2265	125-3265	125-4265	\$15.92
9/32"	7/8"	2-1/2"	125-2281	125-3281	125-4281	\$15.50
19/64"	7/8"	2-1/2"	125-2296	125-3296	125-4296	\$15.68
5/16"	7/8"	2-1/2"	125-2312	125-3312	125-4312	\$15.20
21/64"	7/8"	2-1/2"	125-2328	125-3328	125-4328	\$18.52
11/32"	7/8"	2-1/2"	125-2343	125-3343	125-4343	\$18.00
23/64"	7/8"	2-1/2"	125-2359	120-3359	125-4359	\$17.86
3/8"	1"	2-1/2"	125-2375	120-3375	125-4375	\$17.50
25/64"	1"	2-1/2"	125-2390	120-3390	125-4390	\$31.50
13/32"	1"	2-1/2"	125-2406	120-3406	125-4406	\$31.00
27/64"	1"	2-1/2"	125-2421	120-3421	125-4421	\$30.00
7/16"	1"	2-1/2"	125-2437	120-3437	125-4437	\$30.00
29/64"	1"	3"	125-2453	120-3453	125-4453	\$33.96
15/32"	1"	3"	125-2468	120-3468	125-4468	\$33.88
31/64"	1"	3"	125-2484	120-3484	125-4484	\$33.06
1/2"	1"	3"	125-2500	120-3500	125-4500	\$30.20

SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END SQUARE

2-3-4 FLUTE

TIN COATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
33/64"	1-1/4"	3-1/2"	125-2515	125-3515	125-4515	\$74.44
17/32"	1-1/4"	3-1/2"	125-2531	125-3531	125-4531	\$72.74
35/64"	1-1/4"	3-1/2"	125-2546	125-3546	125-4546	\$83.56
9/16"	1-1/4"	3-1/2"	125-2562	125-3562	125-4562	\$58.30
37/64"	1-1/4"	3-1/2"	125-2578	125-3578	125-4578	\$72.00
19/32"	1-1/4"	3-1/2"	125-2593	125-3593	125-4593	\$70.36
39/64"	1-1/4"	3-1/2"	125-2609	125-3609	125-4609	\$68.32
5/8"	1-1/4"	3-1/2"	125-2625	125-3625	125-4625	\$57.60
41/64"	1-1/2"	4"	125-2640	125-3640	125-4640	\$102.30
21/32"	1-1/2"	4"	125-2656	125-3656	125-4656	\$100.90
43/64"	1-1/2"	4"	125-2671	125-3671	125-4671	\$99.34
11/16"	1-1/2"	4"	125-2687	125-3687	125-4687	\$95.70
45/64"	1-1/2"	4"	125-2703	125-3703	125-4703	\$94.12
23/32"	1-1/2"	4"	125-2718	125-3718	125-4718	\$93.18
47/64"	1-1/2"	4"	125-2734	125-3734	125-4737	\$92.40
3/4"	1-1/2"	4"	125-2750	125-3750	125-4750	\$82.80

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
49/64"	1-1/2"	4"	125-2765	125-3765	125-4765	\$159.06
25/32"	1-1/2"	4"	125-2781	125-3781	125-4781	\$158.18
51/64"	1-1/2"	4"	125-2796	125-3796	125-4796	\$157.30
13/16"	1-1/2"	4"	125-2812	125-3812	125-4812	\$156.20
53/64"	1-1/2"	4"	125-2828	125-3828	125-4828	\$156.98
27/32"	1-1/2"	4"	125-2843	125-3843	125-4843	\$156.68
55/64"	1-1/2"	4"	125-2859	125-3859	125-4859	\$156.20
7/8"	1-1/2"	4"	125-2875	125-3875	125-4875	\$140.60
57/64"	1-1/2"	4"	125-2890	125-3890	125-4890	\$167.06
29/32"	1-1/2"	4"	125-2906	125-3906	125-4906	\$163.90
59/64"	1-1/2"	4"	125-2921	125-3921	125-4921	\$161.70
15/16"	1-1/2"	4"	125-2937	125-3937	125-4937	\$158.40
61/64"	1-1/2"	4"	125-2953	125-3953	125-4953	\$160.56
31/32"	1-1/2"	4"	125-2968	125-3968	125-4968	\$159.56
63/64"	1-1/2"	4"	125-2984	125-3984	125-4984	\$158.40
1"	1-1/2"	4"	125-2100	125-3100	125-4100	\$142.60

SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END SQUARE

2-3-4 FLUTE

TICN COAT-HTC PROGRESSIVE COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	3/32"	1-1/2"	127-2031	127-3031	127-4031	\$7.55
3/64"	1/8"	1-1/2"	127-2046	127-3046	127-4046	\$7.55
1/16"	3/16"	1-1/2"	127-2062	127-3062	127-4062	\$6.38
5/64"	1/4"	1-1/2"	127-2078	127-3078	127-4078	\$6.21
3/32"	3/8"	1-1/2"	127-2093	127-3093	127-4093	\$5.80
7/64"	3/8"	1-1/2"	127-2109	127-3109	127-4109	\$5.82
1/8"	1/2"	1-1/2"	127-2125	127-3125	127-4125	\$5.61
9/64"	9/16"	2"	127-2140	127-3140	127-4140	\$12.01
5/32"	9/16"	2"	127-2156	127-3156	127-4156	\$11.16
11/64"	9/16"	2"	127-2171	127-3171	127-4171	\$11.60
3/16"	5/8"	2"	127-2187	127-3187	127-4187	\$10.86
13/64"	5/8"	2-1/2"	127-2203	127-3203	127-4203	\$16.04
7/32"	5/8"	2-1/2"	127-2218	127-3218	127-4218	\$14.61
15/64"	3/4"	2-1/2"	127-2234	127-3234	127-4234	\$15.83
1/4"	3/4"	2-1/2"	127-2250	127-3250	127-4250	\$12.77

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
17/64"	7/8"	2-1/2"	127-2265	127-3265	127-4265	\$19.34
9/32"	7/8"	2-1/2"	127-2281	127-3281	127-4281	\$17.46
19/64"	7/8"	2-1/2"	127-2296	127-3296	127-4296	\$18.70
5/16"	7/8"	2-1/2"	127-2312	127-3312	127-4312	\$17.52
21/64"	7/8"	2-1/2"	127-2328	127-3328	127-4328	\$23.12
11/32"	7/8"	2-1/2"	127-2343	127-3343	127-4343	\$20.91
23/64"	7/8"	2-1/2"	127-2359	127-3359	127-4359	\$21.09
3/8"	1"	2-1/2"	127-2375	127-3375	127-4375	\$20.53
25/64"	1"	2-1/2"	127-2390	127-3390	127-4390	\$31.04
13/32"	1"	2-1/2"	127-2406	127-3406	127-4406	\$30.56
27/64"	1"	2-1/2"	127-2421	127-3421	127-4421	\$29.29
7/16"	1"	2-1/2"	127-2437	127-3437	127-4437	\$29.47
29/64"	1"	3"	127-2453	127-3453	127-4453	\$36.76
15/32"	1"	3"	127-2468	127-3468	127-4468	\$36.38
31/64"	1"	3"	127-2484	127-3484	127-4484	\$35.89
1/2"	1"	3"	127-2500	127-3500	127-4500	\$33.35

SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END SQUARE

2-3-4 FLUTE

TICN COAT-HTC PROGRESSIVE COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
33/64"	1-1/4"	3-1/2"	127-2515	127-3515	127-4515	\$78.90
17/32"	1-1/4"	3-1/2"	127-2531	127-3531	127-4531	\$77.21
35/64"	1-1/4"	3-1/2"	127-2546	127-3546	127-4546	\$72.91
9/16"	1-1/4"	3-1/2"	127-2562	127-3562	127-4562	\$61.73
37/64"	1-1/4"	3-1/2"	127-2578	127-3578	127-4578	\$74.22
19/32"	1-1/4"	3-1/2"	127-2593	127-3593	127-4593	\$72.91
39/64"	1-1/4"	3-1/2"	127-2609	127-3609	127-4609	\$71.53
5/8"	1-1/4"	3-1/2"	127-2625	127-3625	127-4625	\$63.67
41/64"	1-1/2"	4"	127-2640	127-3640	127-4640	\$98.01
21/32"	1-1/2"	4"	127-2656	127-3656	127-4656	\$96.42
43/64"	1-1/2"	4"	127-2671	127-3671	127-4671	\$96.22
11/16"	1-1/2"	4"	127-2687	127-3687	127-4687	\$93.90
45/64"	1-1/2"	4"	127-2703	127-3703	127-4703	\$95.16
23/32"	1-1/2"	4"	127-2718	127-3718	127-4718	\$94.48
47/64"	1-1/2"	4"	127-2734	127-3734	127-4737	\$94.22
3/4"	1-1/2"	4"	127-2750	127-3750	127-4750	\$85.09

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
49/64"	1-1/2"	4"	127-2765	127-3765	127-4765	\$174.99
25/32"	1-1/2"	4"	127-2781	127-3781	127-4781	\$174.25
51/64"	1-1/2"	4"	127-2796	127-3796	127-4796	\$173.49
13/16"	1-1/2"	4"	127-2812	127-3812	127-4812	\$170.72
53/64"	1-1/2"	4"	127-2828	127-3828	127-4828	\$171.79
27/32"	1-1/2"	4"	127-2843	127-3843	127-4843	\$171.26
55/64"	1-1/2"	4"	127-2859	127-3859	127-4859	\$170.72
7/8"	1-1/2"	4"	127-2875	127-3875	127-4875	\$150.60
57/64"	1-1/2"	4"	127-2890	127-3890	127-4890	\$176.50
29/32"	1-1/2"	4"	127-2906	127-3906	127-4906	\$175.47
59/64"	1-1/2"	4"	127-2921	127-3921	127-4921	\$174.46
15/16"	1-1/2"	4"	127-2937	127-3937	127-4937	\$170.72
61/64"	1-1/2"	4"	127-2953	127-3953	127-4953	\$169.65
31/32"	1-1/2"	4"	127-2968	127-3968	127-4968	\$168.57
63/64"	1-1/2"	4"	127-2984	127-3984	127-4984	\$168.40
1"	1-1/2"	4"	127-2100	127-3100	127-4100	\$152.54

SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END SQUARE

2-3-4 FLUTE

ALTIN COATED - **HTC** HARD COAT

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	3/32"	1-1/2"	130-2031	130-3031	130-4031	\$7.78
3/64"	1/8"	1-1/2"	130-2046	130-3046	130-4046	\$7.78
1/16"	3/16"	1-1/2"	130-2062	130-3062	130-4062	\$6.58
5/64"	1/4"	1-1/2"	130-2078	130-3078	130-4078	\$6.40
3/32"	3/8"	1-1/2"	130-2093	130-3093	130-4093	\$5.98
7/64"	3/8"	1-1/2"	130-2109	130-3109	130-4109	\$6.00
1/8"	1/2"	1-1/2"	130-2125	130-3125	130-4125	\$5.78
9/64"	9/16"	2"	130-2140	130-3140	130-4140	\$12.38
5/32"	9/16"	2"	130-2156	130-3156	130-4156	\$11.50
11/64"	9/16"	2"	130-2171	130-3171	130-4171	\$11.96
3/16"	5/8"	2"	130-2187	130-3187	130-4187	\$11.20
13/64"	5/8"	2-1/2"	130-2203	130-3203	130-4203	\$16.54
7/32"	5/8"	2-1/2"	130-2218	130-3218	130-4218	\$15.06
15/64"	3/4"	2-1/2"	130-2234	130-3234	130-4234	\$16.32
1/4"	3/4"	2-1/2"	130-2250	130-3250	130-4250	\$13.16

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
17/64"	7/8"	2-1/2"	130-2265	130-3265	130-4265	\$19.94
9/32"	7/8"	2-1/2"	130-2281	130-3281	130-4281	\$18.56
19/64"	7/8"	2-1/2"	130-2296	130-3296	130-4296	\$19.28
5/16"	7/8"	2-1/2"	130-2312	130-3312	130-4312	\$18.06
21/64"	7/8"	2-1/2"	130-2328	130-3328	130-4328	\$23.84
11/32"	7/8"	2-1/2"	130-2343	130-3343	130-4343	\$21.56
23/64"	7/8"	2-1/2"	130-2359	130-3359	130-4359	\$21.74
3/8"	7/8"	2-1/2"	130-2375	130-3375	130-4375	\$21.16
25/64"	7/8"	2-1/2"	130-2390	130-3390	130-4390	\$32.00
13/32"	7/8"	2-1/2"	130-2406	130-3406	130-4406	\$31.50
27/64"	7/8"	2-1/2"	130-2421	130-3421	130-4421	\$30.20
7/16"	1"	2-1/2"	130-2437	130-3437	130-4437	\$30.38
29/64"	1"	3"	130-2453	130-3453	130-4453	\$37.90
15/32"	1"	3"	130-2468	130-3468	130-4468	\$37.50
31/64"	1"	3"	130-2484	130-3484	130-4484	\$37.00
1/2"	1"	3"	130-2500	130-3500	130-4500	\$34.38

SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END SQUARE
2-3-4 FLUTE

ALTIN COATED - **HTC** HARD COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
33/64"	1-1/4"	3-1/2"	130-2515	130-3515	130-4515	\$81.34
17/32"	1-1/4"	3-1/2"	130-2531	130-3531	130-4531	\$79.60
35/64"	1-1/4"	3-1/2"	130-2546	130-3546	130-4546	\$75.16
9/16"	1-1/4"	3-1/2"	130-2562	130-3562	130-4562	\$63.64
37/64"	1-1/4"	3-1/2"	130-2578	130-3578	130-4578	\$76.52
19/32"	1-1/4"	3-1/2"	130-2593	130-3593	130-4593	\$75.16
39/64"	1-1/4"	3-1/2"	130-2609	130-3609	130-4609	\$73.74
5/8"	1-1/4"	3-1/2"	130-2625	130-3625	130-4625	\$65.64
41/64"	1-1/2"	4"	130-2640	130-3640	130-4640	\$101.04
21/32"	1-1/2"	4"	130-2656	130-3656	130-4656	\$99.40
43/64"	1-1/2"	4"	130-2671	130-3671	130-4671	\$99.20
11/16"	1-1/2"	4"	130-2687	130-3687	130-4687	\$96.80
45/64"	1-1/2"	4"	130-2703	130-3703	130-4703	\$98.10
23/32"	1-1/2"	4"	130-2718	130-3718	130-4718	\$97.40
47/64"	1-1/2"	4"	130-2734	130-3734	130-4737	\$97.14
3/4"	1-1/2"	4"	130-2750	130-3750	130-4750	\$87.72

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
49/64"	1-1/2"	4"	130-2765	130-3765	130-4765	\$180.40
25/32"	1-1/2"	4"	130-2781	130-3781	130-4781	\$179.64
51/64"	1-1/2"	4"	130-2796	130-3796	130-4796	\$178.86
13/16"	1-1/2"	4"	130-2812	130-3812	130-4812	\$176.00
53/64"	1-1/2"	4"	130-2828	130-3828	130-4828	\$177.10
27/32"	1-1/2"	4"	130-2843	130-3843	130-4843	\$176.56
55/64"	1-1/2"	4"	130-2859	130-3859	130-4859	\$176.00
7/8"	1-1/2"	4"	130-2875	130-3875	130-4875	\$155.26
57/64"	1-1/2"	4"	130-2890	130-3890	130-4890	\$181.96
29/32"	1-1/2"	4"	130-2906	130-3906	130-4906	\$180.90
59/64"	1-1/2"	4"	130-2921	130-3921	130-4921	\$179.86
15/16"	1-1/2"	4"	130-2937	130-3937	130-4937	\$176.00
61/64"	1-1/2"	4"	130-2953	130-3953	130-4953	\$174.90
31/32"	1-1/2"	4"	130-2968	130-3968	130-4968	\$173.78
63/64"	1-1/2"	4"	130-2984	130-3984	130-4984	\$173.60
1"	1-1/2"	4"	130-2100	130-3100	130-4100	\$157.26

SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END BALL

2-4 FLUTE

UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/64"	1/16"	1-1/2"	135-2015	135-4015	\$12.21
1/32"	3/32"	1-1/2"	135-2031	135-4031	\$9.00
3/64"	1/8"	1-1/2"	135-2046	135-4046	\$9.00
1/16"	3/16"	1-1/2"	135-2062	135-4062	\$8.00
5/64"	1/4"	1-1/2"	135-2078	135-4078	\$8.00
3/32"	3/8"	1-1/2"	135-2093	135-4093	\$8.00
7/64"	3/8"	1-1/2"	135-2109	135-4109	\$8.00
1/8"	1/2"	1-1/2"	135-2125	135-4125	\$6.40
9/64"	9/16"	2"	135-2140	135-4140	\$11.00
5/32"	9/16"	2"	135-2156	135-4156	\$10.60
11/64"	9/16"	2"	135-2171	135-4171	\$11.00
3/16"	5/8"	2"	135-2187	135-4187	\$10.60
13/64"	5/8"	2-1/2"	135-2203	135-4203	\$13.90
7/32"	5/8"	2-1/2"	135-2218	135-4218	\$13.00
15/64"	3/4"	2-1/2"	135-2234	135-4234	\$13.90
1/4"	3/4"	2-1/2"	135-2250	135-4250	\$12.20

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
17/64"	7/8"	2-1/2"	135-2265	135-4265	\$18.20
9/32"	7/8"	2-1/2"	135-2281	135-4281	\$17.00
19/64"	7/8"	2-1/2"	135-2296	135-4296	\$18.20
5/16"	7/8"	2-1/2"	135-2312	135-4312	\$15.60
21/64"	7/8"	2-1/2"	135-2328	135-4328	\$20.50
11/32"	7/8"	2-1/2"	135-2343	135-4343	\$19.00
23/64"	7/8"	2-1/2"	135-2359	135-4359	\$20.50
3/8"	7/8"	2-1/2"	135-2375	135-4375	\$19.00
25/64"	7/8"	2-1/2"	135-2390	135-4390	\$31.60
13/32"	7/8"	2-1/2"	135-2406	135-4406	\$31.00
27/64"	7/8"	2-1/2"	135-2421	135-4421	\$30.80
7/16"	1"	2-1/2"	135-2437	135-4437	\$30.00
29/64"	1"	3"	135-2453	135-4453	\$34.20
15/32"	1"	3"	135-2468	135-4468	\$33.90
31/64"	1"	3"	135-2484	135-4484	\$33.60
1/2"	1"	3"	135-2500	135-4500	\$32.00

SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END BALL
2-4 FLUTE
UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
33/64"	1-1/4"	3-1/2"	135-2515	135-4515	\$74.00
17/32"	1-1/4"	3-1/2"	135-2531	135-4531	\$70.00
35/64"	1-1/4"	3-1/2"	135-2546	135-4546	\$68.00
9/16"	1-1/4"	3-1/2"	135-2562	135-4562	\$61.00
37/64"	1-1/4"	3-1/2"	135-2578	135-4578	\$75.00
19/32"	1-1/4"	3-1/2"	135-2593	135-4593	\$71.00
39/64"	1-1/4"	3-1/2"	135-2609	135-4609	\$69.00
5/8"	1-1/4"	3-1/2"	135-2625	135-4625	\$61.00
41/64"	1-1/2"	4"	135-2640	135-4640	\$103.00
21/32"	1-1/2"	4"	135-2656	135-4656	\$103.00
43/64"	1-1/2"	4"	135-2671	135-4671	\$102.00
11/16"	1-1/2"	4"	135-2687	135-4687	\$96.00
45/64"	1-1/2"	4"	135-2703	135-4703	\$94.00
23/32"	1-1/2"	4"	135-2718	135-4718	\$94.00
47/64"	1-1/2"	4"	135-2734	135-4737	\$94.00
3/4"	1-1/2"	4"	135-2750	135-4750	\$84.00

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
49/64"	1-1/2"	4"	135-2765	135-4765	\$185.90
25/32"	1-1/2"	4"	135-2781	135-4781	\$185.90
51/64"	1-1/2"	4"	135-2796	135-4796	\$185.90
13/16"	1-1/2"	4"	135-2812	135-4812	\$185.90
53/64"	1-1/2"	4"	135-2828	135-4828	\$180.60
27/32"	1-1/2"	4"	135-2843	135-4843	\$180.60
55/64"	1-1/2"	4"	135-2859	135-4859	\$180.60
7/8"	1-1/2"	4"	135-2875	135-4875	\$164.00
57/64"	1-1/2"	4"	135-2890	135-4890	\$189.70
29/32"	1-1/2"	4"	135-2906	135-4906	\$189.70
59/64"	1-1/2"	4"	135-2921	135-4921	\$189.70
15/16"	1-1/2"	4"	135-2937	135-4937	\$182.50
61/64"	1-1/2"	4"	135-2953	135-4953	\$182.50
31/32"	1-1/2"	4"	135-2968	135-4968	\$182.50
63/64"	1-1/2"	4"	135-2984	135-4984	\$182.50
1"	1-1/2"	4"	135-2100	135-4100	\$166.00

SOLID CARBIDE END MILLS**STANDARD LENGTH**

SINGLE END BALL

2-4 FLUTE

TIN COATED

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/64"	1/16"	1-1/2"	140-2015	140-4015	\$13.11
1/32"	3/32"	1-1/2"	140-2031	140-4031	\$9.90
3/64"	1/8"	1-1/2"	140-2046	140-4046	\$9.90
1/16"	3/16"	1-1/2"	140-2062	140-4062	\$9.30
5/64"	1/4"	1-1/2"	140-2078	140-4078	\$9.10
3/32"	3/8"	1-1/2"	140-2093	140-4093	\$9.30
7/64"	3/8"	1-1/2"	140-2109	140-4109	\$8.80
1/8"	1/2"	1-1/2"	140-2125	140-4125	\$8.70
9/64"	9/16"	2"	140-2140	140-4140	\$13.68
5/32"	9/16"	2"	140-2156	140-4156	\$12.20
11/64"	9/16"	2"	140-2171	140-4171	\$13.04
3/16"	5/8"	2"	140-2187	140-4187	\$12.00
13/64"	5/8"	2-1/2"	140-2203	140-4203	\$16.42
7/32"	5/8"	2-1/2"	140-2218	140-4218	\$15.50
15/64"	3/4"	2-1/2"	140-2234	140-4234	\$16.30
1/4"	3/4"	2-1/2"	140-2250	140-4250	\$14.50

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
17/64"	7/8"	2-1/2"	140-2265	140-4265	\$19.70
9/32"	7/8"	2-1/2"	140-2281	140-4281	\$18.50
19/64"	7/8"	2-1/2"	140-2296	140-4296	\$18.46
5/16"	7/8"	2-1/2"	140-2312	140-4312	\$18.00
21/64"	7/8"	2-1/2"	140-2328	140-4328	\$22.54
11/32"	7/8"	2-1/2"	140-2343	140-4343	\$22.00
23/64"	7/8"	2-1/2"	140-2359	140-4359	\$22.48
3/8"	1"	2-1/2"	140-2375	140-4375	\$22.00
25/64"	1"	2-1/2"	140-2390	140-4390	\$37.50
13/32"	1"	2-1/2"	140-2406	140-4406	\$37.00
27/64"	1"	2-1/2"	140-2421	140-4421	\$36.50
7/16"	1"	2-1/2"	140-2437	140-4437	\$37.10
29/64"	1"	3"	140-2453	140-4453	\$40.68
15/32"	1"	3"	140-2468	140-4468	\$40.58
31/64"	1"	3"	140-2484	140-4484	\$39.96
1/2"	1"	3"	140-2500	140-4500	\$38.00

SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END BALL
2-4 FLUTE
TIN COATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
33/64"	1-1/4"	3-1/2"	140-2515	140-4515	\$81.96
17/32"	1-1/4"	3-1/2"	140-2531	140-4531	\$81.40
35/64"	1-1/4"	3-1/2"	140-2546	140-4546	\$79.54
9/16"	1-1/4"	3-1/2"	140-2562	140-4562	\$68.40
37/64"	1-1/4"	3-1/2"	140-2578	140-4578	\$81.86
19/32"	1-1/4"	3-1/2"	140-2593	140-4593	\$81.54
39/64"	1-1/4"	3-1/2"	140-2609	140-4609	\$79.56
5/8"	1-1/4"	3-1/2"	140-2625	140-4625	\$68.30
41/64"	1-1/2"	4"	140-2640	140-4640	\$119.00
21/32"	1-1/2"	4"	140-2656	140-4656	\$118.26
43/64"	1-1/2"	4"	140-2671	140-4671	\$117.04
11/16"	1-1/2"	4"	140-2687	140-4687	\$113.86
45/64"	1-1/2"	4"	140-2703	140-4703	\$114.26
23/32"	1-1/2"	4"	140-2718	140-4718	\$113.36
47/64"	1-1/2"	4"	140-2734	140-4737	\$112.28
3/4"	1-1/2"	4"	140-2750	140-4750	\$98.40

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
49/64"	1-1/2"	4"	140-2765	140-4765	\$196.60
25/32"	1-1/2"	4"	140-2781	140-4781	\$196.36
51/64"	1-1/2"	4"	140-2796	140-4796	\$195.80
13/16"	1-1/2"	4"	140-2812	140-4812	\$194.26
53/64"	1-1/2"	4"	140-2828	140-4828	\$195.00
27/32"	1-1/2"	4"	140-2843	140-4843	\$194.76
55/64"	1-1/2"	4"	140-2859	140-4859	\$194.50
7/8"	1-1/2"	4"	140-2875	140-4875	\$176.60
57/64"	1-1/2"	4"	140-2890	140-4890	\$206.80
29/32"	1-1/2"	4"	140-2906	140-4906	\$204.60
59/64"	1-1/2"	4"	140-2921	140-4921	\$202.40
15/16"	1-1/2"	4"	140-2937	140-4937	\$198.00
61/64"	1-1/2"	4"	140-2953	140-4953	\$201.30
31/32"	1-1/2"	4"	140-2968	140-4968	\$198.96
63/64"	1-1/2"	4"	140-2984	140-4984	\$198.22
1"	1-1/2"	4"	140-2100	140-4100	\$179.40

SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END BALL

2-3-4 FLUTE

TICN COAT - HTC PROGRESSIVE COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	3/32"	1-1/2"	143-2031	143-4031	\$10.46
3/64"	1/8"	1-1/2"	143-2046	143-4046	\$10.46
1/16"	3/16"	1-1/2"	143-2062	143-4062	\$9.49
5/64"	1/4"	1-1/2"	143-2078	143-4078	\$8.85
3/32"	3/8"	1-1/2"	143-2093	143-4093	\$9.49
7/64"	3/8"	1-1/2"	143-2109	143-4109	\$8.15
1/8"	1/2"	1-1/2"	143-2125	143-4125	\$7.93
9/64"	9/16"	2"	143-2140	143-4140	\$14.05
5/32"	9/16"	2"	143-2156	143-4156	\$12.80
11/64"	9/16"	2"	143-2171	143-4171	\$13.75
3/16"	5/8"	2"	143-2187	143-4187	\$12.80
13/64"	5/8"	2-1/2"	143-2203	143-4203	\$18.35
7/32"	5/8"	2-1/2"	143-2218	143-4218	\$17.13
15/64"	3/4"	2-1/2"	143-2234	143-4234	\$18.29
1/4"	3/4"	2-1/2"	143-2250	143-4250	\$16.35

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
17/64"	7/8"	2-1/2"	143-2265	143-4265	\$23.14
9/32"	7/8"	2-1/2"	143-2281	143-4281	\$21.88
19/64"	7/8"	2-1/2"	143-2296	143-4296	\$22.33
5/16"	7/8"	2-1/2"	143-2312	143-4312	\$21.50
21/64"	7/8"	2-1/2"	143-2328	143-4328	\$27.12
11/32"	7/8"	2-1/2"	143-2343	143-4343	\$24.79
23/64"	7/8"	2-1/2"	143-2359	143-4359	\$25.39
3/8"	1"	2-1/2"	143-2375	143-4375	\$24.79
25/64"	1"	2-1/2"	143-2390	143-4390	\$40.22
13/32"	1"	2-1/2"	143-2406	143-4406	\$38.49
27/64"	1"	2-1/2"	143-2421	143-4421	\$37.60
7/16"	1"	2-1/2"	143-2437	143-4437	\$38.20
29/64"	1"	3"	143-2453	143-4453	\$44.62
15/32"	1"	3"	143-2468	143-4468	\$42.68
31/64"	1"	3"	143-2484	143-4484	\$41.71
1/2"	1"	3"	143-2500	143-4500	\$40.14

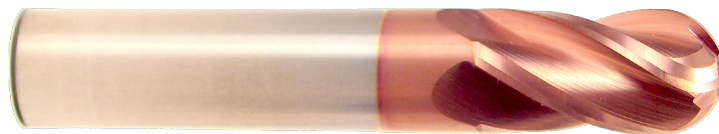
SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END BALL

2-4 FLUTE

TICN COAT - HTC PROGRESSIVE COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
33/64"	1-1/4"	3-1/2"	143-2515	143-4515	\$89.65
17/32"	1-1/4"	3-1/2"	143-2531	143-4531	\$88.41
35/64"	1-1/4"	3-1/2"	143-2546	143-4546	\$84.99
9/16"	1-1/4"	3-1/2"	143-2562	143-4562	\$73.37
37/64"	1-1/4"	3-1/2"	143-2578	143-4578	\$84.25
19/32"	1-1/4"	3-1/2"	143-2593	143-4593	\$83.59
39/64"	1-1/4"	3-1/2"	143-2609	143-4609	\$83.09
5/8"	1-1/4"	3-1/2"	143-2625	143-4625	\$73.37
41/64"	1-1/2"	4"	143-2640	143-4640	\$111.80
21/32"	1-1/2"	4"	143-2656	143-4656	\$110.32
43/64"	1-1/2"	4"	143-2671	143-4671	\$108.83
11/16"	1-1/2"	4"	143-2687	143-4687	\$107.77
45/64"	1-1/2"	4"	143-2703	143-4703	\$109.30
23/32"	1-1/2"	4"	143-2718	143-4718	\$108.89
47/64"	1-1/2"	4"	143-2734	143-4737	\$108.37
3/4"	1-1/2"	4"	143-2750	143-4750	\$97.70

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
49/64"	1-1/2"	4"	143-2765	143-4765	\$210.01
25/32"	1-1/2"	4"	143-2781	143-4781	\$209.56
51/64"	1-1/2"	4"	143-2796	143-4796	\$209.13
13/16"	1-1/2"	4"	143-2812	143-4812	\$207.00
53/64"	1-1/2"	4"	143-2828	143-4828	\$207.97
27/32"	1-1/2"	4"	143-2843	143-4843	\$207.54
55/64"	1-1/2"	4"	143-2859	143-4859	\$207.00
7/8"	1-1/2"	4"	143-2875	143-4875	\$187.46
57/64"	1-1/2"	4"	143-2890	143-4890	\$219.80
29/32"	1-1/2"	4"	143-2906	143-4906	\$216.60
59/64"	1-1/2"	4"	143-2921	143-4921	\$213.40
15/16"	1-1/2"	4"	143-2937	143-4937	\$209.13
61/64"	1-1/2"	4"	143-2953	143-4953	\$210.22
31/32"	1-1/2"	4"	143-2968	143-4968	\$209.61
63/64"	1-1/2"	4"	143-2984	143-4984	\$209.13
1"	1-1/2"	4"	143-2100	143-4100	\$189.40

SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END BALL

2-4 FLUTE

ALTIN COATED - **HTC** HARD COAT

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	3/32"	1-1/2"	145-2031	145-4031	\$10.78
3/64"	1/8"	1-1/2"	145-2046	145-4046	\$10.78
1/16"	3/16"	1-1/2"	145-2062	145-4062	\$9.78
5/64"	1/4"	1-1/2"	145-2078	145-4078	\$9.12
3/32"	3/8"	1-1/2"	145-2093	145-4093	\$9.78
7/64"	3/8"	1-1/2"	145-2109	145-4109	\$8.40
1/8"	1/2"	1-1/2"	145-2125	145-4125	\$8.18
9/64"	9/16"	2"	145-2140	145-4140	\$14.48
5/32"	9/16"	2"	145-2156	145-4156	\$13.20
11/64"	9/16"	2"	145-2171	145-4171	\$14.18
3/16"	5/8"	2"	145-2187	145-4187	\$13.20
13/64"	5/8"	2-1/2"	145-2203	145-4203	\$18.92
7/32"	5/8"	2-1/2"	145-2218	145-4218	\$17.66
15/64"	3/4"	2-1/2"	145-2234	145-4234	\$18.36
1/4"	3/4"	2-1/2"	145-2250	145-4250	\$16.86

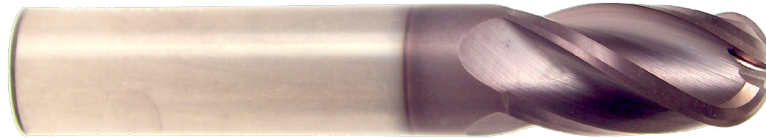
CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
17/64"	7/8"	2-1/2"	145-2265	145-4265	\$23.86
9/32"	7/8"	2-1/2"	145-2281	145-4281	\$22.56
19/64"	7/8"	2-1/2"	145-2296	145-4296	\$23.02
5/16"	7/8"	2-1/2"	145-2312	145-4312	\$22.16
21/64"	7/8"	2-1/2"	145-2328	145-4328	\$27.96
11/32"	7/8"	2-1/2"	145-2343	145-4343	\$25.56
23/64"	7/8"	2-1/2"	145-2359	145-4359	\$26.18
3/8"	1"	2-1/2"	145-2375	145-4375	\$25.56
25/64"	1"	2-1/2"	145-2390	145-4390	\$41.46
13/32"	1"	2-1/2"	145-2406	145-4406	\$39.68
27/64"	1"	2-1/2"	145-2421	145-4421	\$38.76
7/16"	1"	2-1/2"	145-2437	145-4437	\$39.38
29/64"	1"	3"	145-2453	145-4453	\$46.00
15/32"	1"	3"	145-2468	145-4468	\$44.00
31/64"	1"	3"	145-2484	145-4484	\$43.00
1/2"	1"	3"	145-2500	145-4500	\$41.38

SOLID CARBIDE END MILLS

STANDARD LENGTH

SINGLE END BALL
2-4 FLUTE

ALTIN COATED - **HTC** HARD COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
33/64"	1-1/4"	3-1/2"	145-2515	145-4515	\$92.42
17/32"	1-1/4"	3-1/2"	145-2531	145-4531	\$91.14
35/64"	1-1/4"	3-1/2"	145-2546	145-4546	\$87.62
9/16"	1-1/4"	3-1/2"	145-2562	145-4562	\$75.64
37/64"	1-1/4"	3-1/2"	145-2578	145-4578	\$86.86
19/32"	1-1/4"	3-1/2"	145-2593	145-4593	\$86.18
39/64"	1-1/4"	3-1/2"	145-2609	145-4609	\$85.66
5/8"	1-1/4"	3-1/2"	145-2625	145-4625	\$75.64
41/64"	1-1/2"	4"	145-2640	145-4640	\$115.26
21/32"	1-1/2"	4"	145-2656	145-4656	\$113.74
43/64"	1-1/2"	4"	145-2671	145-4671	\$112.20
11/16"	1-1/2"	4"	145-2687	145-4687	\$111.10
45/64"	1-1/2"	4"	145-2703	145-4703	\$112.68
23/32"	1-1/2"	4"	145-2718	145-4718	\$112.26
47/64"	1-1/2"	4"	145-2734	145-4737	\$111.72
3/4"	1-1/2"	4"	145-2750	145-4750	\$100.72

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
49/64"	1-1/2"	4"	145-2765	145-4765	\$216.50
25/32"	1-1/2"	4"	145-2781	145-4781	\$216.04
51/64"	1-1/2"	4"	145-2796	145-4796	\$215.60
13/16"	1-1/2"	4"	145-2812	145-4812	\$213.40
53/64"	1-1/2"	4"	145-2828	145-4828	\$214.40
27/32"	1-1/2"	4"	145-2843	145-4843	\$213.96
55/64"	1-1/2"	4"	145-2859	145-4859	\$213.40
7/8"	1-1/2"	4"	145-2875	145-4875	\$193.26
57/64"	1-1/2"	4"	145-2890	145-4890	\$226.60
29/32"	1-1/2"	4"	145-2906	145-4906	\$223.90
59/64"	1-1/2"	4"	145-2921	145-4921	\$220.00
15/16"	1-1/2"	4"	145-2937	145-4937	\$215.60
61/64"	1-1/2"	4"	145-2953	145-4953	\$216.72
31/32"	1-1/2"	4"	145-2968	145-4968	\$216.10
63/64"	1-1/2"	4"	145-2984	145-4984	\$215.60
1"	1-1/2"	4"	145-2100	145-4100	\$195.26

Series 150



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE END MILLS

LONG LENGTH / SINGLE END SQUARE / 2-4 FLUTE / UNCOATED

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	3/4"	2-1/2"	150-2125	150-4125	\$8.30
3/16"	3/4"	2-1/2"	150-2187	150-4187	\$12.12
1/4"	1-1/8"	3"	150-2250	150-4250	\$14.50
5/16"	1-1/8"	3"	150-2312	150-4312	\$18.00
3/8"	1-1/8"	3"	150-2375	150-4375	\$25.00
7/16"	2"	4"	150-2437	150-4437	\$39.64
1/2"	1-1/2"	4"	150-2504	150-4504	\$40.30
1/2"	2"	4"	150-2500	150-4500	\$42.84
5/8"	2-1/4"	5"	150-2625	150-4625	\$78.00
3/4"	2-1/4"	5"	150-2750	150-4750	\$110.00
1"	2-1/4"	5"	150-2100	150-4100	\$170.00



Series 155

SOLID CARBIDE END MILLS

LONG LENGTH / SINGLE END BALL / 2-4 FLUTE / UNCOATED

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	3/4"	2-1/2"	155-2125	155-4125	\$13.60
3/16"	3/4"	2-1/2"	155-2187	155-4187	\$16.24
1/4"	1-1/8"	3"	155-2250	155-4250	\$21.06
5/16"	1-1/8"	3"	155-2312	155-4312	\$25.50
3/8"	1-1/8"	3"	155-2375	155-4375	\$33.00
7/16"	2"	4"	155-2437	155-4437	\$48.17
1/2"	1-1/2"	4"	155-2504	155-4504	\$50.36
1/2"	2"	4"	155-2500	155-4500	\$52.74
5/8"	2-1/4"	5"	155-2625	155-4625	\$98.86
3/4"	2-1/4"	5"	155-2750	155-4750	\$139.00
1"	2-1/4"	5"	155-2100	155-4100	\$216.00



SOLID CARBIDE END MILLS

LONG LENGTH / SINGLE END SQUARE / 2-4 FLUTE / **TIN COATED**

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	3/4"	2-1/2"	152-2125	152-4125	\$9.51
3/16"	3/4"	2-1/2"	152-2187	152-4187	\$13.72
1/4"	1-1/8"	3"	152-2250	152-4250	\$16.83
5/16"	1-1/8"	3"	152-2312	152-4312	\$21.23
3/8"	1-1/8"	3"	152-2375	152-4375	\$28.28
7/16"	2"	4"	152-2437	152-4437	\$44.44
1/2"	1-1/2"	4"	152-2504	152-4504	\$46.65
1/2"	2"	4"	152-2500	152-4500	\$48.70
5/8"	2-1/4"	5"	152-2625	152-4625	\$86.80
3/4"	2-1/4"	5"	152-2750	152-4750	\$120.02
1"	2-1/4"	5"	152-2100	152-4100	\$187.56



Series 157

SOLID CARBIDE END MILLS

LONG LENGTH / SINGLE END BALL / 2-4 FLUTE / **TIN COATED**

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	3/4"	2-1/2"	157-2125	157-4125	\$14.81
3/16"	3/4"	2-1/2"	157-2187	157-4187	\$17.84
1/4"	1-1/8"	3"	157-2250	157-4250	\$23.21
5/16"	1-1/8"	3"	157-2312	157-4312	\$28.73
3/8"	1-1/8"	3"	157-2375	157-4375	\$36.28
7/16"	2"	4"	157-2437	157-4437	\$52.26
1/2"	1-1/2"	4"	157-2504	157-4504	\$60.54
1/2"	2"	4"	157-2500	157-4500	\$58.60
5/8"	2-1/4"	5"	157-2625	157-4625	\$107.66
3/4"	2-1/4"	5"	157-2750	157-4750	\$149.02
1"	2-1/4"	5"	157-2100	157-4100	\$233.56



Series 154

T O O L - C U T T E R M A N U F A C T U R I N G

SOLID CARBIDE END MILLS

LONG LENGTH / SINGLE END SQUARE / 2-4 FLUTE
TICN COAT - HTC PROGRESSIVE COAT

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	3/4"	2-1/2"	154-2125	154-4125	\$10.40
3/16"	3/4"	2-1/2"	154-2187	154-4187	\$14.86
1/4"	1-1/8"	3"	154-2250	154-4250	\$18.59
5/16"	1-1/8"	3"	154-2312	154-4312	\$23.73
3/8"	1-1/8"	3"	154-2375	154-4375	\$30.61
7/16"	2"	4"	154-2437	154-4437	\$47.76
1/2"	1-1/2"	4"	154-2504	154-4504	\$51.41
1/2"	2"	4"	154-2500	154-4500	\$52.92
5/8"	2-1/4"	5"	154-2625	154-4625	\$92.73
3/4"	2-1/4"	5"	154-2750	154-4750	\$126.14
1"	2-1/4"	5"	154-2100	154-4100	\$198.97

**Series 159**

SOLID CARBIDE END MILLS

LONG LENGTH / SINGLE END BALL / 2-4 FLUTE
TICN COAT - HTC PROGRESSIVE COAT

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	3/4"	2-1/2"	159-2125	159-4125	\$15.54
3/16"	3/4"	2-1/2"	159-2187	159-4187	\$18.86
1/4"	1-1/8"	3"	159-2250	159-4250	\$24.60
5/16"	1-1/8"	3"	159-2312	159-4312	\$31.00
3/8"	1-1/8"	3"	159-2375	159-4375	\$38.37
7/16"	2"	4"	159-2437	159-4437	\$54.65
1/2"	1-1/2"	4"	159-2504	159-4504	\$58.72
1/2"	2"	4"	159-2500	159-4500	\$62.53
5/8"	2-1/4"	5"	159-2625	159-4625	\$112.97
3/4"	2-1/4"	5"	159-2750	159-4750	\$154.27
1"	2-1/4"	5"	159-2100	159-4100	\$243.59



SOLID CARBIDE END MILLS

LONG LENGTH / SINGLE END SQUARE / 2-4 FLUTE
ALTIN COATED - **HTC** HARD COAT

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	3/4"	2-1/2"	160-2125	160-4125	\$10.72
3/16"	3/4"	2-1/2"	160-2187	160-4187	\$15.32
1/4"	1-1/8"	3"	160-2250	160-4250	\$19.16
5/16"	1-1/8"	3"	160-2312	160-4312	\$24.46
3/8"	1-1/8"	3"	160-2375	160-4375	\$31.56
7/16"	2"	4"	160-2437	160-4437	\$49.24
1/2"	1-1/2"	4"	160-2504	160-4504	\$53.00
1/2"	2"	4"	160-2500	160-4500	\$54.56
5/8"	2-1/4"	5"	160-2625	160-4625	\$95.60
3/4"	2-1/4"	5"	160-2750	160-4750	\$130.04
1"	2-1/4"	5"	160-2100	160-4100	\$205.12



Series 165

SOLID CARBIDE END MILLS

LONG LENGTH / SINGLE END BALL / 2-4 FLUTE
ALTIN COATED - **HTC** HARD COAT

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	3/4"	2-1/2"	165-2125	165-4125	\$16.02
3/16"	3/4"	2-1/2"	165-2187	165-4187	\$19.44
1/4"	1-1/8"	3"	165-2250	165-4250	\$25.36
5/16"	1-1/8"	3"	165-2312	165-4312	\$31.96
3/8"	1-1/8"	3"	165-2375	165-4375	\$39.56
7/16"	2"	4"	165-2437	165-4437	\$56.34
1/2"	1-1/2"	4"	165-2504	165-4504	\$60.54
1/2"	2"	4"	165-2500	165-4500	\$64.46
5/8"	2-1/4"	5"	165-2625	165-4625	\$116.46
3/4"	2-1/4"	5"	165-2750	165-4750	\$159.04
1"	2-1/4"	5"	165-2100	165-4100	\$251.12



SOLID CARBIDE END MILLS

EXTRA LONG LENGTH**SINGLE END SQUARE / 2-4 FLUTE****UNCOATED**

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	1"	3"	170-2125	170-4125	\$12.42
3/16"	1-1/8"	3"	170-2187	170-4187	\$13.00
1/4"	1-1/2"	4"	170-2250	170-4250	\$17.00
1/4"	1-1/2"	6"	170-2256	170-4256	\$24.50
5/16"	1-5/8"	4"	170-2312	170-4312	\$21.00
5/16"	1-1/2"	6"	170-2316	170-4316	\$34.20
3/8"	1-3/4"	4"	170-2375	170-4375	\$27.50
3/8"	1-1/2"	6"	170-2376	170-4376	\$37.00
3/8"	3"	6"	170-2336	170-4336	\$42.00
1/2"	3"	6"	170-2500	170-4500	\$67.00
1/2"	1-1/2"	6"	170-2506	170-4506	\$58.00
5/8"	3"	6"	170-2625	170-4625	\$88.00
3/4"	3"	6"	170-2750	170-4750	\$122.00
3/4"	4"	7"	170-2757	170-4757	\$152.00
1"	3"	6"	170-2100	170-4100	\$230.00
1"	4"	7"	170-2107	170-4107	\$290.00

SOLID CARBIDE END MILLS

EXTRA LONG LENGTH
SINGLE END BALL / 2-4 FLUTE
UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	1"	3"	175-2125	175-4145	\$16.12
3/16"	1-1/8"	3"	175-2187	175-4187	\$17.88
1/4"	1-1/2"	4"	175-2250	175-4250	\$23.50
1/4"	1-1/2"	6"	175-2256	175-4256	\$29.00
5/16"	1-5/8"	4"	175-2312	175-4312	\$28.70
5/16"	1-1/2"	6"	175-2316	175-4316	\$38.00
3/8"	1-3/4"	4"	175-2375	175-4375	\$38.00
3/8"	1-1/2"	6"	175-2376	175-4376	\$49.50
3/8"	3"	6"	175-2336	175-4336	\$54.50
1/2"	3"	6"	175-2500	175-4500	\$83.00
1/2"	1-1/2"	6"	175-2506	175-4506	\$74.00
5/8"	3"	6"	175-2625	175-4625	\$116.00
3/4"	3"	6"	175-2750	175-4750	\$156.00
3/4"	4"	7"	175-2757	175-4757	\$192.00
1"	3"	6"	175-2100	175-4100	\$270.00
1"	4"	7"	175-2107	175-4107	\$336.00

SOLID CARBIDE END MILLS

EXTRA LONG LENGTH

SINGLE END SQUARE / 2-4 FLUTE

TIN COATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	1"	3"	172-2125	172-4125	\$13.63
3/16"	1-1/8"	3"	172-2187	172-4187	\$14.60
1/4"	1-1/2"	4"	172-2250	172-4250	\$19.92
1/4"	1-1/2"	6"	172-2256	172-4256	\$29.80
5/16"	1-5/8"	4"	172-2312	172-4312	\$24.65
5/16"	1-1/2"	6"	172-2316	172-4316	\$41.81
3/8"	1-3/4"	4"	172-2375	172-4375	\$31.50
3/8"	1-1/2"	6"	172-2376	172-4376	\$45.31
3/8"	3"	6"	172-2336	172-4336	\$46.81
1/2"	3"	6"	172-2500	172-4500	\$75.18
1/2"	1-1/2"	6"	172-2506	172-4506	\$67.18
5/8"	3"	6"	172-2625	172-4625	\$98.25
3/4"	3"	6"	172-2750	172-4750	\$134.16
3/4"	4"	7"	172-2757	172-4757	\$165.38
1"	3"	6"	172-2100	172-4100	\$250.47
1"	4"	7"	172-2107	172-4107	\$313.39

SOLID CARBIDE END MILLS

EXTRA LONG LENGTH
SINGLE END BALL / 2-4 FLUTE
TIN COATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	1"	3"	177-2125	177-4125	\$17.33
3/16"	1-1/8"	3"	177-2187	177-4187	\$19.48
1/4"	1-1/2"	4"	177-2250	177-4250	\$26.42
1/4"	1-1/2"	6"	177-2256	177-4256	\$34.10
5/16"	1-5/8"	4"	177-2312	177-4312	\$32.50
5/16"	1-1/2"	6"	177-2316	177-4316	\$49.87
3/8"	1-3/4"	4"	177-2375	177-4375	\$51.15
3/8"	1-1/2"	6"	177-2376	177-4376	\$53.12
3/8"	3"	6"	177-2336	177-4336	\$55.49
1/2"	3"	6"	177-2500	177-4500	\$84.68
1/2"	1-1/2"	6"	177-2506	177-4506	\$83.13
5/8"	3"	6"	177-2625	177-4625	\$126.25
3/4"	3"	6"	177-2750	177-4750	\$167.71
3/4"	4"	7"	177-2757	177-4757	\$205.38
1"	3"	6"	177-2100	177-4100	\$290.47
1"	4"	7"	177-2107	177-4107	\$359.39

SOLID CARBIDE END MILLS

EXTRA LONG LENGTH**SINGLE END SQUARE / 2-4 FLUTE****TICN COAT-~~HTC~~ PROGRESSIVE COAT**

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	1"	3"	174-2125	174-4125	\$14.39
3/16"	1-1/8"	3"	174-2187	174-4187	\$15.71
1/4"	1-1/2"	4"	174-2250	174-4250	\$22.15
1/4"	1-1/2"	6"	174-2256	174-4256	\$34.05
5/16"	1-5/8"	4"	174-2312	174-4312	\$27.45
5/16"	1-1/2"	6"	174-2316	174-4316	\$47.94
3/8"	1-3/4"	4"	174-2375	174-4375	\$33.76
3/8"	1-1/2"	6"	174-2376	174-4376	\$52.01
3/8"	3"	6"	174-2336	174-4336	\$52.98
1/2"	3"	6"	174-2500	174-4500	\$80.86
1/2"	1-1/2"	6"	174-2506	174-4506	\$74.07
5/8"	3"	6"	174-2625	174-4625	\$105.25
3/4"	3"	6"	174-2750	174-4750	\$141.93
3/4"	4"	7"	174-2757	174-4757	\$173.40
1"	3"	6"	174-2100	174-4100	\$262.81
1"	4"	7"	174-2107	174-4107	\$326.67

SOLID CARBIDE END MILLS

EXTRA LONG LENGTH
SINGLE END BALL / 2-4 FLUTE
TICN COAT-HTC** PROGRESSIVE COAT**



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	1"	3"	179-2125	179-4125	\$17.98
3/16"	1-1/8"	3"	179-2187	179-4187	\$20.45
1/4"	1-1/2"	4"	179-2250	179-4250	\$28.46
1/4"	1-1/2"	6"	179-2256	179-4256	\$38.02
5/16"	1-5/8"	4"	179-2312	179-4312	\$35.21
5/16"	1-1/2"	6"	179-2316	179-4316	\$51.04
3/8"	1-3/4"	4"	179-2375	179-4375	\$43.94
3/8"	1-1/2"	6"	179-2376	179-4376	\$55.04
3/8"	3"	6"	179-2336	179-4336	\$57.95
1/2"	3"	6"	179-2500	179-4500	\$92.50
1/2"	1-1/2"	6"	179-2506	179-4506	\$89.59
5/8"	3"	6"	179-2625	179-4625	\$132.41
3/4"	3"	6"	179-2750	179-4750	\$174.04
3/4"	4"	7"	179-2757	179-4757	\$212.20
1"	3"	6"	179-2100	179-4100	\$301.61
1"	4"	7"	179-2107	179-4107	\$371..30

SOLID CARBIDE END MILLS

EXTRA LONG LENGTH**SINGLE END SQUARE / 2-4 FLUTE****ALTIN COATED - HTC HARD COAT**

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	1"	3"	180-2125	180-4125	\$14.84
3/16"	1-1/8"	3"	180-2187	180-4187	\$16.20
1/4"	1-1/2"	4"	180-2250	180-4250	\$22.84
1/4"	1-1/2"	6"	180-2256	180-4256	\$35.10
5/16"	1-5/8"	4"	180-2312	180-4312	\$28.30
5/16"	1-1/2"	6"	180-2316	180-4316	\$49.42
3/8"	1-3/4"	4"	180-2375	180-4375	\$34.80
3/8"	1-1/2"	6"	180-2376	180-4376	\$53.62
3/8"	3"	6"	180-2336	180-4336	\$54.62
1/2"	3"	6"	180-2500	180-4500	\$83.36
1/2"	1-1/2"	6"	180-2506	180-4506	\$76.36
5/8"	3"	6"	180-2625	180-4625	\$108.50
3/4"	3"	6"	180-2750	180-4750	\$146.32
3/4"	4"	7"	180-2757	180-4757	\$178.76
1"	3"	6"	180-2100	180-4100	\$270.94
1"	4"	7"	180-2107	180-4107	\$336.78

SOLID CARBIDE END MILLS

EXTRA LONG LENGTH

SINGLE END BALL / 2-4 FLUTE
ALTIN COATED - **HTC** HARD COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	1"	3"	185-2125	185-4125	\$18.54
3/16"	1-1/8"	3"	185-2187	185-4187	\$21.08
1/4"	1-1/2"	4"	185-2250	185-4250	\$29.34
1/4"	1-1/2"	6"	185-2256	185-4256	\$39.20
5/16"	1-5/8"	4"	185-2312	185-4312	\$36.30
5/16"	1-1/2"	6"	185-2316	185-4316	\$55.77
3/8"	1-3/4"	4"	185-2375	185-4375	\$55.30
3/8"	1-1/2"	6"	185-2376	185-4376	\$56.74
3/8"	3"	6"	185-2336	185-4336	\$59.74
1/2"	3"	6"	185-2500	185-4500	\$95.36
1/2"	1-1/2"	6"	185-2506	185-4506	\$92.36
5/8"	3"	6"	185-2625	185-4625	\$135.50
3/4"	3"	6"	185-2750	185-4750	\$179.42
3/4"	4"	7"	185-2757	185-4757	\$218.76
1"	3"	6"	185-2100	185-4100	\$310.94
1"	4"	7"	185-2107	185-4107	\$382.78

SOLID CARBIDE END MILLS

STUB LENGTH

SINGLE END SQUARE

2-3-4 FLUTE

UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	100-2013	100-3013	100-4013	\$5.70
3/64"	3/32"	1-1/2"	100-2046	100-3046	100-4046	\$5.70
1/16"	1/8"	1-1/2"	100-2062	100-3062	100-4062	\$4.56
3/32"	3/16"	1-1/2"	100-2093	100-3093	100-4093	\$4.00
1/8"	1/4"	1-1/2"	100-2125	100-3125	100-4125	\$3.80
5/32"	5/16"	2"	100-2156	100-3156	100-4156	\$8.46
3/16"	3/8"	2"	100-2187	100-3187	100-4187	\$8.18
7/32"	7/16"	2"	100-2218	100-3218	100-4218	\$9.88
1/4"	1/2"	2"	100-2250	100-3250	100-4250	\$8.08
5/16"	1/2"	2"	100-2312	100-3312	100-4312	\$10.92
3/8"	5/8"	2"	100-2375	100-3375	100-4375	\$13.88
7/16"	5/8"	2-1/2"	100-2437	100-3437	100-4437	\$19.00
1/2"	5/8"	2-1/2"	100-2500	100-3500	100-4500	\$23.76
5/8"	3/4"	3"	100-2625	100-3625	100-4625	\$48.46
3/4"	1"	3"	100-2750	100-3750	100-4750	\$67.46
1"	1"	3"	100-2100	100-3100	100-4100	\$119.60

SOLID CARBIDE END MILLS

STUB LENGTH

SINGLE END BALL

2-3-4 FLUTE

UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	105-2031	105-3031	105-4031	\$8.56
3/64"	3/32"	1-1/2"	105-2046	105-3046	105-4046	\$8.56
1/16"	1/8"	1-1/2"	105-2062	105-3062	105-4062	\$7.60
3/32"	3/16"	1-1/2"	105-2093	105-3093	105-4093	\$7.60
1/8"	1/4"	1-1/2"	105-2125	105-3125	105-4125	\$6.08
5/32"	5/16"	2"	105-2156	105-3156	105-4156	\$10.08
3/16"	3/8"	2"	105-2187	105-3187	105-4187	\$10.08
7/32"	7/16"	2"	105-2218	105-3218	105-4218	\$12.36
1/4"	1/2"	2"	105-2250	105-3250	105-4250	\$11.60
5/16"	1/2"	2"	105-2312	105-3312	105-4312	\$14.82
3/8"	5/8"	2"	105-2375	105-3375	105-4375	\$18.06
7/16"	5/8"	2-1/2"	105-2437	105-3437	105-4437	\$27.56
1/2"	5/8"	2-1/2"	105-2500	105-3500	105-4500	\$30.40
5/8"	3/4"	3"	105-2625	105-3625	105-4625	\$57.96
3/4"	1"	3"	105-2750	105-3750	105-4750	\$79.80
1"	1"	3"	105-2100	105-3100	105-4100	\$153.70

SOLID CARBIDE END MILLS

STUB LENGTH

SINGLE END SQUARE

2-3-4 FLUTE

TIN COATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	107-2031	107-3031	107-4031	\$7.00
3/64"	3/32"	1-1/2"	107-2046	107-3046	107-4046	\$7.00
1/16"	1/8"	1-1/2"	107-2062	107-3062	107-4062	\$6.26
3/32"	3/16"	1-1/2"	107-2093	107-3093	107-4093	\$5.50
1/8"	1/4"	1-1/2"	107-2125	107-3125	107-4125	\$5.50
5/32"	5/16"	2"	107-2156	107-3156	107-4156	\$10.40
3/16"	3/8"	2"	107-2187	107-3187	107-4187	\$10.20
7/32"	7/16"	2"	107-2218	107-3218	107-4218	\$13.20
1/4"	1/2"	2"	107-2250	107-3250	107-4250	\$12.80
5/16"	1/2"	2"	107-2312	107-3312	107-4312	\$16.00
3/8"	5/8"	2"	107-2375	107-3375	107-4375	\$18.00
7/16"	5/8"	2-1/2"	107-2437	107-3437	107-4437	\$24.50
1/2"	5/8"	2-1/2"	107-2500	107-3500	107-4500	\$29.00
5/8"	3/4"	3"	107-2625	107-3625	107-4625	\$56.00
3/4"	1"	3"	107-2750	107-3750	107-4750	\$72.00
1"	1"	3"	107-2100	107-3100	107-4100	\$135.00

SOLID CARBIDE END MILLS

STUB LENGTH

SINGLE END BALL

2-3-4 FLUTE

TIN COATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	109-2031	109-3031	109-4031	\$9.70
3/64"	3/32"	1-1/2"	109-2046	109-3046	109-4046	\$9.60
1/16"	1/8"	1-1/2"	109-2062	109-3062	109-4062	\$8.80
3/32"	3/16"	1-1/2"	109-2093	109-3093	109-4093	\$8.50
1/8"	1/4"	1-1/2"	109-2125	109-3125	109-4125	\$7.20
5/32"	5/16"	2"	109-2156	109-3156	109-4156	\$12.00
3/16"	3/8"	2"	109-2187	109-3187	109-4187	\$11.80
7/32"	7/16"	2"	109-2218	109-3218	109-4218	\$16.00
1/4"	1/2"	2"	109-2250	109-3250	109-4250	\$15.60
5/16"	1/2"	2"	109-2312	109-3312	109-4312	\$19.00
3/8"	5/8"	2"	109-2375	109-3375	109-4375	\$21.00
7/16"	5/8"	2-1/2"	109-2437	109-3437	109-4437	\$24.00
1/2"	5/8"	2-1/2"	109-2500	109-3500	109-4500	\$33.00
5/8"	3/4"	3"	109-2625	109-3625	109-4625	\$64.00
3/4"	1"	3"	109-2750	109-3750	109-4750	\$88.00
1"	1"	3"	109-2100	109-3100	109-4100	\$176.00

SOLID CARBIDE END MILLS**STUB LENGTH**

SINGLE END SQUARE

2-3-4 FLUTE

TICN COAT - HTC PROGRESSIVE COAT

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	111-2031	111-3031	111-4031	\$7.18
3/64"	3/32"	1-1/2"	111-2046	111-3046	111-4046	\$7.18
1/16"	1/8"	1-1/2"	111-2062	111-3062	111-4062	\$6.07
3/32"	3/16"	1-1/2"	111-2093	111-3093	111-4093	\$5.51
1/8"	1/4"	1-1/2"	111-2125	111-3125	111-4125	\$5.34
5/32"	5/16"	2"	111-2156	111-3156	111-4156	\$10.61
3/16"	3/8"	2"	111-2187	111-3187	111-4187	\$10.32
7/32"	7/16"	2"	111-2218	111-3218	111-4218	\$13.87
1/4"	1/2"	2"	111-2250	111-3250	111-4250	\$12.13
5/16"	1/2"	2"	111-2312	111-3312	111-4312	\$16.65
3/8"	5/8"	2"	111-2375	111-3375	111-4375	\$19.50
7/16"	5/8"	2-1/2"	111-2437	111-3437	111-4437	\$27.08
1/2"	5/8"	2-1/2"	111-2500	111-3500	111-4500	\$31.68
5/8"	3/4"	3"	111-2625	111-3625	111-4625	\$60.49
3/4"	1"	3"	111-2750	111-3750	111-4750	\$80.84
1"	1"	3"	111-2100	111-3100	111-4100	\$144.92

SOLID CARBIDE END MILLS

STUB LENGTH

SINGLE END SQUARE

2-3-4 FLUTE

ALTIN COATED - **HTC** HARD COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	110-2031	110-3031	110-4031	\$7.40
3/64"	3/32"	1-1/2"	110-2046	110-3046	110-4046	\$7.40
1/16"	1/8"	1-1/2"	110-2062	110-3062	110-4062	\$6.26
3/32"	3/16"	1-1/2"	110-2093	110-3093	110-4093	\$5.68
1/8"	1/4"	1-1/2"	110-2125	110-3125	110-4125	\$5.50
5/32"	5/16"	2"	110-2156	110-3156	110-4156	\$10.94
3/16"	3/8"	2"	110-2187	110-3187	110-4187	\$10.64
7/32"	7/16"	2"	110-2218	110-3218	110-4218	\$14.30
1/4"	1/2"	2"	110-2250	110-3250	110-4250	\$12.50
5/16"	1/2"	2"	110-2312	110-3312	110-4312	\$17.16
3/8"	5/8"	2"	110-2375	110-3375	110-4375	\$20.10
7/16"	5/8"	2-1/2"	110-2437	110-3437	110-4437	\$27.92
1/2"	5/8"	2-1/2"	110-2500	110-3500	110-4500	\$32.66
5/8"	3/4"	3"	110-2625	110-3625	110-4625	\$62.36
3/4"	1"	3"	110-2750	110-3750	110-4750	\$83.34
1"	1"	3"	110-2100	110-3100	110-4100	\$149.40

SOLID CARBIDE END MILLS**STUB LENGTH**

SINGLE END BALL

2-3-4 FLUTE

ALTIN COATED - HTC HARD COAT

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	3 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	115-2031	115-3031	115-4031	\$10.24
3/64"	3/32"	1-1/2"	115-2046	115-3046	115-4046	\$10.24
1/16"	1/8"	1-1/2"	115-2062	115-3062	115-4062	\$9.30
3/32"	3/16"	1-1/2"	115-2093	115-3093	115-4093	\$9.30
1/8"	1/4"	1-1/2"	115-2125	115-3125	115-4125	\$7.78
5/32"	5/16"	2"	115-2156	115-3156	115-4156	\$12.54
3/16"	3/8"	2"	115-2187	115-3187	115-4187	\$12.54
7/32"	7/16"	2"	115-2218	115-3218	115-4218	\$16.78
1/4"	1/2"	2"	115-2250	115-3250	115-4250	\$16.02
5/16"	1/2"	2"	115-2312	115-3312	115-4312	\$21.06
3/8"	5/8"	2"	115-2375	115-3375	115-4375	\$24.28
7/16"	5/8"	2-1/2"	115-2437	115-3437	115-4437	\$36.46
1/2"	5/8"	2-1/2"	115-2500	115-3500	115-4500	\$39.42
5/8"	3/4"	3"	115-2625	115-3625	115-4625	\$71.86
3/4"	1"	3"	115-2750	115-3750	115-4750	\$95.68
1"	1"	3"	115-2100	115-3100	115-4100	\$185.50

SOLID CARBIDE END MILLS

DOUBLE END - STUB LENGTH

DOUBLE END SQUARE AND BALL

2-4 FLUTE

UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	190-2031	190-4031	\$9.00
3/64"	3/32"	1-1/2"	190-2046	190-4046	\$9.00
1/16"	1/8"	1-1/2"	190-2062	190-4062	\$8.00
3/32"	3/16"	1-1/2"	190-2093	190-4093	\$7.60
7/64"	7/32"	1-1/2"	190-2109	190-4109	\$7.40
1/8"	1/4"	1-1/2"	190-2125	190-4125	\$7.20
5/32"	5/16"	2"	190-2156	190-4156	\$11.00
3/16"	3/8"	2"	190-2187	190-4187	\$10.50
7/32"	3/8"	2-1/2"	190-2218	190-4218	\$12.40
1/4"	1/2"	2-1/2"	190-2250	190-4250	\$12.20
9/32"	1/2"	2-1/2"	190-2281	190-4281	\$15.00
5/16"	1/2"	2-1/2"	190-2312	190-4312	\$14.60
3/8"	9/16"	2-1/2"	190-2375	190-4375	\$19.00
7/16"	9/16"	2-3/4"	190-2437	190-4437	\$29.00
1/2"	5/8"	3"	190-2500	190-4500	\$32.00
9/16"	11/16"	3-1/2"	190-2562	190-4562	\$70.00
5/8"	11/16"	3-1/2"	190-2625	190-4625	\$68.00
3/4"	7/8"	4"	190-2750	190-4750	\$86.00

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	195-2031	195-4031	\$16.00
3/64"	3/32"	1-1/2"	195-2046	195-4046	\$16.00
1/16"	1/8"	1-1/2"	195-2062	195-4062	\$14.40
3/32"	3/16"	1-1/2"	195-2093	195-4093	\$14.00
7/64"	7/32"	1-1/2"	195-2109	195-4109	\$14.00
1/8"	1/4"	1-1/2"	195-2125	195-4125	\$13.60
5/32"	5/16"	2"	195-2156	195-4156	\$16.00
3/16"	3/8"	2"	195-2187	195-4187	\$15.60
7/32"	3/8"	2-1/2"	195-2218	195-4218	\$16.60
1/4"	1/2"	2-1/2"	195-2250	195-4250	\$16.20
9/32"	1/2"	2-1/2"	195-2281	195-4281	\$19.00
5/16"	1/2"	2-1/2"	195-2312	195-4312	\$18.00
3/8"	9/16"	2-1/2"	195-2375	195-4375	\$28.00
7/16"	9/16"	2-3/4"	195-2437	195-4437	\$36.00
1/2"	5/8"	3"	195-2500	195-4500	\$42.00
9/16"	11/16"	3-1/2"	195-2562	195-4562	\$94.00
5/8"	11/16"	3-1/2"	195-2625	195-4625	\$88.00
3/4"	7/8"	4"	195-2750	195-4750	\$112.00

Series 197/199

T O O L - C U T T E R M A N U F A C T U R I N G

SOLID CARBIDE END MILLS

DOUBLE END - STUB LENGTH

DOUBLE END SQUARE AND BALL

2-4 FLUTE

TIN COATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	197-2031	190-4031	\$10.20
3/64"	3/32"	1-1/2"	197-2046	197-4046	\$10.10
1/16"	1/8"	1-1/2"	197-2062	197-4062	\$8.88
3/32"	3/16"	1-1/2"	197-2093	197-4093	\$8.80
7/64"	7/32"	1-1/2"	197-2109	197-4109	\$8.80
1/8"	1/4"	1-1/2"	197-2125	197-4125	\$8.70
5/32"	5/16"	2"	197-2156	197-4156	\$12.30
3/16"	3/8"	2"	197-2187	197-4187	\$12.20
7/32"	3/8"	2-1/2"	197-2218	197-4218	\$14.72
1/4"	1/2"	2-1/2"	197-2250	197-4250	\$14.50
9/32"	1/2"	2-1/2"	197-2281	197-4281	\$17.90
5/16"	1/2"	2-1/2"	197-2312	197-4312	\$17.50
3/8"	9/16"	2-1/2"	197-2375	197-4375	\$21.90
7/16"	9/16"	2-3/4"	197-2437	197-4437	\$33.68
1/2"	5/8"	3"	197-2500	197-4500	\$36.60
9/16"	11/16"	3-1/2"	197-2562	197-4562	\$66.10
5/8"	11/16"	3-1/2"	197-2625	197-4625	\$77.32
3/4"	7/8"	4"	197-2750	197-4750	\$98.36

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	199-2031	199-4031	\$17.00
3/64"	3/32"	1-1/2"	199-2046	199-4046	\$17.00
1/16"	1/8"	1-1/2"	199-2062	199-4062	\$15.80
3/32"	3/16"	1-1/2"	199-2093	199-4093	\$15.20
7/64"	7/32"	1-1/2"	199-2109	199-4109	\$15.20
1/8"	1/4"	1-1/2"	199-2125	199-4125	\$14.90
5/32"	5/16"	2"	199-2156	199-4156	\$17.10
3/16"	3/8"	2"	199-2187	199-4187	\$16.80
7/32"	3/8"	2-1/2"	199-2218	199-4218	\$18.10
1/4"	1/2"	2-1/2"	199-2250	199-4250	\$18.00
9/32"	1/2"	2-1/2"	199-2281	199-4281	\$21.00
5/16"	1/2"	2-1/2"	199-2312	199-4312	\$20.50
3/8"	9/16"	2-1/2"	199-2375	199-4375	\$31.00
7/16"	9/16"	2-3/4"	199-2437	199-4437	\$42.00
1/2"	5/8"	3"	199-2500	199-4500	\$48.00
9/16"	11/16"	3-1/2"	199-2562	199-4562	\$102.00
5/8"	11/16"	3-1/2"	199-2625	199-4625	\$96.00
3/4"	7/8"	4"	199-2750	199-4750	\$122.00

SOLID CARBIDE END MILLS

DOUBLE END - STUB LENGTH

DOUBLE END SQUARE AND BALL

2-4 FLUTE

TICN COAT- HTC PROGRESSIVE COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	192-2031	192-4031	\$9.70
3/64"	3/32"	1-1/2"	192-2046	192-4046	\$9.70
1/16"	1/8"	1-1/2"	192-2062	192-4062	\$8.73
3/32"	3/16"	1-1/2"	192-2093	192-4093	\$8.34
7/64"	7/32"	1-1/2"	192-2109	192-4109	\$8.15
1/8"	1/4"	1-1/2"	192-2125	192-4125	\$7.96
5/32"	5/16"	2"	192-2156	192-4156	\$13.19
3/16"	3/8"	2"	192-2187	192-4187	\$12.61
7/32"	3/8"	2-1/2"	192-2218	192-4218	\$16.49
1/4"	1/2"	2-1/2"	192-2250	192-4250	\$15.91
9/32"	1/2"	2-1/2"	192-2281	192-4281	\$20.37
5/16"	1/2"	2-1/2"	192-2312	192-4312	\$19.79
3/8"	9/16"	2-1/2"	192-2375	192-4375	\$24.25
7/16"	9/16"	2-3/4"	192-2437	192-4437	\$35.89
1/2"	5/8"	3"	192-2500	192-4500	\$36.86
9/16"	11/16"	3-1/2"	192-2562	192-4562	\$77.60
5/8"	11/16"	3-1/2"	192-2625	192-4625	\$73.72
3/4"	7/8"	4"	192-2750	192-4750	\$98.94

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	194-2031	194-4031	\$16.49
3/64"	3/32"	1-1/2"	194-2046	194-4046	\$16.49
1/16"	1/8"	1-1/2"	194-2062	194-4062	\$15.52
3/32"	3/16"	1-1/2"	194-2093	194-4093	\$15.52
7/64"	7/32"	1-1/2"	194-2109	194-4109	\$15.13
1/8"	1/4"	1-1/2"	194-2125	194-4125	\$15.13
5/32"	5/16"	2"	194-2156	194-4156	\$18.04
3/16"	3/8"	2"	194-2187	194-4187	\$17.46
7/32"	3/8"	2-1/2"	194-2218	194-4218	\$20.37
1/4"	1/2"	2-1/2"	194-2250	194-4250	\$19.40
9/32"	1/2"	2-1/2"	194-2281	194-4281	\$24.25
5/16"	1/2"	2-1/2"	194-2312	194-4312	\$23.28
3/8"	9/16"	2-1/2"	194-2375	194-4375	\$32.98
7/16"	9/16"	2-3/4"	194-2437	194-4437	\$42.68
1/2"	5/8"	3"	194-2500	194-4500	\$48.50
9/16"	11/16"	3-1/2"	194-2562	194-4562	\$104.76
5/8"	11/16"	3-1/2"	194-2625	194-4625	\$99.91
3/4"	7/8"	4"	194-2750	194-4750	\$128.04

SOLID CARBIDE END MILLS**DOUBLE END - STUB LENGTH**

DOUBLE END SQUARE AND BALL

2-4 FLUTE

ALTIN COATED - HTC HARD COAT

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	200-2031	200-4031	\$10.00
3/64"	3/32"	1-1/2"	200-2046	200-4046	\$10.00
1/16"	1/8"	1-1/2"	200-2062	200-4062	\$9.00
3/32"	3/16"	1-1/2"	200-2093	200-4093	\$8.60
7/64"	7/32"	1-1/2"	200-2109	200-4109	\$8.40
1/8"	1/4"	1-1/2"	200-2125	200-4125	\$8.20
5/32"	5/16"	2"	200-2156	200-4156	\$13.60
3/16"	3/8"	2"	200-2187	200-4187	\$13.00
7/32"	3/8"	2-1/2"	200-2218	200-4218	\$17.00
1/4"	1/2"	2-1/2"	200-2250	200-4250	\$16.40
9/32"	1/2"	2-1/2"	200-2281	200-4281	\$21.00
5/16"	1/2"	2-1/2"	200-2312	200-4312	\$20.40
3/8"	9/16"	2-1/2"	200-2375	200-4375	\$25.00
7/16"	9/16"	2-3/4"	200-2437	200-4437	\$37.00
1/2"	5/8"	3"	200-2500	200-4500	\$38.00
9/16"	11/16"	3-1/2"	200-2562	200-4562	\$80.00
5/8"	11/16"	3-1/2"	200-2625	200-4625	\$76.00
3/4"	7/8"	4"	200-2750	200-4750	\$102.00

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/32"	1/16"	1-1/2"	205-2031	205-4031	\$17.00
3/64"	3/32"	1-1/2"	205-2046	205-4046	\$17.00
1/16"	1/8"	1-1/2"	205-2062	205-4062	\$16.00
3/32"	3/16"	1-1/2"	205-2093	205-4093	\$16.00
7/64"	7/32"	1-1/2"	205-2109	205-4109	\$15.60
1/8"	1/4"	1-1/2"	205-2125	205-4125	\$15.60
5/32"	5/16"	2"	205-2156	205-4156	\$18.60
3/16"	3/8"	2"	205-2187	205-4187	\$18.00
7/32"	3/8"	2-1/2"	205-2218	205-4218	\$21.00
1/4"	1/2"	2-1/2"	205-2250	205-4250	\$20.00
9/32"	1/2"	2-1/2"	205-2281	205-4281	\$25.00
5/16"	1/2"	2-1/2"	205-2312	205-4312	\$24.00
3/8"	9/16"	2-1/2"	205-2375	205-4375	\$34.00
7/16"	9/16"	2-3/4"	205-2437	205-4437	\$44.00
1/2"	5/8"	3"	205-2500	205-4500	\$50.00
9/16"	11/16"	3-1/2"	205-2562	205-4562	\$108.00
5/8"	11/16"	3-1/2"	205-2625	205-4625	\$103.00
3/4"	7/8"	4"	205-2750	205-4750	\$132.00

SOLID CARBIDE END MILLS

DOUBLE END - W/WELDON FLATS • DOUBLE END SQUARE / 2-4 FLUTE
UNCOATED

CUTTER DIA	SHANK DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
3/32"	3/8"	5/16"	3"	210-2093	210-4093	\$28.40
1/8"	3/8"	3/8"	3-1/16"	210-2125	210-4125	\$28.00
5/32"	3/8"	7/16"	3-1/8"	210-2156	210-4156	\$27.60
3/16"	3/8"	1/2"	3-1/4"	210-2187	210-4187	\$27.00
7/32"	3/8"	9/16"	3-1/2"	210-2218	210-4218	\$27.00
1/4"	3/8"	5/8"	3-1/2"	210-2250	210-4250	\$27.00
5/16"	3/8"	3/4"	3-1/2"	210-2312	210-4312	\$28.40
11/32"	3/8"	3/4"	3-1/2"	210-2343	210-4343	\$30.40
3/8"	3/8"	3/4"	3-1/2"	210-2375	210-4375	\$30.00
7/16"	1/2"	7/8"	4"	210-2437	210-4437	\$46.00
1/2"	1/2"	1"	4"	210-2500	210-4500	\$42.00
9/16"	5/8"	1-1/4"	5"	210-2532	210-4532	\$78.00
5/8"	5/8"	1-1/2"	6"	210-2625	210-4625	\$84.00
3/4"	3/4"	1-1/2"	6"	210-2750	210-4750	\$122.00



SOLID CARBIDE END MILLS

DOUBLE END - W/WELDON FLATS • DOUBLE END BALL / 2-4 FLUTE
UNCOATED

CUTTER DIA	SHANK DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
3/32"	3/8"	5/16"	3"	215-2093	215-4093	\$36.00
1/8"	3/8"	3/8"	3-1/16"	215-2125	215-4125	\$34.00
5/32"	3/8"	7/16"	3-1/8"	215-2156	215-4156	\$34.00
3/16"	3/8"	1/2"	3-1/4"	215-2187	215-4187	\$33.00
7/32"	3/8"	9/16"	3-1/2"	215-2218	215-4218	\$33.00
1/4"	3/8"	5/8"	3-1/2"	215-2250	215-4250	\$33.00
5/16"	3/8"	3/4"	3-1/2"	215-2312	215-4312	\$38.00
11/32"	3/8"	3/4"	3-1/2"	215-2343	215-4343	\$38.00
3/8"	3/8"	3/4"	3-1/2"	215-2375	215-4375	\$38.00
7/16"	1/2"	7/8"	4"	215-2437	215-4437	\$56.00
1/2"	1/2"	1"	4"	215-2500	215-4500	\$54.00
9/16"	5/8"	1-1/4"	5"	215-2532	215-4532	\$98.86
5/8"	5/8"	1-1/2"	6"	215-2625	215-4625	\$116.00
3/4"	3/4"	1-1/2"	6"	215-2750	215-4750	\$156.00



Series 212



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE END MILLS

DOUBLE END - W/WELDON FLATS • DOUBLE END SQUARE / 2-4 FLUTE
ALTIN COATED - **HTC** HARD COAT

CUTTER DIA	SHANK DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
3/32"	3/8"	5/16"	3"	212-2093	212-4093	\$32.40
1/8"	3/8"	3/8"	3-1/16"	212-2125	212-4125	\$32.00
5/32"	3/8"	7/16"	3-1/8"	212-2156	212-4156	\$32.10
3/16"	3/8"	1/2"	3-1/4"	212-2187	212-4187	\$31.50
7/32"	3/8"	9/16"	3-1/2"	212-2218	212-4218	\$31.50
1/4"	3/8"	5/8"	3-1/2"	212-2250	212-4250	\$31.50
5/16"	3/8"	3/4"	3-1/2"	212-2312	212-4312	\$33.10
11/32"	3/8"	3/4"	3-1/2"	212-2343	212-4343	\$35.10
3/8"	3/8"	3/4"	3-2"	212-2375	212-4375	\$34.70
7/16"	1/2"	7/8"	4"	212-2437	212-4437	\$51.20
1/2"	1/2"	1"	4"	212-2500	212-4500	\$49.00
9/16"	5/8"	1-1/4"	5"	212-2532	212-4532	\$87.00
5/8"	5/8"	1-1/2"	6"	212-2625	212-4625	\$93.00
3/4"	3/4"	1-2"	6"	212-2750	212-4750	\$132.00



Series 217

SOLID CARBIDE END MILLS

DOUBLE END - W/WELDON FLATS • DOUBLE END BALL / 2-4 FLUTE
ALTIN COATED - **HTC** HARD COAT

CUTTER DIA	SHANK DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
3/32"	3/8"	5/16"	3"	217-2093	217-4093	\$40.00
1/8"	3/8"	3/8"	3-1/16"	217-2125	217-4125	\$38.00
5/32"	3/8"	7/16"	3-1/8"	217-2156	217-4156	\$38.50
3/16"	3/8"	1/2"	3-1/4"	217-2187	217-4187	\$37.50
7/32"	3/8"	9/16"	3-1/2"	217-2218	217-4218	\$37.50
1/4"	3/8"	5/8"	3-1/2"	217-2250	217-4250	\$37.50
5/16"	3/8"	3/4"	3-1/2"	217-2312	217-4312	\$42.70
11/32"	3/8"	3/4"	3-1/2"	217-2343	217-4343	\$43.10
3/8"	3/8"	3/4"	3-2"	217-2375	217-4375	\$42.70
7/16"	1/2"	7/8"	4"	217-2437	217-4437	\$61.20
1/2"	1/2"	1"	4"	217-2500	217-4500	\$61.00
9/16"	5/8"	1-1/4"	5"	217-2532	217-4532	\$107.86
5/8"	5/8"	1-1/2"	6"	217-2625	217-4625	\$125.00
3/4"	3/4"	1-2"	6"	217-2750	217-4750	\$166.00



SOLID CARBIDE END MILLS

EXTRA-EXTRA LONG LENGTHS

SINGLE END SQUARE

2-4 FLUTE

UNCOATED & ALTiN COATED - **HTC** HARD COAT



UNCOATED

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/4"	3"	6"	770-2256	770-4256	\$34.50
5/16"	3"	6"	770-2316	770-4316	\$42.18
3/8"	4"	7"	770-2357	770-4357	\$52.88
7/16"	3"	6"	770-2436	770-4436	\$64.32
1/2"	4"	7"	770-2507	770-4507	\$77.90
1/2"	5"	8"	770-2508	770-4508	\$91.24
5/8"	4"	7"	770-2627	770-4627	\$103.94
5/8"	5"	8"	770-2628	770-4628	\$127.48
5/8"	6"	9"	770-2629	770-4629	\$159.18
3/4"	5"	8"	770-2758	770-4758	\$176.00
3/4"	6"	9"	770-2759	770-4759	\$192.32
3/4"	8"	12"	770-2712	770-4712	\$224.00
1"	5"	8"	770-2108	770-4108	\$386.00
1"	6"	9"	770-2109	770-4109	\$448.00
1"	7"	10"	770-2110	770-4110	\$482.00
1"	8"	12"	770-2112	770-4112	\$537.00



ALTiN COATED - **HTC** HARD COAT

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/4"	3"	6"	777-2256	777-4256	\$45.15
5/16"	3"	6"	777-2316	777-4316	\$53.22
3/8"	4"	7"	777-2357	777-4357	\$64.81
7/16"	3"	6"	777-2436	777-4436	\$73.94
1/2"	4"	7"	777-2507	777-4507	\$89.17
1/2"	5"	8"	777-2508	777-4508	\$114.28
5/8"	4"	7"	777-2627	777-4627	\$118.13
5/8"	5"	8"	777-2628	777-4628	\$143.71
5/8"	6"	9"	777-2629	777-4629	\$176.08
3/4"	5"	8"	777-2758	777-4758	\$194.74
3/4"	6"	9"	777-2759	777-4759	\$207.33
3/4"	8"	12"	777-2712	777-4712	\$241.17
1"	5"	8"	777-2108	777-4108	\$403.09
1"	6"	9"	777-2109	777-4109	\$465.61
1"	7"	10"	777-2110	777-4110	\$503.96
1"	8"	12"	777-2112	777-4112	\$552.19

SOLID CARBIDE END MILLS

EXTRA-EXTRA LONG LENGTHS

SINGLE END BALL

2-4 FLUTE

UNCOATED & ALTiN COATED - HTC HARD COAT



UNCOATED

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/4"	3"	6"	775-2256	775-4256	\$38.50
5/16"	3"	6"	775-2316	775-4316	\$46.90
3/8"	4"	7"	775-2357	775-4357	\$57.00
7/16"	3"	6"	775-2436	775-4436	\$70.00
1/2"	4"	7"	775-2507	775-4507	\$83.00
1/2"	5"	8"	775-2508	775-4508	\$97.00
5/8"	4"	7"	775-2627	775-4627	\$113.00
5/8"	5"	8"	775-2628	775-4628	\$135.00
5/8"	6"	9"	775-2629	775-4629	\$169.00
3/4"	5"	8"	775-2758	775-4758	\$193.00
3/4"	6"	9"	775-2759	775-4759	\$218.00
3/4"	8"	12"	775-2712	775-4712	\$243.00
1"	5"	8"	775-2108	775-4108	\$407.00
1"	6"	9"	775-2109	775-4109	\$479.00
1"	7"	10"	775-2110	775-4110	\$509.00
1"	8"	12"	775-2112	775-4112	\$561.00



ALTiN COATED - HTC HARD COAT

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/4"	3"	6"	778-2256	778-4256	\$49.15
5/16"	3"	6"	778-2316	778-4316	\$57.94
3/8"	4"	7"	778-2357	778-4357	\$68.93
7/16"	3"	6"	778-2436	778-4436	\$79.62
1/2"	4"	7"	778-2507	778-4507	\$94.27
1/2"	5"	8"	778-2508	778-4508	\$120.04
5/8"	4"	7"	778-2627	778-4627	\$127.19
5/8"	5"	8"	778-2628	778-4628	\$151.23
5/8"	6"	9"	778-2629	778-4629	\$185.90
3/4"	5"	8"	778-2758	778-4758	\$211.94
3/4"	6"	9"	778-2759	778-4759	\$233.01
3/4"	8"	12"	778-2712	778-4712	\$260.77
1"	5"	8"	778-2108	778-4108	\$430.09
1"	6"	9"	778-2109	778-4109	\$496.61
1"	7"	10"	778-2110	778-4110	\$530.96
1"	8"	12"	778-2112	778-4112	\$576.19

SOLID CARBIDE END MILLS

STRAIGHT FLUTE • SINGLE END • 2-4 FLUTE
UNCOATED

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	1/2"	1-1/2"	780-2125	780-4125	\$5.50
5/32"	5/8"	2"	780-2156	780-4156	\$10.00
3/16"	5/8"	2"	780-2187	780-4187	\$9.60
1/4"	3/4"	2-1/2"	780-2250	780-4250	\$12.20
9/32"	13/16"	2-1/2"	780-2282	780-4282	\$17.50
5/16"	13/16"	2-1/2"	780-2312	780-4312	\$16.50
3/8"	1"	2-1/2"	780-2375	780-4375	\$20.30
7/16"	1"	2-3/4"	780-2437	780-4437	\$28.20
1/2"	1"	3"	780-2500	780-4500	\$34.50
5/8"	1-1/4"	3-1/2"	780-2625	780-4625	\$76.00
3/4"	1-1/2"	4"	780-2750	780-4750	\$104.00
1"	1-1/2"	4"	780-2100	780-4100	\$166.00



Series 795

SOLID CARBIDE END MILLS

LEFT HAND • SINGLE END SQUARE • 4 FLUTE
UNCOATED

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	4 FLUTE PART#	LIST PRICE
3/16"	5/8"	2"	795-18LH	\$17.20
1/4"	3/4"	2-1/2"	795-25LH	\$17.00
5/16"	13/16"	2-1/2"	795-31LH	\$23.00
3/8"	1"	2-1/2"	795-37LH	\$29.20
7/16"	1"	2-3/4"	795-43LH	\$42.00
1/2"	1"	3"	795-50LH	\$50.00
5/8"	1-1/4"	3-1/2"	795-62LH	\$87.00
3/4"	1-1/2"	4"	795-75LH	\$134.00
1"	1-1/2"	4"	795-10LH	\$186.00



SOLID CARBIDE END MILLS**6 FLUTE SQUARE**

SINGLE END SQUARE

6 FLUTE

UNCOATED & ALTIM COATED - HTC HARD COAT**UNCOATED**

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	6 FLUTE PART#	LIST PRICE
1/8"	1/2"	1-1/2"	790-6125	\$4.50
3/16"	5/8"	2"	790-6187	\$9.20
1/4"	3/4"	2-1/2"	790-6250	\$10.10
5/16"	7/8"	2-1/2"	790-6312	\$12.20
3/8"	1"	2-1/2"	790-6375	\$15.30
7/16"	1"	2-1/4"	790-6437	\$22.44
1/2"	1"	3"	790-6500	\$28.60
9/16"	1-1/4"	3-1/2"	790-6562	\$52.50
5/8"	1-1/4"	3-1/2"	790-6625	\$54.80
3/4"	1-1/2"	4"	790-6750	\$75.30
7/8"	1-1/2"	4"	790-6875	\$130.00
1"	1-1/2"	4"	790-6100	\$134.00

**ALTIM COATED - HTC HARD COAT**

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	6 FLUTE PART#	LIST PRICE
1/8"	1/2"	1-1/2"	792-6125	\$6.28
3/16"	5/8"	2"	792-6187	\$11.80
1/4"	3/4"	2-1/2"	792-6250	\$14.76
5/16"	7/8"	2-1/2"	792-6312	\$18.76
3/8"	1"	2-1/2"	792-6375	\$21.86
7/16"	1"	2-1/4"	792-6437	\$31.82
1/2"	1"	3"	792-6500	\$37.98
9/16"	1-1/4"	3-1/2"	792-6562	\$67.14
5/8"	1-1/4"	3-1/2"	792-6625	\$69.44
3/4"	1-1/2"	4"	792-6750	\$92.02
7/8"	1-1/2"	4"	792-6875	\$159.26
1"	1-1/2"	4"	792-6100	\$163.24

SOLID CARBIDE END MILLS

LONG REACH • SINGLE END SQUARE • 2 FLUTE



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	LBS.	NO. OF FLUTES	CATALOG NO.	2 FLUTE PART#	UNCOATED LIST PRICE	2 FLUTE PART#	ALTIN COATED LIST PRICE
3/16	3/16	3/8	3	1-5/8	2	HSMM-2-6	95408	\$46.02	99691	\$50.43
1/4	1/4	3/8	4	2-1/8	2	HSMM-2-8	95412	\$52.40	99692	\$59.85
5/16	5/16	7/16	4	2-1/8	2	HSMM-2-10	95416	\$59.24	99693	\$66.69
3/8	3/8	1/2	4	2-1/8	2	HSMM-2-12	95420	\$64.18	99694	\$71.64
1/2	1/2	5/8	6	3-3/8	2	HSML-2-16	94928	\$89.58	99687	\$104.13
1/2	1/2	5/8	4	2-1/8	2	HSMM-2-16	95428	\$74.48	99695	\$89.03
5/8	5/8	3/4	6	3-3/8	2	HSML-2-20	94930	\$148.46	99698	\$164.92
5/8	5/8	3/4	6	2-3/8	2	HSMM-2-20	95430	\$139.98	99696	\$156.43
3/4	3/4	1	6	2-1/2	2	HSML-2-24	94932	\$194.68	99689	\$215.02
3/4	3/4	1	6	2-1/2	2	HSMM-2-24	95432	\$183.40	99697	\$203.73
1	1	1-1/4	7	4-3/8	2	HSML-2-32	94934	\$324.34	99690	\$351.89
1	1	1-1/4	6	3-3/8	2	HSMM-2-32	95434	\$282.18	99698	\$308.02

Series 765

SOLID CARBIDE END MILLS

LONG REACH • SINGLE END BALL • 2 FLUTE



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	LBS.	NO. OF FLUTES	CATALOG NO.	2 FLUTE PART#	UNCOATED LIST PRICE	2 FLUTE PART#	ALTIN COATED LIST PRICE
3/16	3/16	3/8	3	1-5/8	2	RHSMM-2-6	95508	\$49.83	99699	\$54.24
1/4	1/4	3/8	4	2-1/8	2	RHSMM-2-8	95512	\$56.64	99700	\$64.09
5/16	5/16	7/16	4	2-1/8	2	RHSMM-2-10	95516	\$63.48	99701	\$70.93
3/8	3/8	1/2	4	2-1/8	2	RHSMM-2-12	95520	\$70.54	99702	\$77.99
1/2	1/2	5/8	6	2-1/8	2	RHSML-2-16	95928	\$99.60	99707	\$114.15
1/2	1/2	5/8	4	3-3/8	2	RHSMM-2-16	95528	\$84.37	99703	\$98.93
5/8	5/8	3/4	6	3-3/8	2	RHSML-2-20	95530	\$158.34	99704	\$174.79
5/8	5/8	3/4	6	2-3/8	2	RHSMM-2-20	95930	\$166.81	99708	\$183.27
3/4	3/4	1	6	2-1/2	2	RHSML-2-24	95532	\$210.21	99705	\$230.54
3/4	3/4	1	6	3-3/8	2	RHSMM-2-24	95932	\$221.48	99709	\$241.82
1	1	1-1/4	6	3-3/8	2	RHSML-2-32	95534	\$324.48	99706	\$350.34
1	1	1-1/4	7	4-3/8	2	RHSMM-2-32	95934	\$366.83	99710	\$394.24

Series 772

T O O L - C U T T E R M A N U F A C T U R I N G

SOLID CARBIDE END MILLS

LONG REACH • SINGLE END SQUARE • 4 FLUTE



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	NO. OF FLUTES	CATALOG NO.	4 FLUTE PART#	UNCOATED LIST PRICE	4 FLUTE PART#	ALTiN COATED LIST PRICE
1/4	1/4	3/4	4	4	SHXL-4-8	96012	\$23.82	99739	\$31.28
5/16	5/16	13/16	4	4	SHXL-4-10	96016	\$28.95	99740	\$36.40
3/8	3/8	1	4	4	SHXL-4-12	96020	\$32.98	99741	\$40.44
7/16	7/16	1	6	4	SHXL-4-14	96025	\$45.99	99742	\$56.00
1/2	1/2	1	6	4	SHXL-4-16	96028	\$64.23	99743	\$78.78
5/8	5/8	1-1/4	6	4	SHXL-4-20	96030	\$97.25	99744	\$113.71
3/4	3/4	1-1/2	6	4	SHXL-4-24	96032	\$149.85	99745	\$170.18
1	1	1-1/2	6	4	SHXL-4-32	96034	\$243.48	99746	\$269.34

Series 774

SOLID CARBIDE END MILLS

LONG REACH • SINGLE END BALL • 4 FLUTE



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	NO. OF FLUTES	CATALOG NO.	4 FLUTE PART#	UNCOATED LIST PRICE	4 FLUTE PART#	ALTiN COATED LIST PRICE
1/4	1/4	3/4	4	4	RSHXL-4-8	96112	\$27.06	99731	\$34.53
5/16	5/16	13/16	4	4	RSHXL-4-10	96116	\$33.43	99732	\$40.87
3/8	3/8	1	4	4	RSHXL-4-12	96120	\$38.51	99733	\$45.96
7/16	7/16	1	4	4	RSHXL-4-14	96125	\$53.17	99734	\$60.61
1/2	1/2	1	6	4	RSHXL-4-16	96128	\$71.93	99735	\$86.47
5/8	5/8	1-1/4	6	4	RSHXL-4-20	96130	\$111.72	99736	\$126.26
3/4	3/4	1-1/2	6	4	RSHXL-4-24	96132	\$170.31	99737	\$184.85
1	1	1-1/2	6	4	RSHXL-4-32	96134	\$277.72	99738	\$292.27

SOLID CARBIDE END MILLS

EXTRA LONG REACH • SINGLE END SQUARE / 2-4 FLUTE
UNCOATED



CUTTER DIA	LENGTH OF CUT	CORNER RADIUS	OVERALL REACH	OVERALL LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/4"	3/8"	.015	4-3/8"	6"	750-2256	750-4256	\$51.00
5/16"	1/2"	.015	4-5/16"	6"	750-2316	750-4316	\$57.00
3/8"	1/2"	.030	4-5/16"	6"	750-2376	750-4376	\$65.00
1/2"	3/4"	.030	5-3/4"	8"	750-2508	750-4508	\$107.00
5/8"	7/8"	.030	5-5/8"	8"	750-2628	750-4628	\$137.00
3/4"	1"	.030	5-5/8"	8"	750-2758	750-4758	\$213.00
1"	1-1/4"	.060	5-5/8"	10"	750-2110	750-4110	\$386.00

Series 755

SOLID CARBIDE END MILLS

EXTRA LONG REACH • SINGLE END BALL / 2-4 FLUTE
UNCOATED



CUTTER DIA	LENGTH OF CUT	OVERALL REACH	OVERALL LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/4"	3/8"	4-3/8"	6"	755-2256	755-4256	\$54.00
5/16"	1/2"	4-5/16"	6"	755-2316	755-4316	\$59.00
3/8"	1/2"	4-5/16"	6"	755-2376	755-4376	\$68.00
1/2"	3/4"	5-3/4"	8"	755-2508	755-4508	\$113.00
5/8"	7/8"	5-5/8"	8"	755-2628	755-4628	\$142.00
3/4"	1"	5-5/8"	8"	755-2758	755-4758	\$221.00
1"	1-1/4"	5-5/8"	10"	755-2110	755-4110	\$394.00



HTC-HOT MILLS

HTC-HOT MILLS

OUR UNIQUE HIGH PERFORMANCE 4-FLUTE FINISHING VARIABLE-INDEXED ACCELERATOR CARBIDE END MILLS CUT STAINLESS STEEL AND OTHER TOUGH ALLOYS AT HIGH METAL REMOVAL RATES. SPECIAL TOOL GEOMETRICS OFFER REDUCED VIBRATION, GREATER STRENGTH, TOOL LIFE AND FEEDS & SPEEDS. OUR UNIQUE HIGH PERFORMANCE VARIABLE INDEXED 4-FLUTE ACCELERATOR CARBIDE END MILL STANDARD OFFERING INCLUDE:

- **VARIABLE INDEXED FLUTE TO FLUTE; REDUCES VIBRATIONS ALLOWING INCREASED FEEDS & SPEEDS.**
- **ECCENTRIC-RADIAL O.D. RELIEVED; INCREASES TOOL STRENGTH ALLOWING GREATER FEEDS & SPEEDS.**
- **OUR BEST HARD COATING FOR HEAVY FAST METAL REMOVAL RATES—CAN BE USED DRY**
- **SHANK O.D. COOLANT GROOVE-EACH FLUTE; TO MAXIMIZE COOLING AND CHIP EVACUATION VELOCITY**
- **ECCENTRIC O.D. PRIMARY RELIEF**
- **35 HELIX/RHC-RHS**
- **STD WITH CORNER RADIUS**
- **FLUTE DIAMETER +.000-.002**
- **SHANK DIAMETER -.0001-.0004**
- **HTC —ALTIN HARD COAT**
- **STD. WITH SHANK O.D. COOLANT GROVES FEED SLOTS MAXIMIZE COOLING & CHIP EVACUATION**

HIGH PERFORMANCE 4-FLUTE FINISHING VARIABLE INDEXED CARBIDE END MILLS-THE ACCELERATOR SERIES

SOLID CARBIDE END MILLS

HTC HOT MILLS**SINGLE END SQUARE****4 FLUTE****ALTIN COATED - HTC HARD COAT**

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	CORNER RADIUS	PART#	LIST PRICE
1/8"	1/2"	1-1/2"	.010	800-1250	\$12.00
3/16"	5/8"	2"	.010	800-1870	\$14.00
1/4"	3/4"	2-1/2"	.015	800-2500	\$18.00
5/16"	7/8"	2-1/2"	.015	800-3120	\$26.00
3/8"	1"	2-1/2"	.020	800-3750	\$32.00
7/16"	1-1/8"	2-3/4"	.025	800-4370	\$48.00
1/2"	1-1/4"	3"	.030	800-5000	\$58.00
5/8"	1-1/2"	3-1/2"	.030	800-6250	\$94.00
3/4"	1-3/4"	4"	.040	800-7500	\$136.00
1"	1-3/4"	4"	.045	800-1000	\$216.00

SOLID CARBIDE END MILLS

HTC BALL END HOT MILLS

SINGLE END BALL

4 FLUTE

ALTIN COATED - HTC HARD COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE
1/8"	1/2"	1-1/2"	810-125B	\$16.46
3/16"	5/8"	2"	810-187B	\$18.24
1/4"	3/4"	2-1/2"	810-250B	\$26.00
5/16"	7/8"	2-1/2"	810-312B	\$36.00
3/8"	1"	2-1/2"	810-375B	\$40.00
7/16"	1-1/8"	2-3/4"	810-437B	\$56.00
1/2"	1-1/4"	3"	810-500B	\$72.00
5/8"	1-1/2"	3-1/2"	810-625B	\$128.00
3/4"	1-3/4"	4"	810-750B	\$175.00
1"	1-3/4"	4"	810-100B	\$278.00

HTC-HOT MILLS

SOLID CARBIDE END MILLS

HTC STUB HOT MILLS**SINGLE END SQUARE****4 FLUTE****ALTIN COATED - HTC HARD COAT**

CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	CORNER RADIUS	PART#	LIST PRICE
1/8"	1/4"	1-1/2"	.010	815-1250	\$10.00
3/16"	1/4"	2"	.010	815-1870	\$11.00
1/4"	5/16"	2"	.015	815-2500	\$16.00
5/16"	3/8"	2"	.015	815-3120	\$23.00
3/8"	1/2"	2"	.020	815-3750	\$29.00
7/16"	5/8"	2-1/2"	.025	815-4370	\$44.00
1/2"	5/8"	2-1/2"	.030	815-5000	\$53.00
5/8"	1"	3"	.030	815-6250	\$88.00
3/4"	1"	3"	.040	815-7500	\$129.00
1"	1"	3"	.045	815-1000	\$193.00

SOLID CARBIDE END MILLS

HTC STUB END HOT MILLS

SINGLE END BALL

4 FLUTE

ALTIN COATED - HTC HARD COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE
1/8"	1/4"	1-1/2"	820-125B	\$14.00
3/16"	1/4"	2"	820-187B	\$16.00
1/4"	5/16"	2"	820-250B	\$24.00
5/16"	3/8"	2"	820-312B	\$32.00
3/8"	1/2"	2"	820-375B	\$37.00
7/16"	5/8"	2-1/2"	820-437B	\$51.00
1/2"	5/8"	2-1/2"	820-500B	\$66.00
5/8"	1"	3"	820-625B	\$121.00
3/4"	1"	3"	820-750B	\$164.00
1"	1"	3"	820-100B	\$263.00

HTC-HOT MILLS

Series 822

TOOL - CUTTER MANUFACTURING

SOLID CARBIDE END MILLS

HTC LONG REACH HOT MILLS

SINGLE END SQUARE

4 FLUTE

ALTIN COATED - **HTC** HARD COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	CORNER RADIUS	PART#	LIST PRICE
1/4"	3/4"	4"	.015	822-2500	\$34.50
5/16"	7/8"	4"	.015	822-3120	\$36.20
3/8"	1"	4"	.020	822-3750	\$42.15
1/2"	1-1/4"	4"	.030	822-5000	\$78.00
1/2"	1-1/4"	6"	.030	822-5100	\$87.90
5/8"	1-1/2"	6"	.030	822-6255	\$153.00
3/4"	1-3/4"	6"	.040	822-7500	\$196.00
1"	1-3/4"	6"	.045	822-1000	\$278.00

HTC-HOT MILLS

SOLID CARBIDE END MILLS

BEEFY MILL • C/C, SE, STRAIGHT FLUTE • 2 FLUTE



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	NO. OF FLUTES	CATALOG NO.	2 FLUTE PART#	UNCOATED LIST PRICE	2 FLUTE PART#	ALTIN COATED LIST PRICE
1/8	1/8	1/2	1-1/2	2	SB-2-4	91704	\$11.58	99622	\$15.00
3/16	3/16	5/8	2	2	SB-2-6	91708	\$15.99	99623	\$19.41
1/4	1/4	3/4	2-1/2	2	SB-2-8	91712	\$20.20	99624	\$23.62
5/16	5/16	13/16	2-1/2	2	SB-2-10	91716	\$24.88	99625	\$30.41
3/8	3/8	1	2-1/2	2	SB-2-12	91720	\$29.49	99626	\$35.03
1/2	1/2	1	3	2	SB-2-16	91728	\$46.04	99627	\$52.24

Series 783

SOLID CARBIDE END MILLS

BEEFY MILL • BALL END, SE, STRAIGHT FLUTE • 2 FLUTE



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	NO. OF FLUTES	CATALOG NO.	2 FLUTE PART#	UNCOATED LIST PRICE	2 FLUTE PART#	ALTIN COATED LIST PRICE
1/8	1/8	1/2	1-1/2	2	RSB-2-4	91604	\$14.00	99628	\$17.42
3/16	3/16	5/8	2	2	RSB-2-6	91608	\$19.23	99629	\$22.65
1/4	1/4	3/4	2-1/2	2	RSB-2-8	91612	\$24.25	99630	\$27.68
5/16	5/16	13/16	2-1/2	2	RSB-2-10	91616	\$31.02	99631	\$36.55
3/8	3/8	1	2-1/2	2	RSB-2-12	91620	\$35.43	99632	\$40.96
1/2	1/2	1	3	2	RSB-2-16	91628	\$61.20	99633	\$67.40

Series 416

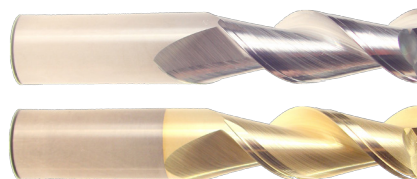


TOOL - CUTTER MANUFACTURING

SOLID CARBIDE END MILLS

SPOON CUTTER • C/C, SE, 45° HELIX • 2 FLUTE

FOR ALUMINUM & NON-FERROUS MACHINING



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	NO. OF FLUTES	CATALOG NO.	2 FLUTE PART#	UNCOATED LIST PRICE	2 FLUTE PART#	ZrN COATED LIST PRICE
1/8	1/8	1/4	1-1/2	2	AFS-2-4	92504	\$11.28	98184	\$14.21
1/8	1/8	1/2	1-1/2	2	AF-2-4	92404	\$12.42	98185	\$15.35
3/16	3/16	5/16	2	2	AFS-2-6	92508	\$15.54	98186	\$18.46
3/16	3/16	9/16	2	2	AF-2-6	92408	\$17.36	98187	\$20.29
1/4	1/4	3/8	2-1/2	2	AFS-208	92512	\$20.94	98188	\$23.86
1/4	1/4	3/4	2-1/2	2	AF-2-8	92412	\$23.31	98189	\$26.24
1/4	1/4	1-1/8	3	2	AFM-2-8	91312	\$33.21	98640	\$37.00
1/4	1/4	1-1/2	4	2	AFL-2-8	91412	\$36.28	98641	\$42.67
5/16	5/16	7/16	2-1/2	2	AFS-2-10	92516	\$22.68	98190	\$27.43
5/16	5/16	13/16	2-1/2	2	AF-2-10	92416	\$25.19	98191	\$29.94
5/16	5/16	1-1/8	3	2	AFM-2-10	91316	\$38.03	98642	\$42.78
5/16	5/16	1-5/8	4	2	AFL-2-10	91416	\$55.15	98643	\$61.53
3/8	3/8	1/2	2-1/2	2	AFS-2-12	92520	\$26.44	98192	\$31.19
3/8	3/8	1	2-1/2	2	AF-2-12	92420	\$29.20	98193	\$33.94
3/8	3/8	1-1/8	3	2	AFM-2-12	91320	\$41.17	98644	\$45.92
3/8	3/8	1-3/4	4	2	AFL-2-12	91420	\$55.77	98645	\$62.16
7/16	7/16	9/16	2-3/4	2	AFS-2-14	92525	\$37.40	98194	\$42.71
7/16	7/16	1	2-3/4	2	AF-2-14	92425	\$41.86	98195	\$47.17
7/16	7/16	2	4	2	AFM-2-14	91325	\$64.74	98646	\$73.32
7/16	7/16	3	6	2	AFL-2-14	91425	\$89.33	98647	\$101.80
1/2	1/2	5/8	3	2	AFS-2-16	92528	\$42.61	98196	\$48.37
1/2	1/2	1-1/4	3	2	AF-2-16	92428	\$47.31	98197	\$53.07
1/2	1/2	2	4	2	AFM-2-16	91328	\$74.57	98648	\$83.15
1/2	1/2	3	6	2	AFL-2-16	91428	\$124.95	98649	\$134.95
5/8	5/8	3/4	3-1/2	2	AFS-2-20	92530	\$81.46	98198	\$89.98
5/8	5/8	1-5/8	3-1/2	2	AF-2-20	92430	\$90.48	98199	\$99.01
5/8	5/8	2-1/4	5	2	AFM-2-20	91330	\$137.04	98650	\$157.00
5/8	5/8	3	6	2	AFL-2-20	91430	\$198.26	98651	\$212.37
3/4	3/4	1	4	2	AFS-2-24	92532	\$114.29	98200	\$127.01
3/4	3/4	1-5/8	4	2	AF-2-24	92432	\$126.95	98201	\$139.67
3/4	3/4	2-1/4	5	2	AFM-2-24	91332	\$167.37	98652	\$181.65
3/4	3/4	3	6	2	AFL-2-24	91432	\$195.63	98653	\$213.05
1	1	1-1/4	4	2	AFS-2-32	92534	\$207.41	98202	\$225.22
1	1	2	4	2	AF-2-32	92434	\$229.46	98203	\$247.27
1	1	2-1/4	5	2	AFM-2-32	91334	\$261.42	98654	\$280.91
1	1	3	6	2	AFL-2-32	91434	\$275.08	98655	\$297.25

SOLID CARBIDE END MILLS

SPOON CUTTER • BALL END, SE, 45° HELIX • 2 FLUTE

FOR ALUMINUM & NON-FERROUS MACHINING



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	NO. OF FLUTES	CATALOG NO.	2 FLUTE PART#	UNCOATED LIST PRICE	2 FLUTE PART#	ZrN COATED LIST PRICE
1/4	1/4	3/8	2-1/2	2	ARFS-2-8	85412	\$23.06	99887	\$26.48
1/4	1/4	3/4	2-1/2	2	ARF-2-8	85512	\$25.63	99879	\$29.05
5/16	5/16	7/16	2-1/2	2	ARFS-2-10	85416	\$25.06	99888	\$30.60
5/16	5/16	13/16	2-1/2	2	ARF-2-10	85516	\$27.88	99880	\$33.42
3/8	3/8	1/2	2-1/2	2	ARFS-2-12	85420	\$22.22	99889	\$34.76
3/8	3/8	1	2-1/2	2	ARF2-12	85520	\$32.52	99881	\$38.03
7/16	7/16	9/16	2-3/4	2	ARFS-2-14	85425	\$41.78	99890	\$47.97
7/16	7/16	1	2-3/4	2	ARF-2-14	85525	\$46.42	99882	\$52.61
1/2	1/2	5/8	3	2	ARFS-2-16	85428	\$47.12	99891	\$53.84
1/2	1/2	1-1/4	3	2	ARF-2-16	85528	\$52.37	99883	\$59.09
5/8	5/8	3/4	3-1/2	2	ARFS-2-20	85430	\$90.64	99892	\$100.59
5/8	5/8	1-5/8	3-1/2	2	ARF-2-20	85530	\$100.72	99884	\$110.66
3/4	3/4	1	4	2	ARFS-2-24	85432	\$127.46	99893	\$142.29
3/4	3/4	1-5/8	4	2	ARF-2-24	85532	\$141.62	99885	\$156.45
1	1	1-1/4	4	2	ARFS-2-32	85434	\$228.06	99894	\$248.84
1	1	2	4	2	ARF-2-32	85534	\$251.05	99886	\$271.83

SOLID CARBIDE END MILLS

SPOON CUTTER • C/C, SE, 60° HELIX • 3 & 4 FLUTE

EXCELLENT FOR HIGH SPEED FINISHING



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	NO. OF FLUTES	CATALOG NO.	4 FLUTE PART#	UNCOATED LIST PRICE	4 FLUTE PART#	ZrN COATED LIST PRICE
1/4	1/4	3/4	2-1/2	3	HH-3-8	93112	\$15.99	99232	\$19.41
5/16	5/16	13/16	2-1/2	3	HH-3-10	93116	\$26.27	99233	\$31.79
3/8	3/8	1	2-1/2	3	HH-3-12	93120	\$29.78	99234	\$35.31
7/16	7/16	1	2-3/4	3	HH-3-14	93125	\$34.44	99235	\$39.62
1/2	1/2	1	3	3	HH-3-16	93128	\$42.87	99236	\$49.59
9/16	9/16	1-1/4	3-1/2	3	HH-3-18	93129	\$74.59	99237	\$84.54
5/8	5/8	1-1/4	3-1/2	3	HH-3-20	93130	\$75.34	99238	\$85.28
3/4	3/4	1-1/2	4	3	HH-3-24	93132	\$106.85	99239	\$121.68
3/4	3/4	1-1/2	4	4	HH-4-24	93632	\$106.85	99240	\$121.68
1	1	1-1/2	4	3	HH-3-32	93134	\$176.75	99241	\$197.52
1	1	1-1/2	4	4	HH-4-32	93634	\$176.75	99242	\$197.52

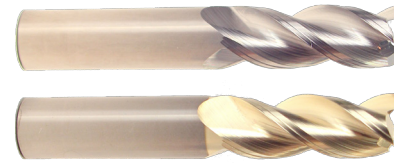
Series 410



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE END MILLS

SPOON CUTTER • C/C, SE, 38° HELIX • 3 FLUTE
FOR ALUMINUM & NON-FERROUS MACHINING



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	NO. OF FLUTES	CATALOG NO.	3 FLUTE PART#	UNCOATED LIST PRICE	3 FLUTE PART#	ZrN COATED LIST PRICE
1/8	1/8	1/4	1-1/3	3	AFS-3-4	92304	\$11.72	99106	\$15.14
1/8	1/8	1/2	1-1/2	3	AF-3-4	92204	\$12.41	99098	\$15.83
3/16	3/16	5/16	2	3	AFS-3-6	92308	\$16.12	99107	\$19.54
3/16	3/16	9/16	2	3	AF-3-6	92208	\$17.36	99099	\$20.78
1/4	1/4	3/8	2-1/2	3	AFS-3-8	92312	\$21.75	99108	\$25.17
1/4	1/4	3/4	2-1/2	3	AF-3-8	92212	\$23.31	99100	\$26.73
1/4	1/4	1-1/8	3	3	AFM-3-8	91112	\$33.21	99656	\$37.62
1/4	1/4	1-1/2	4	3	AFL-3-8	91212	\$36.28	99657	\$43.75
5/16	5/16	1-1/8	3	3	AFM-3-10	91116	\$34.71	99658	\$40.22
5/16	5/16	1-5/8	4	3	AFL-3-10	91216	\$45.12	99659	\$52.58
3/8	3/8	1/2	2-1/2	3	AFS-3-12	92316	\$32.02	99109	\$37.55
3/8	3/8	1	2-1/2	3	AF-3-12	92216	\$34.27	99101	\$39.80
3/8	3/8	1-1/8	3	3	AFM-3-12	91120	\$43.24	99660	\$48.77
3/8	3/8	1-3/4	4	3	AFL-3-12	91220	\$52.38	99661	\$59.84
7/16	7/16	2	4	3	AFM-3-14	91125	\$64.74	99662	\$74.75
7/16	7/16	3	6	3	AFL-3-14	91225	\$89.33	99663	\$103.88
1/2	1/2	5/8	3	3	AFS-3-16	92320	\$48.96	99110	\$55.68
1/2	1/2	1-1/4	3	3	AF-3-16	92220	\$52.38	99102	\$59.11
1/2	1/2	2	4	3	AFM-3-16	91128	\$74.57	99664	\$84.58
1/2	1/2	3	6	3	AFL-3-16	91228	\$132.97	99665	\$147.53
5/8	5/8	3/4	3-1/2	3	AFS-3-20	92324	\$92.29	99111	\$102.22
5/8	5/8	1-5/8	3-1/2	3	AF-3-20	92224	\$98.76	99103	\$108.69
5/8	5/8	2-1/4	5	3	AFM-3-20	91130	\$137.04	99666	\$151.60
5/8	5/8	3	6	3	AFL-3-20	91230	\$210.92	99667	\$227.38
3/4	3/4	1	4	3	AFS-3-24	92328	\$129.97	99112	\$144.80
3/4	3/4	1-5/8	4	3	AF-3-24	92228	\$139.05	99104	\$153.88
3/4	3/4	2-1/4	5	3	AFM-3-24	91132	\$167.37	99668	\$184.02
3/4	3/4	3	6	3	AFL-3-24	91232	\$179.41	99669	\$199.73
1	1	1-1/4	4	3	AFS-3-32	92332	\$207.21	99113	\$228.00
1	1	2	4	3	AF-3-32	92232	\$229.46	99105	\$250.25
1	1	2-1/4	5	3	AFM-3-32	91134	\$261.42	99670	\$284.15
1	1	3	6	3	AFL-3-32	91234	\$275.08	99671	\$300.95

SOLID CARBIDE END MILLS

SPOON CUTTER • C/C, SE & DE, 35° HELIX • 3 FLUTE

FOR STAINLESS STEEL MACHINING



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	STD RADIUS	NO. OF FLUTES	CATALOG NO.	3 FLUTE PART#	UNCOATED LIST PRICE	3 FLUTE PART#	ALTIM COATED LIST PRICE
1/8	1/8	1/4	1-1/2	.008-.010	3	SS-3-4	94860	\$17.80	99017	\$21.22
1/8	1/8	1/2	1-1/2	.008-.010	3	S-3-4	94644	\$18.88	99025	\$22.31
3/16	3/16	5/16	2	.008-.010	3	SS-3-6	94864	\$21.00	99018	\$24.43
3/16	3/16	9/16	2	.008-.010	3	S-3-6	94648	\$22.24	99026	\$25.66
1/4	1/4	3/8	2-1/2	.015-.020	3	SS-3-8	94868	\$25.24	99019	\$28.65
1/4	1/4	3/4	2-1/2	.015-.020	3	S-3-8	94652	\$26.53	99027	\$29.95
3/8	3/8	1/2	2-1/2	.015-.020	3	SS-3-12	94876	\$38.26	99020	\$43.79
3/8	3/8	1	2-1/2	.015-.020	3	S-3-12	94660	\$40.19	99028	\$45.72
1/2	1/2	5/8	3	.030-.035	3	SS-3-16	94880	\$60.22	99021	\$66.94
1/2	1/2	1-1/4	3	.030-.035	3	S-3-16	94664	\$62.66	99029	\$69.38
5/8	5/8	3/4	3-1/2	.030-.035	3	SS-3-20	94882	\$108.16	99022	\$118.09
5/8	5/8	1-5/8	3-1/2	.030-.035	3	S-3-20	94666	\$115.09	99030	\$125.03
3/4	3/4	1	4	.030-.035	3	SS-3-24	94884	\$153.78	99023	\$168.61
3/4	3/4	1-5/8	4	.030-.035	3	S-3-24	94668	\$163.86	99031	\$178.69
1	1	1-1/4	4	.030-.035	3	SS-3-32	94886	\$258.22	99024	\$278.99
1	1	2	4	.030-.035	3	S-3-32	94670	\$274.78	99032	\$295.55

Series 414

SOLID CARBIDE END MILLS

SPOON CUTTER • BALL END, SE, 35° HELIX • 3 FLUTE

FOR STAINLESS STEEL MACHINING



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	NO. OF FLUTES	CATALOG NO.	3 FLUTE PART#	UNCOATED LIST PRICE	3 FLUTE PART#	ALTIM COATED LIST PRICE
1/8	1/8	1/4	1-1/2	3	RSS-3-4	94060	\$26.88	99001	\$39.31
1/8	1/8	1/2	1-1/2	3	RS-3-4	93704	\$28.77	99009	\$32.19
3/16	3/16	5/16	2	3	RSS-3-6	94064	\$34.81	99002	\$38.23
3/16	3/16	9/16	2	3	RS-3-6	93708	\$37.25	99010	\$40.67
1/4	1/4	3/8	2-1/2	3	RSS-3-8	94068	\$41.22	99003	\$44.63
1/4	1/4	3/4	2-1/2	3	RS-3-8	93712	\$44.09	99011	\$47.52
3/8	3/8	1/2	2-1/2	3	RSS-3-12	94076	\$49.44	99004	\$54.96
3/8	3/8	1	2-1/2	3	RS-3-12	93720	\$52.89	99012	\$58.41
1/2	1/2	5/8	3	3	RSS-3-16	94080	\$65.25	99005	\$71.98
1/2	1/2	1-1/4	3	3	RS-3-16	93724	\$69.83	99013	\$76.55
5/8	5/8	3/4	3-1/2	3	RSS-3-20	94082	\$121.48	99006	\$131.41
5/8	5/8	1-5/8	3-1/2	3	RS-3-20	93726	\$129.97	99014	\$139.91
3/4	3/4	1	4	3	RSS-3-24	94084	\$180.65	99007	\$195.48
3/4	3/4	1-5/8	4	3	RS-3-24	93728	\$193.24	99015	\$208.13
1	1	1-1/4	4	3	RSS-3-32	94086	\$296.68	99008	\$317.46
1	1	2	4	3	RS-3-32	93730	\$317.46	99016	\$338.24

Series 650



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE TAPERED END MILLS



3 FLUTE, C/C, SE, TAPERED END MILLS

Taper Per Side	Tip Dia.	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	Reference No.	Brite		TiN Coated		TiCN Coated		TiAlN Coated	
							EDP No.	Price	EDP No.	Price	EDP No.	Price	EDP No.	Price
1/2	1/16	1/8	1	3	3	TC1/2-AA-4C	96414	42.23	97345	43.79	98345	44.57	99345	44.96
1/2	1/16	1/8	1/2	2-1/2	3	TC1/2-AA-2C	96410	32.81	97343	34.37	98343	35.15	99343	35.54
1/2	1/16	1/8	3/4	2-1/2	3	TC1/2-AA-3C	96412	34.40	97344	35.96	98344	36.74	99344	37.13
1/2	1/32	1/8	1/2	2-1/2	3	TC1/2-AAA-2C	96404	30.44	97340	32.00	98340	32.78	99340	33.17
1/2	1/32	1/8	1/4	2-1/2	3	TC1/2-AAA-1C	96402	28.49	97339	30.05	98339	30.83	99339	31.22
1/2	1/4	3/8	1-1/4	3	3	TC1/2-D-5C	96616	43.01	97258	45.53	98258	46.79	99258	47.42
1/2	1/4	3/8	3/4	2-1/2	3	TC1/2-D-3C	96614	40.82	97257	43.34	98257	44.60	99257	45.23
1/2	1/8	1/4	1	3	3	TC1/2-B-4C	96608	34.99	97254	37.00	98254	38.01	99254	38.51
1/2	1/8	1/4	3/4	2-1/2	3	TC1/2-B-3C	96606	28.86	97253	30.42	98253	31.20	99253	31.59
1/2	3/16	1/4	1-1/4	3	3	TC1/2-C-5C	96612	36.45	97256	38.46	98256	39.47	99256	39.97
1/2	3/16	1/4	3/4	2-1/2	3	TC1/2-C-3C	96610	28.86	97255	30.42	98255	31.20	99255	31.59
1/2	3/32	1/8	3/4	2-1/2	3	TC1/2-A-3C	96604	26.24	97252	27.80	98252	28.58	99252	28.97
1/2	3/64	1/8	1/2	2-1/2	3	TC1/2-AAX-2C	96408	30.85	97342	32.41	98342	33.19	99342	33.58
1/2	3/64	1/8	1/4	2-1/2	3	TC1/2-AAX-1C	96406	28.86	97341	30.42	98341	31.20	99341	31.59
1/2	5/64	1/8	1	3	3	TC1/2-AXA-4C	96420	42.63	97348	44.19	98348	44.97	99348	45.36
1/2	5/64	1/8	1/2	2-1/2	3	TC1/2-AXA-2C	96416	33.62	97346	35.18	98346	35.96	99346	36.35
1/2	5/64	1/8	3/4	2-1/2	3	TC1/2-AXA-3C	96418	32.81	97347	34.37	98347	35.15	99347	35.54
1	1/16	1/8	1	3	3	TC1-AA-4C	96434	42.63	97355	44.19	98355	44.97	99355	45.36
1	1/16	1/8	1/2	2-1/2	3	TC1-AA-2C	96430	33.21	97353	34.77	98353	35.55	99353	35.94
1	1/16	1/8	3/4	2-1/2	3	TC1-AA-3C	96432	34.80	97354	36.36	98354	37.14	99354	37.53
1	1/32	1/8	1/2	2-1/2	3	TC1-AAA-2C	96424	30.85	97350	32.41	98350	33.19	99350	33.58
1	1/32	1/8	1/4	2-1/2	3	TC1-AAA-1C	96422	28.86	97349	30.42	98349	31.20	99349	31.59
1	1/4	3/8	1-1/4	3	3	TC1-D-5C	96636	45.41	97268	47.93	98268	49.19	99268	49.82
1	1/4	3/8	2	4	3	TC1-D-8C	96638	62.55	97269	65.95	98269	67.65	99269	68.50
1	1/4	3/8	3/4	2-1/2	3	TC1-D-3C	96634	40.82	97267	43.34	98267	44.60	99267	45.23
1	1/8	1/4	1	3	3	TC1-B-4C	96624	34.99	97262	37.00	98262	38.01	99262	38.51
1	1/8	1/4	1-1/2	3	3	TC1-B-6C	96626	39.80	97263	41.81	98263	42.82	99263	43.32
1	1/8	1/4	3/4	2-1/2	3	TC1-B-3C	96622	33.17	97261	34.73	98261	35.51	99261	35.90
1	3/16	1/4	1-1/4	3	3	TC1-C-5C	96630	37.91	97265	39.92	98265	40.93	99265	41.43
1	3/16	1/4	1-3/4	3-1/2	3	TC1-C-7C	96632	49.53	97266	51.54	98266	52.55	99266	53.05
1	3/16	1/4	3/4	2-1/2	3	TC1-C-3C	96628	33.17	97264	34.73	98264	35.51	99264	35.90
1	3/32	1/4	1	3	3	TC1-A-4C	96620	29.59	97260	31.60	98260	32.61	99260	33.11
1	3/32	1/8	1/2	2-1/2	3	TC1-A-2C	96618	26.97	97259	28.53	98259	29.31	99259	29.70
1	3/64	1/8	1/2	2-1/2	3	TC1-AAX-2C	96428	31.23	97352	32.79	98352	33.57	99352	33.96
1	3/64	1/8	1/4	2-1/2	3	TC1-AAX-1C	96426	29.27	97351	30.83	98351	31.61	99351	32.00
1	5/64	1/8	1	3	3	TC1-AXA-4C	96440	43.00	97358	44.56	98358	45.34	99358	45.73
1	5/64	1/8	1/2	2-1/2	3	TC1-AXA-2C	96436	33.99	97356	35.55	98356	36.33	99356	36.72
1	5/64	1/8	3/4	2-1/2	3	TC1-AXA-3C	96438	33.21	97357	34.77	98357	35.55	99357	35.94
1-1/2	1/16	3/16	1	3	3	TC12-AA-4C	96454	43.40	97365	44.96	98365	45.74	99365	46.13
1-1/2	1/16	1/8	1/2	2-1/2	3	TC12-AA-2C	96450	33.62	97363	35.18	98363	35.96	99363	36.35
1-1/2	1/16	1/8	3/4	2-1/2	3	TC12-AA-3C	96452	35.17	97364	36.73	98364	37.51	99364	37.90
1-1/2	1/32	1/8	1/2	2-1/2	3	TC12-AAA-2C	96444	31.23	97360	32.79	98360	33.57	99360	33.96
1-1/2	1/32	1/8	1/4	2-1/2	3	TC12-AAA-1C	96442	29.27	97359	30.83	98359	31.61	99359	32.00
1-1/2	1/4	3/8	1-1/4	3	3	TC12-D-5C	96652	45.41	97276	47.93	98276	49.19	99276	49.82
1-1/2	1/4	3/8	3/4	2-1/2	3	TC12-D-3C	96650	40.82	97275	43.34	98275	44.60	99275	45.23
1-1/2	1/8	1/4	1-1/2	3	3	TC12-B-6C	96644	40.10	97272	42.11	98272	43.12	99272	43.62
1-1/2	1/8	1/4	3/4	2-1/2	3	TC12-B-3C	96642	33.17	97271	34.73	98271	35.51	99271	35.90
1-1/2	3/16	3/8	1-1/4	3	3	TC12-C-5C	96646	43.01	97273	45.53	98273	46.79	99273	47.42
1-1/2	3/16	3/8	1-3/4	3-1/2	3	TC12-C-7C	96648	45.41	97274	47.93	98274	49.19	99274	49.82

SOLID CARBIDE TAPERED END MILLS



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Taper Per Side	Tip Dia.	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	Reference No.	Brite		TiN Coated		TiCN Coated		TiAlN Coated	
							EDP No.	Price	EDP No.	Price	EDP No.	Price	EDP No.	Price
1-1/2	3/32	1/4	1	3	3	TC12-A-4C	96640	29.59	97270	31.60	98270	32.61	99270	33.11
1-1/2	3/64	1/8	1/2	2-1/2	3	TC12-AAX-2C	96448	31.63	97362	33.19	98362	33.97	99362	34.36
1-1/2	3/64	1/8	1/4	2-1/2	3	TC12-AAX-1C	96446	29.67	97361	31.23	98361	32.01	99361	32.40
1-1/2	5/64	3/16	1	3	3	TC12-AXA-4C	96460	43.40	97368	44.96	98368	45.74	99368	46.13
1-1/2	5/64	1/8	1/2	2-1/2	3	TC12-AXA-2C	96456	34.40	97366	35.96	98366	36.74	99366	37.13
1-1/2	5/64	1/8	3/4	2-1/2	3	TC12-AXA-3C	96458	33.62	97367	35.18	98367	35.96	99367	36.35
2	1/16	3/16	1	3	3	TC2-AA-4C	96520	43.81	97375	45.37	98375	46.15	99375	46.54
2	1/16	1/8	1/2	2-1/2	3	TC2-AA-2C	96516	33.99	97373	35.55	98373	36.33	99373	36.72
2	1/16	1/8	3/4	2-1/2	3	TC2-AA-3C	96518	35.57	97374	37.13	98374	37.91	99374	38.30
2	1/32	1/8	1/2	2-1/2	3	TC2-AAA-2C	96510	31.63	97370	33.19	98370	33.97	99370	34.36
2	1/32	1/8	1/4	2-1/2	3	TC2-AAA-1C	96508	29.67	97369	31.23	98369	32.01	99369	32.40
2	1/4	3/8	1-1/4	3	3	TC2-D-5C	96670	45.41	97285	47.93	98285	49.19	99285	49.82
2	1/4	1/2	2	4	3	TC2-D-8C	96672	62.55	97286	67.12	98286	69.40	99286	70.54
2	1/4	3/8	3/4	2-1/2	3	TC2-D-3C	96668	40.82	97284	43.34	98284	44.60	99284	45.23
2	1/8	1/4	1-1/4	3	3	TC2-B-5C	96660	35.72	97280	37.73	98280	38.74	99280	39.24
2	1/8	1/4	3/4	2-1/2	3	TC2-B-3C	96658	33.17	97279	34.73	98279	35.51	99279	35.90
2	3/16	3/8	1-1/4	3	3	TC2-C-5C	96664	37.91	97282	40.43	98282	41.69	99282	42.32
2	3/16	3/8	1-3/4	3-1/2	3	TC2-C-7C	96666	49.46	97283	51.98	98283	53.24	99283	53.87
2	3/16	1/4	3/4	2-1/2	3	TC2-C-3C	96662	34.26	97281	35.82	98281	36.60	99281	36.99
2	3/32	1/4	1	3	3	TC2-A-4C	96656	34.26	97278	36.27	98278	37.28	99278	37.78
2	3/32	1/4	3/4	2-1/2	3	TC2-A-3C	96654	31.59	97277	33.15	98277	33.93	99277	34.32
2	3/64	1/8	1/2	2-1/2	3	TC2-AAX-2C	96514	28.49	97372	30.05	98372	30.83	99372	31.22
2	3/64	1/8	1/4	2-1/2	3	TC2-AAX-1C	96512	30.04	97371	31.60	98371	32.38	99371	32.77
2	5/64	3/16	1	3	3	TC2-AXA-4C	96526	43.81	97378	45.37	98378	46.15	99378	46.54
2	5/64	1/8	1/2	2-1/2	3	TC2-AXA-2C	96522	34.80	97376	36.36	98376	37.14	99376	37.53
2	5/64	3/16	3/4	2-1/2	3	TC2-AXA-3C	96524	37.57	97377	39.13	98377	39.91	99377	40.30
3	1/16	3/16	1	3	3	TC3-AA-4C	96540	44.21	97385	45.77	98385	46.55	99385	46.94
3	1/16	1/8	1/2	2-1/2	3	TC3-AA-2C	96536	34.40	97383	35.96	98383	36.74	99383	37.13
3	1/16	3/16	3/4	2-1/2	3	TC3-AA-3C	96538	35.98	97384	37.54	98384	38.32	99384	38.71
3	1/32	1/8	1/2	2-1/2	3	TC3-AAA-2C	96530	32.04	97380	33.60	98380	34.38	99380	34.77
3	1/32	1/8	1/4	2-1/2	3	TC3-AAA-1C	96528	30.04	97379	31.60	98379	32.38	99379	32.77
3	1/4	3/8	1-1/4	3	3	TC3-D-5C	96718	45.41	97298	47.93	98298	49.19	99298	49.82
3	1/4	1/2	2	4	3	TC3-D-8C	96720	62.55	97299	67.12	98299	69.40	99299	70.54
3	1/4	3/8	3/4	2-1/2	3	TC3-D-3C	96716	40.82	97297	43.34	98297	44.60	99297	45.23
3	1/8	1/4	1	3	3	TC3-B-4C	96680	34.63	97290	36.64	98290	37.65	99290	38.15
3	1/8	3/8	1-1/2	3-1/2	3	TC3-B-6C	96682	45.41	97291	47.93	98291	49.19	99291	49.82
3	1/8	3/8	2	3-1/2	3	TC3-B-8C	96706	55.40	97292	57.92	98292	59.18	99292	59.81
3	1/8	1/4	3/4	2-1/2	3	TC3-B-3C	96678	32.81	97289	34.37	98289	35.15	99289	35.54
3	3/16	3/8	1-1/4	3	3	TC3-C-5C	96714	45.41	97296	47.93	98296	49.19	99296	49.82
3	3/16	3/8	3/4	2-1/2	3	TC3-C-3C	96712	40.82	97295	43.34	98295	44.60	99295	45.23
3	3/32	1/4	1	3	3	TC3-A-4C	96674	33.90	97287	35.91	98287	36.92	99287	37.42
3	3/32	1/4	1-1/2	3	3	TC3-A-6C	96676	40.10	97288	42.11	98288	43.12	99288	43.62
3	3/64	1/8	1/2	2-1/2	3	TC3-AAX-2C	96534	32.44	97382	34.00	98382	34.78	99382	35.17
3	3/64	1/8	1/4	2-1/2	3	TC3-AAX-1C	96532	30.44	97381	32.00	98381	32.78	99381	33.17
3	5/32	3/8	1-1/4	3	3	TC3-BX-5C	96708	43.01	97293	45.53	98293	46.79	99293	47.42
3	5/32	3/8	1-3/4	3-1/2	3	TC3-BX-7C	96710	54.53	97294	57.05	98294	58.31	99294	58.94
3	5/64	3/16	1	3	3	TC3-AXA-4C	96546	44.21	97388	45.77	98388	46.55	99388	46.94
3	5/64	3/16	1/2	2-1/2	3	TC3-AXA-2C	96542	35.17	97386	36.73	98386	37.51	99386	37.90
3	5/64	3/16	3/4	2-1/2	3	TC3-AXA-3C	96544	37.94	97387	39.50	98387	40.28	99387	40.67

Series 650



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SOLID CARBIDE TAPERED END MILLS



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Taper Per Side	Tip Dia.	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	Reference No.	Brite		TiN Coated		TiCN Coated		TiAlN Coated	
							EDP No.	Price	EDP No.	Price	EDP No.	Price	EDP No.	Price
4	1/4	1/2	1-1/4	3-1/2	3	TC4-D-5C	96734	62.55	97306	65.61	98306	67.15	99306	67.91
4	1/4	3/8	3/4	2-1/2	3	TC4-D-3C	96732	40.82	97305	43.34	98305	44.60	99305	45.23
4	1/8	3/8	1	3	3	TC4-B-4C	96726	34.63	97302	37.15	98302	38.41	99302	39.04
4	1/8	1/4	3/4	2-1/2	3	TC4-B-3C	96724	32.81	97301	34.37	98301	35.15	99301	35.54
4	3/16	3/8	1-1/4	3	3	TC4-C-5C	96730	45.41	97304	47.93	98304	49.19	99304	49.82
4	3/16	3/8	3/4	2-1/2	3	TC4-C-3C	96728	40.82	97303	43.34	98303	44.60	99303	45.23
4	3/32	1/4	1	3	3	TC4-A-4C	96722	29.59	97300	31.60	98300	32.61	99300	33.11
5	1/16	1/4	1	3	3	TC5-AA-4C	96560	46.31	97395	48.32	98395	49.33	99395	49.83
5	1/16	1/4	1/2	2-1/2	3	TC5-AA-2C	96556	34.80	97393	36.36	98393	37.14	99393	37.53
5	1/16	1/4	3/4	2-1/2	3	TC5-AA-3C	96558	36.38	97394	37.94	98394	38.72	99394	39.11
5	1/32	3/16	1/2	2-1/2	3	TC5-AAA-2C	96550	32.44	97390	34.00	98390	34.78	99390	35.17
5	1/32	1/8	1/4	2-1/2	3	TC5-AAA-1C	96548	30.44	97389	32.00	98389	32.78	99389	33.17
5	1/4	1/2	1	3	3	TC5-D-4C	96754	52.49	97316	55.55	98316	57.09	99316	57.85
5	1/4	1/2	1-1/4	3-1/2	3	TC5-D-5C	96756	62.55	97317	65.61	98317	67.15	99317	67.91
5	1/4	5/8	2	4	3	TC5-D-8C	96758	74.14	97318	79.86	98318	82.71	99318	84.14
5	1/4	1/2	3/4	2-1/2	3	TC5-D-3C	96752	47.02	97315	49.84	98315	51.25	99315	51.96
5	1/8	3/8	1	3	3	TC5-B-4C	96744	43.01	97311	45.53	98311	46.79	99311	47.42
5	1/8	3/8	1-1/2	3-1/2	3	TC5-B-6C	96746	45.41	97312	47.93	98312	49.19	99312	49.82
5	1/8	1/4	3/4	2-1/2	3	TC5-B-3C	96742	30.25	97310	31.81	98310	32.59	99310	32.98
5	3/16	1/2	1-1/4	3	3	TC5-C-5C	96750	62.55	97314	65.61	98314	67.15	99314	67.91
5	3/16	3/8	3/4	2-1/2	3	TC5-C-3C	96748	40.82	97313	43.34	98313	44.60	99313	45.23
5	3/32	3/8	1	3	3	TC5-A-4C	96738	41.55	97308	44.07	98308	45.33	99308	45.96
5	3/32	3/8	1-1/2	3-1/2	3	TC5-A-6C	96740	45.41	97309	47.93	98309	49.19	99309	49.82
5	3/32	1/4	3/4	2-1/2	3	TC5-A-3C	96736	34.63	97307	36.19	98307	36.97	99307	37.36
5	3/64	3/16	1/2	2-1/2	3	TC5-AAX-2C	96554	32.81	97392	34.37	98392	35.15	99392	35.54
5	3/64	1/8	1/4	2-1/2	3	TC5-AAX-1C	96552	30.85	97391	32.41	98391	33.19	99391	33.58
5	5/64	3/8	1	3	3	TC5-AXA-4C	96566	51.57	97398	54.09	98398	55.35	99398	55.98
5	5/64	3/16	1/2	2-1/2	3	TC5-AXA-2C	96562	35.57	97396	37.13	98396	37.91	99396	38.30
5	5/64	1/4	3/4	2-1/2	3	TC5-AXA-3C	96564	38.34	97397	39.90	98397	40.68	99397	41.07
7	1/4	5/8	1-1/4	3-1/2	3	TC7-D-5C	96776	68.82	97327	73.35	98327	75.62	99327	76.75
7	1/4	1/2	3/4	2-1/2	3	TC7-D-3C	96774	55.40	97326	58.22	98326	59.63	99326	60.34
7	1/8	3/8	1	3	3	TC7-B-4C	96766	45.41	97322	47.93	98322	49.19	99322	49.82
7	1/8	3/8	1/2	2-1/2	3	TC7-B-2C	96762	39.37	97320	41.89	98320	43.15	99320	43.78
7	1/8	1/2	1-1/2	3-1/2	3	TC7-B-6C	96768	55.40	97323	58.46	98323	60.00	99323	60.76
7	1/8	3/8	3/4	2-1/2	3	TC7-B-3C	96764	42.28	97321	44.80	98321	46.06	99321	46.69
7	3/16	1/2	1-1/4	3-1/2	3	TC7-C-5C	96772	62.55	97325	65.61	98325	67.15	99325	67.91
7	3/32	3/8	1	3	3	TC7-A-4C	96760	42.65	97319	45.17	98319	46.43	99319	47.06
7	5/32	3/8	3/4	2-1/2	3	TC7-BX-3C	96770	42.28	97324	44.80	98324	46.06	99324	46.69
10	1/4	5/8	1	3	3	TC10-D-4C	96792	68.82	97335	73.35	98335	75.62	99335	76.75
10	1/4	5/8	3/4	3	3	TC10-D-3C	96790	67.07	97334	71.60	98334	73.87	99334	75.00
10	1/8	5/8	1	3	3	TC10-B-5C	96784	68.82	97331	73.35	98331	75.62	99331	76.75
10	1/8	5/8	1-1/4	3-1/2	3	TC10-B-4C	96786	62.55	97332	67.08	98332	69.35	99332	70.48
10	1/8	3/8	3/4	2-1/2	3	TC10-B-3C	96782	42.28	97330	44.80	98330	46.06	99330	46.69
10	3/16	5/8	1-1/4	3-1/2	3	TC10-C-5C	96788	68.82	97333	73.35	98333	75.62	99333	76.75
10	3/32	1/4	1/2	2-1/2	3	TC10-A-2C	96778	28.86	97328	30.42	98328	31.20	99328	31.59
10	3/32	5/8	1-1/2	3-1/2	3	TC10-A-6C	96780	68.82	97329	73.35	98329	75.62	99329	76.75
15	1/4	3/4	1	3	3	TC15-D-4C	96798	166.64	97338	172.02	98338	174.71	99338	176.05
15	1/8	3/4	1	3	3	TC15-B-4C	96794	152.02	97336	157.40	98336	160.09	99336	161.43
15	3/16	3/4	1	3	3	TC15-C-4C	96796	160.80	97337	166.18	98337	168.87	99337	170.21

SOLID CARBIDE END MILLS

TOUGH MILL • 5, 8 & 12-FLUTE, C/C, SE & DE, 45° HELIX
IDEAL FOR PERIPHERAL FINISH MILLING



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	NO. OF FLUTES	CATALOG NO.	3 FLUTE BALL PART#	UNCOATED LIST PRICE	3 FLUTE BALL PART#	ALTIM COATED LIST PRICE
1/8	1/8	1/4	1-1/2	5	MHS-5-4	93004	\$15.39	99033	\$18.81
1/8	1/8	1/2	1-1/2	5	MH-5-4	92604	\$16.51	99041	\$19.93
3/16	3/16	5/16	2	5	MHS-5-6	93008	\$16.57	99034	\$19.99
3/16	3/16	9/16	2	5	MH-5-6	92608	\$17.73	99042	\$21.14
1/4	1/4	3/8	2-1/2	5	MHS-5-8	93012	\$17.86	99035	\$21.28
1/4	1/4	3/4	2-1/2	5	MH-5-8	92612	\$19.11	99043	\$22.53
1/4	1/4	1-1/8	3	5	MHM-5-8	90912	\$27.13	99715	\$31.54
1/4	1/4	1-1/2	4	5	MHL-5-8	91012	\$33.07	99723	\$40.53
5/16	5/16	7/16	2-1/2	5	MHS-5-10	93016	\$22.51	99711	\$28.03
5/16	5/16	13/16	2-1/2	5	MH-5-10	92616	\$24.07	99712	\$29.60
5/16	5/16	1-1/8	3	5	MHM-5-10	90916	\$33.12	99716	\$38.63
5/16	5/16	1-5/8	4	5	MHL-5-10	91016	\$40.41	99724	\$47.86
3/8	3/8	1/2	2-1/2	5	MHS-5-12	93020	\$27.78	99036	\$33.24
3/8	3/8	1	2-1/2	5	MH-5-12	92620	\$29.73	99044	\$35.26
3/8	3/8	1-1/8	3	5	MHM-5-12	90920	\$41.33	99717	\$46.85
3/8	3/8	1-3/4	4	5	MHL-5-12	91020	\$45.78	99725	\$53.24
7/16	7/16	9/16	2-3/4	5	MHS-5-14	93025	\$34.87	99713	\$41.06
7/16	7/16	1	2-3/4	5	MH-5-14	92625	\$37.29	99714	\$43.49
7/16	7/16	2	4	5	MHM-5-14	90925	\$61.94	99718	\$71.96
7/16	7/16	3	6	5	MHL-5-14	91025	\$91.05	99726	\$105.50
1/2	1/2	5/8	3	5	MHS-5-16	93028	\$42.81	99037	\$49.53
1/2	1/2	5/8	3	8 *	MHS-8-16	93029	\$49.23	99912	\$55.95
1/2	1/2	1-1/4	3	5	MH-5-16	92628	\$45.80	99045	\$52.53
1/2	1/2	1-1/4	3	8 *	MH-8-16	92629	\$52.67	99456	\$59.40
1/2	1/2	2	4	5	MHM-5-16	90928	\$66.29	99719	\$76.31
1/2	1/2	3	6	5	MHL-5-16	91028	\$132.97	99727	\$147.53
5/8	5/8	3/4	3-1/2	5	MHS-5-20	93030	\$89.91	99038	\$99.85
5/8	5/8	3/4	3-1/2	8 *	MHS-8-20	93031	\$103.68	99913	\$113.62
5/8	5/8	1-5/8	3-1/2	5	MH-5-20	92632	\$96.53	99046	\$106.46
5/8	5/8	1-5/8	3-1/2	8 *	MH-8-20	92631	\$111.00	99457	\$120.94
5/8	5/8	2-1/4	5	5	MHM-5-20	90930	\$128.32	99720	\$142.86
5/8	5/8	3	6	5	MHL-5-20	91030	\$138.57	99728	\$155.03
3/4	3/4	1	4	5	MHS-5-24	93032	\$116.89	99039	\$131.73
3/4	3/4	1	4	8 *	MHS-8-24	93033	\$134.42	99914	\$149.25
3/4	3/4	1-5/8	4	5	MH-5-24	92634	\$125.05	99047	\$158.64
3/4	3/4	1-5/8	4	8 *	MH-8-24	92633	\$143.81	99458	\$166.48
3/4	3/4	2-1/4	5	5	MHM-5-24	90932	\$167.37	99721	\$198.40
3/4	3/4	3	6	5	MHL-5024	91032	\$189.05	99729	\$209.38
1	1	1-1/4	4	5	MHS-5-32	93034	\$185.93	99040	\$206.72
1	1	1-1/4	4	12 *	MHS-12-32	93035	\$260.31	99915	\$281.07
1	1	2	4	5	MH-5-32	92638	\$198.93	99048	\$219.71
1	1	2	4	12 *	MH-12-32	92635	\$278.49	99911	\$299.27
1	1	2-1/4	5	5	MHM-5-32	90934	\$248.82	99722	\$271.55
1	1	3	6	5	MHL-5-32	91034	\$273.71	99730	\$299.55
3/16	3/16	5/16	2	5	DMHS-5-6	85008	\$25.76	99916	\$28.60
1/4	1/4	3/8	2-1/2	5	DMHS-5-8	85012	\$26.99	99917	\$29.83
5/16	5/16	7/16	2-1/2	5	DMHS-5-10	85016	\$31.71	99918	\$36.30
3/8	3/8	1/2	2-1/2	5	DMHS-5-12	85020	\$39.07	99919	\$43.65
7/16	7/16	9/16	2-3/4	5	DMHS-5-14	85025	\$47.97	99920	\$53.10
1/2	1/2	5/8	3	5	DMHS-5-16	85028	\$58.34	99921	\$63.92

Series 350

T O O L - C U T T E R M A N U F A C T U R I N G

SOLID CARBIDE END MILLS

CORNER RADIUS - .015, .032, .062, .093, .125

SINGLE END SQUARE • 2-4 FLUTE

UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	1/2"	1-1/2"	350-2125	350-4125	\$7.04
1/8"	1"	3"	350-2123	350-4123	\$16.50
3/16"	5/8"	2"	350-2187	350-4187	\$11.70
3/16"	1-1/8"	3"	350-2183	350-4183	\$18.34
1/4"	3/4"	2-1/2"	350-2250	350-4250	\$13.42
1/4"	1-1/2"	4"	350-2254	350-4254	\$24.10
5/16"	7/8"	2-1/2"	350-2312	350-4312	\$17.16
5/16"	1-5/8"	4"	350-2314	350-4314	\$30.14
3/8"	1"	2-1/2"	350-2375	350-4375	\$20.90
3/8"	1-1/8"	4"	350-2374	350-4374	\$39.00
3/8"	1-1/2"	6"	350-2376	350-4376	\$49.50
1/2"	1"	3"	350-2500	350-4500	\$35.20
1/2"	1-1/4"	4"	350-2504	350-4504	\$52.74
1/2"	1-1/2"	6"	350-2506	350-4506	\$76.00
5/8"	1-1/4"	3-1/2"	350-2625	350-4625	\$67.10
5/8"	1-1/2"	6"	350-2626	350-4626	\$116.00
3/4"	1-1/2"	4"	350-2750	350-4750	\$92.40
3/4"	2"	6"	350-2756	350-4756	\$156.00
1"	1-1/2"	4"	350-2100	350-4100	\$166.00
1"	2-1/4"	6"	350-2106	350-4106	\$270.00

OTHER SIZES AVAILABLE

SOLID CARBIDE END MILLS

CORNER RADIUS - .015, .032, .062, .093, .125

SINGLE END SQUARE • 2-4 FLUTE

ALTIN COATED - **HTC** HARD COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	1/2"	1-1/2"	360-2125	360-4125	\$8.82
1/8"	1"	3"	360-2123	360-4123	\$18.74
3/16"	5/8"	2"	360-2187	360-4187	\$14.26
3/16"	1-1/8"	3"	360-2183	360-4183	\$21.30
1/4"	3/4"	2-1/2"	360-2250	360-4250	\$18.08
1/4"	1-1/2"	4"	360-2254	360-4254	\$29.50
5/16"	7/8"	2-1/2"	360-2312	360-4312	\$23.72
5/16"	1-5/8"	4"	360-2314	360-4314	\$36.50
3/8"	1"	2-1/2"	360-2375	360-4375	\$27.46
3/8"	1-1/8"	4"	360-2374	360-4374	\$45.30
3/8"	1-1/2"	6"	360-2376	360-4376	\$58.74
1/2"	1"	3"	360-2500	360-4500	\$44.58
1/2"	1-1/4"	4"	360-2504	360-4504	\$64.46
1/2"	1-1/2"	6"	360-2506	360-4506	\$92.36
5/8"	1-1/4"	3-1/2"	360-2625	360-4625	\$81.74
5/8"	1-1/2"	6"	360-2626	360-4626	\$136.50
3/4"	1-1/2"	4"	360-2750	360-4750	\$109.12
3/4"	2"	6"	360-2756	360-4756	\$179.42
1"	1-1/2"	4"	360-2100	360-4100	\$191.86
1"	2-1/4"	6"	360-2106	360-4106	\$310.94

OTHER SIZES AVAILABLE

SOLID CARBIDE END MILLS

ROUGHING "HOG" - HTC TURBO MILL

SINGLE END SQUARE • 4 FLUTE

UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	4 FLUTE PART#	LIST PRICE
1/8"	3/8"	1-1/2"	300-4125	\$11.60
3/16"	5/8"	2"	300-4187	\$15.80
1/4"	3/4"	2-1/2"	300-4250	\$18.00
1/4"	1-1/8"	3"	300-4253	\$36.00
1/4"	1-1/2"	4"	300-4254	\$39.40
5/16"	3/4"	2-1/2"	300-4312	\$24.00
5/16"	1-1/4"	3"	300-4313	\$34.20
5/16"	1-5/8"	4"	300-4314	\$50.00
3/8"	1"	2-1/2"	300-4375	\$32.00
3/8"	1-1/4"	3"	300-4373	\$49.60
3/8"	1-3/4"	4"	300-4374	\$64.00
7/16"	1"	3"	300-4437	\$34.00
7/16"	2"	4"	300-4434	\$70.00
1/2"	1-1/4"	3"	300-4500	\$38.00
1/2"	2"	4"	300-4504	\$74.20
1/2"	3"	6"	300-4506	\$96.00
5/8"	1-1/4"	3-1/2"	300-4625	\$84.00
5/8"	2-1/4"	5"	300-4655	\$146.00
5/8"	3"	6"	300-4626	\$218.00
3/4"	1-1/2"	4"	300-4750	\$110.00
3/4"	2-1/4"	5"	300-4755	\$208.00
3/4"	3"	6"	300-4756	\$258.00
1"	1-1/2"	4"	300-4100	\$150.00
1"	2-1/4"	5"	300-4105	\$276.00
1"	3"	6"	300-4106	\$374.00

SOLID CARBIDE END MILLS

ROUGHING "HOG" - HTC TURBO MILL

SINGLE END SQUARE • 4 FLUTE

TICN COAT- HTC PROGRESSIVE COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	4 FLUTE PART#	LIST PRICE
1/8"	3/8"	1-1/2"	307-4125	\$13.74
3/16"	5/8"	2"	307-4187	\$16.08
1/4"	3/4"	2-1/2"	307-4250	\$25.22
1/4"	1-1/8"	3"	307-4253	\$40.53
1/4"	1-1/2"	4"	307-4254	\$44.62
5/16"	3/4"	2-1/2"	307-4312	\$29.10
5/16"	1-1/4"	3"	307-4313	\$38.64
5/16"	1-5/8"	4"	307-4314	\$58.20
3/8"	1"	2-1/2"	307-4375	\$38.80
3/8"	1-1/4"	3"	307-4373	\$61.11
3/8"	1-3/4"	4"	307-4374	\$75.04
7/16"	1"	3"	307-4437	\$42.68
7/16"	2"	4"	307-4434	\$89.24
1/2"	1-1/4"	3"	307-4500	\$50.44
1/2"	2"	4"	307-4504	\$91.18
1/2"	3"	6"	307-4506	\$120.28
5/8"	1-1/4"	3-1/2"	307-4625	\$99.91
5/8"	2-1/4"	5"	307-4655	\$182.36
5/8"	3"	6"	307-4626	\$244.44
3/4"	1-1/2"	4"	307-4750	\$127.65
3/4"	2-1/4"	5"	307-4755	\$240.56
3/4"	3"	6"	307-4756	\$302.64
1"	1-1/2"	4"	307-4100	\$165.39
1"	2-1/4"	5"	307-4105	\$317.19
1"	3"	6"	307-4106	\$415.16

SOLID CARBIDE END MILLS

ROUGHING "HOG" - HTC TURBO MILL

SINGLE END SQUARE • 4 FLUTE

ALTIN COATED **HTC** HARD COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	4 FLUTE PART#	LIST PRICE
1/8"	3/8"	1-1/2"	310-4125	\$14.16
3/16"	5/8"	2"	310-4187	\$16.58
1/4"	3/4"	2-1/2"	310-4250	\$26.00
1/4"	1-1/8"	3"	310-4253	\$41.78
1/4"	1-1/2"	4"	310-4254	\$46.00
5/16"	3/4"	2-1/2"	310-4312	\$30.00
5/16"	1-1/4"	3"	310-4313	\$39.84
5/16"	1-5/8"	4"	310-4314	\$60.00
3/8"	1"	2-1/2"	310-4375	\$40.00
3/8"	1-1/4"	3"	310-4373	\$63.00
3/8"	1-3/4"	4"	310-4374	\$77.36
7/16"	1"	3"	310-4437	\$44.00
7/16"	2"	4"	310-4434	\$92.00
1/2"	1-1/4"	3"	310-4500	\$52.00
1/2"	2"	4"	310-4504	\$94.00
1/2"	3"	6"	310-4506	\$124.00
5/8"	1-1/4"	3-1/2"	310-4625	\$103.00
5/8"	2-1/4"	5"	310-4655	\$188.00
5/8"	3"	6"	310-4626	\$252.00
3/4"	1-1/2"	4"	310-4750	\$131.60
3/4"	2-1/4"	5"	310-4755	\$248.00
3/4"	3"	6"	310-4756	\$312.00
1"	1-1/2"	4"	310-4100	\$170.50
1"	2-1/4"	5"	310-4105	\$327.00
1"	3"	6"	310-4106	\$428.00

SOLID CARBIDE END MILLS

ROUGHING 45° HIGH HELIX • SINGLE END SQUARE / 3 FLUTE
UNCOATED

CUTTER DIA	SHANK DIAMETER	FLUTE LENGTH	O.A. LENGTH	4 FLUTE PART#	LIST PRICE
3/16"	3/16"	5/8"	2"	830-3187	\$16.00
1/4"	1/4"	3/4"	2-1/2"	830-3250	\$21.60
5/16"	5/16"	3/4"	2-1/2"	830-3312	\$28.80
3/8"	3/8"	7/8"	2-1/2"	830-3375	\$38.40
7/16"	7/16"	1"	3"	830-3437	\$40.80
1/2"	1/2"	1"	3"	830-3500	\$45.60
5/8"	5/8"	1-1/4"	3-1/2"	890-3625	\$100.80
3/4"	3/4"	1-1/2"	4"	830-3750	\$132.00
1"	1"	1-1/2"	4"	830-3100	\$180.00



Series 850

SOLID CARBIDE END MILLS

PROFILING • SINGLE END BALL / 2 FLUTE
ALTIN COATED HTC HARD COAT

CUTTER DIA	SHANK DIAMETER	O.A. LENGTH	PART #	LIST PRICE
1/8"	1/4"	4"	850-2125	\$21.00
3/16"	1/4"	4"	850-2187	\$39.00
1/4"	3/8"	4"	850-2250	\$47.00
3/8"	1/2"	4"	850-2375	\$64.00
1/2"	3/4"	6"	850-2500	\$143.00
5/8"	3/4"	6"	850-2625	\$164.00
3/4"	1"	6"	850-2750	\$211.00



***MORE SIZES AVAILABLE IN
BALL END OR SQUARE END***

Series 833



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE END MILLS

HOG MILL



C/C, SE MEDIUM PITCH KNUCKLE ROUGHER 25° HELIX • 3,4,6 FLUTE

FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CHAM. WIDTH	NO. OF FLUTES	CATALOG NO.	3-4-6 FLUTE PART#	UNCOATED LIST PRICE	3-4-6 FLUTE PART#	ALTIM COATED LIST PRICE
1/4	1/4	3/8	2-1/2	.020	3	KQSHS-3-8	90512	\$47.48	99605	\$50.88
1/4	1/4	3/4	2-1/2	.020	3	KQSH-3-8	90612	\$50.78	99606	\$54.20
5/16	5/16	7/16	2-1/2	.020	3	KQSHS-3-10	90516	\$50.67	99607	\$54.09
5/16	5/16	13/16	2-1/2	.020	3	KQSH-3-10	90616	\$56.94	99608	\$60.36
3/8	3/8	1/2	2-1/2	.020	4	KQSHA-4-12	90520	\$65.92	99609	\$69.34
3/8	3/8	1	2-1/2	.020	4	KQSH-4-12	90620	\$70.55	99610	\$73.97
7/16	7/16	9/16	2-3/4	.020	4	KQSHS-4-14	90525	\$76.71	99611	\$80.13
7/16	7/16	1	2-3/4	.020	4	KQSH-4-14	90625	\$84.37	99612	\$87.79
1/2	1/2	5/8	3	.025	4	KQSHS-4-16	90528	\$83.06	99613	\$86.48
1/2	1/2	1-1/4	3	.025	4	KQSH-4-16	90628	\$88.88	99614	\$92.31
9/16	9/16	1-1/4	3-1/2	.025	4	KQSH-4-18	90629	\$136.52	99615	\$139.95
5/8	5/8	3/4	3-1/2	.025	4	KQSHS-4-20	90530	\$143.72	99616	\$147.14
5/8	5/8	1-5/8	3-1/2	.025	4	KQSH-4-20	90630	\$153.79	99617	\$157.21
3/4	3/4	1	4	.025	4	KQSHS-4-24	90532	\$163.49	99618	\$170.95
3/4	3/4	1-5/8	4	.025	4	KQSH-4-24	90632	\$174.94	99619	\$182.40
1	1	1-1/4	4	.025	6	KQSH-6-32	90534	\$262.39	99620	\$269.85
1	1	2	4	.025	6	KQSH-6-32	90634	\$280.76	99621	\$288.21

Series 835

SOLID CARBIDE END MILLS

HOG MILL • C/C, SE, 35° HELIX • 3 FLUTE

FINE KNUCKLE ROUGHERS FOR ALUMINUM



FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	NO. OF FLUTES	CATALOG NO.	3 FLUTE PART#	UNCOATED LIST PRICE	3 FLUTE PART#	ALTIM COATED LIST PRICE
1/4	1/4	3/8	2-1/2	3	AFQS-3-8	85212	\$47.48	99895	\$50.88
1/4	1/4	3/4	2-1/2	3	AFQ-3-8	85312	\$50.78	99896	\$54.20
5/16	5/16	7/16	2-1/2	3	AFQS-3-10	85216	\$50.67	99897	\$54.09
5/16	5/16	13/16	2-1/2	3	AFQ-3-10	85316	\$56.94	99898	\$60.36
3/8	3/8	1/2	2-1/2	3	AFQS-3-12	85220	\$65.92	99899	\$69.34
3/8	3/8	1	2-1/2	3	AFQ-3-12	85320	\$70.55	99900	\$73.97
7/16	7/16	9/16	2-3/4	3	AFQS-3-14	85225	\$76.71	99901	\$80.13
7/16	7/16	1	2-3/4	3	AFQ-3-14	85325	\$84.37	99902	\$87.79
1/2	1/2	5/8	3	3	AFQS-3-16	85228	\$83.06	99903	\$86.48
1/2	1/2	1-1/4	3	3	AFQ-3-16	85328	\$88.88	99904	\$92.31
5/8	5/8	3/4	3-1/2	3	AFQS-3-20	85230	\$143.72	99905	\$147.14
5/8	5/8	1-5/8	3-1/2	3	AFQ-3-20	85330	\$153.74	99906	\$157.21
3/4	3/4	1	4	3	AFQS-3-24	85232	\$163.49	99907	\$170.95
3/4	3/4	1-5/8	4	3	AFQ-3-24	85332	\$174.94	99908	\$182.40
1	1	1-1/4	4	3	AFQS-3-32	85234	\$262.39	99909	\$269.85
1	1	2	4	3	AFQ-3-32	85334	\$280.76	99910	\$288.21

SOLID CARBIDE END MILLS HOG MILL



3,4,6 FLUTE, C/C/ SE. 45° HELIX - TRUNCATED ROUGHER FOR TITANIUM

FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	NO. OF FLUTES	CATALOG NO.	3-4-6 FLUTE PART#	UNCOATED LIST PRICE	3-4-6 FLUTE PART#	ALTN COATED LIST PRICE
1/4	1/4	3/8	2-1/2	3	TQSHS-3-8	90712	\$47.48	99676	\$50.88
1/4	1/4	3/4	2-1/2	3	TQSH-3-8	90812	\$50.78	99677	\$54.20
3/8	3/8	1/2	2-1/2	4	TQSHS-4-12	90720	\$65.92	99678	\$69.34
3/8	3/8	1	2-1/2	4	TQSH-4-12	90820	\$70.55	99679	\$73.97
1/2	1/2	5/8	3	4	TQSHS-4-16	90728	\$83.06	99680	\$86.48
1/2	1/2	1-1/4	3	4	TQSH-4-16	90828	\$88.88	99681	\$92.31
5/8	5/8	3/4	3-1/2	4	TQSHS-4-20	90730	\$143.72	99682	\$147.14
5/8	5/8	1-5/8	3-1/2	4	TQSH-4-20	90830	\$153.79	99683	\$157.21
3/4	3/4	1	4	4	TQSHS-4-24	90732	\$163.49	99684	\$170.95
3/4	3/4	1-5/8	4	4	TQSH-4-24	90832	\$174.94	99685	\$182.40
1	1	1-1/4	4	6	TQSHS-6-32	90734	\$262.39	99686	\$269.85

Series 837

SOLID CARBIDE END MILLS HOG MILL



5 FLUTE, C/C, SE FINE KNUCKLE ROUGHER FOR TITANIUM, 45° HELIX
HIGH SPEED MACHINING SELECT SERIES

FLUTE DIA.	SHANK DIA.	LENGTH OF CUT	OVERALL LENGTH	CHAM. WIDTH	NO. OF FLUTES	CATALOG NO.	5 FLUTE PART#	UNCOATED LIST PRICE	5 FLUTE PART#	ALTN COATED LIST PRICE
3/8	3/8	1/2	2-1/2	.020	5	FQMHS-5-12	90320	\$62.64	99779	\$68.17
3/8	3/8	1	2-1/2	.020	5	FQMH-5-12	90420	\$79.39	99780	\$84.92
7/16	7/16	9/16	2-3/4	.020	5	FQMHS-5-14	90325	\$70.88	99781	\$77.07
7/16	7/16	1	2-3/4	.020	5	FQMH-5-14	90425	\$87.85	99782	\$94.04
1/2	1/2	5/8	3	.025	5	FQMHS-5-16	90328	\$85.71	99783	\$92.41
1/2	1/2	1-1/4	3	.025	5	FQMH-5-16	90428	\$99.88	99784	\$106.60
5/8	5/8	3/4	3-1/2	.025	5	FQMHS-5-20	90330	\$136.81	99785	\$146.74
5/8	5/8	1-5/8	3-1/2	.025	5	FQMH-5-20	90432	\$173.01	99786	\$182.95
3/4	3/4	1	4	.025	5	FQMHS-5-24	90332	\$173.08	99787	\$187.93
3/4	3/4	1-5/8	4	.025	5	FQMH-5-24	90434	\$196.82	99788	\$216.66
1	1	1-1/4	4	.025	5	FQMHS-5-32	90334	\$283.48	99789	\$304.26
1	1	2	4	.025	5	FQMH-5-32	90438	\$315.88	99790	\$336.66

Series 380

T O O L - C U T T E R M A N U F A C T U R I N G

SOLID CARBIDE END MILLS

HIGH PERFORMANCE - 45° HELIX

SINGLE END • 5-6 FLUTE

ALTIN COATED - **HTC** HARD COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	5 FLUTE PART#	6 FLUTE PART#	LIST PRICE
1/4"	3/4"	2-1/2"	380-5250	380-6250	\$17.50
1/4"	1-1/8"	3"	380-5253	380-6253	\$26.84
1/4"	1-1/2"	4"	380-5254	380-6254	\$31.98
5/16"	3/4"	2-1/2"	380-5312	380-6312	\$25.30
5/16"	1-1/8"	3"	380-5323	380-6323	\$34.26
5/16"	1-5/8"	4"	380-5324	380-6324	\$39.62
3/8"	1"	2-1/2"	380-5375	380-6375	\$28.14
3/8"	1-1/8"	3"	380-5373	380-6373	\$44.20
3/8"	1-3/4"	4"	380-5374	380-6374	\$48.72
7/16"	1-3/16"	2-3/4"	380-5437	380-6437	\$37.00
1/2"	1-1/4"	3"	380-5500	380-6500	\$45.72
1/2"	2"	4"	380-5504	380-6504	\$76.40
1/2"	3"	6"	380-5506	380-6506	\$116.72
5/8"	1-5/8"	3-1/2"	380-5625	380-6625	\$87.30
5/8"	2-1/4"	5"	380-5655	380-6655	\$133.84
5/8"	3"	6"	380-5626	380-6626	\$151.90
3/4"	1-5/8"	4"	380-5750	380-6750	\$116.66
3/4"	2-1/4"	5"	380-5755	380-6755	\$182.06
3/4"	3"	6"	380-5756	380-6756	\$205.00
1"	2"	4"	380-5100	380-6100	\$209.16
1"	2-1/2"	5"	380-5105	380-6105	\$307.00
1"	3-1/4"	6"	380-5106	380-6106	\$379.32
1"	4"	7"	380-5107	380-6107	\$471.50

CORNER RADIUS AVAILABLE

SOLID CARBIDE END MILLS

HIGH PERFORMANCE
UNCOATED

60° 3 FLUTE				
CUT. DIA.	L.O.C.	O.A.L.	PART #	LIST PRICE
1/4"	3/4"	2-1/2"	390-6014	\$11.06
5/16"	7/8"	2-1/2"	390-6016	\$14.96
3/8"	1"	2-1/2"	390-6038	\$18.98
1/2"	1-1/4"	3"	390-6012	\$32.50
9/16"	1-3/8"	3"	390-6096	\$63.70
5/8"	1-1/2"	3-1/2"	390-6058	\$66.30
3/4"	1-5/8"	4"	390-6034	\$92.30
1"	1-3/4"	4"	390-6010	\$166.40



45° 3 FLUTE				
CUT. DIA.	L.O.C.	O.A.L.	PART #	LIST PRICE
1/4"	3/4"	2-1/2"	390-4514	\$10.62
5/16"	7/8"	2-1/2"	390-4516	\$14.38
3/8"	1"	2-1/2"	390-4538	\$18.26
1/2"	1-1/4"	3"	390-4512	\$31.26
9/16"	1-3/8"	3"	390-4596	\$61.26
5/8"	1-1/2"	3-1/2"	390-4558	\$63.76
3/4"	1-5/8"	4"	390-4534	\$88.76
1"	1-3/4"	4"	390-4510	\$160.00



45° 2 FLUTE				
CUT. DIA.	L.O.C.	O.A.L.	PART #	LIST PRICE
1/4"	3/4"	2-1/2"	390-4521	\$10.20
5/16"	7/8"	3"	390-4525	\$13.80
3/8"	1"	2-1/2"	390-4523	\$17.52
1/2"	1-1/4"	3"	390-4522	\$30.00
9/16"	1-3/8"	3"	390-4529	\$58.80
5/8"	1-1/2"	3-1/2"	390-4528	\$61.20
3/4"	1-5/8"	4"	390-4527	\$85.20
1"	1-3/4"	4"	390-4520	\$153.60



Other sizes available

Series 680



TOOL - CUTTER MANUFACTURING

MINI MILL - SOLID CARBIDE END MILLS

2-FLUTE, C/C, SE, 30° Helix Micro-Miniature 1/8" Shank End Mills

• Eccontric O.D. Primary Relief • Flute Diam. Tel. +.0000-.0015 • 30° Helix / RHC-RHS • Shank Diam. Tel. -.0001-.0004



Fractional Flute Diam.	Metric Flute Diam.	Decimal Flute Diam.	Shank Diam.	Length of Cut	Overall Length	No. of Flutes	Reference No.	Brite	
								EDP No.	Price
-	-	.0040	1/8	.0060	1-1/2	2	TS-2-0040-S	95702	28.20
-	-	.0040	1/8	.0120	1-1/2	2	TR-2-0040-S	95802	29.60
-	-	.0050	1/8	.0080	1-1/2	2	TS-2-0050-S	95703	28.20
-	-	.0050	1/8	.0150	1-1/2	2	TR-2-0050-S	95803	29.60
-	-	.0060	1/8	.0090	1-1/2	2	TS-2-0060-S	95704	28.20
-	-	.0060	1/8	.0180	1-1/2	2	TR-2-0060-S	95804	29.60
-	-	.0070	1/8	.0110	1-1/2	2	TS-2-0070-S	95705	25.40
-	-	.0070	1/8	.0210	1-1/2	2	TR-2-0070-S	95805	26.70
-	-	.0080	1/8	.0120	1-1/2	2	TS-2-0080-S	95706	25.40
-	-	.0080	1/8	.0240	1-1/2	2	TR-2-0080-S	95806	26.70
-	-	.0090	1/8	.0140	1-1/2	2	TS-2-0090-S	95707	23.40
-	-	.0090	1/8	.0270	1-1/2	2	TR-2-0090-S	95807	24.60
-	-	.0100	1/8	.0150	1-1/2	2	TS-2-0100-S	95708	21.50
-	-	.0100	1/8	.0300	1-1/2	2	TR-2-0100-S	95808	22.60
-	-	.0110	1/8	.0170	1-1/2	2	TS-2-0110-S	95709	20.90
-	-	.0110	1/8	.0330	1-1/2	2	TR-2-0110-S	95809	21.90
-	-	.0120	1/8	.0180	1-1/2	2	TS-2-0120-S	95710	20.90
-	-	.0120	1/8	.0360	1-1/2	2	TR-2-0120-S	95810	21.90
-	-	.0130	1/8	.0200	1-1/2	2	TS-2-0130-S	95712	15.60
-	-	.0130	1/8	.0390	1-1/2	2	TR-2-0130-S	95812	16.30
-	-	.0140	1/8	.0210	1-1/2	2	TS-2-0140-S	95714	13.50
-	-	.0140	1/8	.0420	1-1/2	2	TR-2-0140-S	95814	14.10
-	-	.0150	1/8	.0230	1-1/2	2	TS-2-0150-S	95716	11.50
-	-	.0150	1/8	.0450	1-1/2	2	TR-2-0150-S	95816	12.10
1/64	-	.0156	1/8	.0310	1-1/2	2	SS-2-0156-S	95770	8.20
1/64	-	.0156	1/8	.0470	1-1/2	2	SR-2-0156-S	95870	8.50
-	-	.0160	1/8	.0240	1-1/2	2	TS-2-0160-S	95718	11.50
-	-	.0160	1/8	.0480	1-1/2	2	TR-2-0160-S	95818	12.10
-	-	.0170	1/8	.0260	1-1/2	2	TS-2-0170-S	95720	11.50
-	-	.0170	1/8	.0510	1-1/2	2	TR-2-0170-S	95820	12.10
-	-	.0180	1/8	.0270	1-1/2	2	TS-2-0180-S	95722	10.90
-	-	.0180	1/8	.0540	1-1/2	2	TR-2-0180-S	95822	11.50
-	-	.0190	1/8	.0290	1-1/2	2	TS-2-0190-S	95724	10.90
-	-	.0190	1/8	.0570	1-1/2	2	TR-2-0190-S	95824	11.50
-	-	.0200	1/8	.0300	1-1/2	2	TS-2-0200-S	95726	10.90
-	-	.0200	1/8	.0600	1-1/2	2	TR-2-0200-S	95826	11.50
-	-	.0210	1/8	.0320	1-1/2	2	TS-2-0210-S	95728	9.60
-	-	.0210	1/8	.0630	1-1/2	2	TR-2-0210-S	95828	10.00
-	-	.0220	1/8	.0330	1-1/2	2	TS-2-0220-S	95730	9.60
-	-	.0220	1/8	.0660	1-1/2	2	TR-2-0220-S	95830	10.00
-	-	.0230	1/8	.0350	1-1/2	2	TS-2-0230-S	95732	9.60
-	-	.0230	1/8	.0690	1-1/2	2	TR-2-0230-S	95832	10.00
-	-	.0240	1/8	.0360	1-1/2	2	TS-2-0240-S	95734	9.60
-	-	.0240	1/8	.0720	1-1/2	2	TR-2-0240-S	95834	10.00
-	-	.0250	1/8	.0380	1-1/2	2	TS-2-0250-S	95736	9.60
-	-	.0250	1/8	.0750	1-1/2	2	TR-2-0250-S	95836	10.00
-	-	.0260	1/8	.0390	1-1/2	2	TS-2-0260-S	95738	9.20
-	-	.0260	1/8	.0780	1-1/2	2	TR-2-0260-S	95838	9.60
-	-	.0270	1/8	.0410	1-1/2	2	TS-2-0270-S	95740	9.20
-	-	.0270	1/8	.0810	1-1/2	2	TR-2-0270-S	95840	9.60
-	-	.0280	1/8	.0420	1-1/2	2	TS-2-0280-S	95742	8.90
-	-	.0280	1/8	.0840	1-1/2	2	TR-2-0280-S	95842	9.40

Fractional Flute Diam.	Metric Flute Diam.	Decimal Flute Diam.	Shank Diam.	Length of Cut	Overall Length	No. of Flutes	Reference No.	Brite	
								EDP No.	Price
-	-	.0290	1/8	.0440	1-1/2	2	TS-2-0290-S	95744	8.90
-	-	.0290	1/8	.0870	1-1/2	2	TR-2-0290-S	95844	9.40
-	-	.0300	1/8	.0450	1-1/2	2	TS-2-0300-S	95746	8.90
-	-	.0300	1/8	.0900	1-1/2	2	TR-2-0300-S	95846	9.40
1/32	-	.0312	1/8	.0470	1-1/2	2	TS-2-0312-S	95748	8.10
1/32	-	.0312	1/8	.0630	1-1/2	2	SS-2-0312-S	95772	6.40
1/32	-	.0312	1/8	.0940	1-1/2	2	TR-2-0312-S	95848	8.50
1/32	-	.0312	1/8	.0940	1-1/2	2	SR-2-0312-S	95872	6.80
-	-	.0350	1/8	.0530	1-1/2	2	TS-2-0350-S	95750	8.10
-	-	.0350	1/8	.1050	1-1/2	2	TR-2-0350-S	95850	8.50
-	1.0 MM	.0394	1/8	.0790	1-1/2	2	SS-2-0394-S	95786	6.40
-	1.0 MM	.0394	1/8	.1180	1-1/2	2	SR-2-0394-S	95886	6.70
-	-	.0400	1/8	.0600	1-1/2	2	TS-2-0400-S	95752	7.90
-	-	.0400	1/8	.1200	1-1/2	2	TR-2-0400-S	95852	8.30
-	-	.0450	1/8	.0680	1-1/2	2	TS-2-0450-S	95754	7.90
-	-	.0450	1/8	.1350	1-1/2	2	TR-2-0450-S	95854	8.30
3/64	-	.0469	1/8	.0940	1-1/2	2	SS-2-0469-S	95774	6.10
3/64	-	.0469	1/8	.1250	1-1/2	2	SR-2-0469-S	95874	6.40
-	-	.0500	1/8	.0750	1-1/2	2	TS-2-0500-S	95756	7.50
-	-	.0500	1/8	.1500	1-1/2	2	TR-2-0500-S	95856	7.90
-	-	.0550	1/8	.0830	1-1/2	2	TS-2-0550-S	95758	7.50
-	-	.0550	1/8	.1650	1-1/2	2	TR-2-0550-S	95858	7.90
-	1.5 MM	.0591	1/8	.1190	1-1/2	2	SS-2-0591-S	95788	6.00
-	1.5 MM	.0591	1/8	.2360	1-1/2	2	SR-2-0591-S	95888	6.40
-	-	.0600	1/8	.0900	1-1/2	2	TS-2-0600-S	95760	7.30
-	-	.0600	1/8	.1800	1-1/2	2	TR-2-0600-S	95860	7.60
1/16	-	.0625	1/8	.0940	1-1/2	2	TS-2-0625-S	95762	7.30
1/16	-	.0625	1/8	.1250	1-1/2	2	SS-2-0625-S	95776	5.70
1/16	-	.0625	1/8	.1880	1-1/2	2	TR-2-0625-S	95862	7.60
1/16	-	.0625	1/8	.2500	1-1/2	2	SR-2-0625-S	95876	6.00
-	-	.0700	1/8	.1050	1-1/2	2	TS-2-0700-S	95764	6.90
-	-	.0700	1/8	.2100	1-1/2	2	TR-2-0700-S	95864	7.20
5/64	-	.0781	1/8	.1880	1-1/2	2	SS-2-0781-S	95778	5.70
5/64	-	.0781	1/8	.3750	1-1/2	2	SR-2-0781-S	95878	6.00
-	2.0 MM	.0787	1/8	.1570	1-1/2	2	SS-2-0787-S	95790	6.00
-	2.0 MM	.0787	1/8	.3940	1-1/2	2	SR-2-0787-S	95890	6.40
-	-	.0800	1/8	.1200	1-1/2	2	TS-2-0800-S	95766	6.90
-	-	.0800	1/8	.2400	1-1/2	2	TR-2-0800-S	95866	7.20
3/32	-	.0938	1/8	.1410	1-1/2	2	TS-2-0938-S	95768	6.40
3/32	-	.0938	1/8	.1880	1-1/2	2	SS-2-0938-S	95780	5.70
3/32	-	.0938	1/8	.2810	1-1/2	2	TR-2-0938-S	95868	6.80
3/32	-	.0938	1/8	.3750	1-1/2	2	SR-2-0938-S	95880	6.00
-	2.5 MM	.0984	1/8	.1970	1-1/2	2	SS-2-0984-S	95792	6.00
-	2.5 MM	.0984	1/8	.3940	1-1/2	2	SR-2-0984-S	95892	6.40
7/64	-	.1094	1/8	.2500	1-1/2	2	SS-2-1094-S	95782	5.70
7/64	-	.1094	1/8	.5000	1-1/2	2	SR-2-1094-S	95882	6.00
-	3.0 MM	.1181	1/8	.2360	1-1/2	2	SS-2-1181-S	95794	6.00
-	3.0 MM	.1181	1/8	.4470	1-1/2	2	SR-2-1181-S	95894	6.40
1/8	-	.1250	1/8	.2500	1-1/2	2	SS-2-1250-S	95784	5.70
1/8	-	.1250	1/8	.5000	1-1/2	2	SR-2-1250-S	95884	6.00

SOLID CARBIDE END MILLS

METRIC ENDMILLS - STANDARD LENGTH

SINGLE END SQUARE • 2-3-4 FLUTE

UNCOATED



DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART #	3 FLUTE PART#	4 FLUTE PART #	LIST PRICE
1MM	3MM	38MM	950-2039	950-3039	950-4039	\$8.28
1.5MM	5MM	38MM	950-2059	950-3059	950-4059	\$8.20
2MM	6MM	38MM	950-2078	950-3078	950-4078	\$6.60
2.5MM	7MM	38MM	950-2098	950-3098	950-4098	\$6.60
3MM	12MM	38MM	950-2118	950-3118	950-4118	\$5.10
3.5MM	12MM	50MM	950-2137	950-3137	950-4137	\$8.98
4MM	14MM	50MM	950-2157	950-3157	950-4157	\$8.62
4.5MM	14MM	50MM	950-2177	950-3177	950-4177	\$8.98
5MM	16MM	50MM	950-2196	950-3196	950-4196	\$9.68
6MM	19MM	63MM	950-2236	950-3236	950-4236	\$9.50
7MM	19MM	63MM	950-2275	950-3275	950-4275	\$13.50
8MM	19MM	63MM	950-2315	950-3315	950-4315	\$12.50
9MM	22MM	70MM	950-2354	950-3354	950-4354	\$22.44
10MM	22MM	70MM	950-2393	950-3393	950-4393	\$19.80
11MM	25MM	70MM	950-2433	950-3433	950-4433	\$29.92
12MM	25MM	75MM	950-2472	950-3472	950-4472	\$25.00
13MM	30MM	88MM	950-2512	950-3512	950-4512	\$49.68
14MM	30MM	88MM	950-2551	950-3551	950-4551	\$46.20
15MM	32MM	88MM	950-2591	950-3591	950-4591	\$66.24
16MM	32MM	88MM	950-2629	950-3629	950-4629	\$61.60
17MM	36MM	100MM	950-2669	950-3669	950-4669	\$75.50
18MM	36MM	100MM	950-2708	950-3708	950-4708	\$70.40
19MM	38MM	100MM	950-2748	950-3748	950-4748	\$90.84
20MM	38MM	100MM	950-2787	950-3787	950-4787	\$84.48
21MM	38MM	100MM	950-2827	950-3827	950-4827	\$111.16
22MM	38MM	100MM	950-2866	950-3866	950-4866	\$103.84
23MM	38MM	100MM	950-2906	950-3906	950-4906	\$131.20
24MM	38MM	100MM	950-2945	950-3945	950-4945	\$142.90
25MM	38MM	100MM	950-2984	950-3984	950-4984	\$122.00

SOLID CARBIDE END MILLS

METRIC ENDMILLS - STANDARD LENGTH

SINGLE END SQUARE • 2-3-4 FLUTE

TIN COATED



DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART #	3 FLUTE PART#	4 FLUTE PART #	LIST PRICE
1MM	3MM	38MM	952-2039	952-3039	952-4039	\$9.26
1.5MM	5MM	38MM	952-2059	952-3059	952-4059	\$9.26
2MM	6MM	38MM	952-2078	952-3078	952-4078	\$7.53
2.5MM	7MM	38MM	952-2098	952-3098	952-4098	\$7.53
3MM	12MM	38MM	952-2118	952-3118	952-4118	\$6.13
3.5MM	12MM	50MM	952-2137	952-3137	952-4137	\$9.77
4MM	14MM	50MM	952-2157	952-3157	952-4157	\$9.59
4.5MM	14MM	50MM	952-2177	952-3177	952-4177	\$10.03
5MM	16MM	50MM	952-2196	952-3196	952-4196	\$10.58
6MM	19MM	63MM	952-2236	952-3236	952-4236	\$10.64
7MM	19MM	63MM	952-2275	952-3275	952-4275	\$14.27
8MM	19MM	63MM	952-2315	952-3315	952-4315	\$13.89
9MM	22MM	70MM	952-2354	952-3354	952-4354	\$23.93
10MM	22MM	70MM	952-2393	952-3393	952-4393	\$21.73
11MM	25MM	70MM	952-2433	952-3433	952-4433	\$31.97
12MM	25MM	75MM	952-2472	952-3472	952-4472	\$27.80
13MM	30MM	88MM	952-2512	952-3512	952-4512	\$49.25
14MM	30MM	88MM	952-2551	952-3551	952-4551	\$48.15
15MM	32MM	88MM	952-2591	952-3591	952-4591	\$65.15
16MM	32MM	88MM	952-2629	952-3629	952-4629	\$64.05
17MM	36MM	100MM	952-2669	952-3669	952-4669	\$75.25
18MM	36MM	100MM	952-2708	952-3708	952-4708	\$74.09
19MM	38MM	100MM	952-2748	952-3748	952-4748	\$89.90
20MM	38MM	100MM	952-2787	952-3787	952-4787	\$88.17
21MM	38MM	100MM	952-2827	952-3827	952-4827	\$109.12
22MM	38MM	100MM	952-2866	952-3866	952-4866	\$107.99
23MM	38MM	100MM	952-2906	952-3906	952-4906	\$127.10
24MM	38MM	100MM	952-2945	952-3945	952-4945	\$127.50
25MM	38MM	100MM	952-2984	952-3984	952-4984	\$126.37

SOLID CARBIDE END MILLS

METRIC ENDMILLS - STANDARD LENGTH

SINGLE END SQUARE • 2-3-4 FLUTE

TICN COAT-**HTC** PROGRESSIVE COAT



DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART #	3 FLUTE PART#	4 FLUTE PART #	LIST PRICE
1MM	3MM	38MM	953-2039	953-3039	953-4039	\$10.09
1.5MM	5MM	38MM	953-2059	953-3059	953-4059	\$10.09
2MM	6MM	38MM	953-2078	953-3078	953-4078	\$8.21
2.5MM	7MM	38MM	953-2098	953-3098	953-4098	\$8.21
3MM	12MM	38MM	953-2118	953-3118	953-4118	\$6.68
3.5MM	12MM	50MM	953-2137	953-3137	953-4137	\$10.65
4MM	14MM	50MM	953-2157	953-3157	953-4157	\$10.46
4.5MM	14MM	50MM	953-2177	953-3177	953-4177	\$10.94
5MM	16MM	50MM	953-2196	953-3196	953-4196	\$11.54
6MM	19MM	63MM	953-2236	953-3236	953-4236	\$11.60
7MM	19MM	63MM	953-2275	953-3275	953-4275	\$15.56
8MM	19MM	63MM	953-2315	953-3315	953-4315	\$15.14
9MM	22MM	70MM	953-2354	953-3354	953-4354	\$26.09
10MM	22MM	70MM	953-2393	953-3393	953-4393	\$23.68
11MM	25MM	70MM	953-2433	953-3433	953-4433	\$34.85
12MM	25MM	75MM	953-2472	953-3472	953-4472	\$30.31
13MM	30MM	88MM	953-2512	953-3512	953-4512	\$53.51
14MM	30MM	88MM	953-2551	953-3551	953-4551	\$52.49
15MM	32MM	88MM	953-2591	953-3591	953-4591	\$70.90
16MM	32MM	88MM	953-2629	953-3629	953-4629	\$69.82
17MM	36MM	100MM	953-2669	953-3669	953-4669	\$81.90
18MM	36MM	100MM	953-2708	953-3708	953-4708	\$80.76
19MM	38MM	100MM	953-2748	953-3748	953-4748	\$95.07
20MM	38MM	100MM	953-2787	953-3787	953-4787	\$96.10
21MM	38MM	100MM	953-2827	953-3827	953-4827	\$118.11
22MM	38MM	100MM	953-2866	953-3866	953-4866	\$117.09
23MM	38MM	100MM	953-2906	953-3906	953-4906	\$138.07
24MM	38MM	100MM	953-2945	953-3945	953-4945	\$138.20
25MM	38MM	100MM	953-2984	953-3984	953-4984	\$137.43

SOLID CARBIDE END MILLS

METRIC ENDMILLS - STANDARD LENGTH

SINGLE END SQUARE • 2-3-4 FLUTE

ALTiN COATED - **HTC** HARD COAT

DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART #	3 FLUTE PART#	4 FLUTE PART #	LIST PRICE
1MM	3MM	38MM	954-2039	954-3039	954-4039	\$10.19
1.5MM	5MM	38MM	954-2059	954-3059	954-4059	\$10.19
2MM	6MM	38MM	954-2078	954-3078	954-4078	\$8.29
2.5MM	7MM	38MM	954-2098	954-3098	954-4098	\$8.29
3MM	12MM	38MM	954-2118	954-3118	954-4118	\$6.75
3.5MM	12MM	50MM	954-2137	954-3137	954-4137	\$10.75
4MM	14MM	50MM	954-2157	954-3157	954-4157	\$10.55
4.5MM	14MM	50MM	954-2177	954-3177	954-4177	\$11.04
5MM	16MM	50MM	954-2196	954-3196	954-4196	\$11.64
6MM	19MM	63MM	954-2236	954-3236	954-4236	\$11.71
7MM	19MM	63MM	954-2275	954-3275	954-4275	\$15.70
8MM	19MM	63MM	954-2315	954-3315	954-4315	\$15.28
9MM	22MM	70MM	954-2354	954-3354	954-4354	\$26.34
10MM	22MM	70MM	954-2393	954-3393	954-4393	\$23.91
11MM	25MM	70MM	954-2433	954-3433	954-4433	\$35.17
12MM	25MM	75MM	954-2472	954-3472	954-4472	\$30.59
13MM	30MM	88MM	954-2512	954-3512	954-4512	\$54.05
14MM	30MM	88MM	954-2551	954-3551	954-4551	\$52.97
15MM	32MM	88MM	954-2591	954-3591	954-4591	\$71.50
16MM	32MM	88MM	954-2629	954-3629	954-4629	\$70.46
17MM	36MM	100MM	954-2669	954-3669	954-4669	\$82.44
18MM	36MM	100MM	954-2708	954-3708	954-4708	\$81.50
19MM	38MM	100MM	954-2748	954-3748	954-4748	\$98.00
20MM	38MM	100MM	954-2787	954-3787	954-4787	\$96.99
21MM	38MM	100MM	954-2827	954-3827	954-4827	\$119.90
22MM	38MM	100MM	954-2866	954-3866	954-4866	\$118.79
23MM	38MM	100MM	954-2906	954-3906	954-4906	\$140.00
24MM	38MM	100MM	954-2945	954-3945	954-4945	\$140.25
25MM	38MM	100MM	954-2984	954-3984	954-4984	\$139.01

SOLID CARBIDE END MILLS

METRIC ENDMILLS - STANDARD LENGTH

SINGLE END BALL • 2-4 FLUTE

UNCOATED



DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART #	3 FLUTE PART#	4 FLUTE PART #	LIST PRICE
1MM	3MM	38MM	955-2039	955-3039	955-4039	\$9.60
1.5MM	5MM	38MM	955-2059	955-3059	955-4059	\$9.60
2MM	6MM	38MM	955-2078	955-3078	955-4078	\$7.92
2.5MM	7MM	38MM	955-2098	955-3098	955-4098	\$7.92
3MM	12MM	38MM	955-2118	955-3118	955-4118	\$7.92
3.5MM	12MM	50MM	955-2137	955-3137	955-4137	\$10.92
4MM	14MM	50MM	955-2157	955-3157	955-4157	\$10.56
4.5MM	14MM	50MM	955-2177	955-3177	955-4177	\$10.92
5MM	16MM	50MM	955-2196	955-3196	955-4196	\$11.62
6MM	19MM	63MM	955-2236	955-3236	955-4236	\$13.56
7MM	19MM	63MM	955-2275	955-3275	955-4275	\$21.20
8MM	19MM	63MM	955-2315	955-3315	955-4315	\$16.67
9MM	22MM	70MM	955-2354	955-3354	955-4354	\$27.54
10MM	22MM	70MM	955-2393	955-3393	955-4393	\$24.90
11MM	25MM	70MM	955-2433	955-3433	955-4433	\$33.00
12MM	25MM	75MM	955-2472	955-3472	955-4472	\$32.00
13MM	30MM	88MM	955-2512	955-3512	955-4512	\$48.10
14MM	30MM	88MM	955-2551	955-3551	955-4551	\$47.00
15MM	32MM	88MM	955-2591	955-3591	955-4591	\$63.90
16MM	32MM	88MM	955-2629	955-3629	955-4629	\$62.86
17MM	36MM	100MM	955-2669	955-3669	955-4669	\$84.75
18MM	36MM	100MM	955-2708	955-3708	955-4708	\$83.52
19MM	38MM	100MM	955-2748	955-3748	955-4748	\$104.90
20MM	38MM	100MM	955-2787	955-3787	955-4787	\$103.84
21MM	38MM	100MM	955-2827	955-3827	955-4827	\$124.60
22MM	38MM	100MM	955-2866	955-3866	955-4866	\$123.20
23MM	38MM	100MM	955-2906	955-3906	955-4906	\$152.40
24MM	38MM	100MM	955-2945	955-3945	955-4945	\$152.75
25MM	38MM	100MM	955-2984	955-3984	955-4984	\$151.36

SOLID CARBIDE END MILLS**METRIC ENDMILLS - STANDARD LENGTH**

SINGLE END BALL • 2-4 FLUTE

TIN COATED

DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART #	3 FLUTE PART#	4 FLUTE PART #	LIST PRICE
1MM	3MM	38MM	957-2039	957-3039	957-4039	\$10.20
1.5MM	5MM	38MM	957-2059	957-3059	957-4059	\$10.20
2MM	6MM	38MM	957-2078	957-3078	957-4078	\$8.51
2.5MM	7MM	38MM	957-2098	957-3098	957-4098	\$8.51
3MM	12MM	38MM	957-2118	957-3118	957-4118	\$8.51
3.5MM	12MM	50MM	957-2137	957-3137	957-4137	\$11.65
4MM	14MM	50MM	957-2157	957-3157	957-4157	\$11.45
4.5MM	14MM	50MM	957-2177	957-3177	957-4177	\$11.65
5MM	16MM	50MM	957-2196	957-3196	957-4196	\$12.68
6MM	19MM	63MM	957-2236	957-3236	957-4236	\$14.61
7MM	19MM	63MM	957-2275	957-3275	957-4275	\$22.37
8MM	19MM	63MM	957-2315	957-3315	957-4315	\$17.81
9MM	22MM	70MM	957-2354	957-3354	957-4354	\$28.97
10MM	22MM	70MM	957-2393	957-3393	957-4393	\$26.05
11MM	25MM	70MM	957-2433	957-3433	957-4433	\$35.09
12MM	25MM	75MM	957-2472	957-3472	957-4472	\$34.11
13MM	30MM	88MM	957-2512	957-3512	957-4512	\$50.33
14MM	30MM	88MM	957-2551	957-3551	957-4551	\$49.21
15MM	32MM	88MM	957-2591	957-3591	957-4591	\$66.25
16MM	32MM	88MM	957-2629	957-3629	957-4629	\$65.18
17MM	36MM	100MM	957-2669	957-3669	957-4669	\$86.90
18MM	36MM	100MM	957-2708	957-3708	957-4708	\$85.74
19MM	38MM	100MM	957-2748	957-3748	957-4748	\$107.10
20MM	38MM	100MM	957-2787	957-3787	957-4787	\$106.03
21MM	38MM	100MM	957-2827	957-3827	957-4827	\$127.30
22MM	38MM	100MM	957-2866	957-3866	957-4866	\$126.15
23MM	38MM	100MM	957-2906	957-3906	957-4906	\$155.00
24MM	38MM	100MM	957-2945	957-3945	957-4945	\$155.25
25MM	38MM	100MM	957-2984	957-3984	957-4984	\$154.00

SOLID CARBIDE END MILLS

METRIC ENDMILLS - STANDARD LENGTH

SINGLE END BALL • 2-4 FLUTE

TICN COAT - HTC PROGRESSIVE COAT



DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART #	3 FLUTE PART#	4 FLUTE PART #	LIST PRICE
1MM	3MM	38MM	958-2039	958-3039	958-4039	\$10.47
1.5MM	5MM	38MM	958-2059	958-3059	958-4059	\$10.47
2MM	6MM	38MM	958-2078	958-3078	958-4078	\$8.64
2.5MM	7MM	38MM	958-2098	958-3098	958-4098	\$8.64
3MM	12MM	38MM	958-2118	958-3118	958-4118	\$8.64
3.5MM	12MM	50MM	958-2137	958-3137	958-4137	\$11.91
4MM	14MM	50MM	958-2157	958-3157	958-4157	\$11.52
4.5MM	14MM	50MM	958-2177	958-3177	958-4177	\$11.93
5MM	16MM	50MM	958-2196	958-3196	958-4196	\$12.67
6MM	19MM	63MM	958-2236	958-3236	958-4236	\$14.79
7MM	19MM	63MM	958-2275	958-3275	958-4275	\$23.12
8MM	19MM	63MM	958-2315	958-3315	958-4315	\$18.18
9MM	22MM	70MM	958-2354	958-3354	958-4354	\$30.02
10MM	22MM	70MM	958-2393	958-3393	958-4393	\$27.15
11MM	25MM	70MM	958-2433	958-3433	958-4433	\$35.98
12MM	25MM	75MM	958-2472	958-3472	958-4472	\$34.88
13MM	30MM	88MM	958-2512	958-3512	958-4512	\$52.50
14MM	30MM	88MM	958-2551	958-3551	958-4551	\$51.23
15MM	32MM	88MM	958-2591	958-3591	958-4591	\$67.90
16MM	32MM	88MM	958-2629	958-3629	958-4629	\$66.57
17MM	36MM	100MM	958-2669	958-3669	958-4669	\$88.50
18MM	36MM	100MM	958-2708	958-3708	958-4708	\$87.38
19MM	38MM	100MM	958-2748	958-3748	958-4748	\$110.25
20MM	38MM	100MM	958-2787	958-3787	958-4787	\$109.18
21MM	38MM	100MM	958-2827	958-3827	958-4827	\$130.75
22MM	38MM	100MM	958-2866	958-3866	958-4866	\$129.38
23MM	38MM	100MM	958-2906	958-3906	958-4906	\$160.00
24MM	38MM	100MM	958-2945	958-3945	958-4945	\$160.25
25MM	38MM	100MM	958-2984	958-3984	958-4984	\$158.98

Series 959



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE END MILLS

METRIC ENDMILLS - STANDARD LENGTH

SINGLE END BALL • 2-4 FLUTE

ALTIN COATED - **HTC** HARD COAT



DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART #	3 FLUTE PART#	4 FLUTE PART #	LIST PRICE
1MM	3MM	38MM	959-2039	959-3039	959-4039	\$10.56
1.5MM	5MM	38MM	959-2059	959-3059	959-4059	\$10.56
2MM	6MM	38MM	959-2078	959-3078	959-4078	\$8.72
2.5MM	7MM	38MM	959-2098	959-3098	959-4098	\$8.72
3MM	12MM	38MM	959-2118	959-3118	959-4118	\$8.72
3.5MM	12MM	50MM	959-2137	959-3137	959-4137	\$12.03
4MM	14MM	50MM	959-2157	959-3157	959-4157	\$11.64
4.5MM	14MM	50MM	959-2177	959-3177	959-4177	\$12.04
5MM	16MM	50MM	959-2196	959-3196	959-4196	\$12.79
6MM	19MM	63MM	959-2236	959-3236	959-4236	\$14.96
7MM	19MM	63MM	959-2275	959-3275	959-4275	\$23.32
8MM	19MM	63MM	959-2315	959-3315	959-4315	\$18.47
9MM	22MM	70MM	959-2354	959-3354	959-4354	\$30.29
10MM	22MM	70MM	959-2393	959-3393	959-4393	\$27.38
11MM	25MM	70MM	959-2433	959-3433	959-4433	\$36.30
12MM	25MM	75MM	959-2472	959-3472	959-4472	\$35.20
13MM	30MM	88MM	959-2512	959-3512	959-4512	\$52.90
14MM	30MM	88MM	959-2551	959-3551	959-4551	\$51.70
15MM	32MM	88MM	959-2591	959-3591	959-4591	\$69.45
16MM	32MM	88MM	959-2629	959-3629	959-4629	\$68.14
17MM	36MM	100MM	959-2669	959-3669	959-4669	\$90.90
18MM	36MM	100MM	959-2708	959-3708	959-4708	\$89.87
19MM	38MM	100MM	959-2748	959-3748	959-4748	\$110.45
20MM	38MM	100MM	959-2787	959-3787	959-4787	\$109.22
21MM	38MM	100MM	959-2827	959-3827	959-4827	\$132.90
22MM	38MM	100MM	959-2866	959-3866	959-4866	\$131.52
23MM	38MM	100MM	959-2906	959-3906	959-4906	\$161.50
24MM	38MM	100MM	959-2945	959-3945	959-4945	\$162.00
25MM	38MM	100MM	959-2984	959-3984	959-4984	\$160.49

SOLID CARBIDE END MILLS

METRIC ENDMILLS - LONG & EXTRA LONG LENGTH

SINGLE END SQUARE • 2-4 FLUTE

UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
3MM	25MM	75MM	460-2119	460-4119	\$8.91
3MM	25MM	100MM	460-2122	460-4122	\$12.93
4MM	19MM	57MM	460-2160	460-4160	\$11.17
4MM	25MM	75MM	460-2162	460-4162	\$12.38
4MM	25MM	100MM	460-2164	460-4164	\$14.80
4MM	50MM	100MM	460-2166	460-4166	\$16.03
5MM	25MM	75MM	460-2200	460-4200	\$12.50
5MM	30MM	100MM	460-2202	460-4202	\$14.09
6MM	25MM	75MM	460-2240	460-4240	\$15.16
6MM	30MM	100MM	460-2242	460-4242	\$17.10
6MM	50MM	100MM	460-2244	460-4244	\$19.05
8MM	30MM	100MM	460-2320	460-4320	\$18.37
8MM	50MM	150MM	460-2322	460-4322	\$22.91
10MM	38MM	100MM	460-2340	460-4340	\$31.57
10MM	75MM	150MM	460-2342	460-4342	\$46.00
12MM	50MM	100MM	460-2480	460-4480	\$44.63
12MM	75MM	150MM	460-2482	460-4482	\$63.94
14MM	50MM	125MM	460-2554	460-4554	\$71.03
14MM	75MM	150MM	460-2556	460-4556	\$79.41
16M	75MM	150MM	460-2640	460-4640	\$92.73
18MM	75MM	150MM	460-2712	460-4712	\$119.00
20MM	75MM	150MM	460-2790	460-4790	\$163.00
25MM	75MM	150MM	460-2990	460-4990	\$231.00

Series 462

T O O L - C U T T E R M A N U F A C T U R I N G

SOLID CARBIDE END MILLS

METRIC ENDMILLS - LONG & EXTRA LONG LENGTH

SINGLE END SQUARE • 2-4 FLUTE

TIN COATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
3MM	25MM	75MM	462-2119	462-4119	\$10.02
3MM	25MM	100MM	462-2122	462-4122	\$14.16
4MM	19MM	57MM	462-2160	462-4160	\$12.67
4MM	25MM	75MM	462-2162	462-4162	\$13.11
4MM	25MM	100MM	462-2164	462-4164	\$15.40
4MM	50MM	100MM	462-2166	462-4166	\$17.47
5MM	25MM	75MM	462-2200	462-4200	\$13.11
5MM	30MM	100MM	462-2202	462-4202	\$14.99
6MM	25MM	75MM	462-2240	462-4240	\$16.05
6MM	30MM	100MM	462-2242	462-4242	\$17.97
6MM	50MM	100MM	462-2244	462-4244	\$19.03
8MM	30MM	100MM	462-2320	462-4320	\$19.14
8MM	50MM	150MM	462-2322	462-4322	\$24.18
10MM	38MM	100MM	462-2340	462-4340	\$33.57
10MM	75MM	150MM	462-2342	462-4342	\$47.83
12MM	50MM	100MM	462-2480	462-4480	\$46.51
12MM	75MM	150MM	462-2482	462-4482	\$66.92
14MM	50MM	125MM	462-2554	462-4554	\$72.09
14MM	75MM	150MM	462-2556	462-4556	\$81.21
16M	75MM	150MM	462-2640	462-4640	\$96.10
18MM	75MM	150MM	462-2712	462-4712	\$123.00
20MM	75MM	150MM	462-2790	462-4790	\$186.00
25MM	75MM	150MM	462-2990	462-4990	\$235.00

SOLID CARBIDE END MILLS

METRIC ENDMILLS - LONG & EXTRA LONG LENGTH

SINGLE END SQUARE • 2-4 FLUTE

ALTIN COATED - **HTC** HARD COAT



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
3MM	25MM	75MM	464-2119	464-4119	\$10.91
3MM	25MM	100MM	464-2122	464-4122	\$14.97
4MM	19MM	57MM	464-2160	464-4160	\$13.51
4MM	25MM	75MM	464-2162	464-4162	\$14.07
4MM	25MM	100MM	464-2164	464-4164	\$16.13
4MM	50MM	100MM	464-2166	464-4166	\$18.57
5MM	25MM	75MM	464-2200	464-4200	\$14.57
5MM	30MM	100MM	464-2202	464-4202	\$16.10
6MM	25MM	75MM	464-2240	464-4240	\$17.15
6MM	30MM	100MM	464-2242	464-4242	\$19.03
6MM	50MM	100MM	464-2244	464-4244	\$21.07
8MM	30MM	100MM	464-2320	464-4320	\$20.14
8MM	50MM	150MM	464-2322	464-4322	\$26.06
10MM	38MM	100MM	464-2340	464-4340	\$35.00
10MM	75MM	150MM	464-2342	464-4342	\$49.88
12MM	50MM	100MM	464-2480	464-4480	\$48.01
12MM	75MM	150MM	464-2482	464-4482	\$68.00
14MM	50MM	125MM	464-2554	464-4554	\$76.00
14MM	75MM	150MM	464-2556	464-4556	\$84.51
16M	75MM	150MM	464-2640	464-4640	\$98.11
18MM	75MM	150MM	464-2712	464-4712	\$126.00
20MM	75MM	150MM	464-2790	464-4790	\$190.02
25MM	75MM	150MM	464-2990	464-4990	\$239.00

SOLID CARBIDE DRILLS

JOBBER LENGTH • METRIC

UNCOATED



CUTTER DIA.	FLUTE LENGTH	O.A. LENGTH	PART #	LIST PRICE
1.0MM	16MM	38MM	957-0394	\$7.34
1.5MM	19MM	38MM	957-0591	\$6.86
2.0MM	22MM	44MM	957-0787	\$7.24
2.5MM	25MM	51MM	957-0984	\$8.30
3.0MM	32MM	57MM	957-1181	\$9.26
3.5MM	35MM	64MM	957-1378	\$10.46
4.0MM	35MM	64MM	957-1575	\$12.16
4.5MM	41MM	70MM	957-1772	\$14.00
5.0MM	44MM	76MM	957-1969	\$15.94
5.5MM	44MM	76MM	957-2165	\$14.78
6.0MM	51MM	83MM	957-2362	\$22.86
6.5MM	51MM	83MM	957-2559	\$24.96
7.0MM	57MM	89MM	957-2756	\$27.20
7.5MM	60MM	95MM	957-2953	\$22.20
8.0MM	60MM	95MM	957-3150	\$33.32
8.5MM	64MM	102MM	957-3346	\$37.76
9.0MM	64MM	102MM	957-3543	\$41.70
9.5MM	70MM	108MM	957-3740	\$33.40
10.0MM	73MM	114MM	957-3937	\$54.26
10.5MM	73MM	114MM	957-4134	\$46.98
11.0MM	73MM	114MM	957-4331	\$50.90
11.5MM	76MM	121MM	957-4528	\$55.24
12MM	76MM	121MM	957-4724	\$61.26
12.5MM	76MM	121MM	957-4921	\$63.28

SOLID CARBIDE DRILLS

SCREW MACHINE - 135° METRIC - POINT

UNCOATED



CUTTER DIA.	FLUTE LENGTH	O.A. LENGTH	PART #	LIST PRICE
1.0MM	13MM	38MM	959-0394	\$6.54
1.5MM	13MM	38MM	959-0591	\$6.60
2.0MM	19MM	44MM	959-0797	\$7.08
2.5MM	21MM	46MM	959-0984	\$8.14
3.0MM	22MM	48MM	959-1181	\$9.02
3.5MM	24MM	49MM	959-1378	\$10.78
4.0MM	27MM	54MM	959-1575	\$12.32
4.5MM	29MM	56MM	959-1772	\$14.26
5.0MM	30MM	57MM	959-1969	\$15.82
5.5MM	32MM	60MM	959-2165	\$14.74
6.0MM	33MM	62MM	959-2362	\$20.60
6.5MM	35MM	64MM	959-2559	\$24.24
7.0MM	38MM	68MM	959-2756	\$26.50
7.5MM	40MM	70MM	959-2953	\$25.54
8.0MM	41MM	71MM	959-3150	\$32.52
8.5MM	43MM	76MM	959-2246	\$35.02
9.0MM	44MM	78MM	959-3543	\$40.58
9.5MM	46MM	79MM	959-3740	\$37.20
10.0MM	48MM	83MM	959-3937	\$47.90
10.5MM	51MM	86MM	959-4134	\$49.52
11.0MM	51MM	86MM	959-4331	\$54.26
11.5MM	52MM	87MM	959-4528	\$66.62
12.0MM	54MM	92MM	959-4740	\$68.36
12.5MM	56MM	94MM	959-4921	\$62.80

Series 585/586/587



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE DRILLS

CENTER DRILL

60° - 82° - 90°

UNCOATED



SIZE	DRILL DIAMETER	O.A. LENGTH	BODY DIAMETER	60° PART#	LIST PRICE	82° PART#	LIST PRICE	90° PART#	LIST PRICE
00	.025	1-1/2"	1/8"	585-0250	\$10.00	586-0250	\$11.00	587-0250	\$11.00
0	.031	1-1/2"	1/8"	585-0310	\$9.00	586-0310	\$9.90	587-0310	\$9.90
1	.046	1-1/2"	1/8"	585-0460	\$8.50	586-0460	\$9.35	587-0460	\$9.35
2	.078	2"	3/16"	585-0782	\$9.00	586-0782	\$9.90	587-0782	\$9.90
3	.109	2"	1/4"	585-1092	\$10.00	586-1092	\$11.00	587-1092	\$11.00
4	.125	2-1/2"	5/16"	585-1250	\$16.00	586-1250	\$17.60	587-1250	\$17.60
5	.187	2-3/4"	7/16"	585-1870	\$28.00	586-1870	\$30.80	587-1870	\$30.80
6	.218	3"	1/2"	585-2183	\$36.00	586-2183	\$39.60	587-2183	\$39.60
7	.250	3-1/2"	5/8"	585-2500	\$76.00	586-2500	\$83.60	587-2500	\$83.60
8	.312	4"	3/4"	585-3124	\$108.00	586-3124	\$118.80	587-3124	\$118.80
1	.046	4"	1/8"	585-0464	\$15.00	586-0464	\$16.50	587-0464	\$16.50
2	.078	4"	3/16"	585-0784	\$25.00	586-0784	\$27.50	587-0784	\$27.50
3	.109	4"	1/4"	585-1094	\$29.00	586-1094	\$31.90	587-1094	\$31.90
3	.109	6"	1/4"	585-1096	\$37.00	586-1096	\$40.70	587-1096	\$40.70
4	.125	4"	5/16"	585-1254	\$35.00	586-1254	\$38.50	587-1254	\$38.50
4	.125	6"	5/16"	585-1256	\$45.00	586-1256	\$49.50	587-1256	\$49.50
5	.187	4"	7/16"	585-1874	\$53.64	586-1874	\$58.30	587-1874	\$58.30
5	.187	6"	7/16"	585-1876	\$64.00	586-1876	\$70.40	587-1876	\$70.40
6	.218	4"	1/2"	585-2184	\$52.00	586-2184	\$57.20	587-2184	\$57.20
6	.218	6"	1/2"	585-2186	\$78.00	586-2186	\$85.20	587-2186	\$85.20

SOLID CARBIDE DRILLS

SPADE DRILLS - SPOTTING DRILL

UNCOATED

SPADE DRILL



CUTTER DIA	O.A. LENGTH	PART #	LIST PRICE
3/32"	1-1/2"	590-0938	\$5.00
1/8"	1-1/2"	590-1250	\$5.00
5/32"	2"	590-1562	\$7.00
3/16"	2"	590-1875	\$7.00
7/32"	2"	590-2188	\$11.00
1/4"	2"	590-2500	\$10.00
9/32"	2"	590-2812	\$15.00
5/16"	2-1/2"	590-3125	\$14.00
11/32"	2-1/2"	590-3438	\$20.00
3/8"	2-1/2"	590-3750	\$18.00
13/32"	2-1/2"	590-4062	\$26.00
7/16"	2-3/4"	590-4375	\$24.00
15/32"	2-1/2"	590-4688	\$34.00
1/2"	3"	590-5000	\$32.00

SPOTTING DRILL 60-90-120



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART #	LIST PRICE
1/4	1	2-1/2	595-2500	\$15.00
1/4	1-3/8	4	595-2504	\$24.00
3/8	1	2-1/2	595-3750	\$23.00
3/8	1-1/2	6	595-3756	\$39.00
1/2	1-1/4	3	595-5000	\$43.00
1/2	1-1/2	6	595-5006	\$67.00
5/8	1-1/4	3-1/2	595-6250	\$61.00
5/8	2	6	595-6256	\$88.00
3/4	1-1/2	4	595-7500	\$84.00
3/4	2	6	595-7506	\$120.00

Series 500



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE DRILLS

DRILL MILL • SINGLE END • 2 OR 4 FLUTE 90° POINT
UNCOATED

CUTTER DIA	SHANK DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	1/8"	1/2"	1-1/2"	500-2125	500-4125	\$9.76
3/16"	3/16"	5/8"	2"	500-2187	500-4187	\$12.00
1/4"	1/4"	3/4"	2-1/2"	500-2250	500-4250	\$14.46
5/16"	5/16"	13/16"	2-1/2"	500-2312	500-4312	\$19.50
3/8"	3/8"	1"	2-1/2"	500-2375	500-4375	\$21.76
7/16"	7/16"	1"	2-1/2"	500-2437	500-4437	\$36.00
1/2"	1/2"	1"	3"	500-2500	500-4500	\$39.00
5/8"	5/8"	1-1/4"	3-1/2"	500-2625	500-4625	\$66.00
3/4"	3/4"	1-1/2"	4"	500-2750	500-4750	\$105.00



Series 505

SOLID CARBIDE DRILLS

DRILL MILL • SINGLE END • 2 OR 4 FLUTE 90° POINT
ALTIN COATED - **HTC** HARD COAT

CUTTER DIA	SHANK DIAMETER	FLUTE LENGTH	O.A. LENGTH	2 FLUTE PART#	4 FLUTE PART#	LIST PRICE
1/8"	1/8"	1/2"	1-1/2"	505-2125	505-4125	\$11.80
3/16"	3/16"	5/8"	2"	505-2187	505-4187	\$15.00
1/4"	1/4"	3/4"	2-1/2"	505-2250	505-4250	\$19.56
5/16"	5/16"	13/16"	2-1/2"	505-2312	505-4312	\$26.50
3/8"	3/8"	1"	2-1/2"	505-2375	505-4375	\$28.76
7/16"	7/16"	1"	2-1/2"	505-2437	505-4437	\$45.60
1/2"	1/2"	1"	3"	505-2500	505-4500	\$49.00
5/8"	5/8"	1-1/4"	3-1/2"	505-2625	505-4625	\$79.00
3/4"	3/4"	1-1/2"	4"	505-2750	505-4750	\$117.50



**Series 550**

TOOL - CUTTER MANUFACTURING

SOLID CARBIDE DRILLS

JOBBER LENGTH • FRACTIONAL SIZES

UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE
1/16"	3/4"	1-1/2"	550-0625	\$5.96
5/64"	7/8"	1-3/4"	550-0781	\$6.30
3/32"	1"	2"	550-0938	\$7.14
7/64"	1-1/4"	2-1/4"	550-1094	\$7.84
1/8"	1-1/4"	2-1/4"	550-1250	\$8.06
9/64"	1-3/8"	2-1/2"	550-1406	\$9.66
5/32"	1-3/8"	2-1/2"	550-1562	\$10.16
11/64"	1-5/8"	2-3/4"	550-1719	\$11.90
3/16"	1-5/8"	2-3/4"	550-1875	\$11.90
13/64"	1-3/4"	3"	550-2031	\$14.50
7/32"	1-3/4"	3"	550-2188	\$14.78
15/64"	2"	3-1/4"	550-2344	\$17.64
1/4"	2"	3-1/4"	550-2500	\$17.44
17/64"	2-1/8"	3-1/2"	550-2656	\$18.76
9/32"	2-1/8"	3-1/2"	550-2812	\$20.00
19/64"	2-3/8"	3-3/4"	550-2969	\$22.20
5/16"	2-3/8"	3-3/4"	550-3125	\$23.38
21/64"	2-1/2"	4"	550-3281	\$25.98
11/32"	2-1/2"	4"	550-3438	\$28.70
23/64"	2-3/4"	4-1/4"	550-3594	\$31.24
3/8"	2-3/4"	4-1/4"	550-3750	\$33.40
25/64"	2-7/8"	4-1/2"	550-3906	\$38.64
13/32"	2-7/8"	4-1/2"	550-4062	\$42.98
27/64"	2-7/8"	4-1/2"	550-4219	\$46.98
7/16"	2-7/8"	4-1/2"	550-4375	\$50.90
29/64"	3"	4-3/4"	550-4531	\$55.24
15/32"	3"	4-3/4"	550-4688	\$59.44
31/64"	3"	4-3/4"	550-4844	\$61.26
1/2"	3"	4-3/4"	550-5000	\$63.28
9/16"	3-1/4"	5"	550-5625	\$116.46
5/8"	4-1/4"	6"	550-6250	\$136.50
3/4"	4-1/4"	6"	550-7500	\$179.42

OTHER SIZES AVAILABLE**TOLL FREE: 800-916-1665 / FAX:586-790-4918**

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Series 552

T O O L - C U T T E R M A N U F A C T U R I N G

SOLID CARBIDE DRILLS

JOBBER LENGTH • FRACTIONAL SIZES • 3 FLUTE 150° POINT
UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE
1/16"	3/4"	1-1/2"	552-0625	\$6.74
5/64"	7/8"	1-3/4"	552-0781	\$7.12
3/32"	1"	2"	552-0938	\$8.07
7/64"	1-1/4"	2-1/4"	552-1094	\$8.86
1/8"	1-1/4"	2-1/4"	552-1250	\$9.11
9/64"	1-3/8"	2-1/2"	552-1406	\$10.92
5/32"	1-3/8"	2-1/2"	552-1562	\$11.48
11/64"	1-5/8"	2-3/4"	552-1719	\$13.45
3/16"	1-5/8"	2-3/4"	552-1875	\$13.45
13/64"	1-3/4"	3"	552-2031	\$16.39
7/32"	1-3/4"	3"	552-2188	\$16.71
15/64"	2"	3-1/4"	552-2344	\$19.94
1/4"	2"	3-1/4"	552-2500	\$19.71
17/64"	2-1/8"	3-1/2"	552-2656	\$21.20
9/32"	2-1/8"	3-1/2"	552-2812	\$22.60
19/64"	2-3/8"	3-3/4"	552-2969	\$25.09
5/16"	2-3/8"	3-3/4"	552-3125	\$26.42
21/64"	2-1/2"	4"	552-3281	\$29.36
11/32"	2-1/2"	4"	552-3438	\$32.43
23/64"	2-3/4"	4-1/4"	552-3594	\$35.31
3/8"	2-3/4"	4-1/4"	552-3750	\$37.75
25/64"	2-7/8"	4-1/2"	552-3906	\$43.67
13/32"	2-7/8"	4-1/2"	552-4062	\$48.57
27/64"	2-7/8"	4-1/2"	552-4219	\$53.09
7/16"	2-7/8"	4-1/2"	552-4375	\$57.52
29/64"	3"	4-3/4"	552-4531	\$62.43
15/32"	3"	4-3/4"	552-4688	\$67.17
31/64"	3"	4-3/4"	552-4844	\$69.23
1/2"	3"	4-3/4"	552-5000	\$71.51
9/16"	3-1/4"	5"	552-5625	\$131.60
5/8"	4-1/4"	6"	552-6250	\$154.25
3/4"	4-1/4"	6"	552-7500	\$202.75

OTHER SIZES AVAILABLE

SOLID CARBIDE DRILLS

JOBBER LENGTH • LETTER SIZES

UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE
A	2"	3-1/4"	555-2344	\$22.22
B	2"	3-1/4"	555-2380	\$22.86
C	2"	3-1/4"	555-2420	\$23.00
D	2"	3-1/4"	555-2460	\$23.60
E	2"	3-1/4"	555-2500	\$21.34
F	2"	3-1/4"	555-2570	\$24.96
G	2-1/8"	3-1/2"	555-2610	\$25.86
H	2-1/8"	3-1/2"	555-2660	\$26.04
I	2-1/8"	3-1/2"	555-2720	\$26.48
J	2-1/8"	3-1/2"	555-2770	\$27.20
K	2-1/8"	3-1/2"	555-2810	\$27.54
L	2-1/8"	3-1/2"	555-2900	\$28.66
M	2-3/8"	3-3/4"	555-2950	\$29.72
N	2-3/8"	3-3/4"	555-3020	\$31.48
O	2-3/8"	3-3/4"	555-3160	\$33.32
P	2-3/8"	3-3/4"	555-3230	\$34.46
Q	2-1/2"	4"	555-3320	\$36.70
R	2-1/2"	4"	555-3390	\$37.76
S	2-1/2"	4"	555-3480	\$40.26
T	2-3/4"	4-1/4"	555-3580	\$41.70
U	2-3/4"	4-1/4"	555-3680	\$43.80
V	2-3/4"	4-1/4"	555-3770	\$47.34
W	2-7/8"	4-1/2"	555-3860	\$49.74
X	2-7/8"	4-1/2"	555-3970	\$54.26
Y	2-7/8"	4-1/2"	555-4040	\$56.14
Z	2-7/8"	4-1/2"	555-4130	\$69.64

Series 553

T O O L - C U T T E R M A N U F A C T U R I N G

SOLID CARBIDE DRILLS

JOBBER LENGTH • LETTER SIZES - 3 FLUTE 150° POINT
UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE
A	2"	3-1/4"	553-2344	\$25.11
B	2"	3-1/4"	553-2380	\$25.84
C	2"	3-1/4"	553-2420	\$25.99
D	2"	3-1/4"	553-2460	\$26.67
E	2"	3-1/4"	553-2500	\$24.12
F	2"	3-1/4"	553-2570	\$28.21
G	2-1/8"	3-1/2"	553-2610	\$29.23
H	2-1/8"	3-1/2"	553-2660	\$29.43
I	2-1/8"	3-1/2"	553-2720	\$29.93
J	2-1/8"	3-1/2"	553-2770	\$30.74
K	2-1/8"	3-1/2"	553-2810	\$31.13
L	2-1/8"	3-1/2"	553-2900	\$32.39
M	2-3/8"	3-3/4"	553-2950	\$33.59
N	2-3/8"	3-3/4"	553-3020	\$35.58
O	2-3/8"	3-3/4"	553-3160	\$37.66
P	2-3/8"	3-3/4"	553-3230	\$38.94
Q	2-1/2"	4"	553-3320	\$41.48
R	2-1/2"	4"	553-3390	\$42.67
S	2-1/2"	4"	553-3480	\$45.50
T	2-3/4"	4-1/4"	553-3580	\$47.13
U	2-3/4"	4-1/4"	553-3680	\$49.50
V	2-3/4"	4-1/4"	553-3770	\$53.50
W	2-7/8"	4-1/2"	553-3860	\$56.21
X	2-7/8"	4-1/2"	553-3970	\$61.32
Y	2-7/8"	4-1/2"	553-4040	\$63.44
Z	2-7/8"	4-1/2"	553-4130	\$78.70

SOLID CARBIDE DRILLS

JOBBER LENGTH • NUMBER SIZES

UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE	CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE	CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE
1	1-3/4"	3"	560-2280	\$20.44	21	1-3/8"	2-1/2"	560-1590	\$12.16	41	1"	2"	560-0960	\$7.98
2	1-3/4"	3"	560-2210	\$18.28	22	1-3/8"	2-1/2"	560-1570	\$11.92	42	1"	2"	560-0935	\$7.88
3	1-3/4"	3"	560-2130	\$17.54	23	1-3/8"	2-1/2"	560-1540	\$11.44	43	1"	2"	560-0890	\$7.72
4	1-3/4"	3"	560-2090	\$16.74	24	1-3/8"	2-1/2"	560-1520	\$11.20	44	1"	2"	560-0860	\$7.72
5	1-3/4"	3"	560-2055	\$16.74	25	1-3/8"	2-1/2"	560-1495	\$11.20	45	7/8"	1-3/4"	560-0820	\$7.40
6	1-3/4"	3"	560-2040	\$16.52	26	1-3/8"	2-1/2"	560-1470	\$11.20	46	7/8"	1-3/4"	560-0810	\$7.24
7	1-3/4"	3"	560-2010	\$15.94	27	1-3/8"	2-1/2"	560-1440	\$10.46	47	7/8"	1-3/4"	560-0785	\$7.24
8	1-3/4"	3"	560-1990	\$15.94	28	1-3/8"	2-1/2"	560-1405	\$10.46	48	7/8"	1-3/4"	560-0760	\$7.24
9	1-3/4"	3"	560-1960	\$15.94	29	1-3/8"	2-1/2"	560-1360	\$10.46	49	7/8"	1-3/4"	560-0730	\$7.02
10	1-5/8"	2-3/4"	560-1935	\$14.98	30	1-1/4"	2-1/4"	560-1285	\$9.66	50	7/8"	1-3/4"	560-0700	\$6.90
11	1-5/8"	2-3/4"	560-1910	\$14.74	31	1-1/4"	2-1/4"	560-1200	\$9.26	51	3/4"	1-1/2"	560-0670	\$6.84
12	1-5/8"	2-3/4"	560-1890	\$14.50	32	1-1/4"	2-1/4"	560-1160	\$9.18	52	3/4"	1-1/2"	560-0635	\$6.86
13	1-5/8"	2-3/4"	560-1850	\$14.16	33	1-1/4"	2-1/4"	560-1130	\$9.02	53	3/4"	1-1/2"	560-0595	\$6.86
14	1-5/8"	2-3/4"	560-1820	\$14.00	34	1-1/4"	2-1/4"	560-1110	\$9.02	54	3/4"	1-1/2"	560-0550	\$6.86
15	1-5/8"	2-3/4"	560-1800	\$14.00	35	1-1/4"	2-1/4"	560-1100	\$8.70	55	3/4"	1-1/2"	560-0520	\$6.86
16	1-5/8"	2-3/4"	560-1770	\$13.68	36	1-1/4"	2-1/4"	560-1065	\$8.62	56	3/4"	1-1/2"	560-0465	\$7.02
17	1-5/8"	2-3/4"	560-1730	\$13.30	37	1-1/4"	2-1/4"	560-1040	\$8.62	57	3/4"	1-1/2"	560-0430	\$7.34
18	1-5/8"	2-3/4"	560-1695	\$12.66	38	1-1/4"	2-1/4"	560-1015	\$8.62	58	3/4"	1-1/2"	560-0420	\$7.34
19	1-5/8"	2-3/4"	560-1660	\$12.66	39	1-1/4"	2-1/4"	560-0995	\$8.30	59	3/4"	1-1/2"	560-0410	\$7.34
20	1-3/8"	2-1/2"	560-1610	\$12.16	40	1"	2"	560-0980	\$8.14	60	3/4"	1-1/2"	560-0400	\$7.34

Series 554

TOOL - CUTTER MANUFACTURING

SOLID CARBIDE DRILLS

JOBBER LENGTH • NUMBER SIZES - 3 FLUTE 150° POINT
UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE	CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE	CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE
1	1-3/4"	3"	554-2280	\$23.10	21	1-3/8"	2-1/2"	554-1590	\$13.74	41	1"	2"	554-0960	\$9.02
2	1-3/4"	3"	554-2210	\$20.66	22	1-3/8"	2-1/2"	554-1570	\$13.47	42	1"	2"	554-0935	\$8.91
3	1-3/4"	3"	554-2130	\$19.83	23	1-3/8"	2-1/2"	554-1540	\$12.93	43	1"	2"	554-0890	\$8.73
4	1-3/4"	3"	554-2090	\$18.92	24	1-3/8"	2-1/2"	554-1520	\$12.67	44	1"	2"	554-0860	\$8.73
5	1-3/4"	3"	554-2055	\$18.92	25	1-3/8"	2-1/2"	554-1495	\$12.66	45	7/8"	1-3/4"	554-0820	\$8.37
6	1-3/4"	3"	554-2040	\$18.67	26	1-3/8"	2-1/2"	554-1470	\$12.66	46	7/8"	1-3/4"	554-0810	\$8.19
7	1-3/4"	3"	554-2010	\$18.02	27	1-3/8"	2-1/2"	554-1440	\$11.82	47	7/8"	1-3/4"	554-0785	\$8.19
8	1-3/4"	3"	554-1990	\$18.02	28	1-3/8"	2-1/2"	554-1405	\$11.82	48	7/8"	1-3/4"	554-0760	\$8.19
9	1-3/4"	3"	554-1960	\$18.02	29	1-3/8"	2-1/2"	554-1360	\$11.82	49	7/8"	1-3/4"	554-0730	\$7.94
10	1-5/8"	2-3/4"	554-1935	\$16.93	30	1-1/4"	2-1/4"	554-1285	\$10.91	50	7/8"	1-3/4"	554-0700	\$7.80
11	1-5/8"	2-3/4"	554-1910	\$16.66	31	1-1/4"	2-1/4"	554-1200	\$10.47	51	3/4"	1-1/2"	554-0670	\$7.73
12	1-5/8"	2-3/4"	554-1890	\$16.39	32	1-1/4"	2-1/4"	554-1160	\$10.38	52	3/4"	1-1/2"	554-0635	\$7.73
13	1-5/8"	2-3/4"	554-1850	\$16.00	33	1-1/4"	2-1/4"	554-1130	\$10.20	53	3/4"	1-1/2"	554-0595	\$7.73
14	1-5/8"	2-3/4"	554-1820	\$15.82	34	1-1/4"	2-1/4"	554-1110	\$10.20	54	3/4"	1-1/2"	554-0550	\$7.73
15	1-5/8"	2-3/4"	554-1800	\$15.82	35	1-1/4"	2-1/4"	554-1100	\$9.83	55	3/4"	1-1/2"	554-0520	\$7.76
16	1-5/8"	2-3/4"	554-1770	\$15.46	36	1-1/4"	2-1/4"	554-1065	\$9.74	56	3/4"	1-1/2"	554-0465	\$7.94
17	1-5/8"	2-3/4"	554-1730	\$15.03	37	1-1/4"	2-1/4"	554-1040	\$9.74	57	3/4"	1-1/2"	554-0430	\$8.30
18	1-5/8"	2-3/4"	554-1695	\$14.31	38	1-1/4"	2-1/4"	554-1015	\$9.74	58	3/4"	1-1/2"	554-0420	\$8.30
19	1-5/8"	2-3/4"	554-1660	\$14.31	39	1-1/4"	2-1/4"	554-0995	\$9.38	59	3/4"	1-1/2"	554-0410	\$8.30
20	1-3/8"	2-1/2"	554-1610	\$13.74	40	1"	2"	554-0980	\$9.20	60	3/4"	1-1/2"	554-0400	\$8.30

SOLID CARBIDE DRILLS

SCREW MACHINE • 135° SPLIT POINT - FRACTIONAL SIZES
UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE
1/8"	7/8"	1-7/8"	565-1250	\$8.30
9/64"	15/16"	1-15/16"	565-1406	\$9.26
5/32"	1"	2-1/16"	565-1562	\$9.66
11/64"	1-1/16"	2-1/8"	565-1719	\$12.08
3/16"	1-1/8"	2-3/16"	565-1875	\$12.16
13/64"	1-3/16"	2-1/4"	565-2031	\$14.32
7/32"	1-1/4"	2-3/8"	565-2188	\$14.74
15/64"	1-5/16"	2-7/16"	565-2344	\$18.36
1/4"	1-3/8"	2-1/2"	565-2500	\$17.00
17/64"	1-7/16"	2-5/8"	565-2658	\$23.82
9/32"	1-1/2"	2-11/16"	565-2812	\$24.24
19/64"	1-9/16"	2-3/4"	565-2969	\$25.54
5/16"	1-5/8"	2-13/16"	565-3125	\$24.80
21/64"	1-11/16"	2-15/16"	565-3281	\$28.42
11/32"	1-11/16"	3"	565-3438	\$31.56
23/64"	1-3/4"	3-1/16"	565-3594	\$37.20
3/8"	1-13/16"	3-1/8"	565-3750	\$37.20
25/64"	1-7/8"	3-1/4"	565-3906	\$44.28
13/32"	1-15/16"	3-5/16"	565-4062	\$48.08
27/64"	2"	3-3/8"	565-4219	\$49.52
7/16"	2-1/16"	3-7/16"	565-4375	\$54.26
29/64"	2-1/8"	3-9/16"	565-4531	\$66.62
15/32"	2-1/8"	3-5/8"	565-4688	\$68.36
31/64"	2-3/16"	3-11/16"	565-4844	\$68.36
1/2"	2-1/4"	3-3/4"	565-5000	\$62.80
9/16"	2-1/2"	4"	565-5625	\$124.54
5/8"	2-3/4"	4-1/4"	565-6250	\$162.22
11/16"	2-7/8"	4-5/8"	565-6875	\$184.98
3/4"	3-1/8"	5"	565-7500	\$215.98

SOLID CARBIDE DRILLS

SCREW MACHINE • 135° SPLIT POINT - LETTER SIZES
UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE
A	1-5/16"	2-7/16"	570-2340	\$19.64
B	1-3/8"	2-1/2"	570-2380	\$20.60
C	1-3/8"	2-1/2"	570-2420	\$20.76
D	1-3/8"	2-1/2"	570-2460	\$20.76
E	1-3/8"	2-1/2"	570-2500	\$19.48
F	1-7/16"	2-5/8"	570-2570	\$24.24
G	1-7/16"	2-5/8"	570-2610	\$25.44
H	1-1/2"	2-11/16"	570-2660	\$26.08
I	1-1/2"	2-11/16"	570-2720	\$26.08
J	1-1/2"	2-11/16"	570-2770	\$26.50
K	1-1/2"	2-11/16"	570-2810	\$29.40
L	1-9/16"	2-3/4"	570-2900	\$30.42
M	1-9/16"	2-3/4"	570-2950	\$31.08
N	1-5/8"	2-13/16"	570-3020	\$31.56
O	1-11/16"	2-15/16"	570-3160	\$32.52
P	1-11/16"	2-15/16"	570-3230	\$32.84
Q	1-11/16"	3"	570-3320	\$34.06
R	1-11/16"	3"	570-3390	\$35.02
S	1-3/4"	3-1/16"	570-3480	\$36.86
T	1-3/4"	3-1/16"	570-3580	\$40.58
U	1-13/16"	3-1/8"	570-3680	\$42.34
V	1-7/8"	3-1/4"	570-3770	\$42.98
W	1-15/16"	3-1/4"	570-3860	\$44.04
X	1-15/16"	3-5/16"	570-3970	\$47.90
Y	1-15/16"	3-5/16"	570-4040	\$52.64
Z	2"	3-3/8"	570-4130	\$54.10

SOLID CARBIDE DRILLS

SCREW MACHINE • 135° SPLIT POINT - NUMBER SIZES

UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE	CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE	CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE
1	1-5/16"	2-7/16"	575-2280	\$18.84	21	1-1/16"	2-1/8"	575-1590	\$12.32	41	13/16"	1-13/16"	575-0960	\$7.72
2	1-5/16"	2-7/16"	575-2210	\$18.44	22	1"	2-1/16"	575-1570	\$11.92	42	3/4"	1-3/4"	575-0935	\$7.66
3	1-1/4"	2-3/8"	575-2230	\$17.84	23	1"	2-1/16"	575-1540	\$11.92	43	3/4"	1-3/4"	575-0890	\$7.50
4	1-1/4"	2-3/8"	575-2090	\$18.92	24	1"	2-1/16"	575-1520	\$11.60	44	3/4"	1-3/4"	575-0860	\$7.40
5	1-1/4"	2-3/8"	575-2055	\$17.00	25	1"	2-1/16"	575-1495	\$11.20	45	3/4"	1-3/4"	575-0820	\$7.34
6	1-1/4"	2-3/8"	575-2040	\$17.00	26	1"	2-1/16"	575-1470	\$11.04	46	3/4"	1-3/4"	575-0810	\$7.08
7	1-3/16"	2-1/4"	575-2010	\$16.26	27	1"	2-1/16"	575-1440	\$10.88	47	3/4"	1-3/4"	575-0785	\$7.08
8	1-3/16"	2-1/4"	575-1990	\$15.82	28	15/16"	1-15/16"	575-1405	\$10.78	48	11/16"	1-11/16"	575-0760	\$7.08
9	1-3/16"	2-1/4"	575-1960	\$15.02	29	15/16"	1-15/16"	575-1360	\$10.24	49	11/16"	1-11/16"	575-0730	\$6.90
10	1-3/16"	2-1/4"	575-1935	\$15.02	30	15/16"	1-15/16"	575-1285	\$10.14	50	11/16"	1-11/16"	575-0700	\$6.86
11	1-3/16"	2-1/4"	575-1910	\$15.02	31	7/8"	1-7/8"	575-1200	\$9.02	51	11/16"	1-11/16"	575-0670	\$6.76
12	1-3/16"	2-1/4"	575-1890	\$14.26	32	7/8"	1-7/8"	575-1160	\$9.02	52	11/16"	1-11/16"	575-0635	\$6.76
13	1-1/8"	2-3/16"	575-1850	\$14.58	33	7/8"	1-7/8"	575-1130	\$8.86	53	1/2"	1-1/2"	575-0595	\$6.60
14	1-1/8"	2-3/16"	575-1820	\$14.32	34	7/8"	1-7/8"	575-1110	\$8.86	54	1/2"	1-1/2"	575-0550	\$6.60
15	1-1/8"	2-3/16"	575-1800	\$14.26	35	7/8"	1-7/8"	575-1100	\$8.62	55	1/2"	1-1/2"	575-0520	\$6.54
16	1-1/8"	2-3/16"	575-1770	\$14.16	36	13/16"	1-13/16"	575-1065	\$8.46	56	1/2"	1-1/2"	575-0465	\$6.54
17	1-1/8"	2-3/16"	575-1730	\$14.00	37	13/16"	1-13/16"	575-1040	\$8.38	57	1/2"	1-1/2"	575-0430	\$6.54
18	1-1/16"	2-1/8"	575-1695	\$13.68	38	13/16"	1-13/16"	575-1015	\$8.30	58	1/2"	1-1/2"	575-0420	\$6.54
19	1-1/16"	2-1/8"	575-1660	\$13.04	39	13/16"	1-13/16"	575-0995	\$8.14	59	1/2"	1-1/2"	575-0410	\$6.54
20	1-1/16"	2-1/8"	575-1610	\$12.82	40	13/16"	1-13/16"	575-0980	\$8.14	60	1/2"	1-1/2"	575-0400	\$6.54

SOLID CARBIDE DRILLS

STRAIGHT FLUTE • 140° POINT - FRACTIONAL SIZES

UNCOATED



CUTTER DIA	FLUTE LENGTH	O.A. LENGTH	PART#	LIST PRICE
1/16"	5/8"	1-5/8"	580-0625	\$8.16
5/64"	11/16"	1-11/16"	580-0781	\$6.94
3/32"	3/4"	1-3/4"	580-0938	\$7.86
7/64"	13/16"	1-13/16"	580-1094	\$8.62
1/8"	7/8"	1-7/8"	580-1250	\$8.86
9/64"	15/16"	1-15/16"	580-1406	\$10.62
5/32"	1"	2-1/16"	580-1562	\$11.18
11/64"	1-1/16"	2-1/8"	580-1719	\$13.10
3/16"	1-1/8"	2-3/16"	580-1875	\$13.10
13/64"	1-3/16"	2-1/4"	580-2031	\$15.96
7/32"	1-1/4"	2-3/8"	580-2188	\$16.26
15/64"	1-5/16"	2-7/16"	580-2344	\$19.40
1/4"	1-3/8"	2-1/2"	580-2500	\$19.18
17/64"	1-7/16"	2-5/8"	580-2656	\$20.64
9/32"	1-1/2"	2-11/16"	580-2812	\$22.00
19/64"	1-9/16"	2-3/4"	580-2969	\$24.42
5/16"	1-5/8"	2-13/16"	580-3125	\$25.72
21/64"	1-11/16"	2-15/16"	580-3281	\$28.58
11/32"	1-11/16"	3"	580-3438	\$31.58
23/64"	1-3/4"	3-1/16"	580-3594	\$34.50
3/8"	1-13/16"	3-1/8"	580-3750	\$36.74
25/64"	1-7/8"	3-1/4"	580-3906	\$42.50
13/32"	1-15/16"	3-5/16"	580-4062	\$47.28
27/64"	2"	3-3/8"	580-4219	\$51.68
7/16"	2-1/16"	3-7/16"	580-4375	\$56.00
15/32"	2-1/8"	3-5/8"	580-4688	\$65.38
1/2"	2-1/4"	3-3/4"	580-5000	\$69.60

CARBIDE REAMERS

CHUCKING • FRACTIONAL SIZES

UNCOATED



REAMER DIA	FLUTE LENGTH	O.A. LENGTH	DECIMAL EQUIVALENT	PART#	LIST PRICE
1/8"	5/8"	2-1/4"	.1250	600-1250	\$13.08
9/64"	3/4"	2-1/2"	.1406	600-1406	\$17.28
5/32"	3/4"	2-1/2"	.1562	600-1562	\$15.40
11/64"	7/8"	2-3/4"	.1719	600-1719	\$17.50
3/16"	7/8"	2-3/4"	.1875	600-1875	\$17.56
13/64"	1"	3"	.2031	600-2031	\$21.46
7/32"	1"	3"	.2187	600-2187	\$21.58
15/64"	1"	3"	.2344	600-2344	\$23.32
1/4"	1"	3"	.2500	600-2500	\$23.42
17/64"	1-1/8"	3-1/4"	.2656	600-2656	\$28.26
9/32"	1-1/8"	3-1/4"	.2812	600-2812	\$28.34
19/64"	1-1/8"	3-1/4"	.2969	600-2969	\$31.38
5/16"	1-1/8"	3-1/4"	.3125	600-3125	\$31.50
21/64"	1-1/4"	3-1/2"	.3281	600-3281	\$35.08
11/32"	1-1/4"	3-1/2"	.3437	600-3437	\$35.42
23/64"	1-1/4"	3-1/2"	.3594	600-3594	\$37.76
3/8"	1-1/4"	3-1/2"	.3750	600-3750	\$37.78
25/64"	1-1/4"	3-1/2"	.3906	600-3906	\$41.62
13/32"	1-1/4"	3-1/2"	.4062	600-4062	\$43.28
27/64"	1-3/8"	4"	.4219	600-4219	\$44.76
7/16"	1-3/8"	4"	.4375	600-4375	\$49.06
29/64"	1-3/8"	4"	.4531	600-4531	\$54.10
15/32"	1-3/8"	4"	.4687	600-4687	\$54.22
31/64"	1-1/2"	4"	.4844	600-4844	\$58.36
1/2"	1-1/2"	4"	.5000	600-5000	\$61.28

CARBIDE REAMERS

CHUCKING • LETTER SIZES**UNCOATED**

REAMER DIA	FLUTE LENGTH	O.A. LENGTH	DECIMAL EQUIVALENT	PART#	LIST PRICE
A	1"	3"	.2340	605-2340	\$25.94
B	1"	3"	.2380	605-2380	\$25.86
C	1"	3"	.2420	605-2420	\$25.70
D	1"	3"	.2460	605-2460	\$25.50
E	1"	3"	.2500	605-2500	\$23.32
F	1-1/8"	3-1/4"	.2570	605-2570	\$31.38
G	1-1/8"	3-1/4"	.2610	605-2610	\$31.30
H	1-1/8"	3-1/4"	.2660	605-2660	\$31.26
I	1-1/8"	3-1/4"	.2720	605-2720	\$31.22
J	1-1/8"	3-1/4"	.2770	605-2770	\$31.16
K	1-1/8"	3-1/4"	.2810	605-2810	\$31.10
L	1-1/8"	3-1/4"	.2900	605-2900	\$30.80
M	1-1/8"	3-1/4"	.2950	605-2950	\$30.84
N	1-1/8"	3-1/4"	.3020	605-3020	\$30.86
O	1-1/8"	3-1/4"	.3160	605-3160	\$34.90
P	1-1/4"	3-1/2"	.3230	605-3230	\$35.00
Q	1-1/4"	3-1/2"	.3320	605-3320	\$35.10
R	1-1/4"	3-1/2"	.3390	605-3390	\$35.32
S	1-1/4"	3-1/2"	.3480	605-3480	\$35.14
T	1-1/4"	3-1/2"	.3580	605-3580	\$38.20
U	1-1/4"	3-1/2"	.3680	605-3680	\$38.24
V	1-1/4"	3-1/2"	.3770	605-3770	\$48.08
W	1-1/4"	3-1/2"	.3860	605-3860	\$48.12
X	1-1/4"	3-1/2"	.3970	605-3970	\$55.60
Y	1-1/4"	3-1/2"	.4040	605-4040	\$57.00
Z	1-1/4"	3-1/2"	.4130	605-4130	\$58.60

CARBIDE REAMERS

CHUCKING • NUMBER SIZES

UNCOATED



REAMER DIA	FLUTE LENGTH	O.A. LENGTH	DECIMAL EQUIV.	PART#	LIST PRICE
1	1"	3"	.2280	610-2280	\$24.20
2	1"	3"	.2210	610-2210	\$22.10
3	1"	3"	.2130	610-2130	\$22.10
4	1"	3"	.2090	610-2090	\$22.10
5	1"	3"	.2055	610-2055	\$22.10
6	1"	3"	.2040	610-2040	\$22.10
7	1"	3"	.2010	610-2010	\$22.10
8	1"	3"	.1990	610-1990	\$22.10
9	1"	3"	.1960	610-1960	\$22.10
10	7/8"	2-3/4"	.1935	610-1935	\$22.10
11	7/8"	2-3/4"	.1910	610-1910	\$22.10
12	7/8"	2-3/4"	.1890	610-1890	\$18.16
13	7/8"	2-3/4"	.1850	610-1850	\$18.16
14	7/8"	2-3/4"	.1820	610-1820	\$18.16
15	7/8"	2-3/4"	.1800	610-1800	\$18.16
16	7/8"	2-3/4"	.1770	610-1770	\$18.16
17	7/8"	2-3/4"	.1730	610-1730	\$18.16
18	7/8"	2-3/4"	.1695	610-1695	\$18.16
19	7/8"	2-3/4"	.1660	610-1660	\$18.16
20	7/8"	2-3/4"	.1610	610-1610	\$18.16
21	3/4"	2-1/2"	.1590	610-1590	\$16.14
22	3/4"	2-1/2"	.1570	610-1570	\$16.14
23	3/4"	2-1/2"	.1540	610-1540	\$16.14
24	3/4"	2-1/2"	.1520	610-1520	\$16.14
25	3/4"	2-1/2"	.1495	610-1495	\$16.14
26	3/4"	2-1/2"	.1470	610-1470	\$16.14
27	3/4"	2-1/2"	.1440	610-1440	\$15.50
28	3/4"	2-1/2"	.1405	610-1405	\$15.50
29	3/4"	2-1/2"	.1360	610-1360	\$15.50
30	5/8"	2-1/4"	.1285	610-1285	\$14.46

REAMER DIA	FLUTE LENGTH	O.A. LENGTH	DECIMAL EQUIV.	PART#	LIST PRICE
31	5/8"	2-1/4"	.1200	610-1200	\$14.46
32	5/8"	2-1/4"	.1160	610-1160	\$14.46
33	5/8"	2-1/4"	.1130	610-1130	\$12.94
34	5/8"	2-1/4"	.1110	610-1110	\$12.94
35	5/8"	2-1/4"	.1100	610-1100	\$12.94
36	5/8"	2-1/4"	.1065	610-1065	\$12.94
37	5/8"	2-1/4"	.1040	610-1040	\$12.94
38	5/8"	2-1/4"	.1015	610-1015	\$12.94
39	5/8"	2-1/4"	.0995	610-0995	\$12.94
40	5/8"	2-1/4"	.0980	610-0980	\$12.94
41	5/8"	2-1/4"	.0960	610-0960	\$12.94
42	1/2"	2"	.0935	610-0935	\$12.94
43	1/2"	2"	.0890	610-0890	\$12.94
44	1/2"	2"	.0860	610-0860	\$12.94
45	1/2"	2"	.0820	610-0820	\$12.94
46	1/2"	2"	.0810	610-0810	\$12.94
47	1/2"	1-3/4"	.0785	610-0785	\$12.94
48	1/2"	1-3/4"	.0760	610-0760	\$12.94
49	1/2"	1-3/4"	.0730	610-0730	\$12.94
50	1/2"	1-3/4"	.0700	610-0700	\$12.94
51	1/2"	1-3/4"	.0670	610-0670	\$12.94
52	3/8"	1-1/2"	.0635	610-0635	\$12.94
53	3/8"	1-1/2"	.0595	610-0595	\$12.94
54	3/8"	1-1/2"	.0550	610-0550	\$12.94
55	3/8"	1-1/2"	.0520	610-0520	\$12.94
56	3/8"	1-1/2"	.0465	610-0465	\$12.94
57	3/8"	1-1/2"	.0430	610-0430	\$12.94
58	3/8"	1-1/2"	.0420	610-0420	\$12.94
59	3/8"	1-1/2"	.0410	610-0410	\$12.94
60	3/8"	1-1/2"	.0400	610-0400	\$12.94

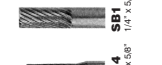
METRIC SIZES AVAILABLE

SOLID CARBIDE BURS

CYLINDRICAL (PLAIN END)



CYLINDRICAL (END CUT)



CYLINDRICAL (END CUT)



CYLINDRICAL (RADIUS END)



CYLINDRICAL (RADIUS END)



BALL



OVAL



FLAME



TREE POINTED



TREE RADIUS



TREE RADIUS



DEBURRING 60°



DEBURRING 90°



CONE



CONE



DEBURRING 60°



DEBURRING 90°



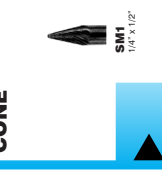
CONE (RADIUS NOSE 14° TAPER)



CONE



CONC



INVERTED CONE (PLAIN END)



INVERTED CONE (END CUT)



CYLINDRICAL (PLAIN END)



ALUMINUM CUT



CYLINDRICAL (RADIUS END)



SC-1NF
1/4" x 3/4"
1/2" x 1"



SC-3NF
3/8" x 3/4"
1/2" x 1"



SC-5NF
1/2" x 1"
3/4" x 1 1/4"



SC-7NF
3/4" x 1"
1/2" x 1 1/2"



SD-1NF
1/4" x 7/32"
3/8" x 5/16"



SD-3NF
3/8" x 5/16"
1/2" x 7/16"



SD-6NF
5/8" x 9/16"
3/4" x 1 1/16"



SE-3NF
3/8" x 5/8"
1/2" x 7/8"



SE-6NF
5/8" x 1"
3/4" x 1 1/4"



SE-7NF
3/4" x 1"
1/2" x 1 1/4"



SF-1NF
1/4" x 3/4"
3/8" x 3/4"



SF-3NF
3/8" x 3/4"
1/2" x 1"



SF-5NF
1/2" x 1"
5/8" x 1 1/4"



SF-14NF
3/4" x 1 1/4"

CONE (RADIUS NOSE 14° TAPER)



SL-3NF
3/8" x 1 1/16"
1/2" x 1 1/8"



SL-4NF
1/2" x 1 1/8"
3/8" x 3/4"



SL-6NF
5/8" x 13/16"
3/4" x 1 1/2"



SL-7NF
3/4" x 1 1/2"



SA-1L6
1/4" x 5/8"



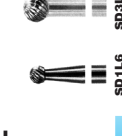
SC-1L6
1/4" x 3/8"



SC-3L6
3/8" x 3/4"



SD-1L6
1/4" x 7/32"



SD-3L6
3/8" x 5/16"



SD-5L6
1/2" x 7/16"



SE-1L6
1/4" x 3/8"



SE-3L6
3/8" x 19/32"



SE-5L6
1/2" x 7/8"

TREE RADIUS



SF-1L6
1/4" x 5/8"



SF-3L6
3/8" x 3/4"



SF-5L6
1/2" x 1"



SG-1L6
1/4" x 5/8"



SG-3L6
3/8" x 3/4"



SG-5L6
1/2" x 1 1/4"



SL-1L6
1/4" x 5/8"



SG-3L6
3/8" x 1 1/16"



SG-5L6
1/2" x 1 1/8"



SA-1
1/16" x 1/4"



SA-2
5/64" x 5/16"



SA-3
3/32" x 3/8"



SC-61
3/32" x 3/8"



SD-61
3/32" x 1/8"



SE-61
3/32" x 1/8"



SG-61
3/32" x 1/4"

TREE POINTED



SG-1L6
1/4" x 5/8"



SG-3L6
3/8" x 3/4"



SG-5L6
1/2" x 1"



SH-2L6
5/16" x 3/4"



SL-1L6
1/4" x 5/8"



SG-3L6
3/8" x 1 1/16"



SG-5L6
1/2" x 1 1/8"



SA-1
1/16" x 1/4"



SA-2
5/64" x 5/16"



SA-3
3/32" x 3/8"



SC-61
3/32" x 3/8"



SD-61
3/32" x 1/8"



SE-61
3/32" x 1/8"



SG-61
3/32" x 1/4"

FLAME



SH-2L6
5/16" x 3/4"



SL-1L6
1/4" x 5/8"



SG-3L6
3/8" x 1 1/16"



SG-5L6
1/2" x 1 1/8"



SA-1
1/16" x 1/4"



SA-2
5/64" x 5/16"



SA-3
3/32" x 3/8"



SC-61
3/32" x 3/8"



SD-61
3/32" x 1/8"



SE-61
3/32" x 1/8"



SG-61
3/32" x 1/4"

3/32" DIA. SHANKS



SA-1
1/16" x 1/4"



SA-2
5/64" x 5/16"



SA-3
3/32" x 3/8"



SC-61
3/32" x 3/8"



SD-61
3/32" x 1/8"



SE-61
3/32" x 1/8"



SG-61
3/32" x 1/4"

3/32" DIA. SHANKS



SA-1
1/16" x 1/4"



SA-2
5/64" x 5/16"



SA-3
3/32" x 3/8"



SC-61
3/32" x 3/8"



SD-61
3/32" x 1/8"



SE-61
3/32" x 1/8"



SG-61
3/32" x 1/4"

3/32" DIA. SHANKS



SA-1
1/16" x 1/4"



SA-2
5/64" x 5/16"



SA-3
3/32" x 3/8"



SC-61
3/32" x 3/8"



SD-61
3/32" x 1/8"



SE-61
3/32" x 1/8"



SG-61
3/32" x 1/4"

3/32" DIA. SHANKS



SA-1
1/16" x 1/4"



SA-2
5/64" x 5/16"



SA-3
3/32" x 3/8"



SC-61
3/32" x 3/8"



SD-61
3/32" x 1/8"



SE-61
3/32" x 1/8"



SG-61
3/32" x 1/4"

3/32" DIA. SHANKS



SA-1
1/16" x 1/4"



SA-2
5/64" x 5/16"



SA-3
3/32" x 3/8"



SC-61
3/32" x 3/8"



SD-61
3/32" x 1/8"



SE-61
3/32" x 1/8"



SG-61
3/32" x 1/4"

3/32" DIA. SHANKS



SA-1
1/16" x 1/4"



SA-2
5/64" x 5/16"



SA-3
3/32" x 3/8"



SC-61
3/32" x 3/8"



SD-61
3/32" x 1/8"



SE-61
3/32" x 1/8"



SG-61
3/32" x 1/4"

3/32" DIA. SHANKS



SA-1
1/16" x 1/4"



SA-2
5/64" x 5/16"



SA-3
3/32" x 3/8"



SC-61
3/32" x 3/8"



SD-61
3/32" x 1/8"



SE-61
3/32" x 1/8"



SG-61
3/32" x 1/4"

3/32" DIA. SHANKS



SA-1
1/16" x 1/4"



SA-2
5/64" x 5/16"



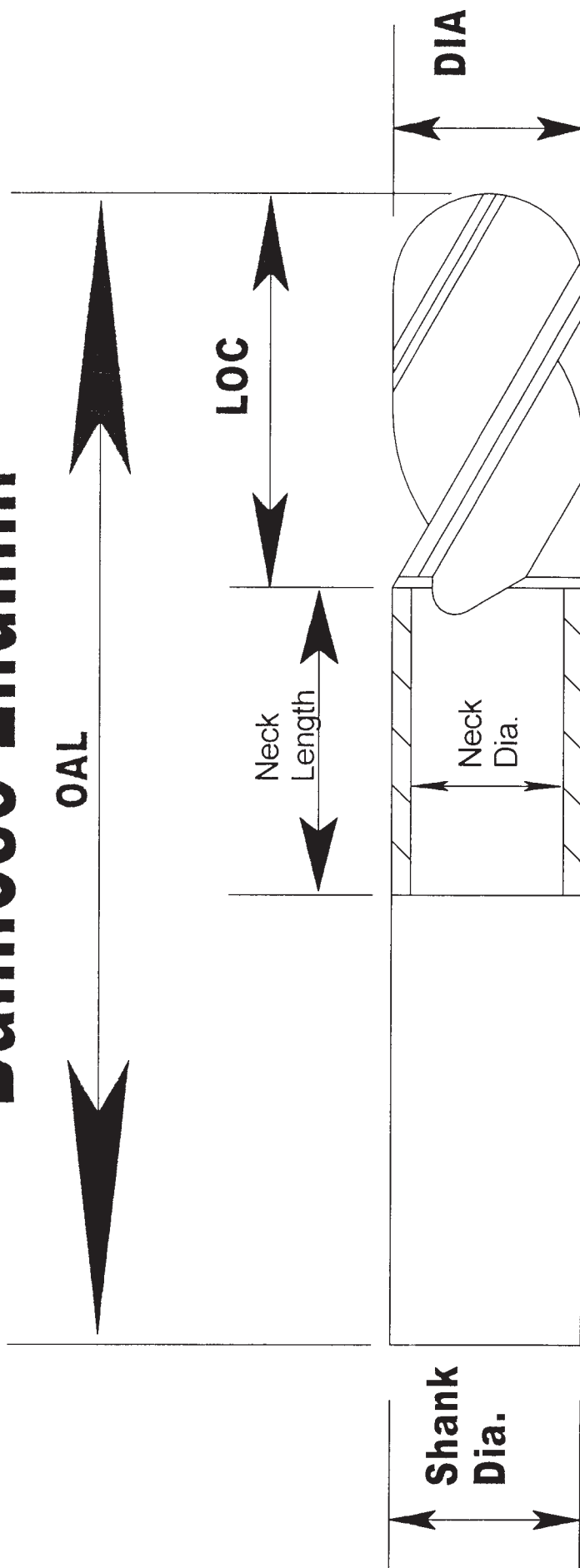
SA-3
3/32" x 3/8"



SC-61
3/32" x 3/8"



Ballnose Endmill



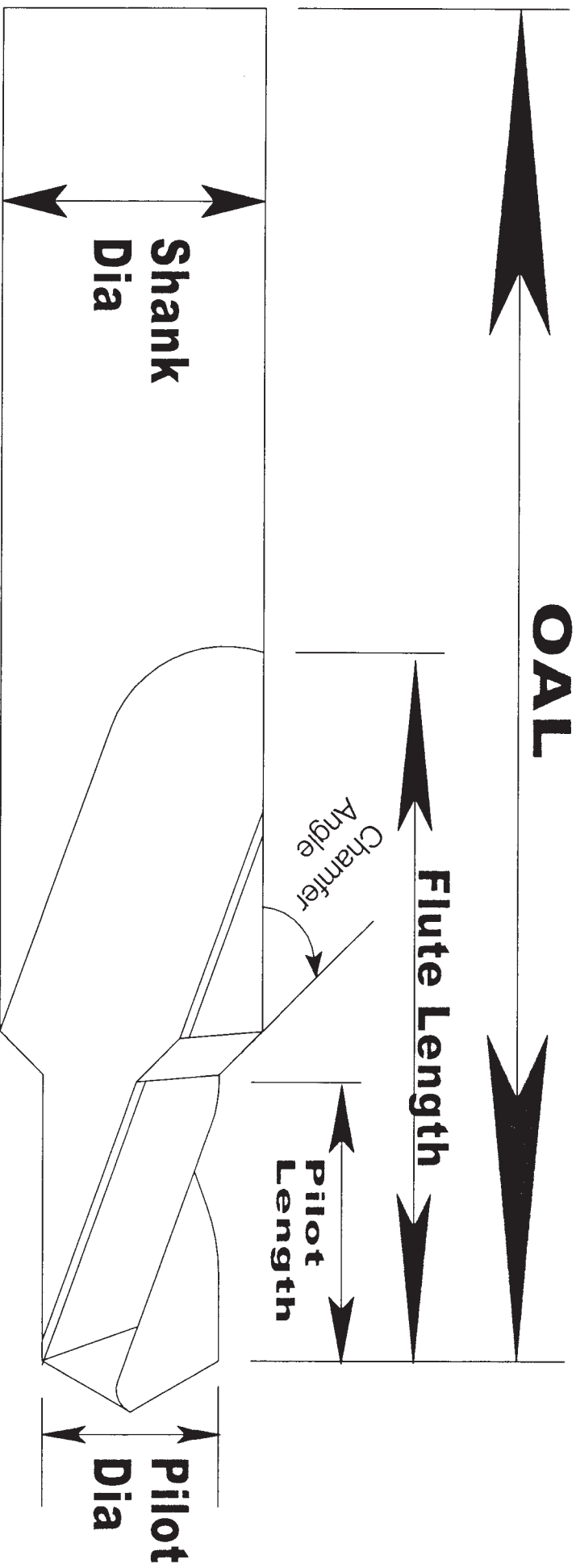
OAL _____
 LOC _____
 DIA. _____
 Shank Dia. _____

Neck yes or no
 Neck Length _____
 Neck Dia. _____

No. of Flutes _____
 Cut type RH or LH
 Helix _____ deg or Straight Flute

HTC
 TOOL-CUTTER & MFG.

Step Drill



Pilot Dia _____
 Pilot Length _____
 Chamfer Angle _____
 Point Angle _____ incl.
 Flute Length _____
 Shank Dia _____

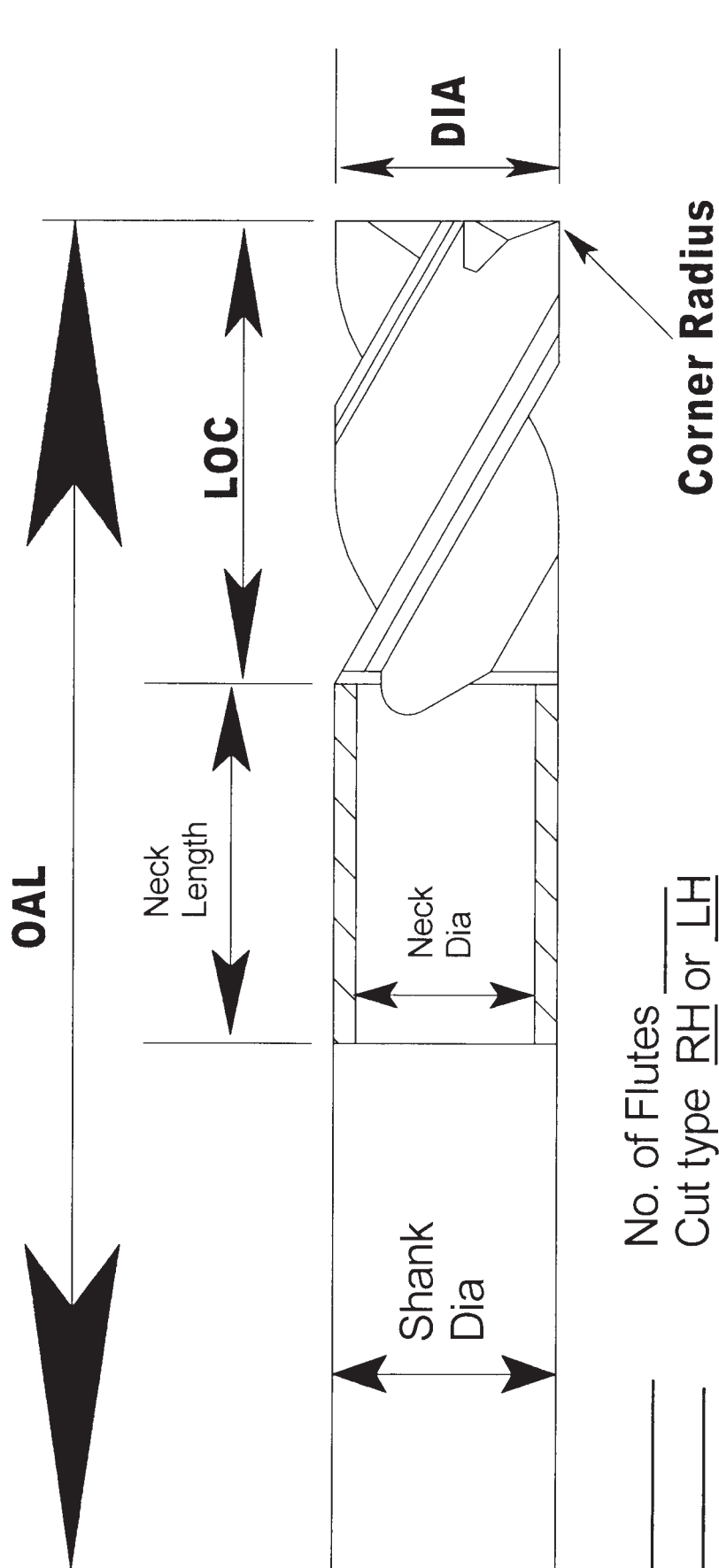
OAL _____
 No. of Flutes _____
 Cut type RH or LH
 Helix _____ deg / _____

lead / Straight Flute

Notes: _____

HTC
 TOOL-CUTTER & MFG.

Square Endmill



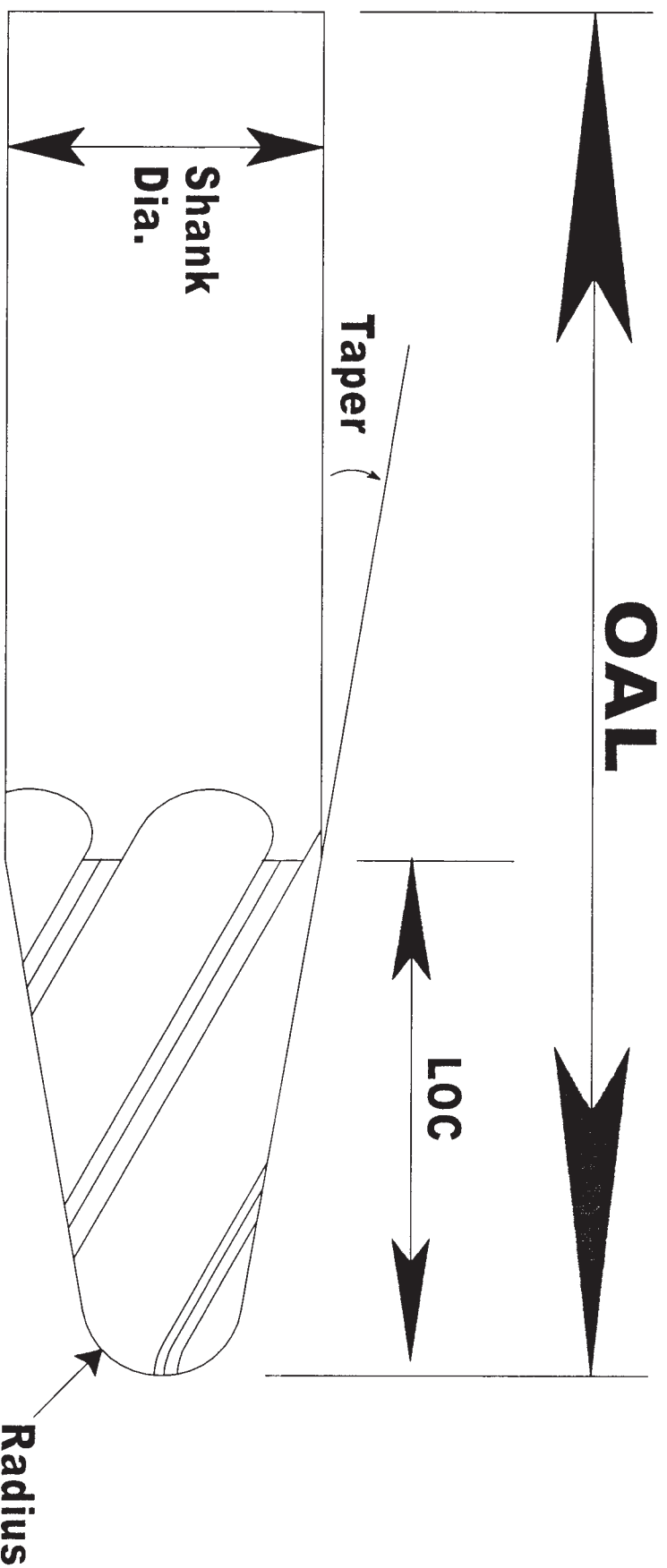
OAL _____
 LOC _____
 DIA. _____
 Shank Dia. _____

No. of Flutes _____
 Cut type RH or LH
 Helix _____ deg or Straight Flute

Neck yes or no
 Neck Length _____
 Neck Dia. _____



Tapered Ballnose Endmill



Radius _____

Taper _____ Deg

LOC _____

Shank Dia. _____

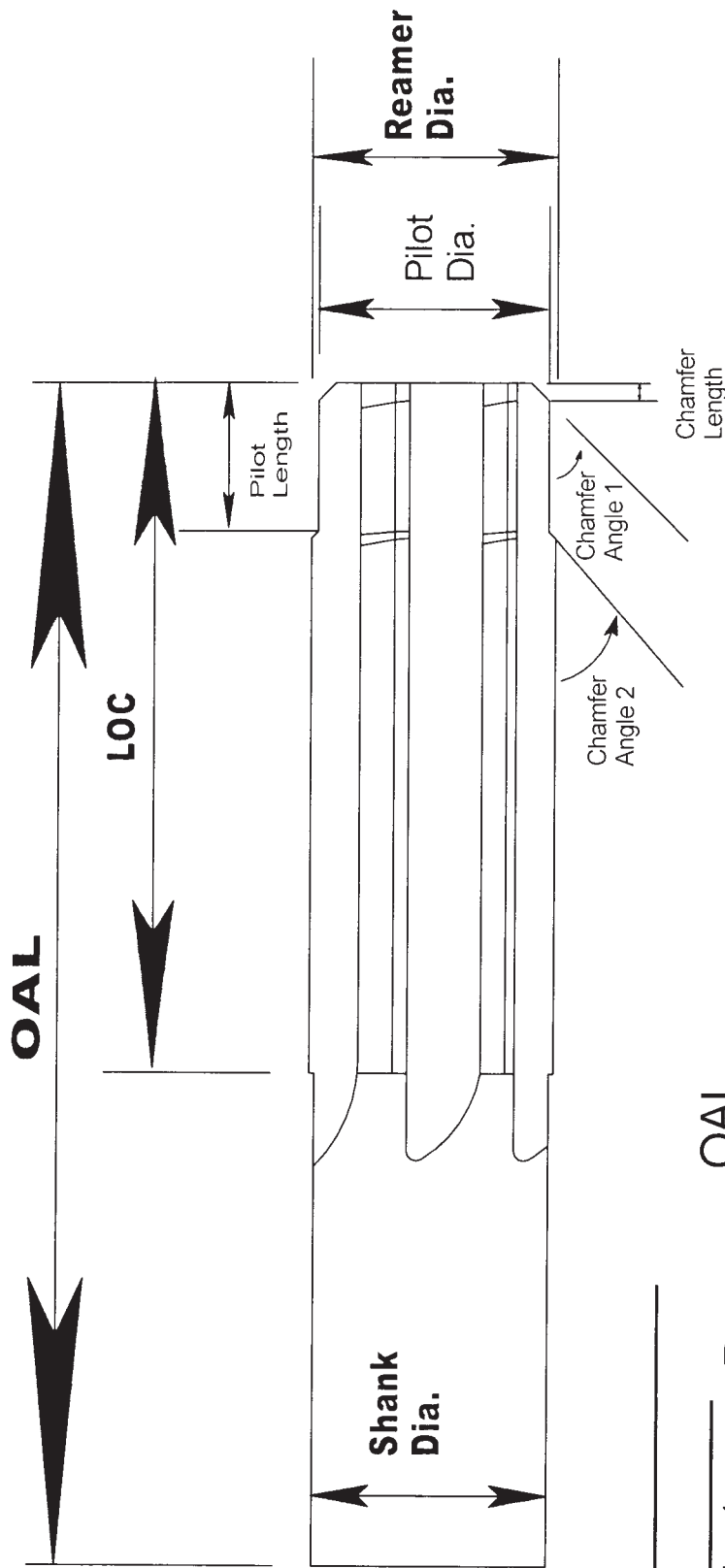
OAL _____

No. of Flutes _____
Helix _____ deg or Straight Flute

Notes: _____

HTG
★
TOOL-CUTTER & MFG.

Step Reamer



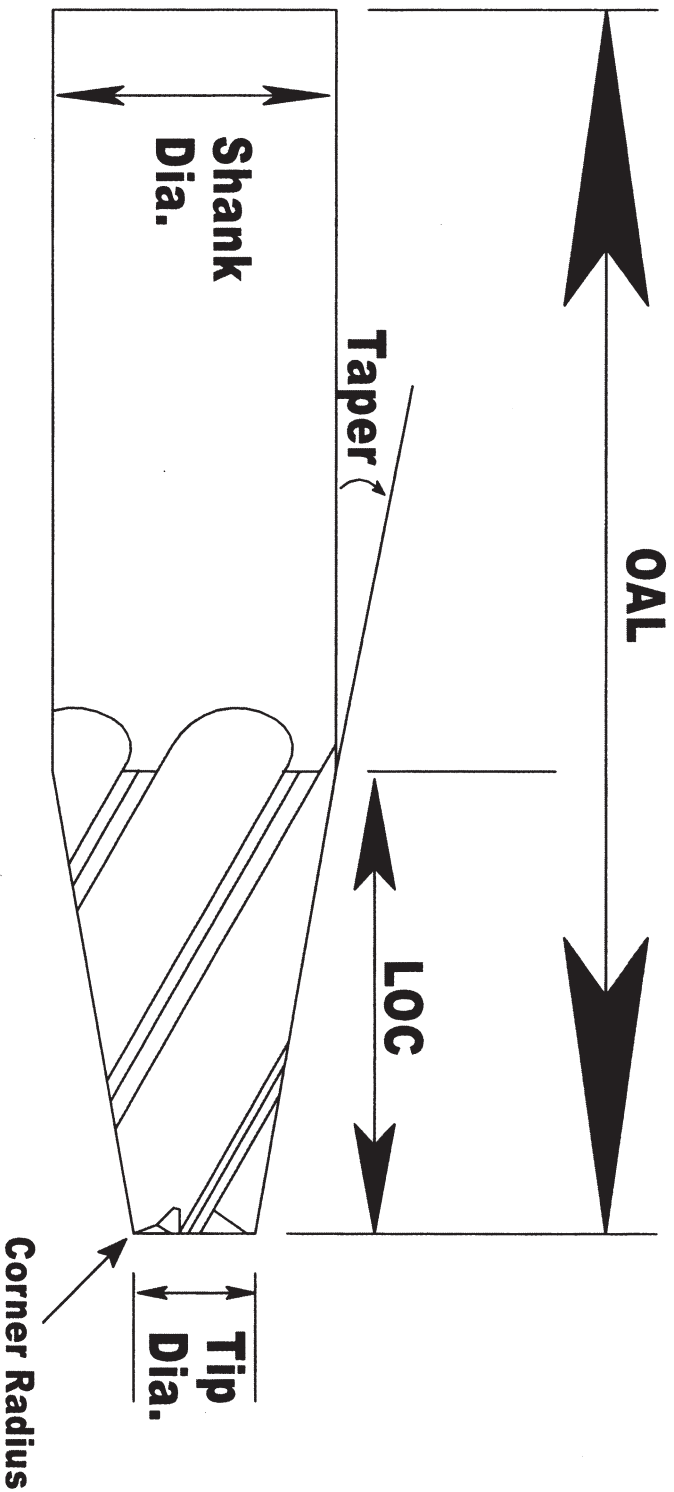
Reamer Dia _____
Pilot Dia _____
Chamfer Angle 1 _____ Deg
Chamfer Length _____
Chamfer Angle 2 _____ Deg
Pilot Length _____
LOC _____
Shank Dia _____

OAL _____
No. of Flutes _____
Cut type RH or LH
Helix _____ deg / _____ lead / Straight Flute

Notes: _____

HTC
TOOL-CUTTER & MFG.

Tapered Square Endmill



Tip Dia. _____

Taper _____ Deg

LOC _____

Shank Dia. _____

OAL _____

No. of Flutes _____

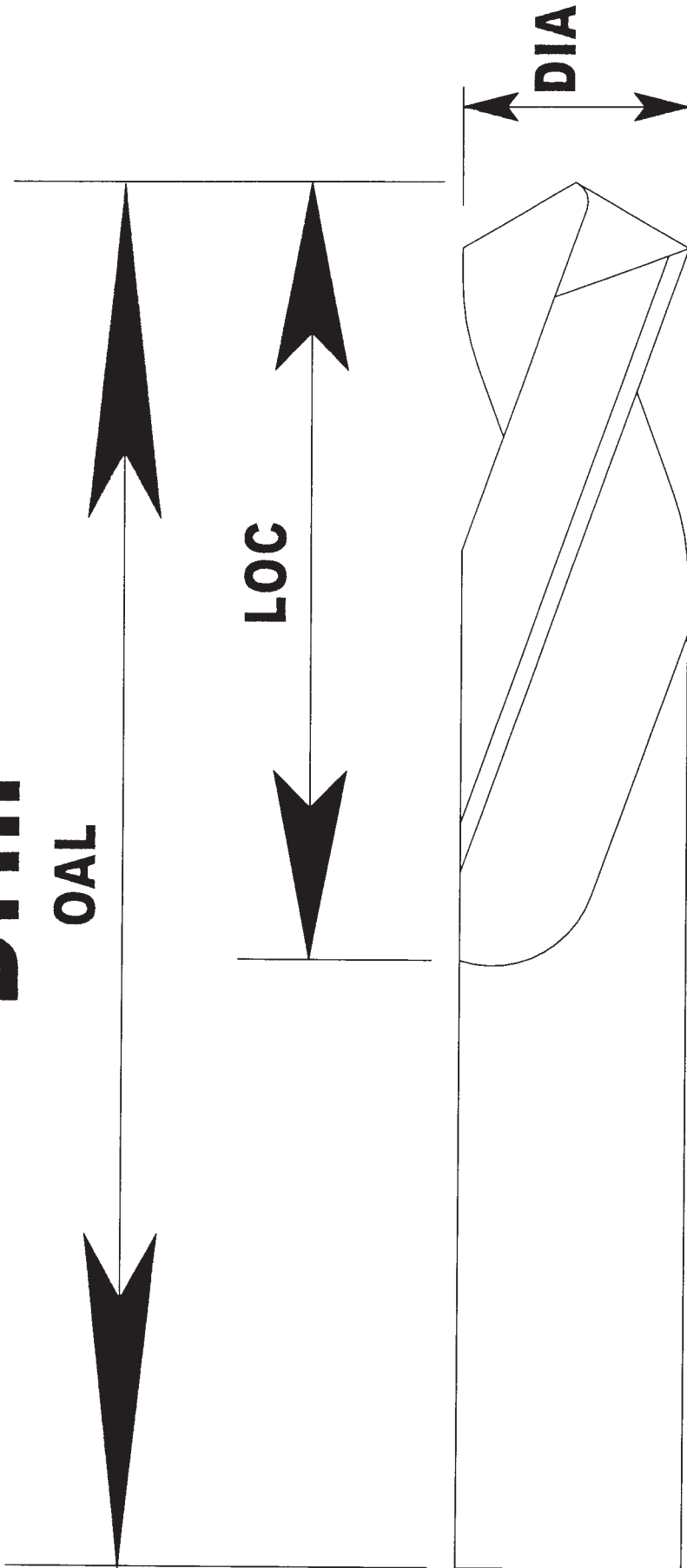
Helix _____ deg or Straight Flute

Corner Radius _____

Notes: _____

HTG
TOOL-CUTTER & MFG.

Drill



Point Angle ____ incl. No. of Flutes ____
 OAL ____ Cut type RH or LH
 LOC ____ Helix ____ deg / ____ lead / Straight Flute
 DIA. ____

Notes: _____

HTC
 TOOL-CUTTER & MFG.



FTG - BURRS

BURRS & COUNTER SINKS

GENERAL INFORMATION - CARBIDE TOOL SELECTION & USE



BURRS - Select the shape which conforms to the contour being machined. The choice of fine, medium, or coarse cut depends on the material to be cut, the finish required and the shape of the burr. Medium cut is used for general purpose deburring of steel, cast iron, and other ferrous materials. A fine cut burr is used for a finer finish. Diamond cut (across flute pattern) will cut fast and permit better control in free hand operation. Stringy materials are cut easily because it produces a powder like chip with its hundreds of chisel-like flutes.

Insert shank as far as possible into the chuck. This will help prevent whipping or chatter. Use just enough pressure to keep

the burr cutting. Excessive pressure will slow spindle speed and damage the cutting edges. Keep the burr moving at all times to prevent it from digging into the work. Do not run burr beyond point of normal resharpening. The heat and pressures will cause excessive chipping of the cutting edges. Thus, the life of the burr will be greatly reduced or damaged beyond repair. Solid carbide burrs will out perform high speed steel tools and mounted wheels as much as 50 to 1 and reduce machining up to 65% when properly used.

NOTE: Medium cuts will be furnished unless otherwise specified.

MAXIMUM SPEEDS RECOMMENDED ON BURRS WITH 1/4" DIAMETER SHANKS

Table No. 1: Malleable Iron, Cast Iron, Die Steels, Aluminum, Steel Welds, Tool Steels, Nabal Bronze, Brass, Etc.

BURR DIAMETER	STANDARDS CUT NO. OF FLUTES	SPEED RPM	
		TABLE NO. 1	TABLE NO. 2
1/16	14	50,000	75,000
3/32	16	40,000	60,000
1/8	18	35,000	53,000
3/16	20	25,000	38,000
1/4	24	22,000	33,000
5/16	26	20,000	30,000
3/8	28	18,000	27,000
7/16	30	17,000	26,000
1/2	32	16,000	24,000
5/8	34	15,000	23,000
3/4	36	14,000	21,000
7/8	38	13,000	20,000
1	40	12,000	18,000

Table No. 2: Refers to Stainless Steel

BURR DIA.	COARSE CUT NO. OF FLUTES	SPEED RPM		FINE CUT NO. OF FLUTES	SPEED RPM	
		TABLE 1	TABLE 2		TABLE 1	TABLE 2
1/16	8	65,000	98,000	20	30,000	45,000
3/32	10	55,000	83,000	22	25,000	38,000
1/8	12	45,000	68,000	26	20,000	30,000
3/16	14	39,000	59,000	30	16,000	24,000
1/4	16	35,000	53,000	34	14,000	21,000
5/16	16	32,000	48,000	38	12,000	18,000
3/8	18	29,000	44,000	42	11,000	17,000
7/16	18	27,000	41,000	46	10,500	15,800
1/2	20	25,000	38,000	50	10,000	15,000
5/8	22	23,000	35,000	54	9,500	14,300
3/4	24	20,000	30,000	58	9,000	13,500
7/8	26	19,000	29,000	60	8,500	12,700
1	28	18,000	27,000	62	8,000	12,000

DRILLS - Solid carbide drills will produce clean holes to close tolerance. They have extended life because of their extra rigidity and resistance to abrasion, if they are properly used. Riding the drill or allowing it to dwell, or not feed, will dull the edges causing a need for excessive resharpening. Hand feed, using steady speed and feed, is recommended for drilling hardened steel. Too much pressure can cause breakage. Run at approximately twice the speed of high speed steel drills with the same feed. Dulling and possible breakage are caused by vibration and chatter. To eliminate this, decrease speed and increase feed. Spindles must be in good condition and the work should be held rigidly.

MATERIAL	LUBRICANT
Aluminum	Kerosene or Soluble Oil
Bakelite, Fibre, Rubber, Plastics	Dry or Air Blast
Copper, Brass, Bronze, etc.	Dry, Air Blast or Soluble Oil
Magnesium	Soluble Oil or Light Oil
Cast & Malleable Iron	Soluble Oil, Dry or Air Blast
Monel Metal	Soluble Oil
Stainless Steels	Light or Soluble Oil
Steels Softer than Rockwell C-50	Light or Soluble Oil
Steels Harder than Rockwell C-50	Light Oil

DRILL DIAMETER	INCHES PER REVOLUTION	
	MIN.	MAX.
Under 1/16	.001	.002
1/16 to 1/8	.001	.003
1/8 to 3/16	.002	.005
3/16 to 1/4	.002	.008
1/4 to 3/8	.003	.012
3/8 to 1/2	.004	.012

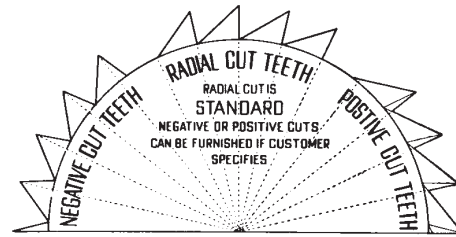
MATERIALS	SURFACE FT./MINUTE	
	MINIMUM	MAXIMUM
Rockwell C-30 & Under	80	148
Rockwell C-30 to C-40	45	91
Rockwell C-40 to C-50	32	49
Rockwell C-50 to C-60	23	30
Rockwell C-60 & Over	15	20
Aluminum & Aluminum Alloys	198	400
Brass & Bronze	200	395
Cast & Malleable Iron	92	200
Magnesium	300	597
Stainless Steel	82	200
Copper	200	400
Fibre	205	597
Hard Rubber	198	602
Monel Metal	80	200
Plastics	253	698
Glass Epoxy	150	253



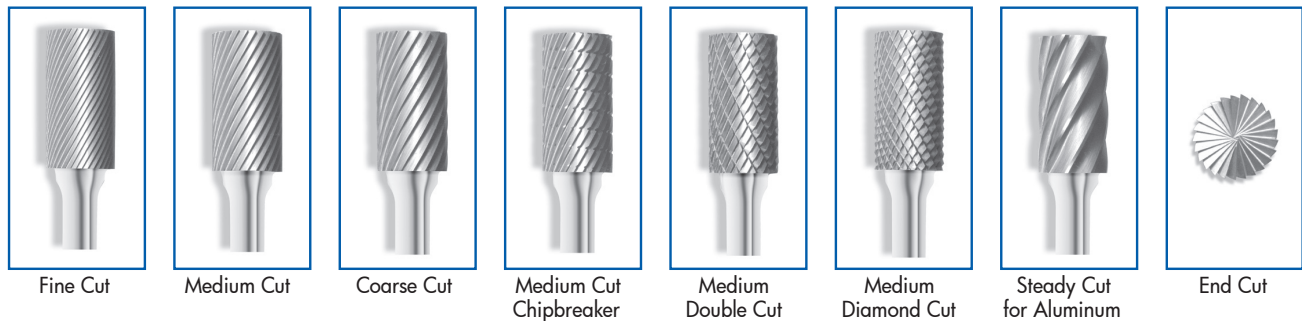
SELECTION OF BASIC CUTS AND TYPES OF FLUTES

The proper flute selection is necessary to obtain best results. Selecting the right size cut assures that the job will be done to perfection required. RIGHT is a chart that shows the types of flutes available at Rico. BELOW are three charts that show the types of cuts. NOTE what each cut is best suited for.

TYPES OF FLUTES AVAILABLE



Three types of cuts are available. The radial cut is the standard cut for all Rico rotary cutters. However, a few special cut patterns are listed. If soft metals, like aluminum are to be cut, specify a negative cut.



FINE CUT

Fine Flutes: Use when a good finish is necessary and where removal of stock is not primary. Inadvisable for use on non-ferrous material. Fine cut available only upon specification. Diamond or Double cut may be requested.

STANDARD CUT

General Purpose Fluting: For use when medium stock removal and finish is desired. Standard cut is stocked, only and supplied unless otherwise specified. Diamond or Double cut may be requested.

COARSE CUT

Coarse Fluting: For rapid stock removal on non-ferrous materials, when finish is not the primary object. Diamond or Double cut is available on specification only.

Cut No.	1	2	3	4	5	6	7
Teeth Per Inch	62	50	40	31	25	20	16
Pitch	.016	.020	.025	.032	.040	.050	.062

Cut No.	8	9	10	11	12	13	14
Teeth Per Inch	13	11	9	8	7	6	5
Pitch	.076	.092	.111	.125	.143	.166	.200

Above is a table showing pitches available on Rico rotary cutters. (Pitch is distance between flutes.) RIGHT - this chart shows fine, standard, and coarse cuts for the corresponding diameters. NOTE - state cut number when ordering a cut different from this table.

Diameter	Fine	Standard	Coarse
3/32"	2	3	5
1/8"	3	4	5
3/16"	3	5	6
1/4"	4	5	7
5/16"	4	6	7
3/8"	4	6	8
7/16"	5	6	8
1/2"	5	7	9
9/16"	5	7	9
5/8"	5	7	9
3/4"	6	8	10
7/8"	6	8	10
1"	6	8	10
1 - 1/8"	6	9	11
1 - 1/4"	6	9	11

HTC manufactures many lengths and sizes not listed. Please call for price and del. All routers are manufactured with down cut. Remember, HTC has a complete regrind service.



NO END CUT



BURR END



135° END DRILL POINT



END MILL END

CUTTING DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	OVERALL LENGTH	NO END CUT		BURR END		135° DRILL POINT		END MILL END	
				EDP NUMBER	LIST PRICE	EDP NUMBER	LIST PRICE	EDP NUMBER	LIST PRICE	EDP NUMBER	LIST PRICE
1/16	3/16	1/8	1-1/2	92084	5.25	92284	6.00	92384	6.75	92184	6.90
1/8	1/2	1/8	1-1/2	92085	5.60	92285	6.80	92385	7.00	92185	7.15
3/16	5/8	3/16	2	92086	9.25	92286	10.50	92386	11.35	92186	11.80
1/4	3/4	1/4	2	92087	9.90	92287	11.10	92387	12.90	92187	13.55
1/4	1	1/4	2-1/2	93087	10.95	93287	12.20	93387	13.60	93187	14.20
1/4	1	1/4	3	94087	13.65	94287	13.90	94387	15.00	94187	15.85
5/16	1	5/16	2-1/2	92088	22.75	92288	24.15	92388	26.60	92188	26.95
3/8	1	3/8	2-1/2	92089	23.10	92289	25.70	92389	26.90	92189	27.30
1/2	1	1/2	3	92090	42.40	92290	45.95	92390	47.45	92190	48.75

Tolerances: Cut Diameter - +.000 -.005 Shank Diameter +.0000 -.0005



Two straight flutes, used for wood, laminates and plastics.



2 RH spiral, RH cutting flutes up cut for wood, plastics and non-ferrous materials.



2 LH spiral, RH cutting flutes, down cut, used for wood, plastics and non-ferrous materials.

CUTTING DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	OVERALL LENGTH	STRAIGHT FLUTE EDP NUMBER	RH SPIRAL EDP NUMBER	LH SPIRAL EDP NUMBER	LIST PRICE
1/8	1/2	1/8	1-1/2	93125	93130	93135	8.90
3/16	5/8	3/16	2	93126	93131	93136	12.90
1/4	1	1/4	2-1/2	93127	93132	93137	15.80
3/8	1	3/8	2-1/2	93128	93133	93138	24.90
1/2	1	1/2	2-1/2	93129	93134	93139	43.40

Tolerances: Cut Diameter - +.000 -.003 Shank Diameter +.0000 -.0005

CENTERLESS GROUND CARBIDE ROUNDS

SERIES SSE-SPLIT ONE END



DIAMETER X LENGTH	LENGTH OF SPLIT	EDP NUMBER	LIST PRICE
1/8 x 1-1/2	3/8	61001	3.40
1/8 x 2	3/8	61002	4.60
1/8 x 3	3/8	60183	5.60
1/8 x 4	3/8	60184	7.50
3/16 x 2	1/2	61003	6.20
3/16 x 3	1/2	61004	9.30
3/16 x 4	1/2	63164	12.60
1/4 x 2	1/2	61005	8.95
1/4 x 2-1/2	1/2	61006	9.40
1/4 x 3	1/2	61007	12.75
1/4 x 4	1/2	61144	18.50
5/16 x 2-1/2	1/2	61008	14.30
5/16 x 3	1/2	61009	19.90
5/16 x 4	1/2	65164	21.30
3/8 x 2-1/2	1/2	61010	17.60
3/8 x 3	1/2	61011	23.25
3/8 x 4	1/2	63807	26.95
7/16 x 2-1/2	5/8	67162	25.40
7/16 x 3	5/8	67163	29.00
7/16 x 4	5/8	67164	37.40
1/2 x 3	5/8	61012	29.50
1/2 x 4	5/8	61013	45.60

SERIES SDE-SPLIT BOTH ENDS



DIAMETER X LENGTH	LENGTH OF SPLIT	EDP NUMBER	LIST PRICE
1/8 x 1-1/2	3/8	62001	5.90
1/8 x 2	3/8	62002	6.95
1/8 x 3	3/8	62183	9.45
1/8 x 4	3/8	62184	12.90
3/16 x 2	1/2	62003	7.80
3/16 x 3	1/2	62004	14.90
3/16 x 4	1/2	62364	15.95
1/4 x 2	1/2	62005	11.80
1/4 x 2-1/2	1/2	62006	13.00
1/4 x 3	1/2	62007	17.20
1/4 x 4	1/2	62144	22.75
5/16 x 2-1/2	1/2	62008	17.60
5/16 x 3	1/2	62009	22.75
5/16 x 4	1/2	62564	25.95
3/8 x 2-1/2	1/2	62010	23.65
3/8 x 3	1/2	62011	26.40
3/8 x 4	1/2	62384	31.55
7/16 x 2-1/2	5/8	62762	29.60
7/16 x 3	5/8	62763	36.40
7/16 x 4	5/8	62764	41.95
1/2 x 3	5/8	62012	37.60
1/2 x 4	5/8	62013	56.40

SPECIAL SIZES AVAILABLE UPON REQUEST

SOLID CARBIDE CENTER LAPS



TOOL NUMBER	DIAMETER	INCLUDED ANGLE	NO. OF FLUTES	OVERALL LENGTH	SHANK DIAMETER	EDP NUMBER	LIST PRICE
1100	3/32	60°	5	1-1/2	3/32	11100	5.95
1101	1/8	60°	5	1-1/2	1/8	11101	5.95
1102	3/16	60°	5	1-1/2	3/16	11102	9.95
1103	1/4	60°	5	2	1/4	11103	12.80
1104	5/16	60°	7	2	5/16	11104	19.95
1105	3/8	60°	7	2	3/8	11105	22.20
1106	7/16	60°	7	2	7/16	11106	28.00
1107	1/2	60°	7	2	1/2	11107	31.10
1108	5/8	60°	9	2-1/2	1/2	11108	33.15
1109	3/4	60°	9	2-1/2	1/2	11109	49.30
1110	7/8	60°	9	2-1/2	1/2	11110	59.00
1111	1	60°	9	2-1/2	1/2	11111	62.90

SOLID CARBIDE BORING TOOLS



TOOL NUMBER	MIN. HOLE DIAMETER	MAXIMUM DEPTH	SHANK DIAMETER	OVERALL LENGTH	EDP NUMBER	LIST PRICE
R-B-0	.090	1/2	1/8	1-1/2	91300	12.95
R-B-1	.120	5/8	1/8	1-1/2	91301	12.95
R-B-2	.150	3/4	3/16	2	91302	15.70
R-B-3	.180	3/4	3/16	2	91303	16.90
R-B-4	.210	1	1/4	2	91304	21.00
R-B-5	.240	1	1/4	2	91305	23.20
R-B-6	.275	1-1/4	5/16	2-1/2	91306	27.10
R-B-7	.300	1-1/4	5/16	2-1/2	91307	32.80
R-B-8	.330	1-1/2	3/8	2-1/2	91308	36.55
R-B-9	.360	1-1/2	3/8	2-1/2	91309	38.40



Slightly thinner saws are available upon request. However, saws listed are standard sizes and are recommended for most uses. For general purpose cutting of steel, use standard saws. Another flute structure is required for cutting cast iron, non-ferrous metals, and plastic. Please specify when ordering. HTC slitting saws have side clearance. Specify diameter, thickness, hole size or shank diameter, mounted or unmounted, hardness and material to be cut. Other variations than listed are subject to quotation.

TOOL - CUTTER MANUFACTURING

SOLID CARBIDE SLITTING SAWS



DIAMETER	THICKNESS RANGE	HOLE DIAMETER	SHANK DIAMETER	NUMBER OF TEETH	PRICE 1-5 PCS.	PRICE 6-25 PCS.
1/4	.010-.035	--	1/8	12	35.75	28.80
1/4	.010-.035	1/8	--	12	29.55	21.95
5/16	.010-.035	--	1/8	12	35.75	28.80
5/16	.010-.035	1/8	--	12	29.55	21.95
3/8	.010-.030	--	1/8 or 1/4	14	37.30	31.00
3/8	.010-.030	1/8	--	14	29.55	21.95
3/8	.031-.063	--	1/8 or 1/4	14	34.90	27.30
3/8	.031-.063	1/8	--	14	29.55	21.95
1/2	.010-.035	--	1/8 or 1/4	14	37.60	30.20
1/2	.010-.035	3/16	--	14	29.55	21.95
1/2	.036-.063	--	1/8 or 1/4	14	35.80	28.95
1/2	.036-.063	3/16	--	14	28.90	21.10
5/8	.015-.040	--	1/4	16	39.95	32.35
5/8	.015-.040	1/4	--	16	33.60	25.75
5/8	.041-.063	--	1/4	16	40.30	32.50
5/8	.041-.063	1/4	--	16	33.60	25.75
3/4	.015-.040	1/4	--	18	36.10	25.75
3/4	.014-.093	1/4	--	18	40.90	28.40
3/4	.094-.125	1/4	--	18	45.45	34.15
1	.015-.063	5/16	--	20	44.65	36.65
1	.064-.093	5/16	--	20	49.70	39.00
1	.094-.125	5/16	--	20	54.85	43.30
1-1/4	.020-.063	5/16	--	24	48.90	40.60
1-1/4	.064-.093	5/16	--	24	55.35	43.25
1-1/4	.094-.125	5/16	--	24	58.65	48.55
1-1/2	.030-.063	1/2	--	36	52.20	43.15
1-1/2	.064-.093	1/2	--	36	56.40	47.45
1-1/2	.094-.125	1/2	--	36	61.50	49.95
1-3/4	.040-.063	1/2	--	38	63.30	51.85
1-3/4	.064-.093	1/2	--	38	69.90	66.00
1-3/4	.094-.125	1/2	--	38	80.50	69.90
2	.040-.063	1/2	--	40	74.40	64.50
2	.064-.093	1/2	--	40	83.80	74.00
2	.094-.125	1/2	--	40	96.20	85.40
2-1/2	.040-.063	1	--	48	84.55	73.75
2-1/2	.064-.093	1	--	48	98.50	89.95
2-1/2	.094-.125	1	--	48	109.80	99.90
3	.040-.063	1	--	72	123.05	114.65
3	.064-.093	1	--	72	139.40	129.00
3	.094-.125	1	--	72	165.90	156.70
3-1/2	.040-.063	1	--	76	142.70	134.55
3-1/2	.064-.093	1	--	76	159.60	150.00
3-1/2	.094-.125	1	--	76	210.00	199.30
4	.040-.063	1	--	80	151.75	143.45
4	.064-.093	1	--	80	166.65	157.30
4	.094-.125	1	--	80	217.75	206.85

For variations from above - please call.

Tolerances: Cut Diameter - +.015 -.015 Hole Diameter +.0005 -.0000 Thickness +.00025 -.00025

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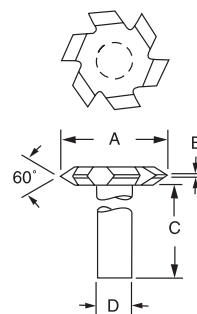


TOOL - CUTTER MANUFACTURING

SOLID CARBIDE THREAD MILLS



These Carbide Thread Mills are chiefly intended for milling precision threads in hard to cut materials, such as laminated plastics, fiberglass, etc. They can also be used with some care in non-ferrous metals and mild steel. Thread form generated is American Standard Thread. Minimum pitch listed is that for a female thread.



TOOL NUMBER	A	B	C	D	NUMBER OF FLUTES	MIN. PITCH	MAX. PITCH	EDP NUMBER	LIST PRICE
RT-38W	3/8	.002	1-3/4	3/16	4	32	20	12001	33.20
RT-12W	1/2	.0035	2	1/4	5	20	16	12002	39.90
RT-34W	3/4	.0045	2	1/4	6	16	8	12003	55.65
RT-1W	1	.009	2-1/2	3/8	7	8	4	12004	73.75

SOLID CARBIDE THIN DISCS



FLAT TYPE

FLAT TYPE

TOOL NUMBER	MIN. HOLE DIAMETER	EDP NUMBER	SHANK DIAMETER
1/4	3/32	16251	25.25
5/16	3/32	16261	27.00
3/8	1/8	16271	29.70
1/2	1/8	16281	34.15
5/8	1/8	16291	37.90
3/4	5/32	16301	41.30
1	3/16	16321	46.50



RADIUS TYPE

RADIUS TYPE

TOOL NUMBER	MIN. HOLE DIAMETER	EDP NUMBER	SHANK DIAMETER
1/4	3/32	16252	33.00
5/16	3/32	16262	36.55
3/8	1/8	16272	38.70
1/2	1/8	16282	44.45
5/8	1/8	16292	49.15
3/4	5/32	16302	55.20
1	3/16	16322	59.10

1/4" diameter thru 1/2" diameter with 1/8", 3/16" or 1/4" shanks.
 5/8" and 3/4" diameters with 3/16" or 1/4" shanks.
 1" diameter with 1/4" shanks.
 Please specify shank size. Also specify flat or radius type



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE KEYSET CUTTER W/ HARDENED STEEL SHANKS



Tolerances:

Cutting Diameter up to and including 3/4" +.010 -.015;

7/8 + 1 - 1/2 diameter +.012; +.017.

Face Width +.0000 -.0005.

Shank Diameter +.0000 -.0005.

TOOL NUMBER	AMERICAN STANDARDS	NOMINAL CUTTER DIA.	FACE WIDTH	OVERALL LENGTH	SHANK DIAMETER	NUMBER OF FLUTES	EDP NUMBER	LIST PRICE
1975	303	3/8	3/32	2-3/32	1/2	8	91975	43.50
1976	403	3/8	1/8	2-1/8	1/2	8	91976	43.50
1977	304	1/2	3/32	2-3/32	1/2	10	91977	50.00
1978	404	1/2	1/8	2-1/8	1/2	10	91978	50.50
1979	305	5/8	3/32	2-3/32	1/2	10	91979	51.10
1980	405	5/8	1/8	2-1/8	1/2	10	91980	55.90
1981	505	5/8	5/32	2-5/32	1/2	10	91981	54.55
1982	605	5/8	3/16	2-3/16	1/2	10	91982	59.00
1983	406	3/4	1/8	2-1/8	1/2	10	91983	69.80
1984	506	3/4	5/32	2-5/32	1/2	10	91984	71.00
1985	606	3/4	3/16	2-3/16	1/2	10	91985	74.90
1986	806	3/4	1/4	2-1/4	1/2	10	91986	75.65
1987	507	7/8	5/32	2-5/32	1/2	12	91987	84.25
1988	607	7/8	3/16	2-3/16	1/2	12	91988	84.60
1989	707	7/8	7/32	2-7/32	1/2	12	91989	88.30
1990	807	7/8	1/4	2-1/4	1/2	12	91990	89.95
1991	608	1	3/16	2-3/16	1/2	12	91991	93.35
1992	708	1	7/32	2-7/32	1/2	12	91992	102.00
1993	808	1	1/4	2-1/4	1/2	12	91993	104.10
1994	609	1-1/8	3/16	2-3/16	1/2	14	91994	126.65
1995	709	1-1/8	7/32	2-7/32	1/2	14	91995	129.85
1996	809	1-1/8	1/4	2-1/4	1/2	14	91996	130.75
1997	610	1-1/4	3/16	2-3/16	1/2	14	91997	128.40
1998	710	1-1/4	7/32	2-7/32	1/2	14	91998	132.00
1999	810	1-1/4	1/4	2-1/4	1/2	14	91999	134.70
2000	812	1-1/2	1/4	2-1/4	1/2	16	92000	160.00
2001	1012	1-1/2	5/16	2-5/16	1/2	16	92001	164.90
2002	1212	1-1/2	3/8	2-3/8	1/2	16	92002	170.05



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE COUNTERSINKS

SINGLE FLUTE



Ideal for countersinking mild steels and all materials except hardened steel. Produces finishes comparable to ground surface. Eliminates chatter, and tearing.

BODY SIZE	SHANK DIAMETER	OVERALL LENGTH	60° INC. EDP NUMBER	82° INC. EDP NUMBER	90° INC. EDP NUMBER	100° INC. EDP NUMBER	LIST PRICE
1/8	1/8	1-1/2	91897	91898	91899	92999	10.90
3/16	3/16	2	91900	91901	91902	92902	12.20
1/4	1/4	2	91903	91904	91905	92905	15.25
3/8	1/4	2	91906	91907	91908	92908	20.20
1/2	1/4	2	91909	91910	91911	92911	31.30
5/8	1/2	2-3/4	91912	91913	91914	92914	42.90
3/4	1/2	2-3/4	91915	91916	91917	92917	64.60
1	1/2	3	91918	91919	91920	92920	89.90
1-1/4	3/4	3-1/4	91921	91922	91923	92923	129.60

1/8 through 1/4 solid carbide.
Can be re-sharpened many times.

SOLID CARBIDE COUNTERSINK SETS

SINGLE FLUTE

60°, 82°, 90° 100°
INCLUDED ANGLE



INCLUDED ANGLE	EDP NUMBER	LIST PRICE
60°	66266	241.25
82°	66268	241.25
90°	66269	241.25
100°	66270	241.25

Sizes 1/4", 3/8", 1/2", 3/4", 1" in wood box.

OTHER DEGREE ANGLES ON REQUEST.



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE CHATTERLESS COUNTERSINKS

3 FLUTE



Spiral flutes for a chatterless and clean finish. Can be resharpened many times.

BODY SIZE	SHANK DIAMETER	OVERALL LENGTH	60° INC. EDP NUMBER	82° INC. EDP NUMBER	90° INC. EDP NUMBER	100° INC. EDP NUMBER	LIST PRICE
1/8	1/8	1-1/2	36601	36621	36641	36661	10.90
3/16	3/16	2	36602	36622	36642	36662	14.25
1/4	1/4	2	36603	36623	36643	36663	16.20
5/16	1/4	2-1/2	36604	36624	36644	36664	19.10
3/8	1/4	2-1/2	36605	36625	36645	36665	20.90
1/2	1/4	2-1/2	36606	36626	36646	36666	31.90
5/8	1/2	2-5/8	36607	36627	36647	36667	52.50
3/4	1/2	2-3/4	36608	36628	36648	36668	61.30
7/8	1/2	3	36609	36629	36649	36669	88.70
1	1/2	3	36610	36630	36650	36670	92.40
1-1/4	3/4	3-1/4	36611	36631	36651	36671	156.50
1-1/2	3/4	3-1/2	36612	36632	36652	36672	224.45

SOLID CARBIDE COUNTERSINK SETS

3 FLUTE

60°, 82°, 90° 100°
INCLUDED ANGLE



INCLUDED ANGLE	EDP NUMBER	LIST PRICE
60°	66360	242.70
82°	66368	242.70
90°	66390	242.70
100°	66300	242.70

Sizes 1/4", 3/8", 1/2", 3/4", 1" in wood box.

OTHER DEGREE ANGLES ON REQUEST.

BURRS & COUNTERSINKS



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE CHATTERLESS COUNTERSINKS

6 FLUTE



Chatterless countersinks have flutes designed for fast shearing cuts ideal for hardened steel and other tough alloys.

BODY SIZE	SHANK DIAMETER	OVERALL LENGTH	60° INC. EDP NUMBER	82° INC. EDP NUMBER	90° INC. EDP NUMBER	100° INC. EDP NUMBER	LIST PRICE
1/8	1/8	1-1/2	36100	36120	36140	36170	10.90
3/16	3/16	2	36101	36121	36141	36171	14.25
1/4	1/4	2	36102	36122	36142	36172	16.20
5/16	1/4	2-1/2	36103	36123	36143	36173	19.10
3/8	1/4	2-1/2	36104	36124	36144	36174	20.90
1/2	1/4	2-1/2	36105	36125	36145	36175	31.90
5/8	1/2	2-5/8	36106	36126	36146	36176	52.50
3/4	1/2	2-3/4	36107	36127	36147	36177	61.30
7/8	1/2	3	36108	36128	36148	36178	88.70
1	1/2	3	36109	36129	36149	36179	92.40
1-1/4	3/4	3-1/4	36110	36130	36150	36180	156.50
1-1/2	3/4	3-1/2	36111	36131	36151	36181	224.45

SOLID CARBIDE COUNTERSINK SETS

6 FLUTE

60°, 82°, 90° 100°
INCLUDED ANGLE



INCLUDED ANGLE	EDP NUMBER	LIST PRICE
60°	66226	242.70
82°	66228	242.70
90°	66229	242.70
100°	66230	242.70

Sizes 1/4", 3/8", 1/2", 3/4", 1" in wood box.

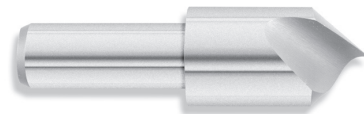
OTHER DEGREE ANGLES ON REQUEST.



TOOL - CUTTER MANUFACTURING

CHATTERLESS COUNTERSINKS

SINGLE FLUTE - H.S.S.



Chatterless countersinks have flutes designed for fast shearing cuts ideal for hardened steel and other tough alloys.

BODY SIZE	SHANK DIAMETER	OVERALL LENGTH	60° INC. EDP NUMBER	82° INC. EDP NUMBER	90° INC. EDP NUMBER	100° INC. EDP NUMBER	120° INC. EDP NUMBER	LIST PRICE
1/8	1/8	1-1/2	31000	31020	31040	31060	31080	6.10
3/16	3/16	1-1/2	31001	31021	31041	31061	31081	6.25
1/4	3/16	2	31101	31121	31141	31161	31181	6.50
1/4	1/4	2	31002	31022	31042	31062	31082	6.50
5/16	1/4	2	31003	31023	31043	31063	31083	7.10
3/8	1/4	2	31004	31024	31044	31064	31084	7.50
1/2	1/4	2	31005	31025	31045	31065	31085	9.15
5/8	1/2	2-1/2	31006	31026	31046	31066	31086	12.25
3/4	1/2	2-3/4	31007	31027	31047	31067	31087	17.55
7/8	1/2	2-3/4	31008	31028	31048	31068	31088	24.00
1	1/2	2-3/4	31009	31029	31049	31069	31089	29.45
1-1/4	3/4	3-3/8	31010	31030	31050	--	--	55.25
1-1/2	3/4	3-3/8	31011	31031	31051	--	--	74.00
2	3/4	3-3/4	31012	31032	31052	--	--	120.25
2-1/2	1	4-3/4	31013	31033	31053	--	--	269.00
3	1	5	31014	31034	31054	--	--	370.00

CHATTERLESS COUNTERSINK SETS

SINGLE FLUTE - H.S.S.



R-230: 5 HSS COUNTERSINKS

1/4", 3/8", 1/2", 3/4" and 1" diameter in wood box.

INCLUDED ANGLE	EDP NUMBER	LIST PRICE
60°	66236	85.70
82°	66238	85.70
90°	66239	85.70

R-240: 9 HSS COUNTERSINKS

3/16", 1/4", 5/16", 3/8", 1/2", 5/8", 3/4", and 1" diameter in wood box.

INCLUDED ANGLE	EDP NUMBER	LIST PRICE
60°	66246	131.75
82°	66248	131.75
90°	66249	131.75

R-250: HSS COUNTERSINKS

3/16" diameter through 2" diameter in wood box.

INCLUDED ANGLE	EDP NUMBER	LIST PRICE
60°	66256	384.80
82°	66258	384.80
90°	66259	384.80

*Also available in 100° and 120°. Cutters can be sharpened many times.

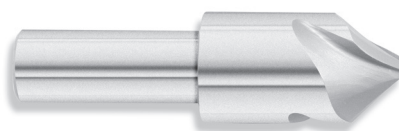
BURRS & COUNTERSINKS



TOOL - CUTTER MANUFACTURING

CHATTERLESS COUNTERSINKS

3 FLUTE - H.S.S.



Spiral flutes for a chatterless and clean finish. Can be sharpened many times.

BODY SIZE	SHANK DIAMETER	OVERALL LENGTH	60° INC. EDP NUMBER	82° INC. EDP NUMBER	90° INC. EDP NUMBER	100° INC. EDP NUMBER	120° INC. EDP NUMBER	LIST PRICE
3/16	3/16	1-1/2	33001	33021	33041	33061	33081	5.55
1/4	1/4	2	33002	33022	33042	33062	33082	5.70
5/16	1/4	2	33003	33023	33043	33063	33083	6.80
3/8	1/4	2	33004	33024	33044	33064	33084	7.10
1/2	1/4	2	33005	33025	33045	33065	33085	8.75
5/8	1/2	2-1/2	33006	33026	33046	33066	33086	12.45
3/4	1/2	2-1/2	33007	33027	33047	33067	33087	17.10
7/8	1/2	2-3/4	33008	33028	33048	33068	33088	23.55
1	1/2	2-3/4	33009	33029	33049	33069	33089	26.25
1-1/4	3/4	3-3/8	33010	33030	33050	33070	33090	39.95
1-1/2	3/4	3-1/2	33011	33031	33051	33071	33091	57.75
1-3/4	1	4-1/4	33012	33032	33052	33072	33092	77.00
2	1	4-3/8	33013	33033	33053	33073	33093	95.10
2-1/2	1	4-3/4	33014	33034	33054	33074	33094	252.30
3	1	5	33015	33035	33055	33075	33095	346.00

CHATTERLESS COUNTERSINK SETS

3 FLUTE - H.S.S.



R-270: 8 HSS COUNTERSINKS

1/4", 3/8", 1/2", 3/4" and 1" diameter in wood box.

INCLUDED ANGLE	EDP NUMBER	LIST PRICE
60°	66276	123.25
82°	66278	123.25
90°	66279	123.25

R-280: HSS COUNTERSINKS

3/16" diameter through 1-1/2" diameter in wood box.

INCLUDED ANGLE	EDP NUMBER	LIST PRICE
60°	66286	226.50
82°	66288	226.50
90°	66289	226.50

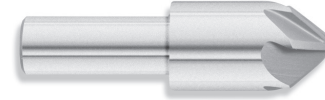
*Also available in 100° and 120°. Cutters can be sharpened many times.



TOOL - CUTTER MANUFACTURING

CHATTERLESS COUNTERSINKS

6 FLUTE - H.S.S.



Chatterless countersinks are designed with flute arrangements for fast and clean shearing cuts. These are of the finest quality made.

BODY DIAMETER	SHANK DIAMETER	LENGTH OF SHANK	OVERALL LENGTH	60° INC. EDP NUMBER	82° INC. EDP NUMBER	90° INC. EDP NUMBER	100° INC. EDP NUMBER	120° INC. EDP NUMBER	LIST PRICE
1/8	1/8	--	1-1/2	36000	36020	36040	36060	36080	5.10
3/16	3/16	--	1-1/2	36001	36021	36041	36061	36081	5.55
1/4	1/4	--	2	36002	36022	36042	36062	36082	5.70
1/4	3/16	3/4	1-1/2	36003	36023	36043	36063	36083	5.70
5/16	1/4	1	2	36004	36024	36044	36064	36084	6.80
3/8	1/4	1	2	36005	36025	36045	36065	36085	7.10
1/2	1/4	1	2	36006	36026	36046	36066	36086	8.75
1/2	3/8	1	2	36007	36027	36047	36067	36087	8.75
5/8	1/2	1-1/8	2-1/2	36008	36028	36048	36068	36088	12.45
3/4	1/2	1-5/16	2-3/4	36009	36029	36049	36069	36089	17.10
7/8	1/2	1-5/16	2-3/4	36010	36030	36050	36070	36090	23.55
1	1/2	1-5/16	2-3/4	36011	36031	36051	36071	36091	26.25
1-1/4	3/4	1-5/8	3-3/8	36012	36032	36052	36072	36092	39.95
1-1/2	3/4	1-5/8	3-1/2	36013	36033	36053	36073	36093	57.75
1-3/4	1	2-1/8	4-1/4	36014	36034	36054	36074	36094	77.00
2	1	2-1/8	4-3/8	36015	36035	36055	36075	36095	95.10
2-1/2	1	2-1/8	4-3/4	36016	36036	36056	36076	36096	252.30
3	1	2-1/8	5	36017	36037	36057	36077	36097	346.00

BURRS & COUNTERSINKS

CHATTERLESS COUNTERSINK SETS

6 FLUTE - H.S.S.



R-200: 8 HSS COUNTERSINKS

1/4", 5/16", 3/8", 1/2", 5/8", 3/4", 7/8" and 1" diameter in wooden box.

INCLUDED ANGLE	EDP NUMBER	LIST PRICE
60°	66206	119.70
82°	66208	119.70
90°	66209	119.70

R-210: HSS COUNTERSINKS

3/16" diameter through 1-1/2" diameter in wood box.

INCLUDED ANGLE	EDP NUMBER	LIST PRICE
60°	66216	223.95
82°	66218	223.95
90°	66219	223.95

*Also available in 100° and 120°. Cutters can be sharpened many times.



TOOL - CUTTER MANUFACTURING

CHATTERLESS COUNTERSINKS

6 FLUTE - H.S.S.

SINGLE FLUTE • HIGH SPEED STEEL

C/SINK DIAMETER	OVERALL LENGTH	60° INC. EDP NUMBER	82° INC. EDP NUMBER	90° INC. EDP NUMBER	100° INC. EDP NUMBER	120° INC. EDP NUMBER	LIST PRICE
1/8	1-1/2	94901	95901	96901	97901	98901	9.35
3/16	2	94902	95902	96902	97902	98902	9.60
1/4	2	94903	95903	96903	97903	98903	10.00
5/16	2-1/2	94904	95904	96904	97904	98904	10.95
3/8	2-1/2	94905	95905	96905	97905	98905	12.95
1/2	3	94906	95906	96906	97906	98906	14.65

SINGLE FLUTE • SOLID CARBIDE

C/SINK DIAMETER	OVERALL LENGTH	60° INC. EDP NUMBER	82° INC. EDP NUMBER	90° INC. EDP NUMBER	100° INC. EDP NUMBER	120° INC. EDP NUMBER	LIST PRICE
1/8	1-1/2	93901	93911	93921	93931	93941	12.95
3/16	2	93902	93912	93922	93932	93942	17.15
1/4	2	93903	93913	93923	93933	93943	21.65
5/16	2-1/2	93904	93914	93924	93934	93944	32.50
3/8	2-1/2	93905	93915	93925	93935	93945	39.90
1/2	3	93906	93916	93926	93936	93946	54.60

6 FLUTE • HIGH SPEED STEEL

C/SINK DIAMETER	OVERALL LENGTH	60° INC. EDP NUMBER	82° INC. EDP NUMBER	90° INC. EDP NUMBER	100° INC. EDP NUMBER	120° INC. EDP NUMBER	LIST PRICE
1/8	1-1/2	36201	36301	36401	36501	36801	9.35
3/16	2	36202	36302	36402	36502	36802	9.60
1/4	2	36203	36303	36403	36503	36803	10.00
5/16	2-1/2	36204	36304	36404	36504	36804	10.95
3/8	2-1/2	36205	36305	36405	36505	36805	12.95
1/2	3	36206	36306	36406	36506	36806	14.65

6 FLUTE • SOLID CARBIDE

C/SINK DIAMETER	OVERALL LENGTH	60° INC. EDP NUMBER	82° INC. EDP NUMBER	90° INC. EDP NUMBER	100° INC. EDP NUMBER	120° INC. EDP NUMBER	LIST PRICE
1/8	1-1/2	38201	38301	38401	38501	38601	12.95
3/16	2	38202	38302	38402	38502	38602	17.15
1/4	2	38203	38303	38403	38503	38603	21.65
5/16	2-1/2	38204	38304	38404	38504	38604	32.50
3/8	2-1/2	38205	38305	38405	38505	38605	39.90
1/2	3	38206	38306	38406	38506	38606	54.60

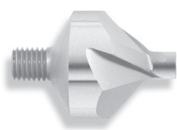


TOOL - CUTTER MANUFACTURING

MICRO STOP COUNTERSINKS

HSS • 2-3-4 FLUTES

Threaded shank can be used with all manufacturers micro stop fixtures.



BODY DIAMETER	PILOT RANGE	THREAD & DIAMETER	82° INC. EDP NUMBER	90° INC. EDP NUMBER	100° INC. EDP NUMBER	120° INC. EDP NUMBER	LIST PRICE
3/8	1/16-3/16	1/4-28	37002	37022	37042	37062	14.20
7/16	3/32-3/16	1/4-28	37003	37023	37043	37063	15.00
1/2	3/32-1/4	1/4-28	37004	37024	37044	37064	15.75
5/8	5/32-3/8	1/4-28	37005	37025	37045	37065	18.00
3/4	3/16-3/8	1/4-28	37006	37026	37046	37066	31.85
1	3/16-1/2	3/8-24	37008	37028	37048	37068	55.70
1-1/4	3/16-1/2	3/8-24	37009	37029	37049	37069	76.45

CARBIDE • 2-3-4 FLUTES

Threaded shank, special pilot diameter can be ordered.



BODY DIAMETER	PILOT RANGE	THREAD & DIAMETER	82° INC. EDP NUMBER	90° INC. EDP NUMBER	100° INC. EDP NUMBER	120° INC. EDP NUMBER	LIST PRICE
3/8	.0938-.1285	1/4-28	37101	37141	37181	37241	52.25
3/8	.1562-.1590	1/4-28	37102	37142	37182	37242	52.25
3/8	.1875-.1935	1/4-28	37103	37143	37183	37243	52.25
7/16	.0938-.1285	1/4-28	37104	37144	37184	37244	56.75
7/16	.1562-.1590	1/4-28	37105	37145	37185	37245	56.75
7/16	.1875-.1935	1/4-28	37106	37146	37186	37246	56.75
1/2	.0938-.1285	1/4-28	37107	37147	37187	37247	62.50
1/2	.1562-.1590	1/4-28	37108	37148	37188	37248	62.50
1/2	.1875-.1935	1/4-28	37109	37149	37189	37249	62.50
1/2	.2187-.2500	1/4-28	37110	37150	37190	37250	62.50
5/8	.1250-.1590	1/4-28	37111	37151	37191	37251	79.90
5/8	.1975-.2187	1/4-28	37112	37152	37192	37252	79.90
5/8	.2500-.2570	1/4-28	37113	37153	37193	37253	79.90
5/8	.3125-.3750	1/4-28	37114	37154	37194	37254	79.90
3/4	.1562-.1590	3/8-24	37115	37155	37195	37255	95.60
3/4	.1875-.2187	3/8-24	37116	37156	37196	37256	95.60
3/4	.2500-.2570	3/8-24	37117	37157	37197	37257	95.60
3/4	.3125	3/8-24	37118	37158	37198	37258	95.60
3/4	.3750	3/8-24	37119	37159	37199	37259	95.60
1	.1875-.1935	3/8-24	37125	37165	37205	37265	136.65
1	.2187	3/8-24	37126	37166	37206	37266	136.65
1	.2500-.2570	3/8-24	37127	37167	37207	37267	136.65
1	.3125	3/8-24	37128	37168	37208	37268	136.65
1	.3750	3/8-24	37129	37169	37209	37269	136.65
1	.5000	3/8-24	37130	37170	37210	37270	136.65

BURRS & COUNTERSINKS

PROUD TO BE MADE IN THE USA

130

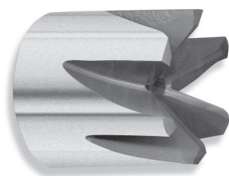
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TOOL - CUTTER MANUFACTURING

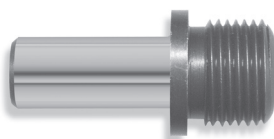
OUTSIDE CHAMFERING MILLS

Made of High Speed Steel , hardened to resist wear, one size can be used for many sized parts. Completely chatterless, can be resharpened many times.



MAJOR WORK DIAMETER	INCLUDED ANGLE	ACT. MOUTH DIMENSIONS	RECESS HOLE	BODY DIAMETER	BODY LENGTH	THREAD SIZE AND DEPTH	EDP NUMBER	LIST PRICE
1/4	60°	5/16	3/64	1/2	1	5/16 - 24 x 5/16	30001	46.20
1/2	60°	5/8	1/8	7/8	1-1/4	3/8 - 24 x 3/8	30002	59.76
3/4	60°	7/8	1/4	1-1/8	1-3/4	1/2 - 20 x 1/2	30003	68.76
1	60°	1-1/8	1/4	1-1/2	2	3/4 - 16 x 5/8	30004	95.88
1-3/4	60°	1-7/8	1/2	2-1/4	2-11/16	1 - 14 x 3/4	30005	231.00
2	60°	2-1/8	3/4	2-3/4	3	1 - 14 x 3/4	30006	402.30
3	60°	3-1/4	1	3-3/4	3-3/4	1-1/4 - 12 x 7/8	30007	828.36
1/4	90°	5/16	3/64	1/2	1	5/16 - 24 x 5/16	30008	43.32
1/2	90°	5/8	1/8	7/8	1-1/4	3/8 - 24 x 3/8	30009	56.40
3/4	90°	7/8	3/16	1-1/8	1-5/16	1/2 - 20 x 1/2	30010	66.60
1	90°	1-1/8	1/4	1-3/8	1-3/4	3/4 - 16 x 5/8	30011	92.70
1-1/2	90°	1-5/8	3/8	2	1-7/8	3/4 - 16 x 5/8	30012	154.20
2	90°	2-1/8	5/8	2-1/2	2-1/2	1 - 14 x 3/4	30013	267.60
3	90°	3-1/4	3/4	3-3/4	2-7/8	1-1/4 - 12 x 7/8	30014	705.60

SHANKS STRAIGHT THREADED



SHANK DIAMETER	LENGTH OF SHANK	THREAD SIZE	THREAD LENGTH	SHOULDER DIAMETER	EDP NUMBER	LIST PRICE
1/4	1-3/4	5/16 - 24	5/16	7/16	88021	5.10
1/4	1-3/4	3/8 - 24	3/8	1/2	88022	8.88
3/8	1-1/4	5/16 - 24	5/16	7/16	88023	6.65
3/8	1-1/4	3/8 - 24	3/8	1/2	88024	7.32
3/8	1-1/4	1/2 - 20	1/2	5/8	88025	11.76
1/2	1-1/4	5/16 - 24	5/16	1/2	88026	7.32
1/2	1-1/4	3/8 - 24	3/8	1/2	88027	7.32
1/2	1-1/4	1/2 - 20	1/2	5/8	88028	11.76
1/2	1-1/4	3/4 - 16	5/8	7/8	88029	21.06
5/8	1-1/4	3/8 - 24	3/8	5/8	88030	11.80
5/8	1-1/4	1/2 - 20	1/2	5/8	88031	11.80
5/8	1-1/4	3/4 - 16	5/8	7/8	88032	21.06
3/4	1-1/2	1/2 - 20	1/2	3/4	88033	15.68
3/4	1-1/2	3/4 - 16	5/8	7/8	88034	21.06
1	1-1/2	1/2 - 20	1/2	1	88035	27.24
1	1-1/2	3/4 - 16	5/8	1	88036	27.24
1	1-1/2	1 - 14	3/4	1-3/16	88037	35.04
1	2	1-1/4 - 12	3/4	1-1/2	88038	50.10



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE BURRS 1/8" SHANKS

	TOOL NUMBER	FLUTE DIA. INCL. ANGLE	LENGTH OF FLUTE	OVERALL LENGTH	EDP NUMBER	LIST PRICE
	SA-41	1/16	1/4	1-1/2	70203	4.95
	SA-42	3/32	7/16	1-1/2	70202	4.95
	SA-43	1/8	9/16	1-1/2	70201	4.95
ABOVE W/END CUT	SB-43	1/8	9/16	1-1/2	70211	4.95
	SC-41	3/32	7/16	1-1/2	70205	4.95
	SC-42	1/8	9/16	1-1/2	70204	4.95
	SD-41	3/32	--	1-1/2	70207	4.95
	SD-42	1/8	--	1-1/2	70206	4.95
	SE-41	1/8	7/32	1-1/2	70208	4.95
	SF-41	1/8	1/4	1-1/2	71209	4.95
	SF-42	1/8	1/2	1-1/2	70209	4.95
	SG-41	1/8	1/4	1-1/2	70210	4.95
	SG-43	1/8	3/8	1-1/2	71215	4.95
	SG-44	1/8	1/2	1-1/2	72215	4.95
	SH-41	1/8	1/4	1-1/2	70215	4.95
	SJ-42	1/8-60°	--	1-1/2	70217	4.95
	SK-42	1/8-90°	--	1-1/2	70218	4.95
	SL-41	1/8-14°	3/8	1-1/2	70212	4.95
	SL-42	1/8-8°	1/2	1-1/2	70213	4.95
	SM-41	1/8-12°	3/8	1-1/2	71214	4.95
	SM-42	1/8-14°	7/16	1-1/2	72214	4.95
	SM-43	1/8-7°	5/8	1-1/2	70214	4.95
	SN-41	3/32-10°	1/8	1-1/2	71216	4.95
	SN-42	1/8-10°	3/16	1-1/2	70216	4.95

BURRS & COUNTER SINKS

Tools illustrated ground single cut. Can also be ground double cut or any cut desired.



TOOL - CUTTER MANUFACTURING

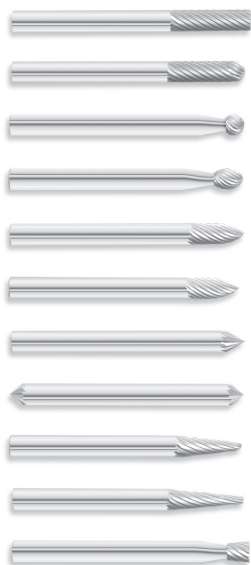
SOLID CARBIDE BURRS

1/4" DIAMETER • 1/8" SHANKS



TOOL NUMBER	FLUTE DIA. INCL. ANGLE	LENGTH OF FLUTE	OVERALL LENGTH	EDP NUMBER	LIST PRICE
SA-51	1/4	1/2	2	70222	8.50
SB-51	1/4	3/16	1-11/16	70223	8.50
SC-51	1/4	1/2	2	70224	8.50
SD-51	1/4	--	1-3/4	70225	8.50
SE-51	1/4	3/8	1-7/8	70226	8.50
SF-51	1/4	1/2	2	70227	8.50
SG-51	1/4	1/2	2	70228	8.50
SM-51	1/4-22°	1/2	2	70229	8.50
SN-51	1/4-10°	1/4	1-3/4	70230	8.50

3/16" DIAMETER • 3/16" SHANKS • 2" OAL



TOOL NUMBER	FLUTE DIA. INCL. ANGLE	LENGTH OF FLUTE	OVERALL LENGTH	EDP NUMBER	LIST PRICE
SA-81	3/16	5/8	2	70257	8.20
SC-81	3/16	5/8	2	70259	8.20
SD-81	3/16	--	2	70261	8.20
SE-81	3/16	9/32	2	70262	8.20
SF-81	3/16	1/2	2	70263	8.20
SG-81	3/16	1/2	2	70264	8.20
SJ-81	3/16-60°	--	2	70265	8.20
SK-81	3/16-82°	--	2	71265	8.20
SL-81	3/16-14°	1/2	2	71266	8.20
SM-81	3/16-12°	5/8	2	72266	8.20
SN-81	3/16-10°	1/4	2	70268	8.20

Can be resharpened many times.



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE BURRS

CYLINDRICAL SHAPE



TOOL NUMBER	FLUTE DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
SA-12	1/8	5/8	1/4	70301	9.00
SA-14	3/16	5/8	1/4	70238	9.00
SA-1	1/4	5/8	1/4	70302	7.75
SA-2	5/16	3/4	1/4	70304	9.75
SA-3	3/8	3/4	1/4	70305	10.50
SA-4	7/16	1	1/4	70314	15.50
SA-5	1/2	1	1/4	70306	17.40
SA-6	5/8	1	1/4	70307	21.25
SA-7	3/4	1	1/4 or 3/8	70309	33.00
SA-9	1	1	1/4 or 3/8	70310	43.90
SA-16	3/4	3/4	1/4 or 3/8	70318	32.60

*This tool available in end cut at 10% extra. SA-12, SA-14, SA-1 are solid carbide.

CYLINDRICAL RADIUS SHAPE



TOOL NUMBER	FLUTE DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
SC-12	1/8	5/8	1/4	70349	9.30
SC-14	3/16	5/8	1/4	70240	9.30
SC-1	1/4	5/8	1/4	70239	9.00
SC-2	5/16	3/4	1/4	70352	11.45
SC-3	3/8	3/4	1/4	70353	11.70
SC-4	7/16	1	1/4	70360	16.95
SC-5	1/2	1	1/4	70354	19.50
SC-6	5/8	1	1/4	70355	25.60
SC-7	3/4	1	1/4 or 3/8	70356	35.95

SC-12, SC-14, SC-1 are solid carbide.

Available in all cuts as shown on page (iv). When ordering, please specify EDP #, and type of cut. If cut not specified tools will be furnished in medium single cut. These tools are available with shank length up to 6" long. Call for pricing.



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE BURRS

BALL SHAPE



TOOL NUMBER	FLUTE DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
SD-12	1/8	1/8	1/4	70366	9.50
SD-14	3/16	3/16	1/4	70367	9.50
SD-1	1/4	1/4	1/4	70241	8.80
SD-2	5/16	5/16	1/4	70368	8.80
SD-3	3/8	3/8	1/4	70369	9.65
SD-4	7/16	7/16	1/4	70374	12.75
SD-5	1/2	1/2	1/4	70370	13.60
SD-6	5/8	5/8	1/4	70371	18.10
SD-7	3/4	3/4	1/4 or 3/8	70372	25.60
SD-9	1	1	1/4 or 3/8	70373	39.80

SD-12, SD-14, SD-1 are Solid Carbide.

EGG SHAPE



TOOL NUMBER	FLUTE DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
SE-11	3/16	5/16	1/4	70381	9.50
SE-1	1/4	3/8	1/4	70242	9.50
SE-3	3/8	5/8	1/4	70382	11.00
SE-5	1/2	7/8	1/4	70383	17.95
SE-6	5/8	1	1/4	70384	25.35
SE-7	3/4	1	1/4 or 3/8	70385	33.90

SE-11, SE-1 are Solid Carbide.

FLAME SHAPE



TOOL NUMBER	FLUTE DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
SH-1	1/4	5/8	1/4	70247	11.95
SH-2	5/16	3/4	1/4	70390	13.85
SH-5	1/2	1-1/4	1/4	70391	25.95
SH-6	5/8	1-7/16	1/4	70392	36.20
SH-7	3/4	1-5/8	1/4 or 3/8	70393	49.90

SH-1 is Solid Carbide.

Available in all cuts as shown on page (iv). When ordering, please specify EDP #, and type of cut. If cut not specified tools will be furnished in medium single cut. These tools are available with shank length up to 6" long. Call for pricing.



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE BURRS

TREE - RADIUS SHAPE



TOOL NUMBER	FLUTE DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
SF-1	1/4	5/8	1/4	70243	9.50
SF-3	3/8	3/4	1/4	70411	12.00
SF-4	7/16	1	1/4	70416	16.95
SF-5	1/2	1	1/4	70412	17.90
SF-6	5/8	1	1/4	70413	25.00
SF-7	3/4	1	1/4 or 3/8	70417	32.95
SF-14	3/4	1-1/4	1/4 or 3/8	71419	38.15
SF-15	3/4	1-1/2	1/4 or 3/8	70418	47.00

SF-1 is Solid Carbide.

TREE - POINTED SHAPE



TOOL NUMBER	FLUTE DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
SG-1	1/4	5/8	1/4	70244	9.50
SG-2	5/16	3/4	1/4	70401	11.00
SG-3	3/8	3/4	1/4	70402	11.95
SG-5	1/2	1	1/4	70404	17.95
SG-6	5/8	1	1/4	70405	24.90
SG-7	3/4	1	1/4 or 3/8	70406	32.40
SG-15	3/4	1-1/2	1/4 or 3/8	70407	36.90

SG-1 is Solid Carbide.

Available in all cuts as shown on page (iv). When ordering, please specify EDP #, and type of cut. If cut not specified tools will be furnished in medium single cut. These tools are available with shank length up to 6" long. Call for pricing.



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE BURRS

CONE - RADIUS END (14° INCLUDED ANGLE)



TOOL NUMBER	FLUTE DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
SL-1	1/4	5/8	1/4	70438	9.55
SL-2	5/16	7/8	1/4	70444	11.95
SL-3	3/8	1-1/16	1/4	70440	14.15
SL-4	1/2	1-1/8	1/4	70441	18.00
SL-6	5/8	1-5/16	1/4	70442	33.85
SL-7	3/4	1-1/2	1/4 or 3/8	70443	48.30

SL-1 is Solid Carbide.

CONE - FLAT END



TOOL NUMBER	FLUTE DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
SM-1	1/4-22°	1/2	1/4	70455	9.70
SM-2	1/4-14°	3/4	1/4	70450	10.10
SM-3	1/4-10°	1	1/4	70451	10.95
SM-4	3/8-28°	5/8	1/4	70452	14.80
SM-5	1/2-28°	7/8	1/4	70453	19.00
SM-6	5/8-31°	1	1/4	70454	28.15

SM-1, SM-2, SM-3 are Solid Carbide.

INVERTED CONE SHAPE



TOOL NUMBER	FLUTE DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
SN-1	1/4-10°	5/16	1/4	70248	8.50
SN-2	3/8-13°	3/8	1/4	70422	16.45
SN-3	1/2-16°	1/2	1/4	70423	18.95
SN-6	5/8-18°	3/4	1/4	70424	24.00
SN-7	3/4-30°	5/8	1/4	70425	29.65

SN-1 is Solid Carbide.

Available in all cuts as shown on page (iv). When ordering, please specify EDP #, and type of cut. If cut not specified tools will be furnished in medium single cut. Different angles available on request. These tools are available with shank length up to 6" long. Call for pricing.



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE BURRS

TAPER - 60° INCLUDED ANGLE



TOOL NUMBER	FLUTE DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
*SJ-1	1/4	--	1/4	70475	9.00
SJ-2	5/16	--	1/4	70469	9.30
SJ-3	3/8	--	1/4	70470	10.00
SJ-5	1/2	--	1/4	70471	12.90
SJ-6	5/8	--	1/4	70472	17.95
SJ-7	3/4	--	1/4 or 3/8	70473	23.70
SJ-9	1	--	1/4 or 3/8	70474	38.00

*SJ-1 Double End - Solid Carbide.

TAPER - 90° INCLUDED ANGLE



TOOL NUMBER	FLUTE DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
*SK-1	1/4	--	1/4	70497	9.00
SK-2	5/16	--	1/4	70491	9.30
SK-3	3/8	--	1/4	70492	10.00
SK-5	1/2	--	1/4	70493	12.90
SK-6	5/8	--	1/4	70494	17.95
SK-7	3/4	--	1/4 or 3/8	70495	23.70
SK-9	1	--	1/4 or 3/8	70496	38.00

*SK-1 Double End - Solid Carbide.

SOLID GRINDING CARBIDE BURRS 45° LEAD ANGLE



TOOL NUMBER	CUTTING DIAMETER	SHANK DIAMETER	CUTTING LENGTH	NECK LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1450	1/16	1/8	1/8	3/8	1-1/2	91450	12.95
1452	3/32	1/8	1/8	3/8	1-1/2	91452	12.95
1454	1/8	1/8	1/8	1/2	1-1/2	91454	12.95
1456	5/32	3/16	3/16	1/2	2	91456	19.35
1458	3/16	3/16	3/16	5/8	2	91458	19.00
1460	7/32	1/4	1/4	3/4	2	91460	21.25
1462	1/4	1/4	1/4	3/4	2	91462	20.00
1463	9/32	1/4	5/16	--	2-1/2	91463	31.95
1464	5/16	1/4	1/2	--	2-1/2	91464	31.95
1465	11/32	1/4	1/2	--	2-1/2	91465	34.25
1466	3/8	1/4	1/2	--	2-1/2	91466	34.25
1469	7/16	1/4	1/2	--	2-1/2	91469	42.65
1470	1/2	1/4	1/2	--	2-1/2	91470	48.10

Available with end cut and spiral cut.



TOOL - CUTTER MANUFACTURING

SOLID CARBIDE STEADY CUT BURRS

HTC Steady Cut is designed for steady operation, free chip flow, no loading or clogging on non-ferrous metals, aluminum, soft steel, plastics and other soft, sticky materials. All burrs in this catalog can be ordered steady cut if so specified. Following are in stock. Other sizes available on request.



CYLINDER SHAPE

DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
1/4	3/4	1/4	94102	10.25
3/8	3/4	1/4	94105	14.70
1/2	1	1/4	94106	23.65
5/8	1	1/4	94107	29.75
3/4	1	1/4 or 3/8	94109	47.50
1	1	1/4 or 3/8	94110	61.75



CYLINDER RADIUS END

DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
1/4	3/4	1/4	94202	12.00
3/8	3/4	1/4	94205	16.30
1/2	1	1/4	94206	27.30
5/8	1	1/4	94207	34.90
3/4	1	1/4 or 3/8	94209	48.85



BALL SHAPE

DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
1/4	1/4	1/4	94603	12.50
3/8	3/8	1/4	94604	13.55
1/2	1/2	1/4	94605	19.30
5/8	5/8	1/4	94606	25.35
3/4	3/4	1/4 or 3/8	94607	35.75



OVAL SHAPE

DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
3/8	5/8	1/4	94502	15.40
1/2	7/8	1/4	94503	25.10
5/8	1	1/4	94504	36.50
3/4	1	1/4 or 3/8	94505	48.55



TREE RADIUS

DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
1/4	3/4	1/4	94301	13.80
3/8	3/4	1/4	94302	16.90
1/2	1	1/4	94303	25.00
5/8	1	1/4	94304	34.95
3/4	1-1/4	1/4 or 3/8	94305	51.15



14° TAPER RADIUS END

DIAMETER	LENGTH OF FLUTE	SHANK DIAMETER	EDP NUMBER	LIST PRICE
3/8	1-1/16	1/4	94803	19.80
1/2	1-1/8	1/4	94804	25.95
5/8	1-5/16	1/4	94805	46.90
3/4	1-1/2	1/4 or 3/8	94806	70.10



TOOL - CUTTER MANUFACTURING

H.S.S. ROTARY CUTTERS



HSS 1/4" SHANK • CYLINDRICAL SHAPE • A

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
125-A	1/8	1/2	40001	5.25
125-AB	1/8	1	40003	6.95
187-AA	3/16	3/4	40007	6.95
250-A	1/4	1	40011	6.95
250-AC	1/4	1-1/2	40012	8.80
312-A	5/16	1	40015	8.90
375-A	3/8	1	40018	8.95
375-AB	3/8	1-1/2	40019	10.65

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
500-A	1/2	1	40023	11.10
500-AD	1/2	1-1/2	40025	14.65
625-A	5/8	1	40027	13.10
750-A	3/4	3/4	40029	13.25
750-AC	3/4	1	40030	13.65
875-A	7/8	1	40032	21.95
1000-A	1	1	40033	23.75

Stocked in medium cut without chip breakers, but can be ground to your specifications. Can be furnished with end cut. Diamond cut 10% extra.



HSS 1/4" SHANK • BALL SHAPE • B

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
125-B	1/8	1/8	40101	5.25
187-B	3/16	3/16	40102	5.50
250-B	1/4	1/4	40103	6.25
312-B	5/16	5/16	40104	6.75
375-B	3/8	3/8	40105	7.80

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
500-B	1/2	1/2	40107	10.50
625-B	5/8	5/8	40108	11.20
750-B	3/4	3/4	40109	14.25
1000-B	1	1	40111	22.90

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



HSS 1/4" SHANK • SHAPE • N

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
250-N	1/4-10°	1/2	40170	7.95
375-N	3/8-10°	1/2	40172	8.95

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
500-N	1/2-14°	1/2	40173	11.60
750-N	3/4-36°	1/2	40175	12.90

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra. Also available with end cut.



TOOL - CUTTER MANUFACTURING

H.S.S. ROTARY CUTTERS



HSS 1/4" SHANK • CYLINDRICAL RADIUS END • C

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
125-C	1/8	1/2	40120	5.45
187-C	3/16	1/2	40121	5.95
250-C	1/4	1	40124	6.55
250-CC	1/4	1-1/2	40125	7.20
312-C	5/16	1	40127	7.90
375-C	3/8	1	40129	8.90

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
375-CA	3/8	1-1/2	40130	9.65
500-C	1/2	1	40133	9.90
500-CA	1/2	1-1/2	40134	12.20
625-C	5/8	1	40135	13.20
750-C	3/4	1-1/4	40138	14.30
1000-C	1	1-3/8	40140	25.75

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



HSS 1/4" SHANK • OLIVE SHAPE • Q

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
187-Q	3/16	5/16	40151	5.85
250-Q	1/4	7/16	40152	6.25
375-Q	3/8	5/8	40154	8.05
437-Q	7/16	3/4	40155	10.10

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
500-Q	1/2	7/8	40156	10.90
625-Q	5/8	1	40157	12.35
750-Q	3/4	1	40158	16.80
1000-Q	1	1-3/8	40159	26.95

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



HSS 1/4" SHANK • TREE ROUNDED SHAPE • R

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
250-R	1/4	3/4	40203	6.90
250-RB	1/4	1	40204	7.40
375-R	3/8	3/4	40206	8.60
500-R	1/2	1	40209	11.50
500-RB	1/2	1-1/8	40210	11.95

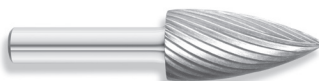
TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
625-R	5/8	1-1/8	40212	13.30
750-R	3/4	1-1/4	40214	16.20
1000-R	1	1-1/4	40217	24.60
1125-R	1-1/8	1-3/4	40219	38.80
1250-R	1-1/4	2	40220	45.95

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



TOOL - CUTTER MANUFACTURING

H.S.S. ROTARY CUTTERS



HSS 1/4" SHANK • TREE POINTED SHAPE • T

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
250-T	1/4	3/4	40231	6.90
375-T	3/8	3/4	40233	8.60
500-TA	1/2	3/4	40234	9.30
500-TC	1/2	1-1/8	40236	12.45

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
625-T	5/8	1	40237	12.10
750-T	3/4	1	40238	14.80
1250-T	1-1/4	2	40240	46.20

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



HSS 1/4" SHANK • FLAME SHAPE • FL

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
312-FL	5/16	3/4	40251	9.40
500-FL	1/2	1-1/4	40252	15.75

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
625-FL	5/8	1-7/16	40253	19.90
750-FL	3/4	1-5/8	40254	26.95

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



HSS 1/4" SHANK • FLAT SHAPE • H

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
250-HA	1/4-25°	1/2	40261	6.60
250-HB	1/4-17°	3/4	40262	7.60
250-H	1/4-13°	1	40263	8.60
250-HC	1/4-10°	1-1/4	40264	9.90
312-H	5/16-16°	1	40265	10.25

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
375-H	3/8-32°	5/8	40266	10.30
500-H	1/2-30°	7/8	40267	11.45
625-H	5/8-30.5°	1	40268	13.50
750-H	3/4-33°	1-1/8	40269	16.00
1000-H	1-35°	1-3/8	40271	24.90

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



HSS 1/4" SHANK • RADIUS CONE

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
250-HD	1/4-14°	5/8	40281	7.30
312-J	5/16-20°	3/4	40284	8.65
375-L	3/8-14°	1	40285	12.75

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
375-LA	3/8-10°	1-3/4	40285	15.20
500-HD	1/2-28°	7/8	40287	15.60
625-F	5/8-36°	7/8	40289	16.40

Stocked in medium cut without chip breakers, but can be ground to your specifications. Diamond cut 10% extra.



TOOL - CUTTER MANUFACTURING

H.S.S. 1/8" ROTARY CUTTERS

BURRS & COUNTER SINKS



HSS 1/4" SHANK • BI SHAPE

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
250-BI	1/4	1	40371	9.90
312-BI	5/16	1-1/8	40372	13.20
375-BI	3/8	1-1/8	40373	14.85



HSS 1/4" SHANK • 4" OAL

TOOL NUMBER	DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
218-CA	7/32	2-1/2	40361	15.20
250-CB	1/4	2-1/2	40362	16.35
250-CT	1/4	2-3/4	40363	18.75

HSS 1/4" SHANK • INTERNAL DEBURRING CUTTERS



TOOL NUMBER	DIAMETER	60° INCL. EDP NUMBER	82° INCL. EDP NUMBER	90° INCL. EDP NUMBER	LIST PRICE
250-ID	1/4	40301	40321	40341	6.30
375-ID	3/8	40303	40323	40343	7.45
500-ID	1/2	40304	40324	40344	10.70
625-ID	5/8	40305	40325	40345	12.50
750-ID	3/4	40306	40326	40346	14.95
1000-ID	1	40308	40328	40348	23.00
1250-ID	1-1/4	40310	40330	40350	36.60

Stocked in medium cut without chip breakers, but can be ground to your specifications. Available in 60°, 80°, and 90°, please specify.



TOOL - CUTTER MANUFACTURING

H.S.S. 1/8" SHANK CUTTERS

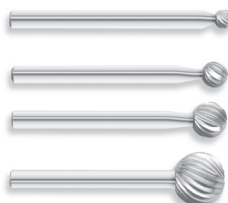
1 1/2" OAL



TOOL NUMBER	DIAMETER LENGTH OF CUT	EDP NUMBER	LIST PRICE
H-13	1/8 x 5/8	41013	3.75
H-21	3/16 x 5/8	41021	4.95
H-20	1/4 x 1/2	41020	6.00
H-30	1/4x1/4-12°PS	41030	6.00



TOOL NUMBER	DIAMETER LENGTH OF CUT	EDP NUMBER	LIST PRICE
H-14	1/8 x 5/8	41014	3.75
H-23	3/16 x 5/8	41023	4.95
H-32	1/4 x 1/2	41032	6.00
H-25	3/16 x 5/16	41025	4.95



TOOL NUMBER	DIAMETER LENGTH OF CUT	EDP NUMBER	LIST PRICE
H-22	1/8 x 1/8	41022	3.75
H-31	3/16 x 3/16	41031	4.95
H-8	1/4 x 1/4	41008	6.00
H-19	3/8 x 3/8	41019	6.30

BURRS & COUNTER SINKS



TOOL - CUTTER MANUFACTURING

H.S.S. 1/8" SHANK CUTTERS

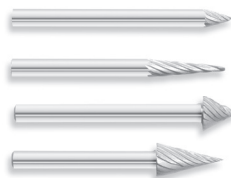
1½" OAL



TOOL NUMBER	DIAMETER LENGTH OF CUT	EDP NUMBER	LIST PRICE
H-28	3/16 x 3/8	41028	4.95
H-1	1/4 x 1/2	41001	6.00
H-4	1/4 x 1/2	41004	6.00



TOOL NUMBER	DIAMETER LENGTH OF CUT	EDP NUMBER	LIST PRICE
H-26	1/8 x 5/16	41026	3.75
H-27	3/16 x 3/8	41027	4.95
H-33	1/4 x 1/2	41033	6.00
H-3	1/4 x 1/2	41003	6.00



TOOL NUMBER	DIAMETER LENGTH OF CUT	EDP NUMBER	LIST PRICE
H-11	1/8 x 1/4	41011	3.75
H-10	1/8 x 9/16	41010	4.45
H-7	1/4 x 1/4	41007	6.00
H-2	1/4 x 1/2	41002	6.00



TOOL NUMBER	DIAMETER LENGTH OF CUT	EDP NUMBER	LIST PRICE
H-15	5/8 x 1/8	41015	9.90
H-16	5/8 x 1/8	41016	9.90
H-18	5/8 x 1/8	41018	9.90
H-29	3/8 x 1/32	41029	6.95

BURRS & COUNTER SINKS



**HIGH SPEED STEEL 1/8" SHANK
27 SET - \$159.85**

TOOL NUMBERS

H-13, H-21, H-20, H-30, H-14, H-23, H-32, H-25,
H-22, H-31, H-8, H-19, H-28, H-1, H-4, H-26,
H-27, H-33, H-3, H-11, H-10, H-7, H-2, H-15,
H-16, H-18, H-29



**CARBIDE 1/8" SHANK
R-115 SET - \$86.25**

TOOL NUMBERS

70211, 70203, 70204, 70205, 70206, 70207,
70208, 70209, 71215, 72215, 70215, 70217,
70213, 72214, 70216



**CARBIDE 1/4" SHANK
R-125 SET - \$108.25**

TOOL NUMBERS

70243, 70244, 70438, 70450, 70248, 70239,
70302, 70247, 70242, 70241



**CARBIDE 1/4" SHANK
R-90 SET - \$142.60**

TOOL NUMBERS

70452, 70411, 70239, 70244, 70241,
70383, 70353, 70440, 70305, 70412



HIGH SPEED STEEL 1/4" SHANK # 25 SET - \$178.40

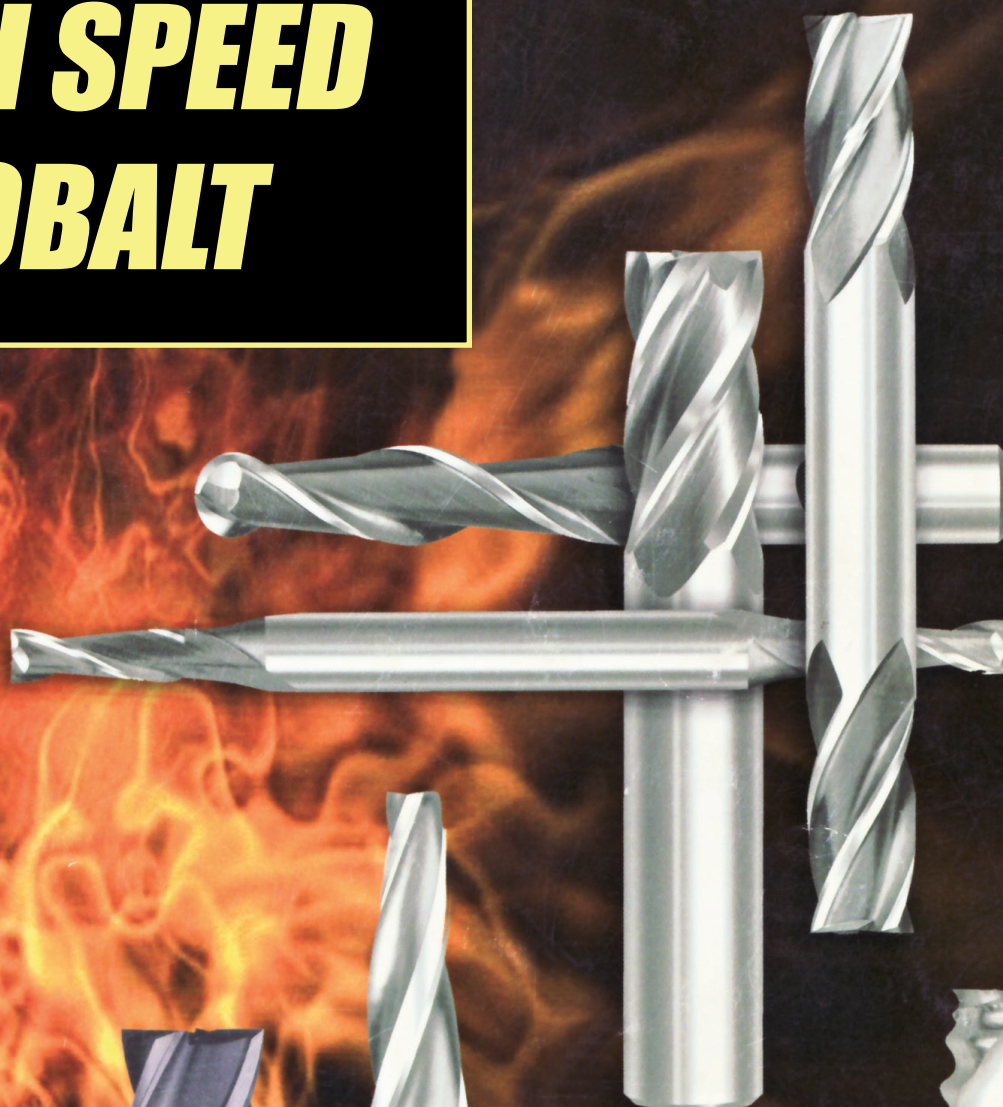
TOOL NUMBERS

125-B, 250-B, 375-B, 500-B, 125-A, 375-A, 500-A, 375-Q, 500-Q, 500-H,
250-T, 375-T, 125-C, 250-C, 375-C, 500-C, 250-HA, 250-R, 375-R, 500-R

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FINISHING & ROUGHING END MILL FEED & SPEED SELECTOR

INSTRUCTIONS

1. Locate SFPM & FPT for material, (table A)
2. Find RPM at intersection of SFM line & Diameter column, (table B)
3. Calculate Feed IPM = FPT x (No. of Flutes) x RPM

EXPLANATION OF SYMBOLS:

SFPM = Surface Feet per Minute (Cutting Speed)
RPM = Revolutions per Minute (Spindle Speed)
FPT = Feed per Tooth
IPM = Inches per Minute

HIGH SPEED STEEL								
MATERIAL TO BE CUT	Condition	FEED PER TOOTH (FPT)						SFPM
		1/8" & UNDER	1/4"	3/8"	1/2"	3/4"	1" & UP	
Aluminum 2024, 6061 7075	150 Bhn	.0006	.0012	.0020	.0040	.0064	.0080	400-800
Magnesium AM60A	90 Bhn	.0007	.0014	.0023	.0045	.0072	.0090	500-1000
Bronze / Brass	81 RF	.0004	.0008	.0013	.0025	.0040	.0050	75-120
Copper 834, 934, 978	150 Bhn	.0005	.0009	.0015	.0030	.0048	.0060	275-450
Inconel 625, 718	300 Bhn	.0002	.0005	.0008	.0015	.0024	.0030	10-20
Hastelloy Alloy B	220 Bhn	.0002	.0005	.0008	.0015	.0024	.0030	15-30
Stainless Steel 304	185 Bhn	.0004	.0008	.0013	.0025	.0040	.0050	60-110
Stainless Steel 17-4PH	375 Bhn	.0002	.0003	.0005	.0010	.0016	.0020	45-80
Steel, 4140 / 4340	350 Bhn	.0003	.0006	.0010	.0020	.0032	.0040	40-70
Steel, 1020	150 Bhn	.0004	.0008	.0013	.0025	.0040	.0050	100-165
Tool Steel A2	250 Bhn	.0002	.0005	.0008	.0015	.0024	.0030	50-90
Tool Steel D2	250 Bhn	.0002	.0005	.0008	.0015	.0024	.0030	35-65
Tool Steel H13	200 Bhn	.0002	.0005	.0008	.0015	.0024	.0030	60-100
Titanium 6Al-4V	325 Bhn	.0002	.0005	.0008	.0015	.0024	.0030	30-90
Titanium 6Al-6V-2Sn	370 Bhn	.0002	.0005	.0008	.0015	.0024	.0030	30-90
Cast Iron (Ductile)	190 Bhn	.0005	.0009	.0015	.0030	.0048	.0060	75-125
Cast Iron (Gray)	220 Bhn	.0003	.0006	.0010	.0020	.0032	.0040	75-125

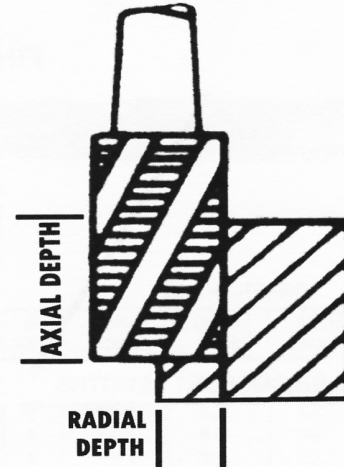
These are based on a RADIAL Depth of Cut equal to the Tool Diameter divided by 4

These Starting Points are Based on Maximum Axial Depth of 1.5 X the Cutting Diameter.

Speeds May be Increased When Using: TiN +25% TiCN +30% TiAlN +35%.

When Slotting Reduce Feed per Tooth 20% and if the Slot Depth is Greater than 1/2 of the Tool Diameter Reduce by 50%.

Roughing End Mills Increase Feed per Tooth by 20%.



RPM SELECTOR

Surface Feet Per Minute (SFPM)	20	30	40	50	60	70	80	90	100	125	150	200	300	400	500	600	800	1000
Diameter Inches	REVOLUTIONS PER MINUTE (RPM)																	
1/16	122	1833	2445	3056	3667	4278	4889	5500	6112	7639	9167							
1/8	611	917	1222	1528	1833	2139	2445	2750	3056	3820	4584	6112	9167					
3/16	407	611	815	1019	1222	1426	1630	1833	2037	2546	3056	4074	6112	8149				
1/4	306	458	611	764	917	1070	1222	1375	1528	1910	2292	3056	4584	6112	7639	9167		
5/16	244	367	489	611	733	856	978	1100	1222	1528	1833	2445	3667	4889	6112	7334	9778	
3/8	204	306	407	509	611	713	815	917	1019	1273	1528	2037	3056	4074	5093	6112	8149	
7/16	175	262	349	437	524	611	698	786	873	1091	1310	1746	2619	3492	4365	5238	6985	8731
1/2	153	229	306	382	458	535	611	688	764	955	1146	1528	2292	3056	3820	4584	6112	7639
5/8	122	183	244	306	367	428	489	550	611	764	917	1222	1833	2445	3056	3667	4889	6112
3/4	102	153	204	255	306	357	407	458	509	637	764	1019	1528	2037	2546	3056	4074	5093
7/8	87	131	175	218	262	306	349	393	437	546	655	873	1310	1746	2183	2619	3492	4365
1	76	115	153	191	229	267	306	344	382	477	573	764	1146	1528	1910	2292	3056	3820
1-1/8	68	102	136	170	204	238	272	306	340	424	509	679	1019	1358	1698	2037	2716	3395
1-1/4	61	92	122	153	183	214	244	275	306	382	458	611	917	1222	1528	1833	2445	3056
1-3/8	56	83	111	139	167	194	222	250	278	347	417	556	833	1111	1389	1667	2222	2778
1-1/2	51	76	102	127	153	178	204	229	255	318	382	509	764	1019	1273	1528	2037	2546
1-5/8	47	71	94	118	141	165	188	212	235	294	353	470	705	940	1175	1410	1880	2351
1-3/4	44	66	87	109	131	153	175	196	218	273	327	437	655	873	1091	1310	1746	2183
1-7/8	41	61	82	102	122	143	163	183	204	255	306	407	611	815	1019	1222	1630	2037
2	38	57	76	96	115	134	153	172	191	239	286	382	573	764	955	1446	1528	1910
2-1/2	31	46	61	76	92	107	122	138	153	191	229	306	458	611	764	917	1222	1528

OTHER CONSIDERATIONS

SPEED		FEED	
Use Higher Speed For: • Soft Materials • Better Finishes • Small Diameter Cutters • Light Cuts • Frail Set-Ups • Maximum Production Rates		Use Less Feed For: • Light, & Finishing cuts • Frail Set-Ups • Smaller Diameter Cutters • Hard to Machine Work Materials • Deep Slotting Cuts • Low Tensile Strength Materials	
Use Lower Speed For: • Hard Materials • Abrasive Materials • Tough Materials • Heavy Cuts • Maximum Cutter Life • Minimum Tool Wear		Use More Feed For: • Heavy, Roughing Cuts • Rigid Set-Ups • Abrasive Materials • High Tensile Strength Materials • Chatter Problems • Easily Machined Metals	

3 Flute Aluminum Coarse Knuckle C/C M-42 Cobalt

O.D.
Tolerance
+.003-.000



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiCN PRICE
AKQCS-12M	3/8	3/8	3/8	2-1/8	3	CC	STUB	11334	\$20.26	\$25.00
AKQCS-16M	1/2	1/2	1/2	2-1/2	3	CC	STUB	11338	\$23.75	\$29.04
AKQCS-20M	5/8	5/8	5/8	2-3/4	3	CC	STUB	11342	\$27.30	\$34.47
AKQCS-24M	3/4	3/4	3/4	3	3	CC	STUB	11346	\$34.28	\$44.39
AKQCS-32M	1	1	1	3-1/2	3	CC	STUB	11350	\$50.38	\$67.56
AKQC-12M	3/8	3/8	3/4	2-1/2	3	CC	REG	11304	\$21.04	\$25.77
AKQC-16M	1/2	1/2	1-1/4	3-1/4	3	CC	REG	11308	\$24.80	\$30.55
AKQC-20M	5/8	5/8	1-5/8	3-3/4	3	CC	REG	11312	\$30.07	\$38.59
AKQC-24M	3/4	3/4	1-5/8	3-7/8	3	CC	REG	11316	\$37.04	\$49.76
AKQC-32M	1	1	2	4-1/2	3	CC	REG	11320	\$54.13	\$71.95
AKQC-40M	1-1/4	1-1/4	2	4-1/2	3	CC	REG	11324	\$69.17	\$92.00
AKQC-48M	1-1/2	1-1/4	2	4-1/2	3	CC	REG	11328	\$93.08	\$120.40
AKQCM-12M	3/8	3/8	1-1/2	3-1/4	3	CC	MED	11368	\$24.35	\$29.08
AKQCM-24M	3/4	3/4	3	5-1/2	3	CC	MED	11374	\$59.15	\$73.42
AKQCM-32M	1	1	3	5-1/2	3	CC	MED	11378	\$61.65	\$81.13
AKQCM-40M	1-1/4	1-1/4	3	5-1/2	3	CC	MED	11382	\$87.16	\$112.36
AKQCM-48M	1-1/2	1-1/4	3	5-1/2	3	CC	MED	11386	\$114.46	\$144.25
AKQCL-16M	1/2	1/2	2	4	3	CC	LONG	11352	\$32.03	\$40.62
AKQCL-20M	5/8	5/8	2-1/2	4-5/8	3	CC	LONG	11354	\$38.13	\$48.86
AKQCL-24M	3/4	3/4	4	6-1/4	3	CC	LONG	11356	\$67.66	\$85.07
AKQCL-32M	1	1	4	6-1/2	3	CC	LONG	11358	\$76.21	\$98.36
AKQCL-40M	1-1/4	1-1/4	4	6-1/2	3	CC	LONG	11362	\$96.73	\$125.95
AKQCL-48M	1-1/2	1-1/4	4	6-1/2	3	CC	LONG	11366	\$127.53	\$161.52
AKQCX-32M	1	1	6	8-1/2	3	CC	X-LONG	11394	\$98.27	\$123.74
AKQCX-40M	1-1/4	1-1/4	6	8-1/2	3	CC	X-LONG	11396	\$143.82	\$180.57
AKQCX-48M	1-1/2	1-1/4	6	8-1/2	3	CC	X-LONG	11398	\$181.78	\$223.62

Fine Pitch Knuckle Non C/C M-42 Cobalt

O.D.
Tolerance
+.003-.000



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiAlN PRICE
FKQCS-8M	1/4	3/8	1/4	2-5/16	3	NCC	STUB	22425	\$18.79	\$24.31
FKQCS-12M	3/8	3/8	3/8	2-1/8	4	NCC	STUB	22428	\$18.79	\$24.31
FKQCS-16ZM	1/2	1/2	1/2	2-1/2	4	NCC	STUB	22431	\$24.43	\$30.62
FKQCS-16ZM5	1/2	1/2	1/2	2-1/2	5	NCC	STUB	22432	\$26.88	\$33.06
FKQCS-20ZM	5/8	5/8	5/8	2-3/4	4	NCC	STUB	22434	\$30.15	\$38.53
FKQCS-20ZM5	5/8	5/8	5/8	2-3/4	5	NCC	STUB	22435	\$33.52	\$41.89
FKQCS-24M	3/4	3/4	3/4	3	4	NCC	STUB	22358	\$37.04	\$48.84
FKQCS-24M5	3/4	3/4	3/4	3	5	NCC	STUB	22357	\$41.16	\$52.95
FKQCS-28YM	7/8	3/4	7/8	3-1/8	4	NCC	STUB	22359	\$46.79	\$64.03
FKQCS-32ZM6	1	3/4	1-1/8	3-5/8	6	NCC	STUB	22378	\$58.39	\$78.42
FKQCS-32ZM5	1	3/4	1-1/8	3-5/8	5	NCC	STUB	22380	\$45.36	\$65.40
FKQCS-32YM	1	1	1	3-1/2	6	NCC	STUB	22381	\$51.63	\$71.66
FKQCS-32M5	1	3/4	3/4	3	5	NCC	STUB	22382	\$47.87	\$67.90
FKQCS-32YM5	1	1	1	3-1/2	5	NCC	STUB	22387	\$54.19	\$74.22
FKQCS-40ZM	1-1/4	3/4	1-1/8	3-5/8	6	NCC	STUB	22383	\$79.92	\$103.82
FKQCS-48ZM	1-1/2	3/4	1-1/8	3-5/8	6	NCC	STUB	22384	\$81.51	\$110.54
FKQCS-64ZM	2	3/4	1-1/8	3-5/8	8	NCC	STUB	22385	\$132.02	\$174.93

Fine Pitch Knuckle Non C/C M-42 Cobalt

O.D
Tolerance
+.003-.000



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
FKQC-6M	3/16	3/8	1/2	2-3/8	3	NCC	REG	22326	\$19.50	\$25.03
FKQC-8M	1/4	3/8	5/8	2-1/2	3	NCC	REG	22328	\$19.50	\$25.03
FKQC-8M4	1/4	3/8	5/8	2-1/2	4	NCC	REG	22329	\$19.50	\$25.03
FKQC-10M	5/16	3/8	3/4	2-1/2	3	NCC	REG	22334	\$19.50	\$25.03
FKQC-12M	3/8	3/8	3/4	2-1/2	4	NCC	REG	22336	\$19.50	\$25.03
FKQC-14M	7/16	1/2	1	2-11/16	4	NCC	REG	22340	\$29.36	\$35.54
FKQC-16M	1/2	1/2	1-1/4	3-1/4	4	NCC	REG	22344	\$25.60	\$32.31
FKQC-16M5	1/2	1/2	1-1/4	3-1/4	5	NCC	REG	22345	\$28.44	\$35.15
FKQC-18M	9/16	1/2	1-3/8	3-3/8	4	NCC	REG	22350	\$31.14	\$41.08
FKQC-20M	5/8	5/8	1-5/8	3-3/4	4	NCC	REG	22352	\$31.06	\$40.99
FKQC-20M5	5/8	5/8	1-5/8	3-3/4	5	NCC	REG	22353	\$34.83	\$44.76
FKQC-24M5	3/4	3/4	1-5/8	3-7/8	5	NCC	REG	22355	\$40.09	\$54.93
FKQC-24M	3/4	3/4	1-5/8	3-7/8	4	NCC	REG	22356	\$35.62	\$50.46
FKQC-24XM	3/4	5/8	1-5/8	3-3/4	4	NCC	REG	22360	\$39.55	\$51.34
FKQC-28M	7/8	3/4	1-7/8	4-1/8	4	NCC	REG	22364	\$51.11	\$71.39
FKQC-28YM	7/8	7/8	1-7/8	4-1/8	5	NCC	REG	22366	\$49.12	\$69.40
FKQC-32YM	1	3/4	2	4-1/4	6	NCC	REG	22369	\$56.12	\$76.89
FKQC-32M5	1	1	2	4-1/2	5	NCC	REG	22372	\$53.61	\$74.38
FKQC-32M6	1	1	2	4-1/2	6	NCC	REG	22374	\$59.95	\$80.73
FKQC-40M	1-1/4	1-1/4	2	4-1/2	6	NCC	REG	22400	\$71.15	\$97.77
FKQC-48M	1-1/2	1-1/4	2	4-1/2	6	NCC	REG	22403	\$99.34	\$131.21
FKQC-64M	2	1-1/4	2	4-1/2	8	NCC	REG	22406	\$149.58	\$197.57
FKQCM-32M5	1	1	3	5-1/2	5	NCC	MED	22390	\$68.65	\$91.37
FKQCM-32M6	1	1	3	5-1/2	6	NCC	MED	22392	\$78.06	\$100.77
FKQCM-40M	1-1/4	1-1/4	3	5-1/2	6	NCC	MED	22409	\$93.71	\$123.10
FKQCM-48M	1-1/2	1-1/4	3	5-1/2	6	NCC	MED	22412	\$128.10	\$162.84
FKQCM-64M	2	1-1/4	3	5-1/2	8	NCC	MED	22415	\$170.06	\$223.16
FKQCL-8M	1/4	3/8	1-1/4	3-1/8	3	NCC	LONG	22330	\$23.26	\$28.79
FKQCL-10M	5/16	3/8	1-3/8	3-1/8	3	NCC	LONG	22332	\$23.26	\$28.79
FKQCL-12M	3/8	3/8	1-1/2	3-1/4	4	NCC	LONG	22338	\$23.26	\$28.79
FKQCL-14M	7/16	1/2	1-3/4	3-3/4	4	NCC	LONG	22346	\$41.21	\$47.94
FKQCL-16M	1/2	1/2	2	4	4	NCC	LONG	22348	\$34.09	\$44.10
FKQCL-20M	5/8	5/8	2-1/2	4-5/8	4	NCC	LONG	22354	\$40.09	\$52.62
FKQCL-24M	3/4	3/4	3	5-1/4	4	NCC	LONG	22362	\$46.62	\$63.27
FKQCL-28XM	7/8	3/4	3-1/2	5-3/4	5	NCC	LONG	22368	\$59.59	\$81.11
FKQCL-28M	7/8	7/8	3-1/2	5-3/4	4	NCC	LONG	22370	\$56.75	\$78.26
FKQCL-32M5	1	1	4	6-1/2	5	NCC	LONG	22386	\$72.67	\$98.52
FKQCL-32M6	1	1	4	6-1/2	6	NCC	LONG	22388	\$81.19	\$107.04
FKQCL-40M	1-1/4	1-1/4	4	6-1/2	6	NCC	LONG	22418	\$105.24	\$139.33
FKQCL-48M	1-1/2	1-1/4	4	6-1/2	6	NCC	LONG	22421	\$142.75	\$182.39
FKQCL-64M	2	1-1/4	4	6-1/2	8	NCC	LONG	22424	\$183.57	\$242.83
FKQCL-264-4M	2	2*	4	7-3/4	8	NCC	LONG	22427	\$205.96	\$275.41
FKQCL-264-6M	2	2*	6	9-3/4	8	NCC	LONG	22430	\$254.62	\$348.58
FKQCL-264-8M	2	2*	8	11-3/4	8	NCC	LONG	22433	\$380.08	\$510.82
FKQCX-32M5	1	1	6	8-1/2	5	NCC	X-LONG	22394	\$99.24	\$128.96
FKQCX-32M6	1	1	6	8-1/2	6	NCC	X-LONG	22396	\$111.13	\$140.85
FKQCX-40M	1-1/4	1-1/4	6	8-1/2	6	NCC	X-LONG	22436	\$150.35	\$193.22
FKQCX-48-6M	1-1/2	1-1/4	6	8-1/2	6	NCC	X-LONG	22438	\$209.71	\$258.52
FKQCX-48-8M	1-1/2	1-1/4	8	10-1/2	6	NCC	X-LONG	22439	\$236.77	\$291.95
FKQCX-264-10M	2	2*	10	13-3/4	8	NCC	X-LONG	22442	\$452.27	\$615.68
FKQCX-264-12M	2	2*	12	15-3/4	8	NCC	X-LONG	22445	\$539.66	\$784.78
FKQCX-80-8M	2-1/2	2*	8	11-5/8	8	NCC	X-LONG	22447	\$539.10	\$825.08
FKQCX-80-10M	2-1/2	2*	10	13-5/8	8	NCC	X-LONG	22449	\$634.52	\$969.52
FKQCX-80-12M	2-1/2	2*	12	15-5/8	8	NCC	X-LONG	22451	\$761.02	\$1,149.14

*Sure-Lock Combination Shank

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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
JFKQC-6M	3/16	3/8	1/2	2-3/8	3	CC	REG	27202	\$22.81	\$28.34
JFKQC-8M	1/4	3/8	5/8	2-1/2	3	CC	REG	27205	\$22.81	\$28.34
JFKQC-10M	5/16	3/8	3/4	2-1/2	3	CC	REG	27207	\$22.81	\$28.34
JFKQC-12M	3/8	3/8	3/4	2-1/2	4	CC	REG	27210	\$22.81	\$28.34
JFKQC-14M	7/16	1/2	1	2-11/16	4	CC	REG	27211	\$30.07	\$36.26
JFKQC-16M	1/2	1/2	1-1/4	3-1/4	4	CC	REG	27212	\$30.07	\$36.78
JFKQC-20M	5/8	5/8	1-5/8	3-3/4	4	CC	REG	27217	\$37.04	\$46.98
JFKQC-24M	3/4	3/4	1-5/8	3-7/8	4	CC	REG	27222	\$42.60	\$57.43
JFKQC-28M	7/8	3/4	1-7/8	4-1/8	4	CC	REG	27227	\$59.59	\$79.89
JFKQC-32M5	1	1	2	4-1/2	5	CC	REG	27231	\$65.15	\$85.92
JFKQC-32YM6	1	3/4	2	4-1/4	6	CC	REG	27232	\$65.15	\$85.92
JFKQC-32M6	1	1	2	4-1/2	6	CC	REG	27233	\$65.15	\$85.92
JFKQC-40M	1-1/4	1-1/4	2	4-1/2	6	CC	REG	27245	\$85.20	\$111.83
JFKQC-48M	1-1/2	1-1/4	2	4-1/2	6	CC	REG	27255	\$122.30	\$154.18
JFKQC-64M	2	1-1/4	2	4-1/2	8	CC	REG	27258	\$180.38	\$228.38
JFKQC-264-2M	2	2	2	5-3/4	8	CC	REG	27275	\$210.97	\$264.08
JFKQCL-8M	1/4	3/8	1-1/4	3-1/8	3	CC	LONG	27206	\$28.11	\$33.63
JFKQCL-10M	5/16	3/8	1-3/8	3-1/8	3	CC	LONG	27208	\$28.11	\$33.63
JFKQCL-12M	3/8	3/8	1-1/2	3-1/4	4	CC	LONG	27209	\$28.11	\$33.63
JFKQCL-16M	1/2	1/2	2	4	4	CC	LONG	27215	\$40.64	\$50.65
JFKQCL-20M	5/8	5/8	2-1/2	4-5/8	4	CC	LONG	27220	\$48.60	\$61.13
JFKQCL-24M	3/4	3/4	3	5-1/4	4	CC	LONG	27225	\$54.13	\$70.79
JFKQCL-32M5	1	1	4	6-1/2	5	CC	LONG	27236	\$85.20	\$111.05
JFKQCL-40M	1-1/4	1-1/4	4	6-1/2	6	CC	LONG	27250	\$127.79	\$161.88
JFKQCL-48M	1-1/2	1-1/4	4	6-1/2	6	CC	LONG	27260	\$174.12	\$213.76
JFKQCL-64M	2	1-1/4	4	6-1/2	8	CC	LONG	27265	\$236.73	\$295.99
JFKQCL-264-4M	2	2*	4	7-3/4	8	CC	LONG	27277	\$248.92	\$318.36
JFKQCL-264-6M	2	2*	6	9-3/4	8	CC	LONG	27280	\$307.91	\$401.89

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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
JKQC-6M	3/16	3/8	1/2	2-3/8	3	CC	REG	30302	\$25.55	\$31.09
JKQC-8M	1/4	3/8	5/8	2-1/2	3	CC	REG	30305	\$25.55	\$31.09
JKQC-10M	5/16	3/8	3/4	2-1/2	3	CC	REG	30307	\$25.25	\$30.77
JKQC-12M	3/8	3/8	3/4	2-1/2	4	CC	REG	30310	\$22.81	\$28.34
JKQC-14M	7/16	1/2	1	2-11/16	4	CC	REG	30311	\$32.20	\$38.39
JKQC-16M	1/2	1/2	1-1/4	3-1/4	4	CC	REG	30312	\$30.07	\$36.78
JKQC-20M	5/8	5/8	1-5/8	3-3/4	4	CC	REG	30317	\$37.04	\$46.98
JKQC-24M	3/4	3/4	1-5/8	3-7/8	4	CC	REG	30322	\$42.60	\$57.43
JKQC-28M	7/8	3/4	1-7/8	4-1/8	4	CC	REG	30327	\$45.19	\$65.48
JKQC-32M5	1	1	2	4-1/2	5	CC	REG	30331	\$65.15	\$85.92
JKQC-32YM6	1	3/4	2	4-1/4	6	CC	REG	30332	\$65.15	\$85.92
JKQC-32M6	1	1	2	4-1/2	6	CC	REG	30333	\$82.38	\$103.15
JKQC-40M	1-1/4	1-1/4	2	4-1/2	6	CC	REG	30345	\$85.20	\$111.83
JKQC-48M	1-1/2	1-1/4	2	4-1/2	6	CC	REG	30355	\$122.30	\$154.18
JKQC-64M	2	1-1/4	2	4-1/2	8	CC	REG	30358	\$164.61	\$212.61
JKQC-264-2M	2	2*	2	5-3/4	8	CC	REG	30375	\$230.89	\$284.00

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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
JKQCL-8M	1/4	3/8	1-1/4	3-1/8	3	CC	LONG	30306	\$28.69	\$34.22
JKQCL-10M	5/16	3/8	1-3/8	3-1/8	3	CC	LONG	30308	\$28.11	\$33.63
JKQCL-12M	3/8	3/8	1-1/2	3-1/4	4	CC	LONG	30309	\$28.11	\$33.63
JKQCL-16M	1/2	1/2	2	4	4	CC	LONG	30315	\$40.64	\$50.65
JKQCL-20M	5/8	5/8	2-1/2	4-5/8	4	CC	LONG	30320	\$48.60	\$61.13
JKQCL-24M	3/4	3/4	3	5-1/4	4	CC	LONG	30325	\$54.13	\$70.79
JKQCL-32M5	1	1	4	6-1/2	5	CC	LONG	30336	\$85.20	\$111.05
JKQCL-40M	1-1/4	1-1/4	4	6-1/2	6	CC	LONG	30350	\$127.79	\$161.88
JKQCL-48M	1-1/2	1-1/4	4	6-1/2	6	CC	LONG	30360	\$174.12	\$213.76
JKQCL-64M	2	1-1/4	4	6-1/2	8	CC	LONG	30365	\$259.08	\$318.35
JKQCL-264-4M	2	2*	4	7-3/4	8	CC	LONG	30377	\$286.35	\$355.80
JKQCL-264-6M	2	2*	6	9-3/4	8	CC	LONG	30380	\$368.99	\$462.96

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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
KQCS-8M	1/4	3/8	1/4	2-5/16	3	NCC	STUB	30403	\$18.79	\$24.31
KQCS-12M	3/8	3/8	3/8	2-1/8	4	NCC	STUB	30406	\$18.79	\$24.31
KQCS-16M	1/2	1/2	3/4	2-3/4	4	NCC	STUB	30858	\$24.93	\$31.12
KQCS-16ZM	1/2	1/2	1/2	2-1/2	4	NCC	STUB	30412	\$24.43	\$30.62
KQCS-16ZM5	1/2	1/2	1/2	2-1/2	5	NCC	STUB	30413	\$26.88	\$33.06
KQCS-20M	5/8	5/8	1	3-1/8	4	NCC	STUB	30814	\$31.06	\$40.99
KQCS-20ZM	5/8	5/8	5/8	2-3/4	4	NCC	STUB	30415	\$29.38	\$37.75
KQCS-20ZM5	5/8	5/8	5/8	2-3/4	5	NCC	STUB	30416	\$33.52	\$41.89
KQCS-24M	3/4	3/4	3/4	3	4	NCC	STUB	30821	\$37.04	\$48.84
KQCS-24M5	3/4	3/4	3/4	3	5	NCC	STUB	30418	\$41.16	\$52.95
KQCS-24ZM	3/4	3/4	1	3-1/4	4	NCC	STUB	30839	\$37.04	\$48.84
KQCS-28M	7/8	7/8	1	3-1/4	4	NCC	STUB	30871	\$47.55	\$64.77
KQCS-28YM	7/8	3/4	7/8	3-1/8	4	NCC	STUB	30425	\$49.12	\$66.36
KQCS-32M5	1	3/4	3/4	3	5	NCC	STUB	30829	\$42.52	\$62.55
KQCS-32ZM6	1	3/4	1-1/8	3-5/8	6	NCC	STUB	30833	\$50.12	\$70.15
KQCS-32YM6	1	1	1	3-1/2	6	NCC	STUB	30844	\$51.63	\$71.66
KQCS-32YM5	1	1	1	3-1/2	5	NCC	STUB	30848	\$54.19	\$74.22
KQCS-32ZM5	1	3/4	1-1/8	3-5/8	5	NCC	STUB	30834	\$50.12	\$70.15
KQCS-36ZM	1-1/8	3/4	1-1/8	3-5/8	6	NCC	STUB	30843	\$72.41	\$96.31
KQCS-40ZM	1-1/4	3/4	1-1/8	3-5/8	6	NCC	STUB	30846	\$73.66	\$97.56
KQCS-44M	1-3/8	3/4	1-1/8	3-3/8	6	NCC	STUB	30853	\$79.92	\$108.95
KQCS-48ZM	1-1/2	3/4	1-1/8	3-5/8	6	NCC	STUB	30856	\$81.51	\$110.54
KQCS-52M	1-5/8	3/4	1-1/8	3-3/8	6	NCC	STUB	30866	\$109.80	\$147.80
KQCS-56M	1-3/4	3/4	1-1/8	3-3/8	6	NCC	STUB	30893	\$130.06	\$168.06
KQCS-64ZM	2	3/4	1-1/8	3-5/8	8	NCC	STUB	30868	\$132.02	\$174.93
KQC-6M	3/16	3/8	1/2	2-3/8	3	NCC	REG	30802	\$19.50	\$25.03
KQC-8M4	1/4	3/8	5/8	2-1/2	4	NCC	REG	30804	\$19.50	\$25.03
KQC-8M	1/4	3/8	5/8	2-1/2	3	NCC	REG	30805	\$19.50	\$25.03
KQC-9M	9/32	3/8	3/4	2-1/2	3	NCC	REG	30801	\$24.05	\$29.58
KQC-10M	5/16	3/8	3/4	2-1/2	3	NCC	REG	30807	\$19.50	\$25.03
KQC-11M	11/32	3/8	3/4	2-1/2	4	NCC	REG	30803	\$24.05	\$29.58
KQC-12M	3/8	3/8	3/4	2-1/2	4	NCC	REG	30810	\$19.50	\$25.03
KQC-13M	13/32	3/8	1	2-3/4	4	NCC	REG	30818	\$32.01	\$38.20
KQC-14M	7/16	1/2	1	2-11/16	4	NCC	REG	30811	\$28.90	\$35.09
KQC-15M	15/32	1/2	1-1/4	3-1/4	4	NCC	REG	30869	\$30.57	\$37.29
KQC-16M	1/2	1/2	1-1/4	3-1/4	4	NCC	REG	30812	\$25.61	\$32.31

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KQC-16M5	1/2	1/2	1-1/4	3-1/4	5	NCC	REG	30849	\$28.44	\$35.15
KQC-18M	9/16	1/2	1-3/8	3-3/8	4	NCC	REG	30816	\$31.14	\$41.08
KQC-20M	5/8	5/8	1-5/8	3-3/4	4	NCC	REG	30817	\$31.06	\$40.99
KQC-20M5	5/8	5/8	1-5/8	3-3/4	5	NCC	REG	30854	\$34.83	\$44.76
KQC-22M	11/16	5/8	1-5/8	3-3/4	4	NCC	REG	30819	\$39.55	\$51.34
KQC-24M	3/4	3/4	1-5/8	3-7/8	4	NCC	REG	30822	\$35.62	\$50.46
KQC-24M5	3/4	3/4	1-5/8	3-7/8	5	NCC	REG	30861	\$40.09	\$54.93
KQC-24XM	3/4	5/8	1-5/8	3-3/4	4	NCC	REG	30823	\$39.55	\$51.34
KQC-26M	13/16	3/4	1-7/8	4	4	NCC	REG	30824	\$41.97	\$62.25
KQC-28YM	7/8	7/8	1-5/8	4-1/8	5	NCC	REG	30826	\$51.11	\$71.39
KQC-28M	7/8	3/4	1-7/8	4-1/8	4	NCC	REG	30827	\$49.12	\$69.40
KQC-30M	15/16	3/4	1-7/8	4-1/8	4	NCC	REG	30851	\$62.15	\$82.91
KQC-32M5	1	1	2	4-1/2	5	NCC	REG	30831	\$53.61	\$74.38
KQC-32M6	1	1	2	4-1/2	6	NCC	REG	30832	\$59.95	\$80.73
KQC-32YM6	1	3/4	2	4-1/4	6	NCC	REG	30859	\$56.12	\$76.89
KQC-36M	1-1/8	1	2	4-1/2	6	NCC	REG	30842	\$76.69	\$103.32
KQC-40M	1-1/4	1-1/4	2	4-1/2	6	NCC	REG	30845	\$71.15	\$97.77
KQC-48M	1-1/2	1-1/4	2	4-1/2	6	NCC	REG	30855	\$99.34	\$131.21
KQC-56M	1-3/4	1-1/4	2	4-1/2	6	NCC	REG	30863	\$128.10	\$168.14
KQC-64M	2	1-1/4	2	4-1/2	8	NCC	REG	30867	\$149.58	\$197.57
KQC-264-2M	2	2*	2	5-3/4	8	NCC	REG	30875	\$166.75	\$219.86
KQCM-32M6	1	1	3	5-1/2	6	NCC	MED	30835	\$78.06	\$100.77
KQCM-32M5	1	1	3	5-1/2	5	NCC	MED	30838	\$68.65	\$91.37
KQCM-40M	1-1/4	1-1/4	3	5-1/2	6	NCC	MED	30847	\$93.71	\$123.10
KQCM-48M	1-1/2	1-1/4	3	5-1/2	6	NCC	MED	30857	\$128.10	\$162.84
KQCM-64M	2	1-1/4	3	5-1/2	8	NCC	MED	30870	\$170.06	\$223.16

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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
KQCL-8M	1/4	3/8	1-1/4	3-1/8	3	NCC	LONG	30806	\$23.26	\$28.79
KQCL-10M	5/16	3/8	1-3/8	3-1/8	3	NCC	LONG	30808	\$23.26	\$28.79
KQCL-12M	3/8	3/8	1-1/2	3-1/4	4	NCC	LONG	30809	\$23.26	\$28.79
KQCL-14M	7/16	1/2	1-3/4	3-3/4	4	NCC	LONG	30813	\$41.21	\$47.94
KQCL-16M	1/2	1/2	2	4	4	NCC	LONG	30815	\$34.09	\$44.10
KQCL-20M	5/8	5/8	2-1/2	4-5/8	4	NCC	LONG	30820	\$40.09	\$52.62
KQCL-24M	3/4	3/4	3	5-1/4	4	NCC	LONG	30825	\$46.62	\$63.27
KQCL-28XM	7/8	3/4	3-1/2	5-3/4	5	NCC	LONG	30828	\$59.59	\$81.11
KQCL-28M	7/8	7/8	3-1/2	5-1/4	4	NCC	LONG	30830	\$62.19	\$83.71
KQCL-32M5	1	1	4	6-1/2	5	NCC	LONG	30836	\$72.67	\$98.52
KQCL-32M6	1	1	4	6-1/2	6	NCC	LONG	30837	\$81.19	\$107.04
KQCL-40M	1-1/4	1-1/4	4	6-1/2	6	NCC	LONG	30850	\$105.24	\$139.33
KQCL-48M	1-1/2	1-1/4	4	6-1/2	6	NCC	LONG	30860	\$142.75	\$182.39
KQCL-64M	2	1-1/4	4	6-1/2	8	NCC	LONG	30872	\$183.57	\$242.83
KQCL-264-4M	2	2*	4	7-3/4	8	NCC	LONG	30877	\$205.96	\$275.41
KQCL-264-6M	2	2*	6	9-3/4	8	NCC	LONG	30880	\$254.62	\$348.58
KQCL-264-8M	2	2*	8	11-3/4	8	NCC	LONG	30882	\$380.08	\$510.82
KQCL-80-4M	2-1/2	2*	4	7-5/8	8	NCC	LONG	30885	\$349.39	\$500.54
KQCL-80-6M	2-1/2	2*	6	9-5/8	8	NCC	LONG	30887	\$465.90	\$690.59
KQCL-96-4M	3	2-1/2*	4	7-5/8	10	NCC	LONG	30895	\$656.75	\$807.89
KQCL-96-6M	3	2-1/2*	6	9-5/8	10	NCC	LONG	30896	\$781.58	\$1,006.27
KQCL-96-8M	3	2-1/2*	8	11-5/8	10	NCC	LONG	30897	\$943.93	\$1,229.92

Coarse Pitch Knuckle Non C/C M-42 Cobalt

O.D
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiAlN PRICE
KQCX-32M6	1	1	6	8-1/2	6	NCC	X-LONG	30840	\$111.13	\$140.85
KQCX-32M5	1	1	6	8-1/2	5	NCC	X-LONG	30841	\$99.24	\$128.96
KQCX-40M	1-1/4	1-1/4	6	8-1/2	6	NCC	X-LONG	30852	\$145.88	\$188.75
KQCX-48-5M	1-1/2	1-1/4	5	7-1/2	6	NCC	X-LONG	30862	\$168.71	\$213.26
KQCX-48-6M	1-1/2	1-1/4	6	8-1/2	6	NCC	X-LONG	30864	\$209.71	\$258.52
KQCX-48-8M	1-1/2	1-1/4	8	10-1/2	6	NCC	X-LONG	30865	\$236.77	\$291.95
KQCX-264-10M	2	2*	10	13-3/4	8	NCC	X-LONG	30883	\$452.27	\$615.68
KQCX-264-12M	2	2*	12	15-3/4	8	NCC	X-LONG	30884	\$539.66	\$784.78
KQCX-80-8M	2-1/2	2*	8	11-5/8	8	NCC	X-LONG	30890	\$539.10	\$825.08
KQCX-80-10M	2-1/2	2*	10	13-5/8	8	NCC	X-LONG	30892	\$634.43	\$969.43
KQCX-80-12M	2-1/2	2*	12	15-5/8	8	NCC	X-LONG	30894	\$761.02	\$1,149.14
KQCX-96-10M	3	2-1/2*	10	13-5/8	10	NCC	X-LONG	30898	\$1,052.05	\$1,387.06
KQCX-96-12M	3	2-1/2*	12	15-5/8	10	NCC	X-LONG	30899	\$1,085.00	\$1,475.28

Coarse Pitch Knuckle Non C/C M-7 HSS

O.D
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiN PRICE
KQC-8	1/4	3/8	5/8	2-1/2	3	NCC	REG	30706	\$20.18	\$23.33
KQC-10	5/16	3/8	3/4	2-1/2	3	NCC	REG	30709	\$21.17	\$24.34
KQC-12	3/8	3/8	3/4	2-1/2	4	NCC	REG	30711	\$14.16	\$17.32
KQC-14	7/16	1/2	1	2-11/16	4	NCC	REG	30712	\$23.18	\$26.71
KQC-16	1/2	1/2	1-1/4	3-1/4	4	NCC	REG	30714	\$20.42	\$24.25
KQC-20	5/8	5/8	1-5/8	3-3/4	4	NCC	REG	30719	\$26.18	\$31.87
KQC-24	3/4	3/4	1-5/8	3-7/8	4	NCC	REG	30724	\$29.69	\$38.18
KQC-28	7/8	3/4	1-7/8	4-1/8	4	NCC	REG	30729	\$34.95	\$46.55
KQC-32Z-5	1	3/4	1-1/8	3-5/8	5	NCC	STUB	30732	\$42.73	\$54.17
KQC-32-5	1	1	2	4-1/2	5	NCC	REG	30733	\$44.97	\$56.85
KQC-32-6	1	1	2	4-1/2	6	NCC	REG	30734	\$49.49	\$61.37
KQC-32Z-6	1	3/4	1-1/8	3-5/8	6	NCC	STUB	30735	\$46.98	\$58.44
KQC-36	1-1/8	1	2	4-1/2	6	NCC	REG	30744	\$62.02	\$77.23
KQC-36Z	1-1/8	3/4	1-1/8	3-5/8	6	NCC	STUB	30745	\$56.13	\$69.78
KQC-40	1-1/4	1-1/4	2	4-1/2	6	NCC	REG	30746	\$62.64	\$77.86
KQC-40Z	1-1/4	3/4	1-1/8	3-5/8	6	NCC	STUB	30747	\$59.64	\$73.29
KQC-48	1-1/2	1-1/4	2	4-1/2	6	NCC	REG	30756	\$84.31	\$102.52
KQC-48Z	1-1/2	3/4	1-1/8	3-5/8	6	NCC	STUB	30757	\$76.47	\$93.05
KQC-64	2	1-1/4	2	4-1/2	8	NCC	REG	30769	\$114.77	\$142.19
KQC-64Z	2	3/4	1-1/8	3-5/8	8	NCC	STUB	30770	\$103.66	\$128.17
KQC-264-2	2	2*	2	5-3/4	8	NCC	REG	30776	\$140.91	\$171.26
KQCM-32-6	1	1	3	5-1/2	6	NCC	MED	30736	\$55.13	\$68.10
KQCM-32-5	1	1	3	5-1/2	5	NCC	MED	30737	\$50.12	\$63.09
KQCM-40	1-1/4	1-1/4	3	5-1/2	6	NCC	MED	30749	\$75.42	\$92.22
KQCM-48	1-1/2	1-1/4	3	5-1/2	6	NCC	MED	30759	\$94.77	\$114.62
KQCM-64	2	1-1/4	3	5-1/2	8	NCC	MED	30771	\$126.66	\$157.02

Coarse Pitch Knuckle Non C/C M-7 HSS

O.D
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiN PRICE
KQCL-14	7/16	1/2	1-3/4	3-3/4	4	NCC	LONG	30713	\$28.95	\$32.78
KQCL-16	1/2	1/2	2	4	4	NCC	LONG	30716	\$27.32	\$33.04
KQCL-20	5/8	5/8	2-1/2	4-5/8	4	NCC	LONG	30721	\$32.95	\$40.12
KQCL-24	3/4	3/4	3	5-1/4	4	NCC	LONG	30726	\$38.21	\$47.74
KQCL-28	7/8	7/8	3-1/2	5-1/4	4	NCC	LONG	30731	\$48.73	\$61.02
KQCL-32-6	1	1	4	6-1/2	6	NCC	LONG	30739	\$63.52	\$78.29
KQCL-32-5	1	1	4	6-1/2	5	NCC	LONG	30740	\$57.76	\$72.53
KQCL-40	1-1/4	1-1/4	4	6-1/2	6	NCC	LONG	30751	\$83.19	\$102.68
KQCL-48	1-1/2	1-1/4	4	6-1/2	6	NCC	LONG	30761	\$107.84	\$130.49
KQCL-64	2	1-1/4	4	6-1/2	8	NCC	LONG	30774	\$139.34	\$173.21
KQCL-264-4	2	2*	4	7-3/4	8	NCC	LONG	30779	\$140.91	\$180.59
KQCL-264-6	2	2*	6	9-3/4	8	NCC	LONG	30781	\$173.85	\$227.54
KQCL-264-8	2	2*	8	11-3/4	8	NCC	LONG	30784	\$341.02	\$415.73
KQCL-80-4	2-1/2	2*	4	7-5/8	8	NCC	LONG	30786	\$289.13	\$375.52
KQCL-80-6	2-1/2	2*	6	9-5/8	8	NCC	LONG	30789	\$358.81	\$487.20
KQCX-32-6	1	1	6	8-1/2	6	NCC	X-LONG	30741	\$87.83	\$104.80
KQCX-32-5	1	1	6	8-1/2	5	NCC	X-LONG	30742	\$79.81	\$96.79
KQCX-40	1-1/4	1-1/4	6	8-1/2	6	NCC	X-LONG	30754	\$121.40	\$145.90
KQCX-48-5	1-1/2	1-1/4	5	7-1/2	6	NCC	X-LONG	30764	\$116.33	\$141.80
KQCX-48-8	1-1/2	1-1/4	8	10-1/2	6	NCC	X-LONG	30766	\$161.69	\$193.22
KQCX-80-8	2-1/2	2*	8	11-5/8	8	NCC	X-LONG	30791	\$431.49	\$594.90
KQCX-80-10	2-1/2	2*	10	13-5/8	8	NCC	X-LONG	30794	\$520.24	\$711.67

Fine Pitch Knuckle Ball End M-42 Cobalt

O.D
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiAlN PRICE
RFKQC-8M	1/4	3/8	5/8	2-1/2	3	BAL	REG	36807	\$31.57	\$35.00
RFKQC-10M	5/16	3/8	3/4	2-1/2	3	BAL	REG	36810	\$31.57	\$37.10
RFKQC-12M	3/8	3/8	3/4	2-1/2	4	BAL	REG	36812	\$31.57	\$37.10
RFKQC-14M	7/16	1/2	1	2-11/16	4	BAL	REG	36813	\$46.11	\$52.29
RFKQC-16M	1/2	1/2	1-1/4	3-1/4	4	BAL	REG	36815	\$41.08	\$47.80
RFKQC-20M	5/8	5/8	1-5/8	3-3/4	4	BAL	REG	36820	\$50.12	\$60.06
RFKQC-24M	3/4	3/4	1-5/8	3-7/8	4	BAL	REG	36825	\$54.13	\$68.97
RFKQC-28YM	7/8	7/8	1-7/8	4-1/8	5	BAL	REG	36828	\$79.62	\$99.90
RFKQC-32M6	1	1	2	4-1/2	6	BAL	REG	36833	\$79.64	\$100.42
RFKQC-40M	1-1/4	1-1/4	2	4-1/2	6	BAL	REG	36847	\$99.24	\$125.87
RFKQC-48M	1-1/2	1-1/4	2	4-1/2	6	BAL	REG	36858	\$130.33	\$162.21
RFKQCL-32M6	1	1	4	6-1/2	6	BAL	LONG	36838	\$107.75	\$133.60
RFKQCL-40M	1-1/4	1-1/4	4	6-1/2	6	BAL	LONG	36853	\$173.09	\$207.17
RFKQCL-48M	1-1/2	1-1/4	4	6-1/2	6	BAL	LONG	36862	\$232.87	\$272.51

Coarse Pitch Knuckle Ball End M-42 Cobalt

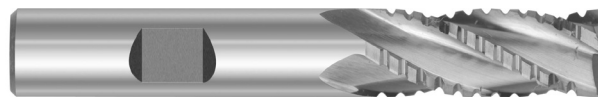
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
RKQC-8M	1/4	3/8	5/8	2-1/2	3	BAL	REG	37307	\$31.57	\$37.10
RKQC-10M	5/16	3/8	3/4	2-1/2	3	BAL	REG	37310	\$31.57	\$37.10
RKQC-12M	3/8	3/8	3/4	2-1/2	4	BAL	REG	37312	\$31.57	\$37.10
RKQC-14M	7/16	1/2	1	2-11/16	4	BAL	REG	37313	\$46.11	\$52.29
RKQC-16M	1/2	1/2	1-1/4	3-1/4	4	BAL	REG	37315	\$41.08	\$47.80
RKQC-20M	5/8	5/8	1-5/8	3-3/4	4	BAL	REG	37320	\$50.12	\$60.06
RKQC-24M	3/4	3/4	1-5/8	3-7/8	4	BAL	REG	37325	\$54.13	\$68.97
RKQC-28YM	7/8	7/8	1-7/8	4-1/8	4	BAL	REG	37328	\$79.62	\$99.90
RKQC-32M6	1	1	2	4-1/2	6	BAL	REG	37333	\$79.64	\$100.42
RKQC-40M	1-1/4	1-1/4	2	4-1/2	6	BAL	REG	37347	\$99.24	\$125.87
RKQC-48M	1-1/2	1-1/4	2	4-1/2	6	BAL	REG	37358	\$130.33	\$162.21
RKQCL-32M6	1	1	4	6-1/2	6	BAL	LONG	37338	\$107.75	\$133.60
RKQCL-40M	1-1/4	1-1/4	4	6-1/2	6	BAL	LONG	37353	\$173.09	\$207.17
RKQCL-48M	1-1/2	1-1/4	4	6-1/2	6	BAL	LONG	37362	\$232.87	\$272.51

Rough & Finish "Truncated" Non C/C M-42 Cobalt

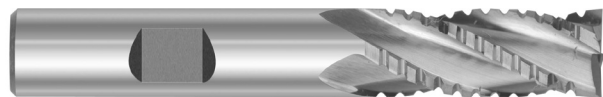
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
TQC-8M	1/4	3/8	5/8	2-1/2	3	NCC	REG	56304	\$19.50	\$25.03
TQC-10M #	5/16	3/8	3/4	2-1/2	3	NCC	REG	56306	\$19.50	\$25.04
TQC-12M	3/8	3/8	3/4	2-1/2	4	NCC	REG	56309	\$19.50	\$25.03
TQC-14M #	7/16	1/2	1	2-11/16	4	NCC	REG	56310	\$28.90	\$35.09
TQC-16M	1/2	1/2	1-1/4	3-1/4	4	NCC	REG	56311	\$25.60	\$32.31
TQC-20M	5/8	5/8	1-5/8	3-3/4	4	NCC	REG	56316	\$31.06	\$40.99
TQC-24M	3/4	3/4	1-5/8	3-7/8	4	NCC	REG	56320	\$35.62	\$50.46
TQC-28M	7/8	3/4	1-7/8	4-1/8	4	NCC	REG	56325	\$51.11	\$71.39
TQC-32M6	1	1	2	4-1/2	6	NCC	REG	56330	\$59.95	\$80.73
TQC-32M5	1	1	2	4-1/2	5	NCC	REG	56331	\$53.61	\$74.38
TQC-36M	1-1/8	1	2	4-1/2	6	NCC	REG	56340	\$77.94	\$104.57
TQC-40M	1-1/4	1-1/4	2	4-1/2	6	NCC	REG	56342	\$71.15	\$97.77
TQC-48M	1-1/2	1-1/4	2	4-1/2	6	NCC	REG	56352	\$99.34	\$131.21
TQC-64M	2	1-1/4	2	4-1/2	8	NCC	REG	56365	\$149.58	\$197.57
TQC-264-2M #	2	2*	2	5-3/4	8	NCC	REG	56372	\$166.75	\$219.86
TQCM-24M	3/4	3/4	3	5-1/4	4	NCC	MED	56323	\$46.62	\$63.27
TQCM-32M6	1	1	3	5-1/2	6	NCC	MED	56332	\$78.06	\$100.77
TQCM-32M5	1	1	3	5-1/2	5	NCC	MED	56333	\$68.65	\$91.37
TQCM-40M	1-1/4	1-1/4	3	5-1/2	6	NCC	MED	56345	\$93.71	\$123.10
TQCM-48M	1-1/2	1-1/4	3	5-1/2	6	NCC	MED	56355	\$128.10	\$162.84
TQCM-64M	2	1-1/4	3	5-1/2	8	NCC	MED	56367	\$170.06	\$223.16

Rough & Finish "Truncated" Non C/C M-42 Cobalt

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Tolerance
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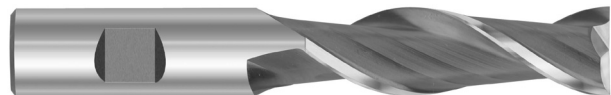


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
TQCL-14M #	7/16	1/2	1-3/4	3-3/4	4	NCC	LONG	56312	\$41.21	\$47.94
TQCL-16M	1/2	1/2	2	4	4	NCC	LONG	56313	\$34.09	\$44.10
TQCL-20M	5/8	5/8	2-1/2	4-5/8	4	NCC	LONG	56318	\$40.09	\$52.62
TQCL-28M #	7/8	7/8	3-1/2	5-1/4	4	NCC	LONG	56327	\$65.41	\$86.92
TQCL-32M6	1	1	4	6-1/2	6	NCC	LONG	56335	\$81.19	\$107.04
TQCL-32M5	1	1	4	6-1/2	5	NCC	LONG	56336	\$72.67	\$98.52
TQCL-40M	1-1/4	1-1/4	4	6-1/2	6	NCC	LONG	56347	\$105.24	\$139.33
TQCL-48M	1-1/2	1-1/4	4	6-1/2	6	NCC	LONG	56357	\$142.75	\$182.39
TQCL-64M	2	1-1/4	4	6-1/2	8	NCC	LONG	56370	\$183.57	\$242.83
TQCL-264-6M #	2	2*	6	9-3/4	8	NCC	LONG	56377	\$254.62	\$348.58
TQCL-80-4M #	2-1/2	2*	4	7-5/8	8	NCC	LONG	56382	\$349.39	\$500.54
TQCL-80-6M	2-1/2	2*	6	9-3/8	8	NCC	LONG	56385	\$465.90	\$690.59
TQCX-32M6	1	1	6	8-1/2	6	NCC	X-LONG	56337	\$111.13	\$140.85
TQCX-32M5	1	1	6	8-1/2	5	NCC	X-LONG	56338	\$99.24	\$128.96
TQCX-40M	1-1/4	1-1/4	6	8-1/2	6	NCC	X-LONG	56350	\$145.88	\$188.75
TQCX-48-5M #	1-1/2	1-1/4	5	7-1/2	6	NCC	X-LONG	56360	\$168.71	\$213.26
TQCX-48-8M #	1-1/2	1-1/4	8	10-1/2	6	NCC	X-LONG	56362	\$236.77	\$291.95
TQCX-80-8M #	2-1/2	2*	8	11-5/8	8	NCC	X-LONG	56387	\$539.10	\$825.08
TQCX-80-10M #	2-1/2	2*	10	13-5/8	8	NCC	X-LONG	56390	\$634.43	\$969.43

To Be Discontinued when stock is depleted

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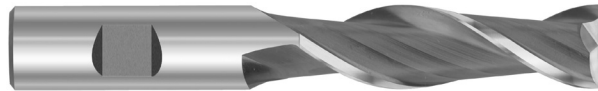


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
A-6	3/16	3/8	5/8	2-1/2	2	CC	REG	10503	\$11.03	\$15.76
A-8	1/4	3/8	5/8	2-1/2	2	CC	REG	10505	\$11.03	\$15.76
A-12	3/8	3/8	3/4	2-1/2	2	CC	REG	10515	\$11.03	\$15.76
A-14	7/16	3/8	1	2-11/16	2	CC	REG	10520	\$14.28	\$19.59
A-16	1/2	1/2	1-1/4	3-1/4	2	CC	REG	10525	\$15.41	\$21.17
A-20	5/8	5/8	1-5/8	3-3/4	2	CC	REG	10530	\$20.42	\$28.95
A-24	3/4	3/4	1-5/8	3-7/8	2	CC	REG	10540	\$22.93	\$35.65
A-32	1	1	2	4-1/2	2	CC	REG	10560	\$37.96	\$55.76
A-32X	1	3/4	1-7/8	4-1/8	2	CC	REG	10565	\$40.72	\$58.52
A-48	1-1/2	1-1/4	2	4-1/2	2	CC	REG	10575	\$75.02	\$102.35
A-264-3	2	2*	3	6-3/4	2	CC	REG	10588	\$205.08	\$255.89
A-264-4	2	2*	4	7-3/4	2	CC	REG	10590	\$205.08	\$264.62
AL-8	1/4	3/8	1-1/4	3-1/8	2	CC	LONG	12006	\$13.16	\$17.89
AL-12	3/8	3/8	1-1/2	3-1/4	2	CC	LONG	12016	\$13.16	\$17.89
AL-16	1/2	1/2	2	4	2	CC	LONG	12026	\$18.41	\$27.00
AL-20	5/8	5/8	2-1/2	4-5/8	2	CC	LONG	12031	\$24.56	\$35.29
AL-24	3/4	3/4	3	5-1/4	2	CC	LONG	12036	\$32.20	\$46.47
AL-32	1	1	4	6-1/2	2	CC	LONG	12046	\$54.88	\$77.03
AL-32A	1	1	3	5-1/2	2	CC	LONG	12051	\$48.99	\$68.46
AL-40	1-1/4	1-1/4	4	6-1/2	2	CC	LONG	12056	\$78.30	\$107.52
AL-48	1-1/2	1-1/4	4	6-1/2	2	CC	LONG	12066	\$103.66	\$137.64
AL-64	2	1-1/4	4	6-1/2	2	CC	LONG	12076	\$167.05	\$217.85
AL-264-6	2	2*	6	9-3/4	2	CC	LONG	12082	\$250.31	\$330.86

* Sure-Lock Combination Shank

2 FLUTE ALUMINUM 37° HELIX M-7 HSS

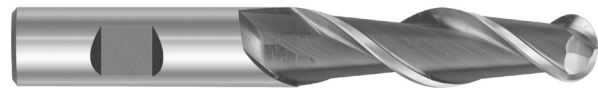
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
AX-8	1/4	3/8	1-3/4	3-9/16	2	CC	X-LONG	13509	\$14.54	\$19.27
AX-12	3/8	3/8	2-1/2	4-1/4	2	CC	X-LONG	13519	\$15.91	\$22.30
AX-16	1/2	1/2	3	5	2	CC	X-LONG	13529	\$21.55	\$31.97
AX-20	5/8	5/8	4	6-1/8	2	CC	X-LONG	13534	\$30.94	\$45.04
AX-24	3/4	3/4	4	6-1/4	2	CC	X-LONG	13539	\$38.34	\$55.75
AX-32	1	1	6	8-1/2	2	CC	X-LONG	13549	\$67.28	\$92.75
AX-40	1-1/4	1-1/4	6	8-1/2	2	CC	X-LONG	13554	\$98.48	\$135.23
AX-48X	1-1/2	1-1/4	6	8-1/2	2	CC	X-LONG	13559	\$125.48	\$167.32
AX-48	1-1/2	1-1/4	8	10-1/2	2	CC	X-LONG	13564	\$145.35	\$192.64

2 FLUTE ALUMINUM 37° HELIX M-7 HSS

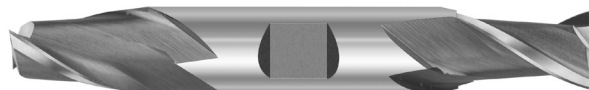
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
AR-8	1/4	3/8	5/8	2-1/2	2	BAL	REG	13008	\$17.92	\$22.65
AR-16	1/2	1/2	1-1/4	3-1/4	2	BAL	REG	13028	\$26.69	\$32.44
AR-24	3/4	3/4	1-5/8	3-7/8	2	BAL	REG	13043	\$41.21	\$53.93
AR-32	1	1	2	4-1/2	2	BAL	REG	13063	\$61.89	\$79.70
AR-56	1-3/4	1-1/4	2	4-1/2	2	BAL	REG	13083	\$110.45	\$144.77
ALR-8	1/4	3/8	1-1/4	3-1/8	2	BAL	LONG	12507	\$23.43	\$28.17
ALR-12	3/8	3/8	1-1/2	3-1/4	2	BAL	LONG	12517	\$24.43	\$29.17
ALR-16	1/2	1/2	2	4	2	BAL	LONG	12527	\$33.45	\$42.03
ALR-20	5/8	5/8	2-1/2	4-5/8	2	BAL	LONG	12532	\$45.73	\$56.46
ALR-24	3/4	3/4	3	5-1/4	2	BAL	LONG	12537	\$57.14	\$71.40
ALR-32	1	1	4	6-1/2	2	BAL	LONG	12547	\$87.07	\$109.22
ALR-48	1-1/2	1-1/4	4	6-1/2	2	BAL	LONG	12557	\$130.45	\$164.44
ALR-64	2	1-1/4	4	6-1/2	2	BAL	LONG	12567	\$204.70	\$255.49
AXR-8	1/4	3/8	1-3/4	3-9/16	2	BAL	X-LONG	14011	\$25.81	\$30.54
AXR-12	3/8	3/8	2-1/2	4-1/4	2	BAL	X-LONG	14021	\$27.43	\$33.83
AXR-16	1/2	1/2	3	5	2	BAL	X-LONG	14031	\$38.34	\$48.77
AXR-24	3/4	3/4	4	6-1/4	2	BAL	X-LONG	14041	\$64.90	\$82.31
AXR-32	1	1	6	8-1/2	2	BAL	X-LONG	14051	\$95.98	\$121.45
AXR-40	1-1/4	1-1/4	6	8-1/2	2	BAL	X-LONG	14056	\$113.52	\$150.26
AXR-48	1-1/2	1-1/4	8	10-1/2	2	BAL	X-LONG	14061	\$165.22	\$212.51
AXR-48X	1-1/2	1-1/4	6	8-1/2	2	BAL	X-LONG	14066	\$155.41	\$197.25

2 FLUTE DOUBLE END M-42 COBALT

O.D
Tolerance
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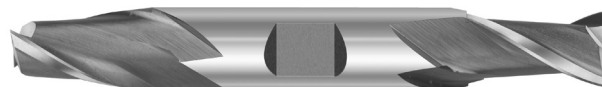


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
XC-4M	1/8	3/8	3/16	2-3/4	2	CC	STUB	58607	\$14.28	\$19.81
XC-5M	5/32	3/8	15/64	2-3/4	2	CC	STUB	58613	\$17.41	\$22.94
XC-6M	3/16	3/8	9/32	2-3/4	2	CC	STUB	58619	\$14.28	\$19.81
XC-7M	7/32	3/8	21/32	2-7/8	2	CC	STUB	58625	\$17.41	\$22.94
XC-8M	1/4	3/8	3/8	2-7/8	2	CC	STUB	58631	\$14.28	\$19.81
DC-4M	1/8	3/8	3/8	3-1/16	2	CC	REG	18010	\$14.02	\$19.55
DC-6M	3/16	3/8	7/16	3-1/8	2	CC	REG	18018	\$14.02	\$19.55
DC-8M	1/4	3/8	1/2	3-1/8	2	CC	REG	18026	\$14.02	\$19.55
DC-10M	5/16	3/8	9/16	3-1/8	2	CC	REG	18034	\$14.02	\$19.55
DC-11M	11/32	3/8	9/16	3-1/8	2	CC	REG	18038	\$16.33	\$21.87
DC-12M *	3/8	3/8	9/16	3-1/8	2	CC	REG	18042	\$14.02	\$19.55
DC-13M	13/32	1/2	13/16	3-3/4	2	CC	REG	18046	\$25.06	\$31.77
DC-16M *	1/2	1/2	13/16	3-3/4	2	CC	REG	18058	\$21.07	\$27.79
DC-17M	17/32	5/8	1-1/8	4-1/2	2	CC	REG	18060	\$33.48	\$46.01
DC-19M	19/32	5/8	1-1/8	4-1/2	2	CC	REG	18064	\$33.48	\$46.01
DC-20M *	5/8	5/8	1-1/8	4-1/2	2	CC	REG	18066	\$28.60	\$41.13
DC-22M	11/16	3/4	1-5/16	5	2	CC	REG	18070	\$38.79	\$55.45
DC-24M *	3/4	3/4	1-5/16	5	2	CC	REG	18074	\$37.11	\$53.76
DC-26M	13/16	7/8	1-9/16	5-1/2	2	CC	REG	18078	\$46.57	\$68.08

* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

2 FLUTE DOUBLE END M-7 HSS

O.D
Tolerance
+.0000-.0015

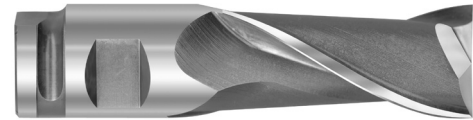


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
XC-4	1/8	3/8	3/16	2-3/4	2	CC	STUB	58505	\$12.91	\$16.06
XC-5	5/32	3/8	15/64	2-3/4	2	CC	STUB	58511	\$13.53	\$16.69
XC-6	3/16	3/8	9/32	2-3/4	2	CC	STUB	58517	\$12.91	\$16.06
XC-7	7/32	3/8	21/32	2-7/8	2	CC	STUB	58523	\$13.53	\$16.69
XC-8	1/4	3/8	3/8	2-7/8	2	CC	STUB	58529	\$12.91	\$16.06
DC-2	1/16	3/8	7/32	3	2	CC	REG	17502	\$15.16	\$18.32
DC-3	3/32	3/8	5/16	3-1/16	2	CC	REG	17505	\$14.28	\$17.45
DC-4	1/8	3/8	3/8	3-1/16	2	CC	REG	17509	\$12.78	\$15.93
DC-5	5/32	3/8	7/16	3-1/8	2	CC	REG	17513	\$13.53	\$16.69
DC-6	3/16	3/8	7/16	3-1/8	2	CC	REG	17517	\$12.78	\$15.93
DC-7	7/32	3/8	1/2	3-1/8	2	CC	REG	17521	\$13.53	\$16.69
DC-8	1/4	3/8	1/2	3-1/8	2	CC	REG	17525	\$13.03	\$16.19
DC-9	9/32	3/8	9/16	3-1/8	2	CC	REG	17529	\$13.78	\$16.94
DC-10	5/16	3/8	9/16	3-1/8	2	CC	REG	17533	\$12.78	\$15.93
DC-11	11/32	3/8	9/16	3-1/8	2	CC	REG	17537	\$13.53	\$16.69
DC-12 *	3/8	3/8	9/16	3-1/8	2	CC	REG	17541	\$13.03	\$16.19
DC-13	13/32	1/2	13/16	3-3/4	2	CC	REG	17545	\$20.67	\$24.50
DC-14	7/16	1/2	13/16	3-3/4	2	CC	REG	17549	\$19.67	\$23.51
DC-16 *	1/2	1/2	13/16	3-3/4	2	CC	REG	17557	\$19.67	\$23.51
DC-17	17/32	5/8	1-1/8	4-1/2	2	CC	REG	17559	\$30.70	\$37.86
DC-18	9/16	5/8	1-1/8	4-1/2	2	CC	REG	17561	\$27.81	\$34.99
DC-20 *	5/8	5/8	1-1/8	4-1/2	2	CC	REG	17565	\$27.19	\$34.36
DC-24 *	3/4	3/4	1-5/16	5	2	CC	REG	17573	\$34.32	\$43.85
DC-28 *	7/8	7/8	1-9/16	5-1/2	2	CC	REG	17581	\$43.22	\$55.52
DC-32 *	1	1	1-5/8	5-7/8	2	CC	REG	17589	\$53.12	\$67.89

* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

2 FLUTE HEAVY DUTY w/SURE-LOCK SHANK M-7 HSS

O.D
Tolerance
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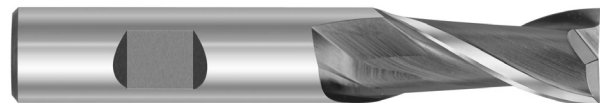


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
PL-64-2	2	2*	2	5-3/4	2	CC	REG	31011	\$126.79	\$157.14
PL-64-6	2	2*	6	9-3/4	2	CC	REG	31033	\$181.04	\$234.73
PL-80-4	2-1/2	2*	4	7-5/8	2	CC	REG	31044	\$265.48	\$351.85
PL-96-4	3	2-1/2*	4	7-5/8	2	CC	REG	31066	\$355.14	\$441.53
PL-96-5	3	2-1/2*	5	8-5/8	2	CC	REG	31077	\$412.26	\$524.33
PL-96-6	3	2-1/2*	6	9-5/8	2	CC	REG	31088	\$457.24	\$585.63

*Heavy Duty Sure-Lok Shank

2 FLUTE "METRIC DIAMETER" FLUTES M-7 HSS

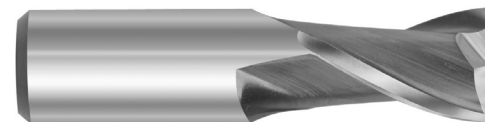
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
MSG-3	3MM	3/8	3/8	2-5/16	2	CC	REG	31100	\$9.89	\$13.06
MSG-4	4MM	3/8	7/16	2-5/16	2	CC	REG	31101	\$9.89	\$13.06
MSG-5	5MM	3/8	1/2	2-5/16	2	CC	REG	31105	\$10.90	\$14.05
MSG-6	6MM	3/8	1/2	2-5/16	2	CC	REG	31111	\$10.90	\$14.05
MSG-7	7MM	3/8	9/16	2-5/16	2	CC	REG	31117	\$10.90	\$14.05
MSG-8	8MM	3/8	9/16	2-5/16	2	CC	REG	31123	\$10.90	\$14.05
MSG-9	9MM	3/8	9/16	2-5/16	2	CC	REG	31129	\$10.90	\$14.05
MSG-10	10MM	3/8	13/16	2-1/2	2	CC	REG	31135	\$13.16	\$16.69
MSG-11	11MM	3/8	13/16	2-1/2	2	CC	REG	31141	\$15.79	\$19.33
MSG-12	12MM	1/2	1	3	2	CC	REG	31147	\$16.67	\$20.50
MSG-13	13MM	1/2	1-1/8	3-1/8	2	CC	REG	31153	\$19.42	\$25.09
MSG-14	14MM	1/2	1-1/8	3-1/8	2	CC	REG	31159	\$19.42	\$25.09
MSG-15	15MM	1/2	1-1/8	3-1/8	2	CC	REG	31165	\$20.67	\$26.35
MSG-16	16MM	1/2	1-5/16	3-5/16	2	CC	REG	31168	\$22.06	\$28.79
MSG-17	17MM	5/8	1-5/16	3-7/16	2	CC	REG	31171	\$23.56	\$30.29
MSG-18	18MM	1/2	1-5/16	3-5/16	2	CC	REG	31174	\$24.56	\$31.30
MSG-20	20MM	3/4	1-1/2	3-3/4	2	CC	REG	31180	\$29.44	\$39.29

2 FLUTE SPIRAL FLUTE M-7 HSS

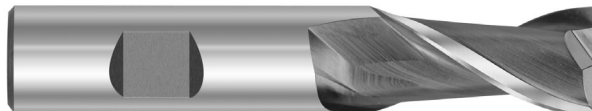
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
SGS-8	1/4	1/4	3/8	1-7/16	2	CC	STUB	47014	\$12.66	\$14.61
SGS-10	5/16	5/16	15/32	1-9/16	2	CC	STUB	47021	\$14.54	\$17.69
SGS-16	1/2	1/2	3/4	2-1/16	2	CC	STUB	47042	\$20.18	\$23.71
SGS-20	5/8	5/8	15/16	2-5/16	2	CC	STUB	47049	\$24.43	\$29.22

2 FLUTE STANDARD M-42 COBALT

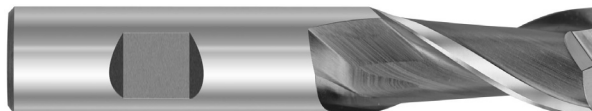
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
SG-4M	1/8	3/8	3/8	2-5/16	2	CC	REG	45504	\$9.86	\$15.39
SG-6M	3/16	3/8	3/8	2-5/16	2	CC	REG	45508	\$9.86	\$15.39
SG-8M	1/4	3/8	1/2	2-5/16	2	CC	REG	45512	\$9.86	\$15.39
SG-10M	5/16	3/8	9/16	2-5/16	2	CC	REG	45516	\$9.86	\$15.39
SG-12M	3/8	3/8	9/16	2-5/16	2	CC	REG	45520	\$9.86	\$15.39
SG-14M	7/16	3/8	13/16	2-1/2	2	CC	REG	45524	\$15.07	\$21.26
SG-16M	1/2	1/2	1	3	2	CC	REG	45528	\$13.24	\$19.96
SG-18M	9/16	1/2	1-1/8	3-1/8	2	CC	REG	45532	\$20.97	\$30.91
SG-20M	5/8	5/8	1-5/16	3-7/16	2	CC	REG	45536	\$20.79	\$30.72
SG-24M	3/4	3/4	1-5/16	3-9/16	2	CC	REG	45540	\$22.52	\$34.30
SG-28M	7/8	7/8	1-1/2	3-3/4	2	CC	REG	45544	\$31.03	\$48.25
SG-28YM	7/8	3/4	1-1/2	3-3/4	2	CC	REG	45546	\$32.27	\$49.49
SG-32M	1	1	1-5/8	4-1/8	2	CC	REG	45548	\$34.61	\$55.37
SG-32ZM	1	3/4	1-1/2	3-3/4	2	CC	REG	45549	\$37.11	\$57.15
SG-40M	1-1/4	1-1/4	1-5/8	4-1/8	2	CC	REG	45552	\$63.31	\$89.94
SG-40ZM	1-1/4	3/4	1-1/2	3-3/4	2	CC	REG	45554	\$64.05	\$87.95
SG-48XM	1-1/2	1-1/4	1-5/8	4-1/8	2	CC	REG	45556	\$84.70	\$116.57
SG-64M	2	1-1/4	1-5/8	4-1/8	2	CC	REG	45560	\$112.93	\$160.94

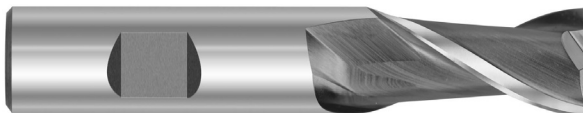
2 FLUTE STANDARD M-7 HSS

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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
XG-4	1/8	3/8	3/16	2-1/8	2	CC	STUB	60007	\$9.27	\$12.43
XG-6	3/16	3/8	9/32	2-3/16	2	CC	STUB	60014	\$9.27	\$12.43
XG-8	1/4	3/8	3/8	2-1/4	2	CC	STUB	60021	\$9.27	\$12.43
SG-4	1/8	3/8	3/8	2-5/16	2	CC	REG	45003	\$9.15	\$12.30
SG-5	5/32	3/8	7/16	2-5/16	2	CC	REG	45005	\$9.15	\$12.30
SG-6	3/16	3/8	3/8	2-5/16	2	CC	REG	45007	\$9.15	\$12.30
SG-6C	3/16	3/8	9/16	2-9/16	2	CC	REG	45107	\$11.28	\$14.43
SG-7	7/32	3/8	1/2	2-5/16	2	CC	REG	45009	\$10.40	\$13.56
SG-8	1/4	3/8	1/2	2-5/16	2	CC	REG	45011	\$9.15	\$12.30

2 FLUTE STANDARD M-7 HSS

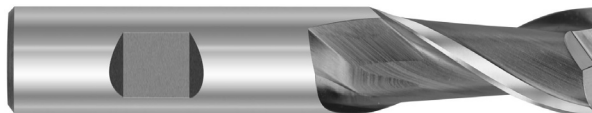


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Tolerance
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
SG-8C	1/4	3/8	9/16	2-9/16	2	CC	REG	45111	\$10.52	\$13.69
SG-9	9/32	3/8	9/16	2-5/16	2	CC	REG	45013	\$10.40	\$13.56
SG-10	5/16	3/8	9/16	2-5/16	2	CC	REG	45015	\$9.15	\$12.30
SG-11	11/32	3/8	9/16	2-5/16	2	CC	REG	45017	\$10.40	\$13.56
SG-12	3/8	3/8	9/16	2-5/16	2	CC	REG	45019	\$9.15	\$12.30
SG-12C	3/8	3/8	9/16	2-9/16	2	CC	REG	45119	\$10.52	\$13.69
SG-13	13/32	3/8	13/16	2-1/2	2	CC	REG	45021	\$13.40	\$16.94
SG-14	7/16	3/8	13/16	2-1/2	2	CC	REG	45023	\$12.91	\$16.44
SG-15	15/32	1/2	1	3	2	CC	REG	45025	\$14.90	\$18.75
SG-16	1/2	1/2	1	3	2	CC	REG	45027	\$12.91	\$16.74
SG-16C	1/2	5/8	1	3-1/8	2	CC	REG	45127	\$21.05	\$26.72
SG-16X	1/2	3/8	13/16	2-1/2	2	CC	REG	45028	\$13.40	\$16.94
SG-17	17/32	1/2	1-1/8	3-1/8	2	CC	REG	45030	\$18.41	\$24.09
SG-18	9/16	1/2	1-1/8	3-1/8	2	CC	REG	45032	\$16.16	\$21.84
SG-18C	9/16	5/8	1	3-1/8	2	CC	REG	45132	\$22.80	\$28.47
SG-19	19/32	1/2	1-1/8	3-1/8	2	CC	REG	45034	\$20.29	\$25.97
SG-20C	5/8	5/8	1	3-1/8	2	CC	REG	45136	\$22.30	\$27.98
SG-20X	5/8	1/2	1-1/8	3-1/8	2	CC	REG	45037	\$18.79	\$24.47
SG-22	11/16	5/8	1-5/16	3-7/16	2	CC	REG	45041	\$19.42	\$26.16
SG-22X	11/16	1/2	1-5/16	3-5/16	2	CC	REG	45042	\$19.42	\$26.16
SG-24	3/4	5/8	1-5/16	3-7/16	2	CC	REG	45046	\$21.17	\$27.92
SG-24C	3/4	3/4	1	3-1/8	2	CC	REG	45146	\$24.30	\$31.05
SG-24CC	3/4	5/8	1	3-1/8	2	CC	REG	45147	\$26.06	\$32.80
SG-24X	3/4	1/2	1-5/16	3-5/16	2	CC	REG	45047	\$21.17	\$27.92
SG-24Y	3/4	3/4	1-5/16	3-9/16	2	CC	REG	45048	\$21.17	\$27.92
SG-25	25/32	1/2	1-1/2	3-1/2	2	CC	REG	45050	\$28.69	\$38.54
SG-26	13/16	5/8	1-1/2	3-5/8	2	CC	REG	45052	\$25.55	\$35.41
SG-26X	13/16	1/2	1-1/2	3-1/2	2	CC	REG	45053	\$25.55	\$35.41
SG-26Y	13/16	3/4	1-1/2	3-3/4	2	CC	REG	45054	\$25.55	\$35.41
SG-28	7/8	7/8	1-1/2	3-3/4	2	CC	REG	45057	\$25.55	\$35.41
SG-28A	7/8	1/2	1-1/2	3-1/2	2	CC	REG	45058	\$25.81	\$35.66
SG-28C	7/8	5/8	1	3-1/8	2	CC	REG	45159	\$26.81	\$36.66
SG-28X	7/8	5/8	1-1/2	3-5/8	2	CC	REG	45059	\$26.69	\$36.53
SG-28Y	7/8	3/4	1-1/2	3-3/4	2	CC	REG	45060	\$26.69	\$36.53
SG-30	15/16	5/8	1-1/2	3-5/8	2	CC	REG	45064	\$28.69	\$40.14
SG-31	31/32	1/2	1-1/2	3-1/2	2	CC	REG	45069	\$33.20	\$44.65
SG-32	1	1	1-5/8	4-1/8	2	CC	REG	45071	\$29.57	\$41.44
SG-32A	1	1/2	1-3/8	3-3/8	2	CC	REG	45072	\$29.57	\$41.01
SG-32C	1	5/8	1	3-1/8	2	CC	REG	45172	\$29.06	\$40.52
SG-32X	1	5/8	1-1/2	3-5/8	2	CC	REG	45073	\$29.57	\$41.01
SG-32Z	1	3/4	1-1/2	3-3/4	2	CC	REG	45075	\$33.33	\$44.77
SG-34	1-1/16	1	1-5/8	4-1/8	2	CC	REG	45076	\$54.88	\$70.09
SG-34Z	1-1/16	3/4	1-1/2	3-3/4	2	CC	REG	45177	\$54.88	\$68.53
SG-36	1-1/8	1	1-5/8	4-1/8	2	CC	REG	45077	\$48.86	\$64.07
SG-36Z	1-1/8	3/4	1-1/2	3-3/4	2	CC	REG	45079	\$47.99	\$61.64
SG-38	1-3/16	1	1-5/8	4-1/8	2	CC	REG	45080	\$60.63	\$75.85
SG-38Z	1-3/16	3/4	1-5/8	3-7/8	2	CC	REG	45181	\$60.63	\$75.85
SG-40	1-1/4	1	1-5/8	4-1/8	2	CC	REG	45081	\$53.50	\$68.71
SG-40C	1-1/4	5/8	1	3-1/8	2	CC	REG	45182	\$45.98	\$59.64
SG-40X	1-1/4	7/8	1-5/8	3-7/8	2	CC	REG	45082	\$47.11	\$62.31
SG-40Y	1-1/4	1-1/4	1-5/8	4-1/8	2	CC	REG	45083	\$53.50	\$68.71
SG-40Z	1-1/4	3/4	1-1/2	3-3/4	2	CC	REG	45084	\$60.63	\$74.30

2 FLUTE STANDARD M-7 HSS

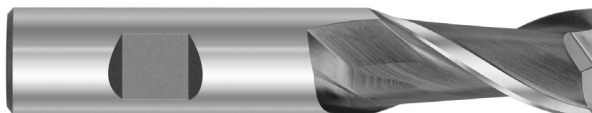
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
SG-42	1-5/16	1	1-5/8	4-1/8	2	CC	REG	45085	\$69.28	\$87.49
SG-44	1-3/8	1	1-5/8	4-1/8	2	CC	REG	45086	\$62.48	\$80.68
SG-44Z	1-3/8	3/4	1-5/8	3-7/8	2	CC	REG	45087	\$63.26	\$81.47
SG-46	1-7/16	1	1-5/8	4-1/8	2	CC	REG	45187	\$76.21	\$94.41
SG-48	1-1/2	1	1-5/8	4-1/8	2	CC	REG	45088	\$68.49	\$86.70
SG-48Z	1-1/2	3/4	1-1/2	3-3/4	2	CC	REG	45090	\$74.90	\$91.49
SG-50	1-9/16	1-1/4	1-5/8	4-1/8	2	CC	REG	45190	\$84.17	\$107.05
SG-52	1-5/8	1-1/4	1-5/8	4-1/8	2	CC	REG	45091	\$72.80	\$95.68
SG-56	1-3/4	1-1/4	1-5/8	4-1/8	2	CC	REG	45093	\$84.05	\$106.93
SG-56Z	1-3/4	3/4	1-5/8	3-7/8	2	CC	REG	45096	\$106.40	\$133.82
SG-58	1-13/16	1-1/4	1-5/8	4-1/8	2	CC	REG	45194	\$84.05	\$106.93
SG-64	2	1-1/4	1-5/8	4-1/8	2	CC	REG	45095	\$98.82	\$126.24
SG-64Z	2	3/4	1-5/8	3-7/8	2	CC	REG	45097	\$99.48	\$126.89
SG-72	2-1/4	1-1/4	1-5/8	4-1/8	2	CC	REG	45098	\$132.41	\$181.44
SG-80	2-1/2	1-1/4	1-5/8	4-1/8	2	CC	REG	45099	\$171.89	\$220.92

2 FLUTE STANDARD M-7 HSS

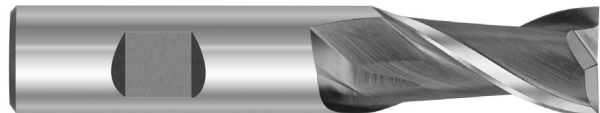
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
SGX-8	1/4	3/8	1	3-1/16	2	CC	MED	47503	\$14.03	\$17.19
SGX-8A	1/4	3/8	1-1/2	3-5/16	2	CC	LONG	47504	\$14.41	\$17.56
SGX-10	5/16	3/8	1-1/4	3-5/16	2	CC	MED	47506	\$14.41	\$17.56
SGX-12	3/8	3/8	1-1/2	3-1/4	2	CC	LONG	47509	\$14.03	\$17.19
SGX-12A	3/8	3/8	1	2-3/4	2	CC	MED	47512	\$11.77	\$14.94
SGX-14	7/16	1/2	1-3/4	3-3/4	2	CC	MED	47513	\$16.42	\$20.25
SGX-16	1/2	1/2	2	4	2	CC	LONG	47515	\$17.67	\$23.39
SGX-16A	1/2	1/2	1-1/2	3-1/2	2	CC	MED	47518	\$15.79	\$19.62
SGX-18	9/16	1/2	1-7/8	3-7/8	2	CC	MED	47519	\$22.93	\$30.09
SGX-20	5/8	5/8	2-3/8	4-1/2	2	CC	X-LONG	47521	\$23.67	\$30.85
SGX-20A	5/8	5/8	1-5/8	3-3/4	2	CC	MED	47524	\$21.17	\$26.85
SGX-20B	5/8	5/8	2	4-1/8	2	CC	LONG	47525	\$23.43	\$30.60
SGX-24	3/4	3/4	3-1/8	5-3/8	2	CC	X-LONG	47530	\$30.94	\$40.47
SGX-24A	3/4	3/4	1-3/4	4	2	CC	MED	47533	\$24.05	\$32.54
SGX-24B	3/4	3/4	2-1/4	4-1/2	2	CC	LONG	47537	\$22.17	\$30.66
SGX-28	7/8	7/8	3-5/8	5-7/8	2	CC	LONG	47543	\$37.59	\$51.34
SGX-28B	7/8	7/8	2-1/2	4-3/4	2	CC	MED	47546	\$27.94	\$39.52
SGX-32	1	1	4-5/8	7-1/8	2	CC	X-LONG	47549	\$54.00	\$69.66
SGX-32A	1	1	2-5/8	5-1/8	2	CC	MED	47552	\$37.96	\$50.94
SGX-32B	1	1	3-5/8	6-1/8	2	CC	LONG	47555	\$47.36	\$62.14
SGX-32C	1	1	3	5-1/2	2	CC	MED	47558	\$42.47	\$55.46
SGX-32D	1	1	2-1/4	4-3/4	2	CC	MED	47561	\$41.47	\$53.34

2 FLUTE STANDARD M-7 HSS & M-42 COBALT

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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiN PRICE
SGX-40	1-1/4	1-1/4	4-3/4	7-1/4	2	CC	X-LONG	47570	\$84.70	\$106.86
SGX-40A	1-1/4	1	2-1/4	4-3/4	2	CC	MED	47573	\$62.02	\$77.23
SGX-40B	1-1/4	1	3	5-1/2	2	CC	LONG	47576	\$71.04	\$87.83
SGX-40X	1-1/4	1-1/4	2-1/4	4-3/4	2	CC	MED	47579	\$57.76	\$72.96
SGX-40Y	1-1/4	1-1/4	3	5-1/2	2	CC	LONG	47582	\$71.04	\$87.83
SGX-48	1-1/2	1-1/4	3	5-1/2	2	CC	MED	47585	\$88.49	\$108.34
SGX-56	1-3/4	1-1/4	3	5-1/2	2	CC	LONG	47591	\$108.36	\$134.04
SGX-64	2	1-1/4	3	5-1/2	2	CC	LONG	47594	\$135.15	\$165.51
SGX-64A	2	1-1/4	2-1/4	4-3/4	2	CC	MED	47595	\$113.33	\$140.75
SGX-56A	1-3/4	1-1/4	2-1/4	4-3/4	2	CC	MED	47596	\$94.11	\$116.99
SGX-72	2-1/4	1-1/4	3	5-1/2	2	CC	MED	47597	\$166.40	\$221.61
SGX-80	2-1/2	1-1/4	3	5-1/2	2	CC	MED	47599	\$201.82	\$257.04
SGX-16M	1/2	1/2	2	4	2	CC	MED	47616	\$20.92	\$30.93
SGX-20AM	5/8	5/8	1-5/8	3-3/4	2	CC	MED	47625	\$25.68	\$35.62
SGX-24M	3/4	3/4	3-1/8	5-3/8	2	CC	LONG	47631	\$39.22	\$55.87
SGX-24BM	3/4	3/4	2-1/4	4-1/2	2	CC	MED	47638	\$29.69	\$44.52
SGX-28AM	7/8	7/8	2	4-1/4	2	CC	MED	47645	\$38.46	\$58.74
SGX-32DM	1	1	2-1/4	4-3/4	2	CC	MED	47662	\$54.44	\$75.21
SGX-40XM	1-1/4	1-1/4	2-1/4	4-3/4	2	CC	MED	47680	\$77.30	\$103.93
SGX-40YM	1-1/4	1-1/4	3	5-1/2	2	CC	MED	47683	\$91.71	\$121.10
SGX-64M	2	1-1/4	3	5-1/2	2	CC	MED	47695	\$162.34	\$258.98

GREEN SHADED AREA REPRESENTS TIALN



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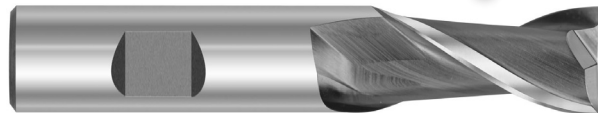
2 FLUTE LONG & EXTRA LONG REACH M-7 HSS & M-42 COBALT

CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiN PRICE
SGL-4	1/8	3/8	3/8	2-3/8	2	CC	L-REACH	46507	\$16.04	\$19.20
SGL-6	3/16	3/8	1/2	2-11/16	2	CC	L-REACH	46513	\$16.04	\$19.20
SGL-8	1/4	3/8	5/8	3-1/16	2	CC	L-REACH	46519	\$16.04	\$19.20
SGL-10	5/16	3/8	3/4	3-5/16	2	CC	L-REACH	46525	\$16.29	\$19.44
SGL-12	3/8	3/8	3/4	3-5/16	2	CC	L-REACH	46531	\$16.29	\$19.44
SGL-14	7/16	1/2	1	3-7/8	2	CC	L-REACH	46535	\$19.04	\$24.77
SGL-16	1/2	1/2	1	4	2	CC	L-REACH	46537	\$20.67	\$26.39
SGL-20	5/8	5/8	1-3/8	4-5/8	2	CC	L-REACH	46543	\$30.07	\$37.23
SGL-24	3/4	3/4	1-5/8	5-3/8	2	CC	L-REACH	46555	\$37.96	\$47.48
SGL-24X	3/4	1/2	1-5/8	5-1/4	2	CC	L-REACH	46561	\$37.96	\$47.48
SGL-28	7/8	7/8	2	6	2	CC	L-REACH	46567	\$42.98	\$56.73
SGL-32	1	1	2-1/2	7-1/4	2	CC	L-REACH	46572	\$66.65	\$82.31
SGXL-14XM	7/16	3/8	3/4	5	2	CC	XL-REACH	47416	\$39.22	\$51.38
SGXL-16M	1/2	1/2	1	6	2	CC	XL-REACH	47418	\$41.34	\$55.89
SGXL-18XM	9/16	1/2	1	6	2	CC	XL-REACH	47420	\$51.69	\$66.23
SGXL-24M	3/4	3/4	1-1/2	8-1/4	2	CC	XL-REACH	47436	\$74.68	\$101.09
SGXL-28XM	7/8	3/4	1-1/2	8-1/4	2	CC	XL-REACH	47440	\$93.34	\$119.77
SGXL-32M	1	1	2	10-1/4	2	CC	XL-REACH	47458	\$124.16	\$163.32
SGXL-36XM	1-1/8	1	2	10-1/4	2	CC	XL-REACH	47460	\$155.23	\$194.40

GREEN SHADED AREA REPRESENTS TIALN

2 FLUTE "KEYWAY TOLERANCE" M-7 HSS

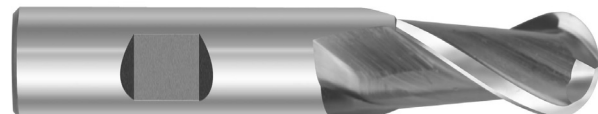
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
SKG-4	1/8	3/8	3/8	2-5/16	2	CC	REG	47704	\$11.03	\$14.18
SKG-6	3/16	3/8	3/8	2-5/16	2	CC	REG	47706	\$11.03	\$14.18
SKG-8	1/4	3/8	1/2	2-5/16	2	CC	REG	47708	\$11.03	\$14.18
SKG-10	5/16	3/8	9/16	2-5/16	2	CC	REG	47710	\$11.03	\$14.18
SKG-12	3/8	3/8	9/16	2-5/16	2	CC	REG	47712	\$11.65	\$14.81
SKG-16	1/2	1/2	1	3	2	CC	REG	47716	\$15.79	\$19.62
SKG-20	5/8	5/8	1-5/16	3-7/16	2	CC	REG	47720	\$22.80	\$28.47
SKG-24	3/4	3/4	1-5/16	3-9/16	2	CC	REG	47724	\$25.81	\$32.55
SKG-32	1	1	1-5/8	4-1/8	2	CC	REG	47732	\$40.09	\$51.97

2 FLUTE STANDARD BALL END M-7 HSS & M-42 COBALT

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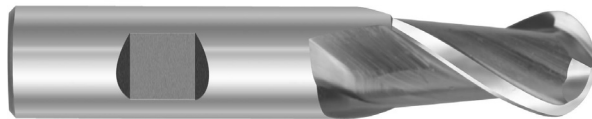


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
SR-4	1/8	3/8	3/8	2-5/16	2	BAL	REG	48504	\$12.91	\$16.06
SR-6	3/16	3/8	1/2	2-3/8	2	BAL	REG	48508	\$12.91	\$16.06
SR-8	1/4	3/8	5/8	2-7/16	2	BAL	REG	48512	\$12.91	\$16.06
SR-9	9/32	3/8	5/8	2-1/2	2	BAL	REG	48514	\$15.03	\$18.57
SR-10	5/16	3/8	3/4	2-1/2	2	BAL	REG	48516	\$14.41	\$17.56
SR-12	3/8	3/8	3/4	2-1/2	2	BAL	REG	48520	\$14.90	\$18.07
SR-14	7/16	1/2	1	3	2	BAL	REG	48524	\$19.67	\$23.51
SR-16	1/2	1/2	1	3	2	BAL	REG	48528	\$19.67	\$23.51
SR-18	9/16	1/2	1	3	2	BAL	REG	48532	\$24.30	\$29.99
SR-20	5/8	5/8	1-3/8	3-1/2	2	BAL	REG	48536	\$28.06	\$33.74
SR-24	3/4	3/4	1-5/8	3-7/8	2	BAL	REG	48544	\$32.82	\$41.31
SR-26	13/16	3/4	2	4-1/4	2	BAL	REG	48552	\$41.72	\$53.31
SR-28	7/8	7/8	2	4-1/4	2	BAL	REG	48556	\$41.72	\$53.31
SR-28Y	7/8	3/4	2	4-1/4	2	BAL	REG	48560	\$41.72	\$53.31
SR-30	15/16	3/4	2-1/4	4-1/2	2	BAL	REG	48564	\$48.61	\$60.49
SR-32	1	1	2-1/4	4-3/4	2	BAL	REG	48568	\$52.62	\$64.50
SR-32X	1	3/4	2-1/4	4-1/2	2	BAL	REG	48572	\$52.62	\$64.50
SR-36	1-1/8	1	2-1/4	4-3/4	2	BAL	REG	48576	\$66.27	\$81.48
SR-44	1-3/8	1-1/4	2-1/2	5	2	BAL	REG	48584	\$85.10	\$104.95
SR-48	1-1/2	1-1/4	2-1/2	5	2	BAL	REG	48588	\$93.72	\$113.57
SR-64	2	1-1/4	2-1/2	5	2	BAL	REG	48592	\$147.45	\$177.79
LONG REACH BALL END										
SRL-4	1/8	3/8	3/8	2-3/8	2	BAL	L-REACH	50505	\$19.92	\$23.08
SRL-8	1/4	3/8	5/8	3-1/16	2	BAL	L-REACH	50517	\$19.92	\$23.08
SRL-12	3/8	3/8	3/4	3-3/16	2	BAL	L-REACH	50528	\$21.30	\$24.45
SRL-14	7/16	1/2	1	3-7/8	2	BAL	L-REACH	50538	\$30.94	\$36.68
SRL-16	1/2	1/2	1	4	2	BAL	L-REACH	50540	\$30.94	\$36.68
SRL-24	3/4	3/4	1-5/8	5-3/8	2	BAL	L-REACH	50552	\$52.37	\$61.89
SRL-32	1	1	2-1/2	7-1/4	2	BAL	L-REACH	50564	\$81.93	\$97.59
SRL-40	1-1/4	1-1/4	3	7-1/4	2	BAL	L-REACH	50570	\$104.75	\$126.91
EXTRA LONG REACH BALL END										
SRXL-10XM	5/16	1/4	1/2	4	2	BAL	XL-REACH	51119	\$46.23	\$53.68
SRXL-12M	3/8	3/8	3/4	5	2	BAL	XL-REACH	51121	\$47.17	\$59.33
SRXL-16M	1/2	1/2	1	6	2	BAL	XL-REACH	51125	\$62.02	\$76.57
SRXL-18XM	9/16	1/2	1	6	2	BAL	XL-REACH	51127	\$77.55	\$94.00
SRXL-24M	3/4	3/4	1-1/2	8-1/4	2	BAL	XL-REACH	51139	\$110.88	\$137.31
SRXL-28XM	7/8	3/4	1-1/2	8-1/4	2	BAL	XL-REACH	51142	\$138.57	\$167.54
SRXL-32M	1	1	2	10-1/4	2	BAL	XL-REACH	51161	\$183.55	\$222.72
SRXL-36XM	1-1/8	1	2	10-1/4	2	BAL	XL-REACH	51163	\$229.41	\$276.40

TIALN

2 FLUTE STANDARD BALL END M-42 COBALT

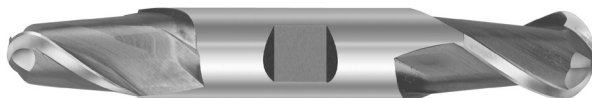
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Tolerance
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
SR-4M	1/8	3/8	3/8	2-5/16	2	BAL	REG	49005	\$16.33	\$21.87
SR-12M	3/8	3/8	9/16	2-5/16	2	BAL	REG	49033	\$15.57	\$21.09
SR-16M	1/2	1/2	1	3	2	BAL	REG	49040	\$22.52	\$29.23
SR-24XM	3/4	3/4	1-5/8	3-7/8	2	BAL	REG	49056	\$37.40	\$45.91
SR-32M	1	1	1-5/8	4-1/8	2	BAL	REG	49061	\$51.13	\$71.90
SR-32XM	1	1	2-1/4	4-3/4	2	BAL	REG	49063	\$89.40	\$110.18

2 FLUTE DOUBLE END BALL END M-7 HSS

O.D
Tolerance
+.0000-.0015

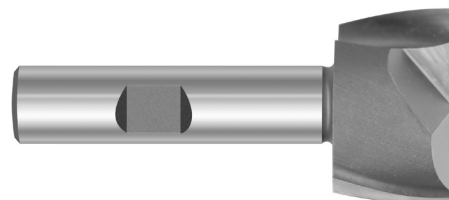


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
SRR-4	1/8	3/8	3/8	3-1/16	2	BAL	REG	51007	\$25.55	\$28.72
SRR-6	3/16	3/8	7/16	3-1/8	2	BAL	REG	51015	\$25.55	\$28.72
SRR-7	7/32	3/8	1/2	3-1/8	2	BAL	REG	51019	\$25.55	\$28.72
SRR-8	1/4	3/8	1/2	3-1/8	2	BAL	REG	51023	\$25.55	\$28.72
SRR-9	9/32	3/8	9/16	3-1/8	2	BAL	REG	51027	\$25.55	\$28.72
SRR-10	5/16	3/8	9/16	3-1/8	2	BAL	REG	51031	\$25.55	\$28.72
SRR-12 *	3/8	3/8	9/16	3-1/8	2	BAL	REG	51039	\$25.55	\$28.72
SRR-14	7/16	1/2	13/16	3-3/4	2	BAL	REG	51043	\$35.96	\$39.80
SRR-16 *	1/2	1/2	13/16	3-3/4	2	BAL	REG	51047	\$35.96	\$39.80
SRR-18	9/16	5/8	1-1/8	4-1/2	2	BAL	REG	51049	\$45.48	\$52.64
SRR-20 *	5/8	5/8	1-1/8	4-1/2	2	BAL	REG	51051	\$49.24	\$56.40
SRR-24 *	3/4	3/4	1-5/16	5	2	BAL	REG	51055	\$62.40	\$71.91
SRR-32 *	1	1	1-5/8	5-7/8	2	BAL	REG	51063	\$94.72	\$109.48

* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

2 FLUTE BRIDGEPORT END MILL M-7 HSS

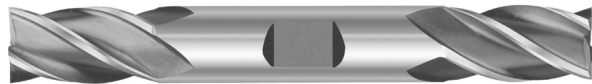
O.D
Tolerance
+.0000-.0015



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
STG-24	3/4	1/2	3/4	2-3/4	2	CC	STUB	54005	\$30.07	\$45.71
STG-32	1	1/2	3/4	2-3/4	2	CC	STUB	54017	\$42.22	\$60.81
STG-32B	1	3/4	3/4	3	2	CC	STUB	54029	\$43.22	\$54.68
STG-36A	1-1/8	5/8	3/4	2-7/8	2	CC	STUB	54041	\$64.90	\$78.55
STG-40	1-1/4	1/2	3/4	2-3/4	2	CC	STUB	54053	\$68.41	\$82.06
STG-40B	1-1/4	3/4	3/4	3	2	CC	STUB	54065	\$68.41	\$82.06
STG-44A	1-3/8	5/8	3/4	2-7/8	2	CC	STUB	54071	\$70.72	\$87.31
STG-44B	1-3/8	3/4	3/4	3	2	CC	STUB	54077	\$70.72	\$87.31
STG-48A	1-1/2	5/8	3/4	2-7/8	2	CC	STUB	54083	\$76.73	\$93.31
STG-48B	1-1/2	3/4	3/4	3	2	CC	STUB	54089	\$76.73	\$93.31

4 FLUTE DOUBLE END NON C/C M-7 HSS

O.D
Tolerance
+.0015-.0000

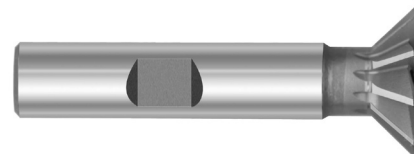


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiN PRICE
DB-4	1/8	3/8	3/8	3-1/16	4	NCC	REG	15504	\$13.03	\$16.19
DB-4X	1/8	3/8	5/8	3-9/16	4	NCC	REG	15505	\$15.53	\$18.70
DB-5	5/32	3/8	7/16	3-1/8	4	NCC	REG	15508	\$13.53	\$16.69
DB-6	3/16	3/8	1/2	3-1/4	4	NCC	REG	15512	\$13.03	\$16.19
DB-6X	3/16	3/8	7/8	4-1/8	4	NCC	REG	15513	\$15.53	\$19.80
DB-7	7/32	3/8	9/16	3-1/4	4	NCC	REG	15516	\$13.53	\$16.69
DB-8	1/4	3/8	5/8	3-3/8	4	NCC	REG	15520	\$12.78	\$15.93
DB-9	9/32	3/8	11/16	3-3/8	4	NCC	REG	15524	\$13.53	\$16.69
DB-10	5/16	3/8	3/4	3-1/2	4	NCC	REG	15528	\$12.78	\$15.93
DB-11	11/32	3/8	3/4	3-1/2	4	NCC	REG	15532	\$13.53	\$16.69
DB-12 *	3/8	3/8	3/4	3-1/2	4	NCC	REG	15536	\$12.78	\$15.93
DB-13	13/32	1/2	1	4-1/8	4	NCC	REG	15540	\$18.92	\$24.64
DB-14	7/16	1/2	1	4-1/8	4	NCC	REG	15544	\$18.41	\$24.15
DB-16 *	1/2	1/2	1	4-1/8	4	NCC	REG	15552	\$18.41	\$24.15
DB-18	9/16	5/8	1-3/8	5	4	NCC	REG	15556	\$26.81	\$35.13
DB-20 *	5/8	5/8	1-3/8	5	4	NCC	REG	15560	\$26.81	\$35.13
DB-24 *	3/4	3/4	1-5/8	5-5/8	4	NCC	REG	15568	\$33.83	\$43.35
DB-32 *	1	1	1-7/8	6-3/8	4	NCC	REG	15584	\$51.99	\$66.77

* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

4, 6 FLUTE STANDARD "CENTER CUTTING" M-7 HSS

O.D
Tolerance
+.010-.000

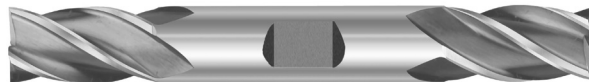


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiN PRICE
45° INC. ANGLE										
DT-12-45	3/8	3/8	1/8	2-1/8	6	NCC	RAD	20500	\$36.71	\$39.87
DT-16-45	1/2	3/8	1/8	2-1/8	8	NCC	RAD	20510	\$39.84	\$43.38
DT-32-45	1	1/2	1/4	2-1/2	10	NCC	RAD	20525	\$49.87	\$59.57
DT-44-45	1-3/8	5/8	3/8	2-7/8	10	NCC	RAD	20530	\$72.92	\$88.81
DT-44-45A	1-3/8	1/2	3/8	2-7/8	10	NCC	RAD	20540	\$72.92	\$88.81
DT-60-45	1-7/8	7/8	1/2	3-1/4	12	NCC	RAD	20550	\$158.24	\$181.74
DT-80-45	2-1/2	1	3/4	3-3/4	12	NCC	RAD	20570	\$223.14	\$261.63
60° INC. ANGLE										
DT-12-60	3/8	3/8	3/16	2-1/8	6	NCC	RAD	21015	\$36.71	\$39.87
DT-16-60	1/2	3/8	7/32	2-1/8	8	NCC	RAD	21025	\$39.84	\$43.38
DT-24-60	3/4	3/8	5/16	2-1/8	8	NCC	RAD	21035	\$46.49	\$52.21
DT-32-60	1	1/2	1/4	2-1/2	10	NCC	RAD	21040	\$49.87	\$59.57
DT-44-60	1-3/8	5/8	9/16	2-7/8	10	NCC	RAD	21045	\$72.67	\$88.56
DT-60-60	1-7/8	7/8	13/16	3-1/4	12	NCC	RAD	21065	\$158.24	\$181.74
DT-72-60	2-1/4	1	1-1/16	3-3/4	12	NCC	RAD	21075	\$188.56	\$227.04
DT-12-60M	3/8	3/8	3/16	2-1/8	6	NCC	RAD	21210	\$44.86	\$50.38
DT-24-60M	3/4	3/8	5/16	2-1/8	8	NCC	RAD	21230	\$56.76	\$66.77

GREEN SHADED AREA REPRESENTS TIALN

4 FLUTE DOUBLE END "CENTER CUTTING" M-7 HSS

O.D
Tolerance
+.0000-.0015

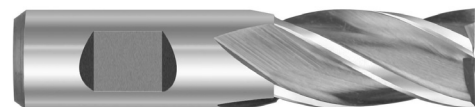


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
JB-4	1/8	3/8	3/8	3-1/16	4	CC	REG	25006	\$16.67	\$19.82
JB-6	3/16	3/8	1/2	3-1/4	4	CC	REG	25012	\$16.67	\$19.82
JB-8	1/4	3/8	5/8	3-3/8	4	CC	REG	25018	\$16.67	\$19.82
JB-10	5/16	3/8	3/4	3-1/2	4	CC	REG	25024	\$16.67	\$19.82
JB-12 *	3/8	3/8	3/4	3-1/2	4	CC	REG	25030	\$16.67	\$19.82
JB-16 *	1/2	1/2	1	4-1/8	4	CC	REG	25036	\$25.93	\$31.66
JB-20 *	5/8	5/8	1-3/8	5	4	CC	REG	25042	\$33.07	\$41.39
JB-24 *	3/4	3/4	1-5/8	5-5/8	4	CC	REG	25048	\$41.59	\$51.12
JB-28 *	7/8	7/8	1-7/8	6-1/8	4	CC	REG	25054	\$53.87	\$67.63
JB-32 *	1	1	1-7/8	6-3/8	4	CC	REG	25060	\$64.77	\$79.55

* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

4, 6 FLUTE STANDARD "CENTER CUTTING" M-7 HSS

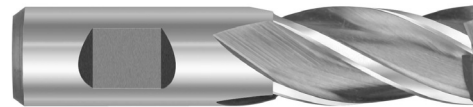
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
JF-4	1/8	3/8	3/8	2-5/16	4	CC	REG	26004	\$12.53	\$15.68
JF-5	5/32	3/8	7/16	2-3/8	4	CC	REG	26008	\$12.53	\$15.68
JF-6	3/16	3/8	1/2	2-3/8	4	CC	REG	26010	\$12.53	\$15.68
JF-7	7/32	3/8	5/8	2-1/2	4	CC	REG	26012	\$13.16	\$16.31
JF-8	1/4	3/8	5/8	2-1/2	4	CC	REG	26014	\$12.03	\$15.19
JF-9	9/32	3/8	5/8	2-1/2	4	CC	REG	26016	\$13.29	\$16.44
JF-10	5/16	3/8	3/4	2-1/2	4	CC	REG	26018	\$12.03	\$15.19
JF-11	11/32	3/8	3/4	2-1/2	4	CC	REG	26020	\$13.29	\$16.44
JF-12	3/8	3/8	3/4	2-1/2	4	CC	REG	26022	\$12.03	\$15.19
JF-13	13/32	3/8	3/4	2-1/2	4	CC	REG	26023	\$18.04	\$21.57
JF-14	7/16	3/8	1	2-11/16	4	CC	REG	26024	\$17.16	\$20.70
JF-16	1/2	1/2	1-1/4	3-1/4	4	CC	REG	26026	\$17.67	\$21.50
JF-17	17/32	1/2	1-3/8	3-3/8	4	CC	REG	26028	\$22.17	\$27.85
JF-18	9/16	1/2	1-3/8	3-3/8	4	CC	REG	26029	\$24.18	\$29.86
JF-20	5/8	5/8	1-5/8	3-3/4	4	CC	REG	26030	\$22.17	\$27.85
JF-22	11/16	5/8	1-5/8	3-3/4	4	CC	REG	26034	\$24.18	\$30.92
JF-24Y	3/4	3/4	1-5/8	3-7/8	4	CC	REG	26038	\$25.55	\$34.04
JF-26	13/16	3/4	1-7/8	4-1/8	4	CC	REG	26040	\$31.45	\$43.04
JF-28	7/8	7/8	1-7/8	4-1/8	4	CC	REG	26042	\$32.20	\$43.79
JF-30	15/16	7/8	1-7/8	4-1/8	4	CC	REG	26044	\$35.71	\$47.59
JF-32Y	1	1	2	4-1/2	4	CC	REG	26046	\$38.84	\$50.72
JF-36	1-1/8	1	2	4-1/2	4	CC	REG	26050	\$53.74	\$68.96
JF-36-6	1-1/8	1	2	4-1/2	6	CC	REG	26054	\$53.74	\$68.96
JF-40	1-1/4	1	2	4-1/2	6	CC	REG	26058	\$58.89	\$74.10
JF-40Y	1-1/4	1-1/4	2	4-1/2	6	CC	REG	26060	\$56.13	\$71.34
JF-40Z	1-1/4	1-1/4	2	4-1/2	4	CC	REG	26062	\$56.13	\$71.34
JF-48	1-1/2	1	2	4-1/2	6	CC	REG	26066	\$77.77	\$95.99
JF-48X	1-1/2	1-1/4	2	4-1/2	6	CC	REG	26068	\$72.80	\$91.02
JF-48Y	1-1/2	1-1/4	2	4-1/2	4	CC	REG	26070	\$72.15	\$90.36
JF-56	1-3/4	1-1/4	2	4-1/2	6	CC	REG	26074	\$89.02	\$111.90
JF-64A	2	1-1/4	2	4-1/2	4	CC	REG	26078	\$104.43	\$131.86

4 OR MORE FLUTE STANDARD "CENTER CUTTING" M-7 HSS

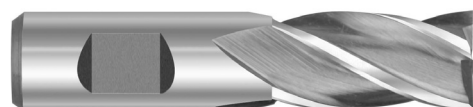
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Tolerance
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
JFM-32	1	1	3	5-1/2	4	CC	MED	29010	\$52.12	\$65.10
JFM-40X	1-1/4	1-1/4	3	5-1/2	6	CC	MED	29030	\$70.54	\$87.32
JFL-8	1/4	3/8	1-1/4	3-1/8	4	CC	LONG	27504	\$14.28	\$17.45
JFL-10	5/16	3/8	1-3/8	3-1/8	4	CC	LONG	27510	\$14.28	\$17.45
JFL-12	3/8	3/8	1-1/2	3-1/4	4	CC	LONG	27516	\$13.65	\$16.82
JFL-16	1/2	1/2	2	4	4	CC	LONG	27522	\$19.04	\$24.77
JFL-20	5/8	5/8	2-1/2	4-5/8	4	CC	LONG	27528	\$26.69	\$33.85
JFL-24	3/4	3/4	3	5-1/4	4	CC	LONG	27534	\$32.70	\$42.22
JFL-28	7/8	7/8	3-1/2	5-3/4	4	CC	LONG	27540	\$40.72	\$53.01
JFL-32	1	1	4	6-1/2	4	CC	LONG	27546	\$54.75	\$69.52
JFL-40	1-1/4	1	4	6-1/2	6	CC	LONG	27552	\$85.20	\$104.67
JFL-40Y	1-1/4	1-1/4	4	6-1/2	4	CC	LONG	27558	\$85.20	\$104.67
JFL-56	1-3/4	1-1/4	4	6-1/2	6	CC	LONG	27570	\$136.46	\$164.48
JFX-6	3/16	3/8	1-1/4	3-1/16	4	CC	X-LONG	29506	\$17.92	\$21.07
JFX-8	1/4	3/8	1-3/4	3-1/2	4	CC	X-LONG	29508	\$16.78	\$19.95
JFX-8X	1/4	3/8	2-1/4	4-1/8	4	CC	X-LONG	29510	\$20.29	\$24.56
JFX-12	3/8	3/8	2-1/2	4-1/4	4	CC	X-LONG	29516	\$17.92	\$22.17
JFX-12X	3/8	3/8	3-1/4	5	4	CC	X-LONG	29517	\$22.68	\$29.63
JFX-16	1/2	1/2	3	5	4	CC	X-LONG	29520	\$22.93	\$29.88
JFX-16X	1/2	1/2	4	6	4	CC	X-LONG	29522	\$29.44	\$37.76
JFX-20	5/8	5/8	4	6-1/8	4	CC	X-LONG	29524	\$33.07	\$42.47
JFX-20X	5/8	5/8	5	7-1/8	4	CC	X-LONG	29526	\$41.72	\$52.80
JFX-24	3/4	3/4	4	6-1/4	4	CC	X-LONG	29528	\$38.84	\$50.46
JFX-24X	3/4	3/4	6	8-1/4	4	CC	X-LONG	29530	\$47.23	\$62.34
JFX-28	7/8	7/8	5	7-1/4	4	CC	X-LONG	29532	\$50.99	\$65.76
JFX-32	1	1	6	8-1/2	4	CC	X-LONG	29536	\$66.90	\$83.88
JFX-32X	1	1	8	10-1/2	4	CC	X-LONG	29538	\$87.32	\$109.70
JFX-40X	1-1/4	1-1/4	6	8-1/2	4	CC	X-LONG	29540	\$100.23	\$124.72
JFX-48	1-1/2	1-1/4	8	10-1/2	6	CC	X-LONG	29544	\$165.09	\$196.62
LONG REACH END MILL										
JFXL-16	1/2	1/2	1-1/4	6	4	CC	L-REACH	30619	\$37.46	\$45.78
JFXL-20	5/8	5/8	1-1/2	7-1/8	4	CC	L-REACH	30625	\$48.86	\$59.94
JFXL-24	3/4	3/4	2	8-1/4	4	CC	L-REACH	30637	\$66.27	\$81.38
JFXL-32	1	1	2-1/2	10-1/4	4	CC	L-REACH	30659	\$108.62	\$131.00

4 OR MORE FLUTE STANDARD "CENTER CUTTING" M-42 COBALT

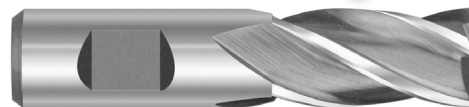
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
JF-4M	1/8	3/8	3/8	2-5/16	4	CC	REG	26507	\$12.85	\$18.37
JF-6M	3/16	3/8	1/2	2-3/8	4	CC	REG	26511	\$12.85	\$18.37
JF-8M	1/4	3/8	5/8	2-1/2	4	CC	REG	26515	\$12.85	\$18.37
JF-10M	5/16	3/8	3/4	2-1/2	4	CC	REG	26519	\$12.85	\$18.37

4 OR MORE FLUTE STANDARD "CENTER CUTTING" M-42 COBALT

O.D.
Tolerance
+.0015-.0000

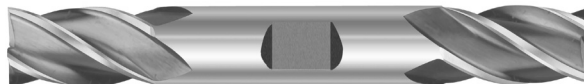


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
JF-12M	3/8	3/8	3/4	2-1/2	4	CC	REG	26523	\$12.85	\$18.37
JF-14M	7/16	3/8	1	2-11/16	4	CC	REG	26527	\$17.60	\$23.79
JF-16M	1/2	1/2	1-1/4	3-1/4	4	CC	REG	26531	\$18.30	\$25.01
JF-16M6	1/2	1/2	1-1/4	3-1/4	6	CC	REG	26535	\$18.30	\$25.01
JF-18M	9/16	1/2	1-3/8	3-3/8	4	CC	REG	26539	\$24.84	\$34.79
JF-20M	5/8	5/8	1-5/8	3-3/4	4	CC	REG	26543	\$23.78	\$33.71
JF-20M6	5/8	5/8	1-5/8	3-3/4	6	CC	REG	26547	\$27.07	\$37.00
JF-24YM	3/4	3/4	1-5/8	3-7/8	4	CC	REG	26551	\$27.07	\$41.90
JF-24YM6	3/4	3/4	1-5/8	3-7/8	6	CC	REG	26555	\$29.58	\$44.42
JF-28M	7/8	7/8	1-7/8	4-1/8	4	CC	REG	26559	\$35.57	\$55.85
JF-32YM	1	1	2	4-1/2	4	CC	REG	26563	\$40.59	\$61.37
JF-32YM6	1	1	2	4-1/2	6	CC	REG	26567	\$44.08	\$64.85
JF-32ZM	1	3/4	1-7/8	4-1/8	4	CC	REG	26568	\$43.59	\$64.36
JF-40YM	1-1/4	1-1/4	2	4-1/2	6	CC	REG	26571	\$72.58	\$99.20
JF-40ZM	1-1/4	1-1/4	2	4-1/2	4	CC	REG	26575	\$65.14	\$91.76
JF-48XM	1-1/2	1-1/4	2	4-1/2	6	CC	REG	26579	\$87.33	\$119.20
JF-64AM	2	1-1/4	2	4-1/2	4	CC	REG	26587	\$135.93	\$183.92
JF-64BM	2	1-1/4	2	4-1/2	6	CC	REG	26591	\$135.93	\$183.92
JFM-8M	1/4	3/8	3/4	2-9/16	4	CC	MED	29210	\$10.65	\$16.17
JFM-12M	3/8	3/8	1-1/8	2-7/8	4	CC	MED	29214	\$10.65	\$16.17
JFM-16M	1/2	1/2	1-1/2	3-1/2	4	CC	MED	29216	\$17.23	\$23.95
JFM-20M	5/8	5/8	1-7/8	4	4	CC	MED	29218	\$23.05	\$35.58
JFM-24YM	3/4	3/4	2	4-1/4	4	CC	MED	29220	\$35.08	\$49.91
JFM-24YM6	3/4	3/4	2	4-1/4	6	CC	MED	29222	\$35.08	\$49.91
JFM-32M	1	1	3	5-1/2	4	CC	MED	29224	\$54.12	\$76.84
JFM-32M6	1	1	3	5-1/2	6	CC	MED	29226	\$62.63	\$85.35
JFM-40M	1-1/4	1-1/4	3	5-1/2	4	CC	MED	29228	\$82.73	\$112.12
JFM-40M6	1-1/4	1-1/4	3	5-1/2	6	CC	MED	29230	\$82.73	\$112.12
JFM-48M6	1-1/2	1-1/4	3	5-1/2	6	CC	MED	29234	\$104.46	\$141.54
JFL-8M	1/4	3/8	1-1/4	3-1/8	4	CC	LONG	28007	\$15.74	\$21.28
JFL-10M	5/16	3/8	1-3/8	3-1/8	4	CC	LONG	28011	\$15.74	\$21.28
JFL-12M	3/8	3/8	1-1/2	3-1/4	4	CC	LONG	28015	\$15.74	\$21.28
JFL-14M	7/16	1/2	1-3/4	3-3/4	4	CC	LONG	28019	\$24.68	\$31.39
JFL-16M	1/2	1/2	2	4	4	CC	LONG	28023	\$23.30	\$33.30
JFL-16M6	1/2	1/2	2	4	6	CC	LONG	28027	\$23.30	\$33.30
JFL-20M	5/8	5/8	2-1/2	4-5/8	4	CC	LONG	28031	\$31.03	\$43.56
JFL-20M6	5/8	5/8	2-1/2	4-5/8	6	CC	LONG	28035	\$31.03	\$43.56
JFL-24M	3/4	3/4	3	5-1/4	4	CC	LONG	28039	\$34.61	\$51.25
JFL-24M6	3/4	3/4	3	5-1/4	6	CC	LONG	28043	\$40.10	\$56.76
JFL-28M	7/8	7/8	3-1/2	5-3/4	4	CC	LONG	28047	\$51.13	\$72.64
JFL-32M	1	1	4	6-1/2	4	CC	LONG	28051	\$62.63	\$88.48
JFL-32M6	1	1	4	6-1/2	6	CC	LONG	28055	\$71.14	\$96.98
JFL-40M	1-1/4	1-1/4	4	6-1/2	4	CC	LONG	28059	\$85.15	\$119.24
JFL-40XM	1-1/4	1-1/4	4	6-1/2	6	CC	LONG	28063	\$93.75	\$127.84
JFL-48M	1-1/2	1-1/4	4	6-1/2	6	CC	LONG	28067	\$107.69	\$147.34
JFL-64AM	2	1-1/4	4	6-1/2	4	CC	LONG	28071	\$169.41	\$228.67
JFL-64BM	2	1-1/4	4	6-1/2	6	CC	LONG	28075	\$169.41	\$228.67
JFL-64-4M	2	2	4	7-3/4	6	CC	LONG	28079	\$254.82	\$324.25
JFL-64-6M	2	2	6	9-3/4	6	CC	LONG	28083	\$305.03	\$399.01
JFX-16M	1/2	1/2	3	5	4	CC	X-LONG	30017	\$26.10	\$38.26
JFX-20M	5/8	5/8	4	6-1/8	4	CC	X-LONG	30025	\$37.11	\$53.57
JFX-24M	3/4	3/4	4	6-1/4	4	CC	X-LONG	30033	\$45.14	\$65.47
JFX-24M6	3/4	3/4	4	6-1/4	6	CC	X-LONG	30037	\$51.13	\$71.45
JFX-32M	1	1	6	8-1/2	4	CC	X-LONG	30045	\$76.64	\$106.35
JFX-32M6	1	1	6	8-1/2	6	CC	X-LONG	30049	\$85.15	\$114.86
JFX-40M	1-1/4	1-1/4	6	8-1/2	6	CC	X-LONG	30053	\$130.29	\$173.16
JFX-40M4	1-1/4	1-1/4	6	8-1/2	4	CC	X-LONG	30057	\$130.29	\$173.16

* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

4 FLUTE DOUBLE END "CENTER CUTTING" M-42 COBALT

O.D
Tolerance
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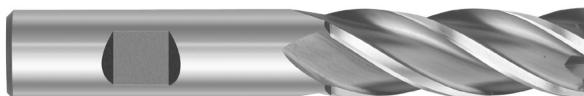


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
JXB-4M	1/8	3/8	3/16	2-3/4	4	CC	STUB	30107	\$16.10	\$21.63
JXB-5M	5/32	3/8	15/64	2-3/4	4	CC	STUB	30113	\$16.10	\$21.63
JXB-6M	3/16	3/8	9/32	2-3/4	4	CC	STUB	30119	\$16.10	\$21.63
JXB-7M	7/32	3/8	21/64	2-7/8	4	CC	STUB	30125	\$16.10	\$21.63
JXB-8M	1/4	3/8	3/8	2-7/8	4	CC	STUB	30131	\$16.10	\$21.63
JB-4M	1/8	3/8	3/8	3-1/16	4	CC	REG	25508	\$17.49	\$23.01
JB-5M	5/32	3/8	7/16	3-1/8	4	CC	REG	25510	\$18.76	\$24.28
JB-6M	3/16	3/8	1/2	3-1/4	4	CC	REG	25514	\$17.49	\$23.01
JB-6AM	13/64	3/8	9/16	3-1/4	4	CC	REG	25515	\$22.06	\$27.58
JB-7M	7/32	3/8	9/16	3-1/4	4	CC	REG	25516	\$18.76	\$24.28
JB-8M	1/4	3/8	5/8	3-3/8	4	CC	REG	25520	\$17.49	\$23.01
JB-10M	5/16	3/8	3/4	3-1/2	4	CC	REG	25526	\$17.49	\$23.01
JB-12M *	3/8	3/8	3/4	3-1/2	4	CC	REG	25532	\$17.49	\$23.01
JB-12AM	25/64	1/2	1	4-1/8	4	CC	REG	25533	\$32.52	\$42.53
JB-13M	13/32	1/2	1	4-1/8	4	CC	REG	25534	\$27.94	\$37.95
JB-14M	7/16	1/2	1	4-1/8	4	CC	REG	25536	\$26.10	\$36.11
JB-16M *	1/2	1/2	1	4-1/8	4	CC	REG	25538	\$26.75	\$36.76
JB-17M	17/32	5/8	1-3/8	5	4	CC	REG	25539	\$43.60	\$58.14
JB-18M	9/16	5/8	1-3/8	5	4	CC	REG	25540	\$35.08	\$49.63
JB-19M	19/32	5/8	1-3/8	5	4	CC	REG	25542	\$43.60	\$58.14
JB-20M *	5/8	5/8	1-3/8	5	4	CC	REG	25544	\$34.11	\$48.66
JB-21M	21/32	3/4	1-5/8	5-5/8	4	CC	REG	25546	\$55.69	\$72.34
JB-24M *	3/4	3/4	1-5/8	5-5/8	4	CC	REG	25550	\$43.11	\$59.76
JB-32M *	1	1	1-7/8	6-3/8	4	CC	REG	25562	\$71.14	\$96.98

* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

4 FLUTE "METRIC FLUTES" NON C/C M-42 COBALT

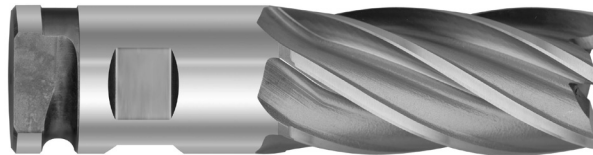
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
MSF-4A	4.5MM	3/8	1/2	2-3/8	4	NCC	REG	30903	\$10.78	\$15.42
MSF-5	5MM	3/8	5/8	2-1/2	4	NCC	REG	30904	\$10.78	\$16.30
MSF-6	6MM	3/8	5/8	2-1/2	4	NCC	REG	30910	\$10.78	\$16.30
MSF-7	7MM	3/8	5/8	2-1/2	4	NCC	REG	30916	\$10.78	\$16.30
MSF-8	8MM	3/8	3/4	2-1/2	4	NCC	REG	30922	\$10.78	\$16.30
MSF-9	9MM	3/8	3/4	2-1/2	4	NCC	REG	30928	\$10.78	\$16.30
MSF-10	10MM	3/8	1	2-11/16	4	NCC	REG	30934	\$13.53	\$19.72
MSF-11	11MM	3/8	1	2-11/16	4	NCC	REG	30940	\$14.28	\$20.47
MSF-11A	11.5MM	3/8	1	2-11/16	4	NCC	REG	30943	\$14.28	\$20.47
MSF-12	12MM	3/8	1	2-11/16	4	NCC	REG	30946	\$14.54	\$20.72
MSF-13	13MM	1/2	1-3/8	3-3/8	4	NCC	REG	30952	\$16.67	\$26.59
MSF-14	14MM	1/2	1-3/8	3-3/8	4	NCC	REG	30958	\$16.67	\$26.59
MSF-15	15MM	1/2	1-3/8	3-3/8	4	NCC	REG	30964	\$17.41	\$27.35
MSF-16	16MM	5/8	1-5/8	3-3/4	4	NCC	REG	30967	\$19.92	\$31.71
MSF-18	18MM	3/4	1-5/8	3-7/8	4	NCC	REG	30973	\$22.42	\$37.26
MSF-20	20MM	3/4	1-7/8	4-1/8	4	NCC	REG	30979	\$28.69	\$48.98

M-7 HSS & M-42 COBALT 4 OR MORE FLUTES HEAVY DUTY SURE-LOCK NCC

O.D
Tolerance
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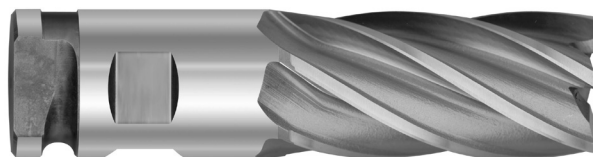
CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
PLC-64-2	2	2*	2	5-3/4	6	NCC	REG	32504	\$148.62	\$178.98
PLC-64Y-2	2	2*	2	5-3/4	4	NCC	REG	32007	\$166.66	\$197.01
PLC-64-3	2	2*	3	6-3/4	6	NCC	REG	32508	\$148.62	\$182.49
PLC-64-4	2	2*	4	7-3/4	6	NCC	REG	32512	\$149.15	\$188.83
PLC-64Y-4	2	2*	4	7-3/4	4	NCC	REG	32021	\$146.53	\$186.22
PLC-64-6	2	2*	6	9-3/4	6	NCC	REG	32520	\$183.65	\$237.34
PLC-64Y-6	2	2*	6	9-3/4	4	NCC	REG	32035	\$181.04	\$234.73
PLC-64-8	2	2*	8	11-3/4	6	NCC	LONG	32524	\$218.03	\$292.73
PLC-64Y-8	2	2*	8	11-3/4	4	NCC	LONG	32042	\$215.42	\$290.12
PLC-64-10	2	2*	10	13-3/4	6	NCC	X-LONG	32530	\$279.59	\$372.98
PLC-64-12	2	2*	12	15-3/4	6	NCC	X-LONG	32534	\$307.43	\$447.51
PLC-80-4	2-1/2	2*	4	7-5/8	6	NCC	REG	32538	\$232.15	\$318.52
PLC-80X-4	2-1/2	2-1/2*	4	8	6	NCC	REG	32550	\$221.82	\$333.88
PLC-80X-6	2-1/2	2-1/2*	6	10	6	NCC	REG	32554	\$276.32	\$421.07
PLC-80X-8	2-1/2	2-1/2*	8	12	6	NCC	X-LONG	32558	\$324.69	\$502.12
PLC-80X-10	2-1/2	2-1/2*	10	14	6	NCC	X-LONG	32562	\$363.12	\$561.56
PLC-80X-12	2-1/2	2-1/2*	12	16	6	NCC	X-LONG	32566	\$411.49	\$656.61
PLC-80Y-6	2-1/2	2*	6	9-5/8	4	NCC	REG	32063	\$284.16	\$412.57
PLC-80-8	2-1/2	2*	8	11-5/8	6	NCC	LONG	32546	\$318.80	\$482.23
PLC-80Y-8	2-1/2	2*	8	11-5/8	4	NCC	LONG	32070	\$272.40	\$435.83
PLC-80XY-4	2-1/2	2-1/2*	4	8	4	NCC	REG	32077	\$233.72	\$320.09
PLC-80XY-6	2-1/2	2-1/2*	6	10	4	NCC	REG	32084	\$270.06	\$414.79
PLC-80XY-8	2-1/2	2-1/2*	8	12	4	NCC	LONG	32091	\$318.54	\$495.98
PLC-96-4	3	2-1/2*	4	7-5/8	8	NCC	REG	33510	\$308.74	\$395.12
PLC-96-5	3	2-1/2*	5	8-5/8	8	NCC	REG	33520	\$351.10	\$463.15
PLC-96B-5	3	2-1/2*	5	8-5/8	6	NCC	REG	32574	\$344.82	\$456.88
PLC-96-6	3	2-1/2*	6	9-5/8	8	NCC	REG	33530	\$384.81	\$513.22
PLC-96B-6	3	2-1/2*	6	9-5/8	6	NCC	REG	32578	\$396.45	\$524.85
PLC-96-8	3	2-1/2*	8	11-5/8	8	NCC	REG	33540	\$467.95	\$631.37
PLC-96B-8	3	2-1/2*	8	11-5/8	6	NCC	REG	32582	\$481.54	\$644.97
PLC-96-10	3	2-1/2*	10	13-5/8	8	NCC	LONG	33550	\$576.84	\$768.27
PLC-96-12	3	2-1/2*	12	15-5/8	8	NCC	LONG	33560	\$606.64	\$829.64
PLC-64-4M	2	2*	4	7-3/4	6	NCC	X-LONG	33015	\$164.14	\$233.59
PLC-64Y-6M	2	2*	6	9-3/4	4	NCC	X-LONG	33042	\$214.38	\$308.35

* HEAVY DUTY SURE-LOCK SHANK

GREEN SHADED AREA REPRESENTS TIALN

4 OR MORE FLUTES HEAVY DUTY SURE-LOCK C/C M-7 HSS

O.D
Tolerance
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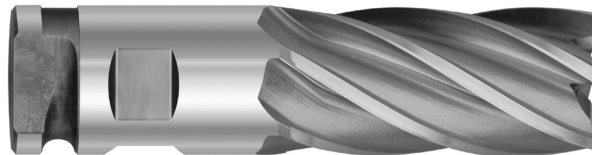


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIALN PRICE
PLCJ-64Y-4	2	2*	4	7-3/4	4	CC	REG	34009	\$175.94	\$215.63
PLCJ-64-6	2	2*	6	9-3/4	6	CC	REG	34511	\$197.51	\$291.57
PLCJ-64Y-6	2	2*	6	9-3/4	4	CC	REG	34018	\$215.02	\$268.71
PLCJ-64-8	2	2*	8	11-3/4	6	CC	LONG	34517	\$235.68	\$366.53
PLCJ-64Y-8	2	2*	8	11-3/4	4	CC	LONG	34027	\$254.63	\$388.48
PLCJ-64-10	2	2*	10	13-3/4	6	CC	X-LONG	34523	\$309.79	\$473.35

* HEAVY DUTY SURE-LOCK SHANK

4 OR MORE FLUTES HEAVY DUTY SURE-LOCK M-7 HSS "CENTER CUTTING"

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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiN PRICE
PLCJ-80-4	2-1/2	2*	4	7-5/8	6	CC	REG	34529	\$268.22	\$354.60
PLCJ-80X-4	2-1/2	2-1/2*	4	8	6	CC	REG	34547	\$257.76	\$369.83
PLCJ-80XY-4	2-1/2	2-1/2*	4	8	4	CC	REG	34055	\$292.66	\$404.73
PLCJ-80Y-4	2-1/2	2*	4	7-5/8	4	CC	REG	34036	\$292.66	\$379.04
PLCJ-80-6	2-1/2	2*	6	9-5/8	6	CC	REG	34535	\$320.38	\$448.78
PLCJ-80XY-6	2-1/2	2-1/2*	6	10	4	CC	REG	34072	\$349.26	\$494.01
PLCJ-80XY-8	2-1/2	2-1/2*	8	12	4	CC	LONG	34081	\$391.09	\$568.53
PLCJ-80Y-8	2-1/2	2*	8	11-5/8	4	CC	LONG	34054	\$391.09	\$554.51
PLCJ-80X-8	2-1/2	2-1/2*	8	12	6	CC	X-LONG	34559	\$361.03	\$538.46
PLCJ-80X-10	2-1/2	2-1/2*	10	14	6	CC	X-LONG	34565	\$393.19	\$591.62
PLCJ-80X-12	2-1/2	2-1/2*	12	16	6	CC	X-LONG	34571	\$441.41	\$686.54
PLCJ-96B-4	3	2-1/2*	4	7-5/8	6	CC	REG	34577	\$359.98	\$446.36
PLCJ-96B-6	3	2-1/2*	6	9-5/8	6	CC	REG	34583	\$438.54	\$566.94

* HEAVY DUTY SURE-LOCK SHANK

4 & 6 FLUTE BALL END M-7 HSS

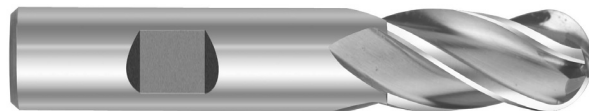
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Tolerance
+.0015-.0000



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiN PRICE
RK-8	1/4	3/8	5/8	2-1/2	4	BAL	REG	37002	\$22.06	\$25.21
RK-8B	1/4	3/8	1-1/4	3-1/16	4	BAL	LONG	37005	\$25.19	\$28.34
RK-10	5/16	3/8	3/4	2-1/2	4	BAL	REG	37011	\$22.06	\$25.21
RK-12	3/8	3/8	3/4	2-1/2	4	BAL	REG	37017	\$24.68	\$27.84
RK-12B	3/8	3/8	1-1/2	3-1/4	4	BAL	MED	37020	\$28.57	\$31.72
RK-12D	3/8	3/8	2-1/2	4-1/4	4	BAL	LONG	37026	\$31.32	\$35.58
RK-16	1/2	1/2	1	3	4	BAL	X-LONG	37029	\$25.93	\$29.77
RK-16A	1/2	1/2	1-1/2	3-1/2	4	BAL	MED	37032	\$38.97	\$42.80
RK-16B	1/2	1/2	2	4	4	BAL	LONG	37035	\$33.83	\$39.55
RK-16D	1/2	1/2	3	5	4	BAL	X-LONG	37041	\$44.61	\$51.56
RK-16E	1/2	1/2	1-1/4	3-1/4	4	BAL	MED	37042	\$28.57	\$32.40
RK-20	5/8	5/8	1-1/4	3-3/8	4	BAL	REG	37044	\$41.21	\$46.90
RK-24	3/4	3/4	1-1/2	3-3/4	4	BAL	REG	37056	\$49.24	\$55.98

4 & 6 FLUTE BALL END M-7 HSS

O.D
Tolerance
+.0015-.0000



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
RK-24B	3/4	3/4	3	5-1/4	4	BAL	REG	37062	\$59.89	\$69.40
RK-24C	3/4	1	3-3/4	6	4	BAL	REG	37065	\$70.29	\$81.90
RK-24D	3/4	3/4	4-1/2	6-3/4	4	BAL	REG	37068	\$74.68	\$86.28
RK-28	7/8	7/8	1-7/8	4-1/8	4	BAL	REG	37070	\$56.13	\$67.71
RK-32	1	1	2	4-1/2	4	BAL	REG	37071	\$84.57	\$96.45
RK-32A	1	1	3	5-1/2	4	BAL	REG	37074	\$90.08	\$103.07
RK-32B	1	1	4	6-1/2	4	BAL	REG	37077	\$96.72	\$111.49
RK-32D	1	1	6	8-1/2	4	BAL	REG	37080	\$119.40	\$136.37
RK-40	1-1/4	1-1/4	2	4-1/2	4	BAL	REG	37083	\$99.73	\$114.93
RK-40A	1-1/4	1-1/4	3	5-1/2	4	BAL	REG	37086	\$113.39	\$130.17
RK-40B	1-1/4	1-1/4	4	6-1/2	6	BAL	REG	37089	\$126.92	\$146.40
RK-40C	1-1/4	1-1/4	6	8-1/2	6	BAL	REG	37092	\$165.51	\$190.00
RK-48	1-1/2	1-1/4	2	4-1/2	6	BAL	REG	37094	\$141.96	\$160.16
RK-48A	1-1/2	1-1/4	4	6-1/2	6	BAL	REG	37096	\$152.67	\$175.33
RK-48B	1-1/2	1-1/4	6	8-1/2	6	BAL	REG	37098	\$183.91	\$211.80
PLD-64-4	2	2*	4	7-3/4	6	BAL	REG	35005	\$222.35	\$262.03
PLD-64-5	2	2*	5	8-3/4	6	BAL	REG	35007	\$267.70	\$314.39
PLD-64-6	2	2*	6	9-3/4	6	BAL	REG	35010	\$273.98	\$327.67
PLD-64-8	2	2*	8	11-3/4	6	BAL	LONG	35015	\$322.34	\$397.05
PLD-80-4	2-1/2	2*	4	7-5/8	6	BAL	REG	35020	\$268.22	\$354.60
PLD-80-5	2-1/2	2*	5	8-5/8	6	BAL	REG	35022	\$320.38	\$432.44
PLD-80-6	2-1/2	2*	6	9-5/8	6	BAL	REG	35025	\$320.38	\$448.78
EXTRA LONG REACH										
RKXL-16	1/2	1/2	1-1/4	6	4	BAL	XL-REACH	37225	\$48.73	\$57.05
RKXL-24	3/4	3/4	2	8-1/4	4	BAL	XL-REACH	37239	\$85.95	\$101.05
RKXL-32	1	1	2-1/2	10-1/4	4	BAL	XL-REACH	37261	\$140.95	\$163.32

* HEAVY DUTY SURE-LOCK SHANK

4 & 6 FLUTE BALL END M-42 COBALT

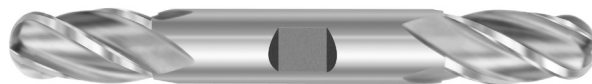
O.D
Tolerance
+.0015-.0000



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
RK-4M	1/8	3/8	3/8	2-5/16	4	BAL	REG	37508	\$22.33	\$27.85
RK-6M	3/16	3/8	1/2	2-3/8	4	BAL	REG	37516	\$22.33	\$27.85
RK-8M	1/4	3/8	5/8	2-7/16	4	BAL	REG	37524	\$22.33	\$27.85
RK-12M	3/8	3/8	3/4	2-1/2	4	BAL	REG	37540	\$25.23	\$30.75
RK-14M	7/16	3/8	1	2-11/16	4	BAL	REG	37548	\$33.07	\$39.26
RK-16M	1/2	1/2	1-1/4	3-1/4	4	BAL	REG	37556	\$29.88	\$36.59
RK-20M	5/8	5/8	1-5/8	3-3/4	4	BAL	REG	37564	\$43.72	\$53.66
RK-24M	3/4	3/4	1-5/8	3-7/8	4	BAL	REG	37572	\$52.22	\$67.05
RK-24M6	3/4	3/4	1-5/8	3-7/8	6	BAL	REG	37575	\$52.22	\$67.05
RK-32M	1	1	2	4-1/2	4	BAL	REG	37580	\$85.33	\$106.09
RK-32M6	1	1	2	4-1/2	6	BAL	REG	37582	\$85.33	\$106.09
RK-40M	1-1/4	1-1/4	2	4-1/2	6	BAL	REG	37588	\$104.86	\$131.49
RK-48M	1-1/2	1-1/4	2	4-1/2	6	BAL	REG	37596	\$142.48	\$174.34

4 FLUTE DOUBLE END BALL M-7 HSS

O.D
Tolerance
+.0000-.0015

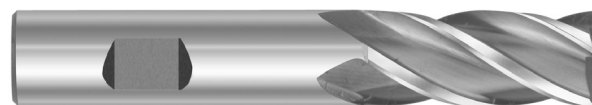


CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
RKK-4	1/8	3/8	3/8	3-1/16	4	BAL	REG	37103	\$35.58	\$38.74
RKK-5	5/32	3/8	7/16	3-1/8	4	BAL	REG	37106	\$35.58	\$38.74
RKK-6	3/16	3/8	1/2	3-1/4	4	BAL	REG	37109	\$35.58	\$38.74
RKK-8	1/4	3/8	5/8	3-3/8	4	BAL	REG	37115	\$35.58	\$38.74
RKK-10	5/16	3/8	3/4	3-1/2	4	BAL	REG	37121	\$35.58	\$38.74
RKK-12 *	3/8	3/8	3/4	3-1/2	4	BAL	REG	37127	\$35.58	\$38.74
RKK-16 *	1/2	1/2	1	4-1/8	4	BAL	REG	37130	\$46.60	\$52.34
RKK-24 *	3/4	3/4	1-5/8	5-5/8	4	BAL	REG	37136	\$88.95	\$98.48
RKK-28 *	7/8	7/8	1-7/8	6-1/8	4	BAL	REG	37139	\$112.13	\$125.89

* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

4 OR MORE FLUTE STANDARD NON "CENTER CUTTING" M-7 HSS

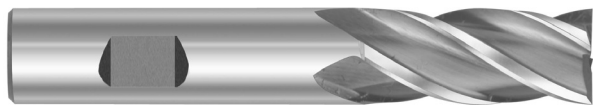
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Tolerance
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
SF-4	1/8	3/8	3/8	2-5/16	4	NCC	REG	41003	\$9.40	\$12.55
SF-7	7/32	3/8	5/8	2-1/2	4	NCC	REG	41006	\$9.53	\$12.68
SF-8	1/4	3/8	5/8	2-1/2	4	NCC	REG	41007	\$9.40	\$12.55
SF-9	9/32	3/8	5/8	2-1/2	4	NCC	REG	41008	\$9.53	\$12.68
SF-10	5/16	3/8	3/4	2-1/2	4	NCC	REG	41009	\$9.40	\$12.55
SF-12	3/8	3/8	3/4	2-1/2	4	NCC	REG	41011	\$9.40	\$12.55
SF-13	13/32	3/8	1	2-11/16	4	NCC	REG	41012	\$13.40	\$16.94
SF-14	7/16	3/8	1	2-11/16	4	NCC	REG	41013	\$12.78	\$16.31
SF-16	1/2	1/2	1-1/4	3-1/4	4	NCC	REG	41015	\$12.78	\$16.62
SF-16X	1/2	3/8	1	2-11/16	4	NCC	REG	41017	\$12.78	\$16.31
SF-17	17/32	1/2	1-3/8	3-3/8	4	NCC	REG	41018	\$16.54	\$22.21
SF-18	9/16	1/2	1-3/8	3-3/8	4	NCC	REG	41019	\$16.29	\$21.96
SF-19	19/32	1/2	1-3/8	3-3/8	4	NCC	REG	41020	\$19.80	\$25.47
SF-20	5/8	5/8	1-5/8	3-3/4	4	NCC	REG	41021	\$19.55	\$25.22
SF-20X	5/8	1/2	1-3/8	3-3/8	4	NCC	REG	41023	\$17.92	\$23.59
SF-21	21/32	5/8	1-5/8	3-3/4	4	NCC	REG	41024	\$22.42	\$29.17
SF-22	11/16	5/8	1-5/8	3-3/4	4	NCC	REG	41025	\$20.92	\$27.66
SF-22X	11/16	1/2	1-5/8	3-5/8	4	NCC	REG	41027	\$19.80	\$26.54
SF-24	3/4	5/8	1-5/8	3-3/4	4	NCC	REG	41029	\$21.43	\$28.17
SF-24X	3/4	1/2	1-5/8	3-5/8	4	NCC	REG	41031	\$21.43	\$28.17
SF-24Y	3/4	3/4	1-5/8	3-7/8	4	NCC	REG	41033	\$22.30	\$30.78
SF-25	25/32	3/4	1-7/8	4-1/8	4	NCC	REG	41034	\$29.82	\$41.40
SF-26	13/16	5/8	1-7/8	4	6	NCC	REG	41035	\$27.43	\$39.03
SF-26A	13/16	3/4	1-7/8	4-1/8	4	NCC	REG	41036	\$27.81	\$39.41
SF-28	7/8	7/8	1-7/8	4-1/8	4	NCC	REG	41039	\$27.94	\$39.52
SF-28X	7/8	5/8	1-7/8	4	6	NCC	REG	41041	\$28.32	\$39.90
SF-28Y	7/8	1/2	1-5/8	3-5/8	6	NCC	REG	41043	\$29.44	\$39.29
SF-28Z	7/8	3/4	1-7/8	4-1/8	4	NCC	REG	41045	\$29.31	\$40.91

4 OR MORE FLUTE STANDARD NON C/C M-7 HSS

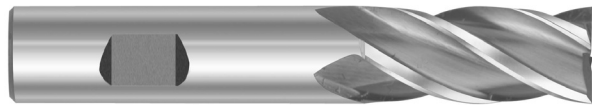
O.D.
Tolerance
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
SF-32	1	7/8	1-7/8	4-1/8	4	NCC	REG	41053	\$31.82	\$43.70
SF-32A	1	1/2	1-3/4	3-3/4	6	NCC	REG	41055	\$32.70	\$44.15
SF-32X	1	5/8	1-7/8	4	6	NCC	REG	41057	\$32.33	\$44.21
SF-32Y	1	1	2	4-1/2	4	NCC	REG	41059	\$33.70	\$45.58
SF-32Z	1	3/4	1-7/8	4-1/8	4	NCC	REG	41061	\$31.82	\$43.70
SF-34	1-1/16	1	2	4-1/2	6	NCC	REG	41062	\$53.50	\$68.71
SF-34Z	1-1/16	3/4	2	4-1/4	6	NCC	REG	41163	\$54.75	\$69.96
SF-36	1-1/8	1	2	4-1/2	6	NCC	REG	41063	\$45.86	\$61.06
SF-36Y	1-1/8	3/4	1-3/4	4	6	NCC	REG	41067	\$49.49	\$64.70
SF-38Z	1-3/16	3/4	2	4-1/4	6	NCC	REG	41169	\$59.51	\$74.72
SF-40	1-1/4	1	2	4-1/2	6	NCC	REG	41069	\$49.87	\$65.08
SF-40A	1-1/4	3/4	1-3/4	4	6	NCC	REG	41071	\$54.00	\$69.20
SF-40Z	1-1/4	1-1/4	2	4-1/2	4	NCC	REG	41077	\$58.89	\$74.10
SF-44	1-3/8	1	2	4-1/2	6	NCC	REG	41079	\$59.34	\$77.55
SF-44Z	1-3/8	3/4	2	4-1/4	6	NCC	REG	41080	\$67.97	\$86.18
SF-46	1-7/16	1	2	4-1/2	6	NCC	REG	41180	\$74.37	\$92.58
SF-48	1-1/2	1	2	4-1/2	6	NCC	REG	41081	\$66.92	\$85.14
SF-48X	1-1/2	1-1/4	2	4-1/2	6	NCC	REG	41083	\$66.92	\$85.14
SF-48Z	1-1/2	3/4	1-1/2	3-3/4	6	NCC	REG	41086	\$73.06	\$89.66
SF-52	1-5/8	1-1/4	2	4-1/2	6	NCC	REG	41087	\$71.76	\$94.63
SF-54	1-11/16	1-1/4	2	4-1/2	6	NCC	REG	41088	\$96.07	\$118.95
SF-56Z	1-3/4	3/4	2	4-1/4	6	NCC	REG	41187	\$80.65	\$103.52
SF-60	1-7/8	1-1/4	2	4-1/2	8	NCC	REG	41091	\$82.74	\$110.17
SF-62	1-15/16	1-1/4	2	4-1/2	6	NCC	REG	41092	\$108.36	\$135.78
SF-64	2	1-1/4	2	4-1/2	8	NCC	REG	41093	\$92.94	\$120.35
SF-64A	2	1-1/4	2	4-1/2	4	NCC	REG	41095	\$99.08	\$126.51
SF-64Z	2	3/4	2	4-1/4	6	NCC	REG	41096	\$92.81	\$120.23
SF-72	2-1/4	1-1/4	2	4-1/2	6	NCC	REG	41099	\$145.88	\$194.91
SF-80	2-1/2	1-1/4	2	4-1/2	6	NCC	REG	41098	\$197.12	\$246.15
SFM-32	1	1	3	5-1/2	4	NCC	MED	43508	\$43.72	\$56.71
SFM-40	1-1/4	1-1/4	3	5-1/2	4	NCC	MED	43514	\$66.15	\$82.94
SFM-40X	1-1/4	1-1/4	3	5-1/2	6	NCC	MED	43520	\$66.15	\$82.94
SFM-48	1-1/2	1-1/4	3	5-1/2	4	NCC	MED	43526	\$83.79	\$103.65
SFM-48X	1-1/2	1-1/4	3	5-1/2	6	NCC	MED	43532	\$83.79	\$103.65
SFM-64	2	1-1/4	3	5-1/2	6	NCC	MED	43544	\$139.34	\$169.69
SFM-72	2-1/4	1-1/4	3	5-1/2	6	NCC	MED	43550	\$166.01	\$221.21
SFM-80	2-1/2	1-1/4	3	5-1/2	8	NCC	MED	43556	\$178.56	\$233.77
SFL-6	3/16	3/8	1	2-7/8	4	NCC	LONG	42504	\$13.53	\$16.69
SFL-8	1/4	3/8	1-1/4	3-1/8	4	NCC	LONG	42506	\$12.40	\$15.57
SFL-10	5/16	3/8	1-3/8	3-1/8	4	NCC	LONG	42509	\$12.40	\$15.57
SFL-12	3/8	3/8	1-1/2	3-1/4	4	NCC	LONG	42512	\$12.15	\$15.31
SFL-14	7/16	1/2	1-3/8	3-3/4	4	NCC	LONG	42515	\$17.16	\$21.00
SFL-16	1/2	1/2	2	4	4	NCC	LONG	42518	\$16.67	\$22.39
SFL-18	9/16	1/2	2	4	4	NCC	LONG	42520	\$23.56	\$30.72
SFL-20	5/8	5/8	2-1/2	4-5/8	4	NCC	LONG	42521	\$23.56	\$30.72
SFL-24	3/4	3/4	3	5-1/4	4	NCC	LONG	42527	\$28.69	\$38.21
SFL-26	13/16	3/4	3	5-1/4	4	NCC	LONG	42531	\$35.96	\$48.25
SFL-28	7/8	7/8	3-1/2	5-3/4	4	NCC	LONG	42533	\$35.96	\$48.25
SFL-32	1	1	4	6-1/2	4	NCC	LONG	42536	\$48.73	\$63.51
SFL-36	1-1/8	1	4	6-1/2	6	NCC	LONG	42539	\$64.39	\$83.88

4 OR MORE FLUTE STANDARD NON C/C M-7 HSS

O.D
Tolerance
+.0000-.0015



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
SFL-40	1-1/4	1	4	6-1/2	6	NCC	LONG	42542	\$76.05	\$95.54
SFL-40X	1-1/4	1-1/4	4	6-1/2	6	NCC	LONG	42545	\$76.05	\$95.54
SFL-40Y	1-1/4	1-1/4	4	6-1/2	4	NCC	LONG	42548	\$79.43	\$98.92
SFL-44	1-3/8	1	4	6-1/2	6	NCC	LONG	42551	\$87.18	\$109.84
SFL-48	1-1/2	1-1/4	4	6-1/2	6	NCC	LONG	42554	\$94.77	\$117.42
SFL-64	2	1-1/4	4	6-1/2	8	NCC	LONG	42566	\$151.11	\$184.97
SFL-64B	2	1-1/4	4	6-1/2	6	NCC	LONG	42572	\$158.30	\$192.16
SFX-8	1/4	3/8	1-3/4	3-1/2	4	NCC	X-LONG	44007	\$14.79	\$17.94
SFX-12	3/8	3/8	2-1/2	4-1/4	4	NCC	X-LONG	44017	\$15.79	\$20.05
SFX-16	1/2	1/2	3	5	4	NCC	X-LONG	44022	\$20.29	\$27.26
SFX-20	5/8	5/8	4	6-1/8	4	NCC	X-LONG	44027	\$29.44	\$38.84
SFX-20X	5/8	1/2	4	6	4	NCC	X-LONG	44031	\$29.44	\$38.84
SFX-24	3/4	3/4	4	6-1/4	4	NCC	X-LONG	44037	\$34.45	\$46.07
SFX-28	7/8	7/8	5	7-1/4	4	NCC	X-LONG	44047	\$45.60	\$60.37
SFX-32	1	1	6	8-1/2	4	NCC	X-LONG	44052	\$60.14	\$77.11
SFX-40	1-1/4	1-1/4	6	8-1/2	6	NCC	X-LONG	44057	\$90.34	\$114.83
SFX-40X	1-1/4	1-1/4	6	8-1/2	4	NCC	X-LONG	44062	\$90.34	\$114.83
SFX-48	1-1/2	1-1/4	8	10-1/2	6	NCC	X-LONG	44067	\$149.53	\$181.06
SFX-48X	1-1/2	1-1/4	6	8-1/2	4	NCC	X-LONG	44072	\$142.61	\$170.51
SFX-48Y	1-1/2	1-1/4	6	8-1/2	6	NCC	X-LONG	44077	\$142.61	\$170.51
EXTRA LONG REACH										
SFXL-24	3/4	3/4	2	8-1/4	4	NCC	XL-REACH	44736	\$57.01	\$72.10
SFXL-32	1	1	2-1/2	10-1/4	4	NCC	XL-REACH	44758	\$93.47	\$115.84
SFXL-40	1-1/4	1-1/4	3-1/2	12-1/2	6	NCC	XL-REACH	44776	\$164.00	\$195.32
SFXL-64	2	2*	4	15-1/4	6	NCC	XL-REACH	44781	\$325.61	\$465.68
SFXL-80	2-1/2	2-1/2*	4	15-3/4	6	NCC	XL-REACH	44792	\$462.46	\$684.24

* Heavy Duty Sure-Lock Shank

4 OR MORE FLUTE STANDARD NON C/C M-42 COBALT

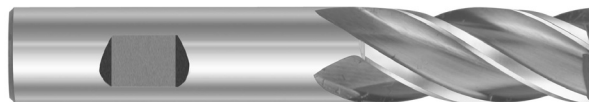
O.D
Tolerance
+.0015-.0000



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
SF-4M	1/8	3/8	3/8	2-5/16	4	NCC	REG	42004	\$9.66	\$15.19
SF-6M	3/16	3/8	1/2	2-3/8	4	NCC	REG	42006	\$9.66	\$15.19
SF-8M	1/4	3/8	5/8	2-1/2	4	NCC	REG	42008	\$9.66	\$15.19
SF-10M	5/16	3/8	3/4	2-1/2	4	NCC	REG	42010	\$9.66	\$15.19
SF-12M	3/8	3/8	3/4	2-1/2	4	NCC	REG	42012	\$9.66	\$15.19
SF-16M	1/2	1/2	1-1/4	3-1/4	4	NCC	REG	42016	\$13.82	\$20.53
SF-20M	5/8	5/8	1-5/8	3-3/4	4	NCC	REG	42022	\$20.73	\$30.67
SF-24YM	3/4	3/4	1-5/8	3-7/8	4	NCC	REG	42034	\$24.05	\$38.89
SF-32YM	1	1	2	4-1/2	4	NCC	REG	42060	\$34.11	\$54.89
SF-32YM6	1	1	2	4-1/2	6	NCC	REG	42062	\$34.11	\$54.89
SF-32ZM	1	3/4	1-7/8	4-1/8	4	NCC	REG	42063	\$32.18	\$52.96
SF-40YM	1-1/4	1-1/4	2	4-1/2	6	NCC	REG	42076	\$65.14	\$91.76
SF-40ZM	1-1/4	1-1/4	2	4-1/2	4	NCC	REG	42078	\$65.14	\$91.76
SF-48XM	1-1/2	1-1/4	2	4-1/2	6	NCC	REG	42084	\$75.33	\$107.20
SF-48YM	1-1/2	1-1/4	2	4-1/2	4	NCC	REG	42086	\$75.33	\$107.20
SF-64BM	2	1-1/4	2	4-1/2	6	NCC	REG	42096	\$88.33	\$136.34

4 OR MORE FLUTE STANDARD NON C/C M-42 COBALT

O.D
Tolerance
+.0015-.0000



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiAlN PRICE
SFL-8M	1/4	3/8	1-1/4	3-1/8	4	NCC	LONG	43009	\$13.53	\$19.05
SFL-12M	3/8	3/8	1-1/2	3-1/4	4	NCC	LONG	43013	\$13.53	\$19.05
SFL-16M	1/2	1/2	2	4	4	NCC	LONG	43017	\$18.76	\$28.77
SFL-20M	5/8	5/8	2-1/2	4-5/8	4	NCC	LONG	43023	\$26.10	\$38.63
SFL-24M	3/4	3/4	3	5-1/4	4	NCC	LONG	43035	\$29.58	\$46.23
SFL-32M	1	1	4	6-1/2	4	NCC	LONG	43059	\$52.09	\$77.94
SFL-32M6	1	1	4	6-1/2	6	NCC	LONG	43061	\$52.09	\$77.94
SFL-40XM	1-1/4	1-1/4	4	6-1/2	6	NCC	LONG	43075	\$76.64	\$110.73
SFL-40YM	1-1/4	1-1/4	4	6-1/2	4	NCC	LONG	43077	\$76.64	\$110.73
SFL-48M	1-1/2	1-1/4	4	6-1/2	6	NCC	LONG	43083	\$91.05	\$130.70
SFL-48YM	1-1/2	1-1/4	4	6-1/2	4	NCC	LONG	43085	\$91.05	\$130.70
SFL-64BM	2	1-1/4	4	6-1/2	6	NCC	LONG	43095	\$128.47	\$187.73
SFX-8M	1/4	3/8	1-3/4	3-1/2	4	NCC	X-LONG	44510	\$16.43	\$21.95
SFX-12M	3/8	3/8	2-1/2	4-1/4	4	NCC	X-LONG	44514	\$18.08	\$25.53
SFX-16M	1/2	1/2	3	5	4	NCC	X-LONG	44518	\$21.30	\$33.46
SFX-20M	5/8	5/8	4	6-1/8	4	NCC	X-LONG	44524	\$32.66	\$49.11
SFX-24M	3/4	3/4	4	6-1/4	4	NCC	X-LONG	44536	\$38.46	\$58.79
SFX-32M	1	1	6	8-1/2	4	NCC	X-LONG	44558	\$69.19	\$98.92
SFX-32M6	1	1	6	8-1/2	6	NCC	X-LONG	44560	\$69.19	\$98.92
SFX-40M	1-1/4	1-1/4	6	8-1/2	6	NCC	X-LONG	44576	\$100.92	\$143.80
SFX-48XM	1-1/2	1-1/4	6	8-1/2	4	NCC	X-LONG	44589	\$158.50	\$207.30
SFX-48YM	1-1/2	1-1/4	6	8-1/2	6	NCC	X-LONG	44591	\$158.50	\$207.30

"RIGHT HAND CUT - LEFT HAND SPIRAL" 4 & 6 FLUTE LEFT HAND M-7 HSS

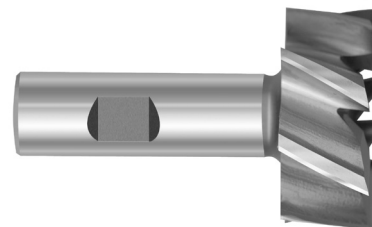
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CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiN PRICE
SSL-8	1/4	3/8	5/8	2-1/2	4	NCC	REG	52508	\$18.79	\$21.95
SSL-10	5/16	3/8	3/4	2-1/2	4	NCC	REG	52510	\$18.79	\$21.95
SSL-14	7/16	3/8	1	2-3/4	4	NCC	REG	52514	\$23.43	\$26.96
SSL-24	3/4	3/4	1-3/4	4	4	NCC	REG	52524	\$38.46	\$46.95
SSL-28	7/8	7/8	1-7/8	4-1/8	4	NCC	REG	52528	\$52.24	\$63.84
SSL-32	1	1	2	4-1/2	4	NCC	REG	52532	\$59.76	\$71.64
SSL-36	1-1/8	1	2	4-1/2	6	NCC	REG	52536	\$81.31	\$96.52
SL-8	1/4	3/8	1-1/4	3-1/8	4	NCC	LONG	48012	\$29.94	\$33.11
SL-12	3/8	3/8	1-1/2	3-1/4	4	NCC	LONG	48022	\$21.68	\$24.83
SL-14	7/16	1/2	1-3/4	3-3/4	4	NCC	LONG	48027	\$29.06	\$32.91
SL-16	1/2	1/2	2	4	4	NCC	LONG	48032	\$32.08	\$37.80
SL-36	1-1/8	1	4	6-1/2	6	NCC	LONG	48057	\$110.88	\$130.36

4,6 & 8 FLUTE BRIDGEPORT NON C/C M-7 HSS

O.D
Tolerance
+.0015-.0000



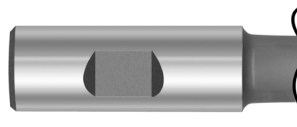
CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
STF-32B	1	3/4	3/4	3	4	NCC	STUB	53026	\$38.21	\$49.67
STF-36B	1-1/8	3/4	3/4	3	6	NCC	STUB	53041	\$55.00	\$72.29
STF-40	1-1/4	1/2	3/4	2-3/4	6	NCC	STUB	53046	\$62.77	\$76.43
STF-40B	1-1/4	3/4	3/4	3	6	NCC	STUB	53056	\$59.51	\$73.16
STF-44B	1-3/8	3/4	3/4	3	6	NCC	STUB	53066	\$62.74	\$79.33
STF-48B	1-1/2	3/4	3/4	3	6	NCC	STUB	53076	\$69.14	\$85.74
STF-56	1-3/4	3/4	3/4	3	6	NCC	STUB	53081	\$84.45	\$106.16
STF-64	2	3/4	3/4	3	8	NCC	STUB	53086	\$101.04	\$125.56

T-SLOT CUTTERS M-7 HSS & M-42 COBALT

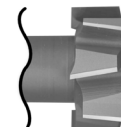
O.D
Tolerance
+.0005-.005

FINISHING HSS

TRUNCATED COBALT



RHC



RBC-RHS

CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
TSS-1	9/16	1/2	15/64	2-19/32	8	NCC	1/4	56505	\$50.12	\$54.90
TSS-4	31/32	3/4	25/64	3-7/16	8	NCC	1/2	56529	\$86.94	\$98.40
TSS-5	1-1/4	1	31/64	3-15/16	8	NCC	5/8	56537	\$122.40	\$137.62
TSS-6	1-15/32	1	5/8	4-7/16	10	NCC	3/4	56545	\$138.82	\$156.27
TSS-7	1-27/32	1-1/4	53/64	4-13/16	10	NCC	1	56553	\$219.63	\$248.72
TSS-8	2-7/32	1-1/4	1-3/32	5-3/8	12	NCC	1-1/4	56561	\$291.67	\$344.59
TSS-9	2-21/32	1-1/4	1-11/32	5-29/32	12	NCC	1-1/2	56569	\$364.59	\$554.79
TST-4M	31/32	3/4	25/64	3-7/16	5	NCC	1/2	56830	\$127.36	\$147.39
TST-5M	1-1/4	1	31/64	3-15/16	6	NCC	5/8	56838	\$160.69	\$187.31
TST-7M	1-27/32	1-1/4	53/64	4-13/16	6	NCC	1	56854	\$275.76	\$326.66
TST-8M	2-7/32	1-1/4	1-3/32	5-3/8	8	NCC	1-1/4	56862	\$361.46	\$454.09
TST-9M	2-21/32	1-1/4	1-11/32	5-29/32	10	NCC	1-1/2	56870	\$534.48	\$867.33

GREEN SHADED AREA REPRESENTS TIALN

4 FLUTE DOUBLE END MINATURE PM-30 COBALT

O.D
Tolerance
+.001-.000



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TIN PRICE
XBS-2	1/16	3/16	3/32	2	4	NCC	STUB	58008	\$9.89	\$11.86
XBS-2A	5/64	3/16	5/32	2	4	NCC	STUB	58014	\$9.89	\$11.86
XBS-3	3/32	3/16	5/32	2	4	NCC	STUB	58020	\$9.89	\$11.86
XBS-3A	7/64	3/16	3/16	2	4	NCC	STUB	58026	\$9.89	\$11.86

4 FLUTE DOUBLE END MINIATURE PM-30 COBALT

STUB & REG
Tolerance
-.001+.000
LONG
Tolerance
+.001-.000



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiN PRICE
XBS-4	1/8	3/16	3/16	2	4	NCC	STUB	58032	\$9.89	\$11.86
XBS-4A	9/64	3/16	7/32	2	4	NCC	STUB	58038	\$9.89	\$11.86
XBS-5	5/32	3/16	1/4	2	4	NCC	STUB	58044	\$9.89	\$11.86
XBS-5A	11/64	3/16	9/32	2	4	NCC	STUB	58050	\$9.89	\$11.86
XBS-6	3/16	3/16	9/32	2	4	NCC	STUB	58056	\$9.89	\$11.86
DBS-2	1/16	3/16	7/32	2-1/4	4	NCC	REG	16505	\$11.03	\$12.98
DBS-2A	5/64	3/16	1/4	2-1/4	4	NCC	REG	16510	\$11.03	\$12.98
DBS-3	3/32	3/16	5/16	2-1/4	4	NCC	REG	16515	\$11.03	\$12.98
DBS-3A	7/64	3/16	11/32	2-1/4	4	NCC	REG	16520	\$11.03	\$12.98
DBS-4	1/8	3/16	3/8	2-1/4	4	NCC	REG	16525	\$11.03	\$12.98
DBS-5	5/32	3/16	7/16	2-1/4	4	NCC	REG	16535	\$11.03	\$12.98
DBS-6	3/16	3/16	1/2	2-1/4	4	NCC	REG	16545	\$11.03	\$12.98
DBX-2	1/16	3/16	7/32	2-1/2	4	NCC	LONG	17001	\$13.78	\$15.73
DBX-3	3/32	3/16	1/2	2-5/8	4	NCC	LONG	17006	\$13.78	\$15.73
DBX-4	1/8	3/16	3/4	3-1/8	4	NCC	LONG	17011	\$13.78	\$15.73

* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

2 FLUTE DOUBLE END MINIATURE PM-30 COBALT

STUB & REG
Tolerance
-.001+.000
LONG
Tolerance
+.001-.000



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiN PRICE
XCS-2	1/16	3/16	3/32	2	2	CC	STUB	59021	\$9.89	\$11.86
XCS-3	3/32	3/16	5/32	2	2	CC	STUB	59033	\$9.89	\$11.86
XCS-4	1/8	3/16	3/16	2	2	CC	STUB	59045	\$9.89	\$11.86
XCS-5	5/32	3/16	1/4	2	2	CC	STUB	59057	\$9.89	\$11.86
XCS-6	3/16	3/16	9/32	2	2	CC	STUB	59069	\$9.89	\$11.86
DCS-1	1/32	3/16	3/32	2-1/4	2	CC	REG	18505	\$12.53	\$14.48
DCS-2	1/16	3/16	7/32	2-1/4	2	CC	REG	18515	\$11.03	\$12.98
DCS-3	3/32	3/16	5/16	2-1/4	2	CC	REG	18525	\$11.03	\$12.98
DCS-4	1/8	3/16	3/8	2-1/4	2	CC	REG	18535	\$11.03	\$12.98
DCS-5	5/32	3/16	7/16	2-1/4	2	CC	REG	18545	\$11.03	\$12.98
DCS-6	3/16	3/16	1/2	2-1/4	2	CC	REG	18555	\$11.03	\$12.98
DCX-2	1/16	3/16	7/32	2-1/2	2	CC	LONG	19006	\$13.78	\$15.73
DCX-3	3/32	3/16	9/32	2-5/8	2	CC	LONG	19011	\$13.78	\$15.73
DCX-4	1/8	3/16	3/4	3-1/8	2	CC	LONG	19016	\$13.78	\$15.73
DCX-6	3/16	3/16	1	3-3/8	2	CC	LONG	19026	\$13.78	\$15.73

* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

2 FLUTE DOUBLE END BALL MINIATURE PM-30 COBALT

STUB & REG
Tolerance
-.001+-.000
LONG
Tolerance
+.001-.000



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiN PRICE
FER-1	1/32	3/16	3/64	2	2	BAL	STUB	21505	\$18.30	\$20.25
FER-1A	3/64	3/16	1/16	2	2	BAL	STUB	21510	\$18.30	\$20.25
FER-2	1/16	3/16	3/32	2	2	BAL	STUB	21515	\$18.30	\$20.25
FER-3	3/32	3/16	5/32	2	2	BAL	STUB	21525	\$17.29	\$19.24
FER-4	1/8	3/16	3/16	2	2	BAL	STUB	21535	\$17.29	\$19.24
FER-5	5/32	3/16	1/4	2	2	BAL	STUB	21545	\$17.29	\$19.24
FRR-1	1/32	3/16	3/32	2-1/4	2	BAL	REG	23007	\$18.30	\$20.25
FRR-1A	3/64	3/16	5/32	2-1/4	2	BAL	REG	23012	\$18.30	\$20.25
FRR-2	1/16	3/16	7/32	2-1/4	2	BAL	REG	23017	\$17.29	\$19.24
FRR-3	3/32	3/16	5/16	2-1/4	2	BAL	REG	23027	\$17.29	\$19.24
FRR-4	1/8	3/16	3/8	2-1/4	2	BAL	REG	23037	\$17.29	\$19.24
FXR-2	1/16	3/16	7/32	2-1/2	2	BAL	LONG	24565	\$22.55	\$24.50
FXR-6	3/16	3/16	1	3-3/8	2	BAL	LONG	24585	\$22.55	\$24.50

* When cutting diameter and shank diameter are the same the tolerance is +.0000-.0025

CORNER ROUNDERS "FRACTIONAL RADIUS" M-7 HSS & M-42 COBALT

O.D
Tolerance
+.001-.001



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FLT #	END TYPE	LENGTH TYPE	BRITE EDP	BRITE PRICE	TiN PRICE
SRC-1	7/16	3/8	5/16	2-1/2	4	NCC	1/32	50002	\$27.43	\$30.97
SRC-2	7/16	3/8	1/4	2-1/2	4	NCC	1/16	50006	\$27.81	\$31.35
SRC-3	1/2	3/8	1/4	2-1/2	4	NCC	3/32	50010	\$29.57	\$33.11
SRC-4	5/8	1/2	5/16	3	4	NCC	1/8	50014	\$36.33	\$42.01
SRC-5	3/4	1/2	5/16	3	4	NCC	5/32	50018	\$39.84	\$46.58
SRC-6	7/8	3/4	3/8	3-1/8	4	NCC	3/16	50022	\$45.10	\$54.95
SRC-6A	7/8	1/2	3/8	2-15/16	4	NCC	3/16	50026	\$45.10	\$54.95
SRC-8	1	3/4	3/8	3-1/4	4	NCC	1/4	50030	\$50.25	\$61.69
SRC-8A	1	1/2	3/8	3	4	NCC	1/4	50034	\$50.25	\$61.69
SRC-10	1-1/8	7/8	3/8	3-1/2	4	NCC	5/16	50038	\$61.52	\$75.17
SRC-10A	1-1/8	1/2	3/8	3-1/4	4	NCC	5/16	50042	\$61.52	\$75.17
SRC-12	1-1/4	7/8	3/8	3-3/4	4	NCC	3/8	50046	\$70.03	\$83.69
SRC-12A	1-1/4	1/2	3/8	3-1/2	4	NCC	3/8	50050	\$70.03	\$83.69
SRC-14A	1-3/8	3/4	3/8	3-3/4	4	NCC	7/16	50058	\$77.30	\$93.20
SRC-16	1-1/2	1	3/8	4-1/8	4	NCC	1/2	50062	\$82.06	\$99.52
SRC-16A	1-1/2	3/4	3/8	3-7/8	4	NCC	1/2	50066	\$82.06	\$99.52
SRC-20	1-15/16	1	9/16	4-1/4	4	NCC	5/8	50070	\$100.10	\$126.39
SRC-20A	1-15/16	3/4	9/16	4	4	NCC	5/8	50074	\$100.10	\$126.39
SRC-24	2-1/4	1	5/8	4-5/16	4	NCC	3/4	50078	\$112.63	\$159.62
SRC-24A	2-1/4	3/4	5/8	4-1/8	4	NCC	3/4	50082	\$112.63	\$159.62
SRC-32	3	1	7/8	4-3/4	4	NCC	1	50086	\$134.68	\$181.68
SRC-32A	3	3/4	7/8	4-1/2	4	NCC	1	50090	\$134.68	\$181.68
SRC-2M	7/16	3/8	1/4	2-1/2	4	NCC	1/16	50107	\$29.44	\$35.64
SRC-3M	1/2	3/8	1/4	2-1/2	4	NCC	3/32	50111	\$31.57	\$37.76
SRC-4M	5/8	1/2	5/16	3	4	NCC	1/8	50115	\$38.59	\$48.52
SRC-8M	1	3/4	3/8	3-1/4	4	NCC	1/4	50131	\$55.00	\$75.03
SRC-10M	1-1/8	7/8	3/8	3-1/2	4	NCC	5/16	50139	\$69.04	\$92.94
SRC-12M	1-1/4	7/8	3/8	3-3/4	4	NCC	3/8	50147	\$78.43	\$102.33
SRC-16M	1-1/2	1	3/8	4-1/8	4	NCC	1/2	50163	\$93.59	\$124.13

GREEN SHADED AREA REPRESENTS TiAlN

TAPERED END MILL M-7 HSS



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FL #	END TYPE	DEG/ SIDE	BRITE EDP	BRITE PRICE	TIN PRICE
T1/2-A-2	3/32	3/8	1/2	2-1/2	3	CC	1/2	80202	\$17.31	\$20.08
T1/2-A-3	3/32	3/8	3/4	2-1/2	3	CC	1/2	80204	\$18.63	\$21.41
T1/2-A-5	3/32	3/8	1-1/4	3-1/8	3	CC	1/2	80206	\$21.06	\$23.84
T1/2-B-1	1/8	3/8	1/4	2-1/2	3	CC	1/2	80208	\$16.20	\$18.98
T1/2-B-2	1/8	3/8	1/2	2-1/2	3	CC	1/2	80210	\$17.64	\$20.42
T1/2-B-3	1/8	3/8	3/4	2-1/2	3	CC	1/2	80212	\$18.63	\$21.41
T1/2-B-4	1/8	3/8	1	2-7/8	3	CC	1/2	80214	\$20.73	\$23.50
T1/2-B-5	1/8	3/8	1-1/4	3-1/8	3	CC	1/2	80216	\$22.16	\$24.94
T1/2-B-6	1/8	3/8	1-1/2	3-1/4	3	CC	1/2	80218	\$24.25	\$27.03
T1/2-C-3	3/16	3/8	3/4	2-1/2	3	CC	1/2	80220	\$18.63	\$21.41
T1/2-C-5	3/16	3/8	1-1/4	3-1/8	3	CC	1/2	80222	\$22.82	\$25.59
T1/2-C-7	3/16	3/8	1-3/4	3-7/8	3	CC	1/2	80224	\$28.55	\$32.30
T1/2-D-3	1/4	3/8	3/4	2-1/2	3	CC	1/2	80226	\$18.96	\$21.74
T1/2-D-5	1/4	3/8	1-1/4	3-1/8	3	CC	1/2	80228	\$23.92	\$26.70
T1/2-D-9	1/4	1/2	2-1/4	4-1/4	3	CC	1/2	80230	\$30.98	\$36.02
T1/2-D-13	1/4	1/2	3-1/4	5-1/2	3	CC	1/2	80232	\$41.23	\$47.35
T1/2-F-5	3/8	1/2	1-1/4	3-1/8	3	CC	1/2	80234	\$27.56	\$30.93
T1/2-F-9	3/8	1/2	2-1/4	4-1/4	3	CC	1/2	80236	\$34.29	\$39.32
T1/2-F-13	3/8	1/2	3-1/4	5-1/2	3	CC	1/2	80238	\$45.86	\$59.07
T1/2-H-5	1/2	1/2	1-1/4	3-1/8	3	CC	1/2	80240	\$33.51	\$41.92
T1/2-H-9	1/2	1/2	2-1/4	4-1/4	3	CC	1/2	80242	\$40.35	\$51.58
T1/2-H-13	1/2	1/2	3-1/4	5-1/2	3	CC	1/2	80244	\$47.95	\$61.45
T1/2-I-9	5/8	5/8	2-1/4	4-1/2	3	CC	1/2	80246	\$55.34	\$70.07
T1/2-I-13	5/8	5/8	3-1/4	5-1/2	3	CC	1/2	80248	\$60.30	\$76.85
T1/2-I-17	5/8	5/8	4-1/4	6-1/2	3	CC	1/2	80250	\$68.13	\$86.83
T1/2-J-9	3/4	3/4	2-1/4	4-1/2	3	CC	1/2	80252	\$58.09	\$74.51
T1/2-J-13	3/4	3/4	3-1/4	5-3/4	3	CC	1/2	80254	\$68.79	\$87.70
T1/2-J-17	3/4	3/4	4-1/4	7-3/4	3	CC	1/2	80256	\$81.80	\$106.40
T1/2-J-21	3/4	3/4	5-1/4	7-3/4	3	CC	1/2	80258	\$126.34	\$157.01
T1-A-2	3/32	3/8	1/2	2-1/2	3	CC	1	80403	\$17.64	\$20.42
T1-A-3	3/32	3/8	3/4	2-1/2	3	CC	1	80405	\$18.96	\$21.74
T1-A-5	3/32	3/8	1-1/4	3-1/8	3	CC	1	80407	\$21.36	\$24.17
T1-B-1	1/8	3/8	1/4	2-1/2	3	CC	1	80409	\$16.97	\$19.76
T1-B-2	1/8	3/8	1/2	2-1/2	3	CC	1	80411	\$17.75	\$20.53
T1-B-3	1/8	3/8	3/4	2-1/2	3	CC	1	80413	\$18.96	\$21.74
T1-B-4	1/8	3/8	1	2-7/8	3	CC	1	80415	\$21.06	\$23.84
T1-B-5	1/8	3/8	1-1/4	3-1/8	3	CC	1	80417	\$22.27	\$25.04
T1-B-6	1/8	3/8	1-1/2	3-1/4	3	CC	1	80419	\$24.59	\$27.36
T1-B-8	1/8	3/8	2	3-7/8	3	CC	1	80421	\$30.75	\$34.51
T1-C-3	3/16	3/8	3/4	2-1/2	3	CC	1	80423	\$19.07	\$21.85
T1-C-5	3/16	3/8	1-1/4	3-1/8	3	CC	1	80425	\$23.04	\$28.82
T1-C-8	3/16	3/8	2	3-7/8	3	CC	1	80427	\$32.30	\$36.05
T1-D-3	1/4	3/8	3/4	2-1/2	3	CC	1	80429	\$19.41	\$22.18
T1-D-5	1/4	3/8	1-1/4	3-1/8	3	CC	1	80431	\$24.03	\$26.71
T1-D-9	1/4	3/8	2-1/4	4-1/4	3	CC	1	80433	\$33.19	\$36.93
T1-D-13	1/4	1/2	3-1/4	5-1/2	3	CC	1	80435	\$44.98	\$51.10
T1-F-5	3/8	1/2	1-1/4	3-1/8	3	CC	1	80437	\$29.10	\$32.48
T1-F-9	3/8	1/2	2-1/4	4-1/4	3	CC	1	80439	\$36.93	\$41.96
T1-F-13	3/8	1/2	3-1/4	5-1/2	3	CC	1	80441	\$48.29	\$54.40
T1-H-5	1/2	1/2	1-1/4	3-1/8	3	CC	1	80443	\$34.06	\$37.44
T1-H-9	1/2	1/2	2-1/4	4-1/4	3	CC	1	80445	\$41.89	\$46.92
T1-H-13	1/2	1/2	3-1/4	5-1/2	3	CC	1	80447	\$51.93	\$58.04
T1-I-9	5/8	5/8	2-1/4	4-1/2	3	CC	1	80449	\$57.21	\$63.52
T1-I-13	5/8	5/8	3-1/4	5-1/2	3	CC	1	80451	\$62.29	\$69.61
T1-I-17	5/8	5/8	4-1/4	6-1/2	3	CC	1	80453	\$70.99	\$79.26
T1-J-9	3/4	3/4	2-1/4	4-3/4	3	CC	1	80455	\$62.50	\$69.97
T1-J-13	3/4	3/4	3-1/4	5-3/4	3	CC	1	80457	\$74.30	\$82.68
T1-J-17	3/4	3/4	4-1/4	6-3/4	3	CC	1	80459	\$90.28	\$100.51
T1-J-21	3/4	3/4	5-1/4	7-3/4	3	CC	1	80461	\$131.07	\$142.90

TAPERED END MILL M-7 HSS



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FL #	END TYPE	DEG/ SIDE	BRITE EDP	BRITE PRICE	TIN PRICE
T12-A-2	3/32	3/8	1/2	2-1/2	3	CC	1-1/2	80602	\$24.21	\$28.00
T12-A-3	3/32	3/8	3/4	2-7/8	3	CC	1-1/2	80604	\$26.01	\$29.80
T12-A-4	3/32	3/8	1	2-7/8	3	CC	1-1/2	80606	\$28.72	\$32.51
T12-A-5	3/32	3/8	1-1/4	3-1/8	3	CC	1-1/2	80608	\$29.62	\$33.40
T12-A-6	3/32	3/8	1-1/2	3-1/4	3	CC	1-1/2	80610	\$31.42	\$35.22
T12-AX-4	7/64	3/8	1	2-7/8	3	CC	1-1/2	80612	\$29.02	\$32.81
T12-AX-6	7/64	3/8	1-1/2	3-1/4	3	CC	1-1/2	80614	\$31.87	\$35.66
T12-AX-8	7/64	3/8	2	3-7/8	3	CC	1-1/2	80616	\$36.68	\$41.80
T12-B-2	1/8	3/8	1/2	2-1/2	3	CC	1-1/2	80618	\$24.35	\$28.14
T12-B-3	1/8	3/8	3/4	2-1/2	3	CC	1-1/2	80620	\$26.01	\$29.80
T12-B-4	1/8	3/8	1	2-7/8	3	CC	1-1/2	80622	\$29.16	\$32.96
T12-B-5	1/8	3/8	1-1/4	3-1/8	3	CC	1-1/2	80624	\$31.12	\$34.91
T12-B-6	1/8	3/8	1-1/2	3-1/4	3	CC	1-1/2	80626	\$33.67	\$37.47
T12-B-8	1/8	3/8	2	3-7/8	3	CC	1-1/2	80628	\$43.00	\$48.11
T12-BX-4	5/32	3/8	1	2-7/8	3	CC	1-1/2	80630	\$29.32	\$33.10
T12-BX-5	5/32	3/8	1-1/4	3-1/4	3	CC	1-1/2	80632	\$31.57	\$35.36
T12-BX-6	5/32	3/8	1-1/2	3-1/4	3	CC	1-1/2	80634	\$33.67	\$37.47
T12-C-3	3/16	3/8	3/4	2-1/2	3	CC	1-1/2	80636	\$26.15	\$29.96
T12-C-5	3/16	3/8	1-1/4	3-1/8	3	CC	1-1/2	80638	\$31.57	\$35.36
T12-C-9	3/16	3/8	2-1/4	4	3	CC	1-1/2	80640	\$45.56	\$50.66
T12-D-3	1/4	3/8	3/4	2-1/2	3	CC	1-1/2	80642	\$26.61	\$30.40
T12-D-5	1/4	3/8	1-1/4	3-1/8	3	CC	1-1/2	80644	\$33.08	\$36.86
T12-D-9	1/4	1/2	2-1/4	4-1/4	3	CC	1-1/2	80646	\$44.05	\$50.92
T12-D-13	1/4	1/2	3-1/4	5-1/2	3	CC	1-1/2	80648	\$64.35	\$72.69
T12-F-5	3/8	1/2	1-1/4	3-1/8	3	CC	1-1/2	80650	\$40.30	\$44.89
T12-F-9	3/8	1/2	2-1/4	4-1/4	3	CC	1-1/2	80652	\$52.62	\$59.49
T12-F-13	3/8	5/8	3-1/4	5-1/2	3	CC	1-1/2	80654	\$67.06	\$77.03
T12-H-5	1/2	1/2	1-1/4	3-1/8	3	CC	1-1/2	80656	\$46.61	\$51.20
T12-H-9	1/2	1/2	2-1/4	4-1/4	3	CC	1-1/2	80658	\$58.93	\$65.81
T12-H-13	1/2	5/8	3-1/4	5-1/2	3	CC	1-1/2	80660	\$76.83	\$86.80
T12-I-9	5/8	3/4	2-1/4	4-1/2	3	CC	1-1/2	80662	\$84.95	\$95.13
T12-I-13	5/8	3/4	3-1/4	5-1/2	3	CC	1-1/2	80664	\$91.41	\$102.83
T12-I-17	5/8	3/4	4-1/4	6-1/2	3	CC	1-1/2	80666	\$103.89	\$117.82
T12-J-9	3/4	3/4	2-1/4	4-3/4	3	CC	1-1/2	80668	\$94.42	\$104.59
T12-J-21	3/4	1	5-1/4	7-3/4	3	CC	1-1/2	80670	\$193.95	\$212.74
T2-AA-2	1/16	3/8	1/2	2-5/8	3	CC	2	80803	\$28.72	\$32.51
T2-AA-4	1/16	3/8	1	2-7/8	3	CC	2	80805	\$30.23	\$34.01
T2-A-2	3/32	3/8	1/2	2-1/2	3	CC	2	80807	\$24.35	\$28.14
T2-A-3	3/32	3/8	3/4	2-1/2	3	CC	2	80809	\$26.15	\$29.96
T2-A-5	3/32	3/8	1-1/4	3-1/4	3	CC	2	80811	\$29.91	\$33.71
T2-B-2	1/8	3/8	1/2	2-1/2	3	CC	2	80813	\$24.81	\$28.59
T2-B-3	1/8	3/8	3/4	2-1/2	3	CC	2	80815	\$26.47	\$30.25
T2-B-4	1/8	3/8	1	2-7/8	3	CC	2	80817	\$29.62	\$33.40
T2-B-5	1/8	3/8	1-1/4	3-1/8	3	CC	2	80819	\$30.37	\$34.15
T2-B-6	1/8	3/8	1-1/2	3-1/4	3	CC	2	80821	\$33.98	\$37.77
T2-B-8	1/8	3/8	2	3-7/8	3	CC	2	80823	\$45.56	\$50.66
T2-C-3	3/16	3/8	3/4	2-1/2	3	CC	2	80825	\$26.61	\$30.40
T2-C-5	3/16	3/8	1-1/4	3-1/8	3	CC	2	80827	\$32.03	\$35.81
T2-C-8	3/16	3/8	2	3-7/8	3	CC	2	80829	\$46.45	\$51.57
T2-D-3	1/4	3/8	3/4	2-1/2	3	CC	2	80831	\$26.61	\$30.40
T2-D-5	1/4	3/8	1-1/4	3-1/8	3	CC	2	80833	\$33.53	\$37.32
T2-D-9	1/4	1/2	2-1/4	4-1/4	3	CC	2	80835	\$47.20	\$54.08
T2-D-13	1/4	1/2	3-1/4	5-1/2	3	CC	2	80837	\$70.21	\$78.56
T2-F-5	3/8	1/2	1-1/4	3-1/8	3	CC	2	80839	\$43.76	\$48.35
T2-F-9	3/8	1/2	2-1/4	4-1/4	3	CC	2	80841	\$54.88	\$61.74
T2-F-13	3/8	5/8	3-1/4	5-1/2	3	CC	2	80843	\$73.22	\$83.20
T2-H-5	1/2	1/2	1-1/4	3-1/8	3	CC	2	80845	\$47.06	\$51.66
T2-H-9	1/2	1/2	2-1/4	4-1/4	3	CC	2	80847	\$59.54	\$66.41
T2-H-13	1/2	5/8	3-1/4	5-1/2	3	CC	2	80849	\$87.50	\$97.48
T2-I-9	5/8	3/4	2-1/4	4-1/2	3	CC	2	80851	\$89.16	\$99.33
T2-I-13	5/8	3/4	3-1/4	5-1/2	3	CC	2	80853	\$94.42	\$105.84
T2-I-17	5/8	3/4	4-1/4	6-1/2	3	CC	2	80855	\$106.90	\$120.83
T2-J-9	3/4	3/4	2-1/4	4-1/2	3	CC	2	80857	\$104.79	\$114.97
T2-J-13	3/4	1	3-1/4	5-3/4	3	CC	2	80859	\$120.43	\$136.01
T2-J-21	3/4	1	5-1/4	7-3/4	3	CC	2	80861	\$205.82	\$224.61

TAPERED END MILL M-7 HSS



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FL #	END TYPE	DEG/ SIDE	BRITE EDP	BRITE PRICE	TIN PRICE
T3-AA-2	1/16	3/8	1/2	2-5/8	3	CC	3	81002	\$28.27	\$32.05
T3-AA-3	1/16	3/8	3/4	2-7/8	3	CC	3	81003	\$28.86	\$35.67
T3-AA-4	1/16	3/8	1	2-7/8	3	CC	3	81004	\$30.66	\$34.47
T3-XA-6	.070	3/8	1-1/2	3-1/4	3	CC	3	81006	\$33.53	\$37.32
T3-A-3	3/32	3/8	3/4	2-7/8	3	CC	3	81008	\$26.47	\$30.25
T3-A-4	3/32	3/8	1	2-7/8	3	CC	3	81009	\$29.02	\$32.81
T3-A-5	3/32	3/8	1-1/4	3-1/8	3	CC	3	81010	\$30.07	\$33.86
T3-A-6	3/32	3/8	1-1/2	3-1/4	3	CC	3	81011	\$31.57	\$35.36
T3-A-8	3/32	3/8	2	3-5/8	3	CC	3	81012	\$36.38	\$40.17
T3-A-10	3/32	3/8	2-1/2	4-1/2	3	CC	3	81013	\$44.20	\$49.32
T3-AX-4	7/64	3/8	1	2-7/8	3	CC	3	81015	\$28.86	\$32.65
T3-AX-6	7/64	3/8	1-1/2	3-1/4	3	CC	3	81016	\$32.17	\$35.97
T3-AX-8	7/64	3/8	2	3-5/8	3	CC	3	81017	\$36.54	\$40.32
T3-B-3	1/8	3/8	3/4	2-1/2	3	CC	3	81019	\$26.61	\$30.40
T3-B-4	1/8	3/8	1	2-7/8	3	CC	3	81020	\$29.77	\$33.56
T3-B-5	1/8	3/8	1-1/4	3-1/8	3	CC	3	81021	\$31.73	\$35.52
T3-B-6	1/8	3/8	1-1/2	3-1/4	3	CC	3	81022	\$36.68	\$40.48
T3-B-8	1/8	3/8	2	3-5/8	3	CC	3	81023	\$47.06	\$50.85
T3-B-10	1/8	3/8	2-1/2	4-1/2	3	CC	3	81024	\$53.83	\$58.93
T3-B-12	1/8	3/8	3	5	3	CC	3	81025	\$61.19	\$69.54
T3-B4-X	1/8	3/8	1-1/8	2-3/4	3	CC	3	81027	\$30.07	\$33.86
T3-BX-4	5/32	3/8	1	2-7/8	3	CC	3	81029	\$30.07	\$33.86
T3-BX-5	5/32	3/8	1-1/4	3-1/8	3	CC	3	81030	\$31.42	\$35.22
T3-BX-6	5/32	3/8	1-1/2	3-1/4	3	CC	3	81031	\$32.62	\$36.41
T3-BX-8	5/32	3/8	2	3-5/8	3	CC	3	81032	\$47.51	\$51.30
T3-C-3	3/16	3/8	3/4	2-1/2	3	CC	3	81033	\$27.36	\$31.15
T3-C-5	3/16	3/8	1-1/4	3-1/8	3	CC	3	81035	\$33.08	\$36.86
T3-C-6	3/16	3/8	1-1/2	3-1/8	3	CC	3	81036	\$37.88	\$41.67
T3-C-8	3/16	1/2	2	4-1/8	3	CC	3	81037	\$47.81	\$54.68
T3-C-10	3/16	1/2	2-1/2	4-1/2	3	CC	3	81038	\$58.18	\$65.06
T3-C-12	3/16	1/2	3	5	3	CC	3	81039	\$67.36	\$75.70
T3-C-13	3/16	5/8	3-1/4	5-1/2	3	CC	3	81040	\$76.68	\$86.66
T3-C-16	3/16	5/8	4	6-1/2	3	CC	3	81042	\$92.92	\$104.19
T3-C-20	3/16	3/4	5	7-1/4	3	CC	3	81044	\$147.64	\$163.76
T3-D-3	1/4	3/8	3/4	2-1/2	3	CC	3	81046	\$28.27	\$32.05
T3-D-4	1/4	3/8	1	2-3/4	3	CC	3	81048	\$30.82	\$34.61
T3-D-5	1/4	3/8	1-1/4	3-1/8	3	CC	3	81050	\$33.53	\$37.32
T3-D-9	1/4	1/2	2-1/4	4-1/4	3	CC	3	81052	\$53.07	\$59.94
T3-D-13	1/4	5/8	3-1/4	5-1/2	3	CC	3	81054	\$88.86	\$98.83
T3-D-16	1/4	5/8	4	6-1/2	3	CC	3	81056	\$96.06	\$107.34
T3-D-20	1/4	3/4	5	7-3/8	3	CC	3	81058	\$160.12	\$176.23
T3-F-5	3/8	1/2	1-1/4	3-1/8	3	CC	3	81060	\$45.40	\$50.01
T3-F-9	3/8	5/8	2-1/4	4-1/4	3	CC	3	81062	\$57.13	\$65.73
T3-F-13	3/8	3/4	3-1/4	5-1/2	3	CC	3	81064	\$103.89	\$115.31
T3-F-16	3/8	3/4	4	6-1/2	3	CC	3	81066	\$124.03	\$137.98
T3-F-20	3/8	3/4	5	7-1/2	3	CC	3	81068	\$172.90	\$189.01
T3-H-5	1/2	1/2	1-1/4	3-1/8	3	CC	3	81070	\$48.71	\$53.32
T3-H-9	1/2	5/8	2-1/4	4-1/4	3	CC	3	81072	\$70.82	\$79.41
T3-H-9S	1/2	1/2	2-1/4	4-1/8	3	CC	3	81074	\$70.82	\$77.68
T3-H-13	1/2	3/4	3-1/4	5-1/2	3	CC	3	81076	\$115.92	\$127.34
T3-H-16	1/2	3/4	4	6-1/2	3	CC	3	81078	\$148.84	\$162.78
T3-H-20	1/2	1	5	7-1/2	3	CC	3	81080	\$204.31	\$223.11
T3-I-9	5/8	3/4	2-1/4	4-1/2	3	CC	3	81082	\$102.53	\$112.72
T3-I-13	5/8	3/4	3-1/4	5-1/2	3	CC	3	81084	\$146.43	\$157.86
T3-I-16	5/8	1	4	6-1/2	3	CC	3	81086	\$174.10	\$191.83
T3-I-20	5/8	1	5	7-1/2	3	CC	3	81088	\$221.31	\$240.10
T3-J-9	3/4	1	2-1/4	4-3/4	3	CC	3	81090	\$119.98	\$134.23
T3-J-13	3/4	1	3-1/4	5-3/4	3	CC	3	81092	\$188.23	\$203.80
T3-J-16	3/4	1	4	6-1/2	3	CC	3	81094	\$221.76	\$239.49
T3-J-20	3/4	1	5	7-1/2	3	CC	3	81096	\$260.85	\$279.64
T4-A-4	3/32	3/8	1	2-7/8	3	CC	4	81202	\$32.62	\$36.41
T4-B-3	1/8	3/8	3/4	2-1/2	3	CC	4	81204	\$27.22	\$31.01
T4-B-4	1/8	3/8	1	2-7/8	3	CC	4	81206	\$30.37	\$42.18
T4-B-6	1/8	3/8	1-1/2	3-1/4	3	CC	4	81208	\$37.13	\$40.92
T4-B-8	1/8	1/2	2	3-7/8	3	CC	4	81210	\$51.42	\$58.29

TAPERED END MILL M-7 HSS



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FL #	END TYPE	DEG/ SIDE	BRITE EDP	BRITE PRICE	TiN PRICE
T4-B-10	1/8	1/2	2-1/2	4-1/2	3	CC	4	81212	\$59.23	\$66.11
T4-C-3	3/16	3/8	3/4	2-1/2	3	CC	4	81214	\$27.81	\$31.60
T4-C-5	3/16	3/8	1-1/4	3-1/8	3	CC	4	81216	\$39.84	\$43.63
T4-C-10	3/16	1/2	2-1/2	4-1/2	3	CC	4	81218	\$77.13	\$83.99
T4-C-13	3/16	5/8	3-1/4	5-1/2	3	CC	4	81220	\$107.20	\$117.18
T4-C-16	3/16	3/4	4	6-1/2	3	CC	4	81222	\$142.23	\$156.16
T4-D-3	1/4	3/8	3/4	2-1/2	3	CC	4	81224	\$30.23	\$34.01
T4-D-5	1/4	1/2	1-1/4	3-1/8	3	CC	4	81226	\$40.59	\$45.19
T4-D-9	1/4	5/8	2-1/4	4-1/2	3	CC	4	81228	\$64.49	\$73.10
T4-D-13	1/4	3/4	3-1/4	5-1/2	3	CC	4	81230	\$106.15	\$117.57
T4-D-16	1/4	3/4	4	6-1/2	3	CC	4	81232	\$148.84	\$162.78
T4-F-5	3/8	1/2	1-1/4	3-1/8	3	CC	4	81234	\$53.83	\$58.42
T4-F-9	3/8	5/8	2-1/4	4-1/4	3	CC	4	81236	\$76.08	\$84.68
T4-F-13	3/8	3/4	3-1/4	5-1/2	3	CC	4	81238	\$125.38	\$136.81
T4-F-16	3/8	3/4	4	6-1/2	3	CC	4	81240	\$187.63	\$201.56
T4-H-5	1/2	1/2	1-1/4	3-1/8	3	CC	4	81242	\$62.69	\$67.30
T4-H-9	1/2	3/4	2-1/4	4-1/2	3	CC	4	81244	\$105.99	\$116.18
T4-H-13	1/2	3/4	3-1/4	5-1/2	3	CC	4	81246	\$159.07	\$170.49
T4-H-16	1/2	1	4	6-1/2	3	CC	4	81248	\$226.72	\$244.45
T5-AA-2	1/16	3/8	1/2	2-5/8	3	CC	5	81403	\$28.72	\$32.51
T5-AA-3	1/16	3/8	3/4	2-7/8	3	CC	5	81405	\$30.07	\$33.86
T5-AA-4	1/16	3/8	1	3-1/4	3	CC	5	81407	\$31.42	\$35.22
T5-AA-6	1/16	3/8	1-1/2	3-1/4	3	CC	5	81409	\$35.93	\$39.73
T5-XA-6	.070	3/8	1-1/2	3-1/4	3	CC	5	81411	\$36.08	\$39.87
T5-A-2	.070	3/8	1/2	2-5/8	3	CC	5	81413	\$28.72	\$32.51
T5-A-3	3/32	3/8	3/4	2-1/2	3	CC	5	81415	\$29.02	\$32.81
T5-A-4	3/32	3/8	1	2-7/8	3	CC	5	81417	\$29.62	\$33.40
T5-A-5	3/32	3/8	1-1/4	3-1/8	3	CC	5	81419	\$31.12	\$34.91
T5-A-6	3/32	3/8	1-1/2	3-1/4	3	CC	5	81421	\$32.03	\$35.81
T5-A-7	3/32	1/2	1-3/4	3-7/8	3	CC	5	81423	\$33.67	\$40.55
T5-A-8	3/32	1/2	2	3-7/8	3	CC	5	81425	\$37.29	\$44.15
T5-A-10	3/32	1/2	2-1/2	4-1/2	3	CC	5	81427	\$48.41	\$55.29
T5-AX-4	7/64	3/8	1	2-7/8	3	CC	5	81429	\$29.77	\$33.56
T5-AX-6	7/64	3/8	1-1/2	3-1/4	3	CC	5	81431	\$32.62	\$36.41
T5-AX-8	7/64	1/2	2	3-7/8	3	CC	5	81433	\$37.29	\$44.15
T5-B-3	1/8	3/8	3/4	2-1/2	3	CC	5	81435	\$26.91	\$30.71
T5-B-4	1/8	3/8	1	2-7/8	3	CC	5	81437	\$29.91	\$33.71
T5-B-4X	1/8	3/8	1-1/8	3	3	CC	5	81439	\$30.82	\$34.61
T5-B-5	1/8	3/8	1-1/4	3-1/8	3	CC	5	81441	\$32.17	\$35.97
T5-B-6	1/8	3/8	1-1/2	3-1/4	3	CC	5	81443	\$36.99	\$40.78
T5-B-8	1/8	1/2	2	3-7/8	3	CC	5	81445	\$48.71	\$55.59
T5-B-8S	1/8	3/4	2	3-7/8	3	CC	5	81447	\$50.37	\$60.55
T5-B-10	1/8	1/2	2-1/2	4-1/2	3	CC	5	81449	\$58.04	\$64.90
T5-B-12	1/8	3/4	3	5-1/2	3	CC	5	81451	\$78.78	\$90.21
T5-B-12S	1/8	1/2	3	5-1/2	3	CC	5	81453	\$89.30	\$97.65
T5-BX-4	5/32	3/8	1	2-7/8	3	CC	5	81455	\$30.52	\$34.31
T5-BX-6	5/32	1/2	1-1/2	3-3/4	3	CC	5	81457	\$32.92	\$37.53
T5-BX-8	5/32	1/2	2	3-7/8	3	CC	5	81459	\$47.95	\$54.83
T5-C-3	3/16	3/8	3/4	2-1/2	3	CC	5	81461	\$27.52	\$31.30
T5-C-5	3/16	1/2	1-1/4	3-1/8	3	CC	5	81463	\$34.74	\$39.33
T5-C-6	3/16	1/2	1-1/2	3-1/8	3	CC	5	81465	\$39.69	\$44.30
T5-C-8	3/16	1/2	2	4-1/8	3	CC	5	81467	\$53.22	\$60.10
T5-C-10	3/16	1/2	2-1/2	4-1/2	3	CC	5	81469	\$75.77	\$82.65
T5-C-12S	3/16	1/2	3	5	3	CC	5	81471	\$91.55	\$99.91
T5-C-12	3/16	3/4	3	5-1/2	3	CC	5	81473	\$87.65	\$99.07
T5-C-13	3/16	3/4	3-1/4	5-1/2	3	CC	5	81475	\$102.53	\$113.96
T5-C-16	3/16	3/4	4	6-1/2	3	CC	5	81477	\$128.39	\$142.33
T5-C-20	3/16	1	5	7-1/2	3	CC	5	81479	\$179.36	\$198.16
T5-D-3	1/4	3/8	3/4	2-1/2	3	CC	5	81481	\$29.32	\$33.10
T5-D-4	1/4	1/2	1	2-7/8	3	CC	5	81483	\$32.03	\$36.62
T5-D-5	1/4	1/2	1-1/4	3-1/8	3	CC	5	81485	\$36.08	\$40.68
T5-D-9	1/4	5/8	2-1/4	4-1/4	3	CC	5	81487	\$59.98	\$68.59
T5-D-13	1/4	3/4	3-1/4	5-1/2	3	CC	5	81489	\$103.58	\$115.01
T5-D-16	1/4	3/4	4	6-1/2	3	CC	5	81491	\$143.42	\$157.37
T5-F-5	3/8	1/2	1-1/4	3-1/8	3	CC	5	81493	\$48.56	\$53.16

TAPERED END MILL M-7 HSS



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FL #	END TYPE	DEG/ SIDE	BRITE EDP	BRITE PRICE	TIN PRICE
T5-F-9	3/8	3/4	2-1/4	4-1/4	3	CC	5	81495	\$73.97	\$84.15
T5-F-13	3/8	3/4	3-1/4	5-1/2	3	CC	5	81497	\$115.47	\$126.89
T5-F-16	3/8	1	4	6-1/2	3	CC	5	81499	\$183.42	\$201.15
T5-F-20	3/8	1-1/4	5	7-1/2	3	CC	5	81501	\$233.79	\$260.38
T5-H-5	1/2	1/2	1-1/4	3-1/8	3	CC	5	81503	\$58.48	\$63.09
T5-H-9	1/2	3/4	2-1/4	4-1/4	3	CC	5	81505	\$98.93	\$109.10
T5-H-13	1/2	1	3-1/4	5-3/4	3	CC	5	81507	\$148.54	\$164.12
T5-H-16	1/2	1	4	6-1/2	3	CC	5	81509	\$199.51	\$217.23
T5-H-20	1/2	1-1/4	5	7-1/2	3	CC	5	81511	\$256.79	\$283.39
T5-I-9	5/8	3/4	2-1/4	4-1/2	3	CC	5	81513	\$133.81	\$143.99
T5-I-20	5/8	1-1/4	5	7-1/2	4	CC	5	81515	\$294.83	\$321.43
T5-J-9	3/4	3/4	2-1/4	4-1/2	3	CC	5	81517	\$133.81	\$143.99
T5-J-16	3/4	1-1/4	4	6-1/2	4	CC	5	81519	\$313.17	\$336.55
T5-J-20	3/4	1-1/4	5	7-1/2	4	CC	5	81521	\$348.65	\$375.25
T7-AA-4	1/16	3/8	1	2-7/8	3	CC	7	81602	\$32.92	\$36.72
T7-AA-6	1/16	1/2	1-1/2	3-1/4	3	CC	7	81604	\$41.34	\$45.94
T7-XA-4	.070	3/8	1	2-3/4	3	CC	7	81606	\$32.92	\$36.72
T7-A-4	3/32	3/8	1	2-7/8	3	CC	7	81608	\$30.52	\$34.31
T7-A-5	3/32	1/2	1-1/4	3-1/8	3	CC	7	81610	\$32.03	\$36.62
T7-A-6	3/32	1/2	1-1/2	3-1/4	3	CC	7	81612	\$33.98	\$38.58
T7-B-3	1/8	3/8	3/4	2-1/2	3	CC	7	81614	\$27.81	\$31.60
T7-B-4	1/8	3/8	1	2-7/8	3	CC	7	81616	\$30.66	\$34.47
T7-B-6	1/8	1/2	1-1/2	3-1/4	3	CC	7	81618	\$37.59	\$42.18
T7-B-8	1/8	5/8	2	4-1/8	3	CC	7	81620	\$55.78	\$64.38
T7-B-12	1/8	3/4	3	5-1/4	3	CC	7	81622	\$95.31	\$106.75
T7-C-5	3/16	1/2	1-1/4	3-1/8	3	CC	7	81624	\$42.10	\$46.69
T7-C-12	3/16	3/4	3	5-1/4	3	CC	7	81626	\$117.72	\$129.14
T7-D-3	1/4	1/2	3/4	2-1/2	3	CC	7	81628	\$37.29	\$41.53
T7-D-5	1/4	1/2	1-1/4	3-1/8	3	CC	7	81630	\$43.15	\$47.76
T7-D-9	1/4	3/4	2-1/4	4-1/2	3	CC	7	81632	\$82.85	\$93.02
T7-D-13	1/4	1	3-1/4	5-3/4	3	CC	7	81634	\$131.40	\$146.98
T7-D-16	1/4	1	4	6-1/2	3	CC	7	81636	\$174.85	\$192.58
T7-E-13	5/16	1	3-1/4	5-3/4	3	CC	7	81638	\$152.76	\$168.33
T7-F-9	3/8	3/4	2-1/4	4-1/4	3	CC	7	81640	\$106.29	\$116.48
T7-F-13	3/8	1	3-1/4	5-3/4	3	CC	7	81642	\$174.70	\$190.27
T7-F-16	3/8	1-1/4	4	6-1/2	3	CC	7	81644	\$228.52	\$251.90
T7-H-5	1/2	5/8	1-1/4	3-1/4	3	CC	7	81646	\$69.46	\$76.26
T7-H-9	1/2	1	2-1/4	4-3/4	3	CC	7	81648	\$126.29	\$140.54
T7-H-13	1/2	1-1/4	3-1/4	5-3/4	3	CC	7	81650	\$203.12	\$223.26
T7-H-16	1/2	1-1/4	4	6-1/2	3	CC	7	81652	\$250.62	\$274.01
T7-I-16	5/8	1-1/4	4	6-1/2	4	CC	7	81654	\$295.27	\$318.66
T7-I-20	5/8	1-1/4	5	7-1/2	4	CC	7	81656	\$327.91	\$354.50
T7-J-13	3/4	1-1/4	3-1/4	5-3/4	4	CC	7	81658	\$266.41	\$286.56
T7-J-16	3/4	1-1/4	4	6-1/2	4	CC	7	81660	\$385.64	\$409.01
T10-AA-4	1/16	3/8	1	2-7/8	3	CC	10	81803	\$53.22	\$57.02
T10-A-2	3/32	3/8	1/2	2-1/2	3	CC	10	81805	\$29.91	\$33.71
T10-A-3	3/32	3/8	3/4	2-7/8	3	CC	10	81807	\$31.27	\$35.06
T10-A-6	3/32	1/2	1-1/2	3-3/8	3	CC	10	81809	\$56.08	\$60.68
T10-B-3	1/8	3/8	3/4	2-1/2	3	CC	10	81811	\$29.02	\$32.81
T10-B-5	1/8	1/2	1-1/4	3-1/8	3	CC	10	81813	\$46.45	\$51.06
T10-B-6	1/8	5/8	1-1/2	3-5/8	3	CC	10	81815	\$53.37	\$60.18
T10-C-5	3/16	1/2	1-1/4	3-1/8	3	CC	10	81817	\$48.27	\$52.86
T10-C-9	3/16	3/4	2-1/4	4-1/2	3	CC	10	81819	\$125.24	\$135.41
T10-D-3	1/4	1/2	3/4	2-1/2	3	CC	10	81821	\$37.88	\$42.13
T10-D-5	1/4	1/2	1-1/4	3-1/8	3	CC	10	81823	\$54.58	\$59.17
T10-D-9	1/4	3/4	2-1/4	4-1/4	3	CC	10	81825	\$118.32	\$128.50
T10-F-5	3/8	5/8	1-1/4	3-1/4	3	CC	10	81827	\$67.06	\$73.87
T10-F-9	3/8	1	2-1/4	4-5/8	3	CC	10	81829	\$139.23	\$153.47
T10-F-13	3/8	1-1/4	3-1/4	4-3/4	4	CC	10	81831	\$252.58	\$270.83
T10-H-5	1/2	3/4	1-1/4	3-3/8	3	CC	10	81833	\$79.98	\$88.07
T10-H-9	1/2	1	2-1/4	4-5/8	3	CC	10	81835	\$161.03	\$175.27
T10-H-13	1/2	1-1/4	3-1/4	4-3/4	4	CC	10	81837	\$273.03	\$291.27
T10-H-16	1/2	1-1/4	4	6-3/8	4	CC	10	81839	\$354.81	\$378.19
T15-AA-3	1/16	1/2	3/4	2-3/4	3	CC	15	82002	\$47.06	\$51.30
T15-A-3	3/32	1/2	3/4	2-3/4	3	CC	15	82004	\$38.18	\$42.42

TAPERED END MILL M-7 HSS



CATALOG NUMBER	FLUTE DIAMETER	SHANK DIAMETER	CUTTING LENGTH	TOOL LENGTH	FL #	END TYPE	DEG/ SIDE	BRITE EDP	BRITE PRICE	TiN PRICE
T15-A-4	3/32	1/2	1	2-7/8	3	CC	15	82006	\$50.96	\$55.57
T15-A-6	3/32	1/2	1-1/2	3-7/16	3	CC	15	82008	\$67.66	\$72.25
T15-B-2	1/8	3/8	1/2	2-1/2	3	CC	15	82010	\$33.23	\$37.02
T15-B-3	1/8	1/2	3/4	2-1/2	3	CC	15	82012	\$39.09	\$43.33
T15-B-4	1/8	1/2	1	3	3	CC	15	82014	\$47.95	\$52.56
T15-B-5	1/8	1/2	1-1/4	3-1/8	3	CC	15	82016	\$59.23	\$63.84
T15-C-4	3/16	1/2	1	3	3	CC	15	82018	\$52.17	\$56.78
T15-C-5	3/16	3/4	1-1/4	3-1/2	3	CC	15	82020	\$70.36	\$78.45
T15-C-5S	3/16	1/2	1-1/4	3-1/4	3	CC	15	82022	\$70.96	\$75.57
T15-C-8	3/16	1	2	4-1/2	3	CC	15	82024	\$167.79	\$182.03
T15-D-4	1/4	1/2	1	3	3	CC	15	82026	\$65.10	\$69.70
T15-D-5	1/4	3/4	1-1/4	3-1/2	3	CC	15	82028	\$73.37	\$81.46
T15-D-5S	1/4	1/2	1-1/4	3-1/4	3	CC	15	82030	\$73.37	\$77.97
T15-D-6	1/4	3/4	1-1/2	3-3/4	3	CC	15	82032	\$86.60	\$94.69
T15-D-9	1/4	1	2-1/4	4-3/4	4	CC	15	82034	\$182.83	\$197.07
T15-D-13	1/4	1-1/4	3-1/4	5-3/4	4	CC	15	82036	\$220.55	\$240.71
T15-E-4	5/16	3/4	1	3-1/4	3	CC	15	82038	\$73.83	\$81.91
T15-E-6	5/16	3/4	1-1/2	3-3/4	4	CC	15	82040	\$94.87	\$102.96
T15-F-5	3/8	3/4	1-1/4	3-1/2	4	CC	15	82042	\$91.71	\$99.80
T15-F-9	3/8	1-1/4	2-1/4	4-3/4	4	CC	15	82044	\$205.07	\$223.32
T15-H-4	1/2	3/4	1	3-1/4	3	CC	15	82046	\$89.91	\$97.99
T15-H-5	1/2	3/4	1-1/4	3-1/2	3	CC	15	82048	\$107.95	\$116.04
T15-H-7	1/2	1	1-3/4	4-1/4	4	CC	15	82050	\$191.24	\$205.49
T15-H-9	1/2	1-1/4	2-1/4	4-3/4	4	CC	15	82052	\$253.33	\$271.59
T15-H-13	1/2	1-1/4	3-1/4	6	4	CC	15	82054	\$365.50	\$391.55
T20-A-3	3/32	1/2	3/4	2-3/4	3	CC	20	82203	\$47.36	\$51.60
T20-B-2	1/8	3/8	1/2	2-1/2	3	CC	20	82205	\$39.39	\$43.17
T20-B-4	1/8	1/2	1	3	3	CC	20	82207	\$83.29	\$87.90
T20-C-4	3/16	1/2	1	3	4	CC	20	82209	\$88.86	\$93.46
T20-C-6	3/16	3/4	1-1/2	3-3/4	4	CC	20	82211	\$137.27	\$145.35
T20-D-4	1/4	1/2	1	3	4	CC	20	82213	\$92.92	\$97.51
T20-D-6	1/4	3/4	1-1/2	3-3/4	4	CC	20	82215	\$143.88	\$151.96
T20-E-4	5/16	3/4	1	3-1/4	4	CC	20	82217	\$100.28	\$108.36
T20-E-6	5/16	3/4	1-1/2	4-3/4	4	CC	20	82219	\$148.84	\$159.03
T20-F-6	3/8	3/4	1-1/2	3-3/4	4	CC	20	82221	\$215.45	\$223.53
T20-F-8	3/8	1	2	4-1/2	4	CC	20	82223	\$274.68	\$288.93
T20-H-9	1/2	1-1/4	2-1/4	4-3/4	4	CC	20	82225	\$329.10	\$347.35
T25-A-3	3/32	1/2	3/4	3	4	CC	25	82402	\$56.54	\$61.13
T25-B-2	1/8	1/2	1/2	2-1/2	3	CC	25	82404	\$47.66	\$51.90
T25-B-4	1/8	1/2	1	3	3	CC	25	82406	\$98.32	\$102.93
T25-D-4	1/4	5/8	1	3-1/4	4	CC	25	82408	\$122.23	\$129.04
T25-D-6	1/4	3/4	1-1/2	3-3/4	4	CC	25	82410	\$201.16	\$209.25
T25-E-3	5/16	5/8	3/4	3	4	CC	25	82412	\$122.23	\$129.04
T25-E-4	5/16	3/4	1	3-1/4	4	CC	25	82414	\$127.04	\$135.13
T25-E-6	5/16	1	1-1/2	4	4	CC	25	82416	\$202.81	\$217.06
T25-F-3	3/8	5/8	3/4	3	4	CC	25	82418	\$135.31	\$142.12
T25-F-4	3/8	3/4	1	3-1/4	4	CC	25	82420	\$143.13	\$151.21
T25-F-6	3/8	1	1-1/2	4	4	CC	25	82422	\$256.49	\$270.74
T25-H-5	1/2	1	1-1/4	3-3/4	3	CC	25	82424	\$254.99	\$268.72
T30-A-3	3/32	1/2	3/4	2-3/4	3	CC	30	82603	\$60.59	\$64.83
T30-B-2	1/8	1/2	1/2	2-1/2	3	CC	30	82605	\$56.98	\$61.22
T30-B-4	1/8	1/2	1	3	4	CC	30	82607	\$146.13	\$150.74
T30-D-4	1/4	3/4	1	3-1/4	4	CC	30	82609	\$151.55	\$159.64
T30-D-6	1/4	1	1-1/2	4	4	CC	30	82611	\$258.14	\$272.39
T30-F-5	3/8	1	1-1/4	3-3/4	4	CC	30	82613	\$260.40	\$274.14
T30-F-6	3/8	1	1-1/2	4	4	CC	30	82615	\$284.75	\$299.00
T30-H-5	1/2	1	1-1/4	3-3/4	4	CC	30	82617	\$281.90	\$295.64
T30-H-6	1/2	1	1-1/2	4	4	CC	30	82619	\$303.70	\$317.95
T45-B-1X	1/8	1/2	5/16	2-1/2	4	CC	45	82802	\$74.58	\$78.82
T45-B-3	1/8	5/8	3/4	3	4	CC	45	82804	\$172.90	\$179.71
T45-B-4	1/8	1	1	3-3/4	4	CC	45	82806	\$240.71	\$254.44

FRACTIONS - DECIMALS - METRIC EQUIVALENT CHART

INCH - DECIMAL - MM	INCH - DECIMAL - MM	INCH - DECIMAL - MM
$\frac{1}{64}$.0156 .396	$\frac{11}{32}$.3438 8.733	$\frac{11}{16}$.6875 17.463
.0197 .500	$\frac{23}{64}$.3594 9.000	.6887 17.500
$\frac{1}{32}$.0312 .793	.3740 9.500	$\frac{45}{64}$.7031 17.859
.0394 1.000	$\frac{3}{8}$.3750 9.525	.7086 18.000
$\frac{3}{64}$.0469 1.191	$\frac{25}{64}$.3906 9.921	$\frac{23}{32}$.7188 18.258
.0591 1.500	.3937 10.000	.7283 18.500
$\frac{1}{16}$.0625 1.588	$\frac{13}{32}$.4062 10.318	$\frac{47}{64}$.7344 18.651
$\frac{5}{64}$.0781 1.984	.4133 10.500	.7480 19.000
.0787 2.000	$\frac{27}{64}$.4219 10.716	$\frac{3}{4}$.7500 19.050
$\frac{3}{32}$.0938 2.383	.4330 11.000	$\frac{49}{64}$.7656 19.446
.0984 2.500	$\frac{7}{16}$.4375 11.113	.7677 19.500
$\frac{7}{64}$.1093 2.776	.4527 11.500	$\frac{25}{32}$.7812 19.843
.1181 3.000	$\frac{29}{64}$.4531 11.509	.7874 20.000
$\frac{1}{8}$.1250 3.175	$\frac{15}{32}$.4688 11.908	$\frac{51}{64}$.7969 20.241
.1378 3.500	.4724 12.000	.8070 20.500
$\frac{9}{64}$.1406 3.571	$\frac{31}{64}$.4844 12.304	$\frac{13}{16}$.8125 20.638
$\frac{5}{32}$.1562 3.968	.4921 12.500	.8267 21.000
.1575 4.000	$\frac{1}{2}$.5000 12.700	$\frac{53}{64}$.8281 21.034
$\frac{11}{64}$.1719 4.366	.5118 13.000	$\frac{27}{32}$.8438 21.433
.1772 4.500	$\frac{33}{64}$.5156 13.096	.8464 21.500
$\frac{3}{16}$.1875 4.763	$\frac{17}{32}$.5312 13.492	$\frac{55}{64}$.8594 21.829
.1969 5.000	.5314 13.500	.8661 22.000
$\frac{13}{64}$.2031 5.159	$\frac{35}{64}$.5469 13.891	$\frac{7}{8}$.8750 22.225
.2165 5.500	.5511 14.000	.8858 22.500
$\frac{7}{32}$.2188 5.558	$\frac{9}{16}$.5625 14.288	$\frac{57}{64}$.8906 22.621
$\frac{15}{64}$.2344 5.954	.5708 14.500	.9055 23.000
.2362 6.000	$\frac{37}{64}$.5781 14.684	$\frac{29}{32}$.9062 23.017
$\frac{1}{4}$.2500 6.483	.5905 15.000	$\frac{59}{64}$.9219 23.416
.2559 6.500	$\frac{19}{32}$.5938 15.081	.9251 23.500
$\frac{17}{64}$.2656 6.746	$\frac{39}{64}$.6093 15.476	$\frac{15}{16}$.9375 23.813
.2755 7.000	.6102 15.500	.9448 24.000
$\frac{9}{32}$.2812 7.143	$\frac{5}{8}$.6250 15.875	$\frac{61}{64}$.9531 24.209
.2953 7.500	.6299 16.000	.9645 24.500
$\frac{19}{64}$.2969 7.541	$\frac{41}{64}$.6406 16.271	$\frac{31}{32}$.9688 24.608
$\frac{5}{16}$.3125 7.938	.6496 16.500	.9842 25.000
.3149 8.000	$\frac{21}{32}$.6562 16.668	$\frac{63}{64}$.9844 25.004
$\frac{21}{64}$.3281 8.334	.6692 17.000	1 1.0000 25.400
.3346 8.500	$\frac{43}{64}$.6719 17.066	1.0039 25.500

Performance Carbide Feeds & Speeds
Recommendations For Surface Feet Per Minute & Chip Thickness Per Tooth*
"OVER" 32 HRc Hard Grade Materials

MATERIAL	SFM	1/8"	3/16"	1/4"	3/8"	1/2"	5/8"	3/4"	1"
NON-FERROUS MATERIALS									
Aluminum Alloys: 440, 356, 380, C61300	500-1000	0.001	0.0015	0.002	0.003	0.004	0.005	0.006	0.008
Copper: Navel Brass, High Silicon Bronze, A17, C-17200	800-1000	0.001	0.0015	0.002	0.0025	0.003	0.004	0.0045	0.005
Copper Alloys: Nickel Silver, Beryllium, Copper, Oxygen-Free Copper	800-1000	0.001	0.0015	0.002	0.0025	0.003	0.004	0.004	0.005
Plastics Polycarbonate	200-500	0.001	0.002	0.003	0.004	0.006	0.008	0.01	0.012
STAINLESS STEELS									
Precipitation: 17/4, 17/7, AF-17, Custom 450/635, 15/7Mo	90-125	0.0003	0.0005	0.001	0.001	0.002	0.003	0.004	0.005
Austentic: 304, 310, 314, 316, 321, 330, 347, 348	90-150	0.0002	0.0003	0.0005	0.001	0.002	0.0025	0.0035	0.004
Martensitic: 420, 430F, 440C, 446	90-170	0.0002	0.0003	0.0005	0.001	0.0015	0.0025	0.0025	0.004
HIGH TEMPERATURE ALLOYS									
Cobalt Base: Air-Resist 13/213/215 Haynes 21/36, Howmet 3, Hs 6/51, Nasa Co-W-Re, Mar-M-302, MP-159	50-80	0.0003	0.0004	0.0006	0.0008	0.0012	0.0015	0.002	0.0025
Nickel Base: Hastelloy-C/B/G/X Inconel 718, Waspaloy, M 252, Rene 41-95, Nimonic 75-80, Astroloy, Udimet 500-700	50-80	0.0004	0.0005	0.0008	0.001	0.002	0.0025	0.003	0.004
Iron Base: A286, Haynes 556, Discoloy, V-57	70-110	0.0004	0.0005	0.001	0.0015	0.02	0.0025	0.003	0.004
STEELS									
High Strength Steels: 4140, 4340M, EDT-150, HP9-430, 11-10, 300M D6Ac, H11, H13, Armor Plate	80-140	0.0004	0.0006	0.001	0.0015	0.0015	0.0025	0.003	0.004
High Alloy Steels-Mold & Die: Hy-Tugg, Stessproof, Armor Plate	80-140	0.0004	0.0006	0.001	0.0015	0.0015	0.0025	0.003	0.004
Medium Alloy Steels: 200, 250, 300	80-140	0.0005	0.0005	0.001	0.002	0.0025	0.0035	0.004	0.005
Low Alloy Steels-Maraging: 23XX, 31XX	100-120	0.0005	0.0007	0.0012	0.002	0.003	0.004	0.005	0.006
CAST IRONS									
Ductile Iron: Ductile Cast Iron	80-140	0.0005	0.008	0.0015	0.002	0.0022	0.003	0.004	0.006
Cast Iron: Malleable, Chilled	80-140	0.0005	0.001	0.002	0.003	0.004	0.005	0.006	0.008
TITANIUM									
Titanium Alloys: 5Al-2.5-Sn-Eli 8Al-1Mo-1V	80-180	0.0003	0.0004	0.0005	0.001	0.0015	0.0025	0.003	0.004
*These are base-line recommendations. Adjust feeds and speeds according to individual circumstances.									
RPM = SFM X 3.82/Tool Diameter Feed (in inches per minute) = RPM X CTT X # of Flutes									

Performance Carbide Feeds & Speeds
Recommendations For Surface Feet Per Minute & Chip Thickness Per Tooth*
"UNDER" 32 HRc Hard Grade Materials

Material	SFM	1/8"	3/16"	1/4"	3/8"	1/2"	5/8"	3/4"	1"
NON-FERROUS MATERIALS									
Aluminum Alloys: 2024-T4/T6, 2014, 6061-T6/T651, 7075-T6	800-2000	0.001	0.002	0.003	0.004	0.005	0.006	0.008	0.01
Magnesium: Die-Cast, Extruded	800-1500	0.001	0.0015	0.002	0.003	0.004	0.006	0.008	0.009
Copper: Yellow Brass, High Lead Brass, Red Brass	800-1000	0.001	0.0012	0.002	0.0025	0.003	0.004	0.004	0.005
Copper Alloys: Aluminum/Bronze, Low Silicon Bronze	800-1000	0.001	0.0012	0.002	0.0025	0.003	0.004	0.004	0.005
Plastics: Acrylics, Phenolics, Polysulfone, G10, G11	200-500	0.001	0.002	0.003	0.004	0.006	0.008	0.01	0.012
Carbon, Graphites: Carbon, Graphites	200-500	0.002	0.003	0.004	0.006	0.008	0.009	0.01	0.012
STAINLESS STEELS									
Precipitation: 13/8, 15/5, AM-350/355	80-250	0.0003	0.0005	0.001	0.001	0.002	0.003	0.004	0.005
Austenitic: 200 Series, 302, 303, 304L, 316L	100-350	0.0002	0.0003	0.0005	0.001	0.002	0.0025	0.0035	0.0045
Martensitic: 403, 410, 416	80-250	0.0002	0.0003	0.0005	0.001	0.0015	0.0025	0.003	0.004
HIGH TEMP. ALLOYS									
Cobalt Base: Stellite, HS-21, Haynes 25/188, X-40, L-605	50-90	0.0003	0.0004	0.0006	0.0008	0.0012	0.0015	0.002	0.0025
Nickel Base: Inconel 600/625, Nickel 200-270, Invar, Monel 400-405, K-Monel, PermaNechel 300, Incoly 600-800, Mar-M-246/247	50-95	0.0004	0.0005	0.0008	0.001	0.002	0.0025	0.003	0.004
Iron Base: N-155, Timken 16-26-6, Incoloy 800-802, Multimet	70-125	0.0004	0.0005	0.001	0.0015	0.002	0.0025	0.003	0.004
STEELS									
High Strength Steels: 4140, 4340, 6150, 52100, H11, H13	100-160	0.0004	0.0006	0.001	0.0015	0.002	0.0025	0.003	0.004
High Alloy Steels-Mold & Die: A-2/6/10, P20, 01, 02, 06	100-160	0.0004	0.0006	0.001	0.0015	0.0015	0.0025	0.003	0.004
Medium Alloy Steels: 200, 250, 300	100-350	0.0005	0.0005	0.001	0.002	0.0025	0.0035	0.004	0.005
Low Alloy Steels-Maraging: 10XX, 11XX, 13XX	100-350	0.0005	0.0007	0.0012	0.002	0.003	0.004	0.005	0.006
CAST IRONS									
Ductile Iron: Ductile Cast Iron	120-350	0.0005	0.008	0.0015	0.002	0.0022	0.003	0.004	0.006
Cast Iron: Gray Cast Iron	120-300	0.0005	0.001	0.002	0.003	0.004	0.005	0.006	0.008
TITANIUM									
Titanium Alloys: Commercially Pure, 6AL-4V, ASTM 1/2/3, 6AL-25N-4Zr-2Mo-Si	100-250	0.0003	0.0004	0.0005	0.001	0.0015	0.0025	0.003	0.004
*These are base-line recommendations. Adjust feeds and speeds according to individual circumstances.									
RPM = SFM X 3.82/Tool Diameter Feed (in inches per minute) = RPM X CTT X # of Flutes									

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