

Atlantic Microtool - 2013

PRECISION CARBIDE CUTTING TOOLS



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THE ATLANTIC MICRO TOOL DIFFERENCE

Today's market has placed ever increasing demands on the machine tool industry and manufacturers for increased production efficiency, better quality control and reduced costs. Atlantic Micro Tool has met these challenges by developing a new line of cutting tool products that maximizes the advantages of today's sophisticated CNC Machining Center Technology, as well as all other machining processes. Our products are custom manufactured to the highest industry standards.

ATLANTIC MICRO TOOL PRODUCTS OFFER THE FOLLOWING ADVANTAGES:

- Ø Extensive product offerings of more than 10,000 part numbers in all industry standard sizes.
- Ø Ultra precision of tolerances and consistent tool accuracy.
- Ø Lab inspected raw materials

POLICIES AND PROCEDURES

ORDERING INFORMATION

All items in the Atlantic Micro Tool catalog carry unique part numbers. Using these numbers will keep ordering errors to a minimum and assure that you will receive exactly what you order. Orders will be accepted by phone, fax, and e-mail. All orders under \$50 will be subject to a \$7.50 processing fee.

PRODUCT WARRANTY

Atlantic Micro Tool assures that all products sold shall be free from manufacturing and material defects. Atlantic Micro Tool will repair, replace, or issue credit on any product that does not conform with this warranty. Any product that has been altered, used, marked or damaged voids this warranty. This warranty is in lieu of all other warranties, expressed or implied including any warranty of merchantability or fitness for a particular purpose and is also in lieu of all other obligations or liabilities, including any obligation or liability arising from contract, or otherwise for damages whether direct, indirect or consequential. There are no other warranties except the warranty against defects in material and workmanship set forth above, and we neither assume nor authorize any other person or firm to assume for it any other obligation or liability in connection with our products.

TERMS OF ORDER

All orders are shipped with Net 30 day terms (delinquent at 45 days). No shipment to delinquent accounts. Any account paid after 30 days may become COD on future orders. All orders are subject to credit approval. In the event any legal action or proceeding is brought by any party under this Agreement, the prevailing party shall be entitled to recover the reasonable fees of its attorneys and any costs incurred in such action or proceeding, including costs of appeal, if any, in such amount that the court or administrative body having jurisdiction over such action or proceeding may award.

DROP SHIPPING

All drop ship orders must be faxed or e-mailed to Atlantic Micro Tool. Atlantic Micro Tool will not assume responsibility for any incorrect shipping information. Atlantic Micro Tool will assess a \$20 fee to any drop ship order that is either returned or re-routed by the shipping company. Failure to provide proper and complete information that results in any additional shipping penalties or fees from UPS will be billed to the distributor.

DISTRIBUTOR DISCOUNT

See current price supplemental for list pricing and call for discount schedule, terms & conditions.

CANCELLATIONS

On orders for special or altered standard tooling, a cancellation fee will be charged proportionate to the cost incurred on the order at the time of cancellation. On standard catalog tools, cancellations are accepted at no charge unless the order has been shipped or the ordered amount is unusually large in proportion to Atlantic Micro Tool's historical sales.

RETURNED GOODS POLICY

Tools may not be returned without a return goods authorization (RGA) number. Material returned for credit will be subject to a 20% restocking charge. Credits will not be issued for any items that have been modified, altered, marked, machined or used. Special items are not subject to returns or exchanges.

SAFETY PRECAUTIONS

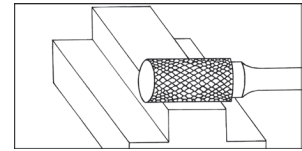
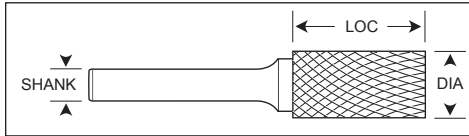
Carbide cutting tools should be used to perform functions that are compatible with the original tool design. Any carbide cutting tool may chip or shatter when broken. Safety glasses and other appropriate safety equipment should be worn by all people in the vicinity of tool use.

TECHNICAL ASSISTANCE

Any technical assistance or application suggestions made by Atlantic Micro Tool personnel are only to assist the customer and in all cases use of such information is solely the customer's responsibility.

CLAIMS AND REVISIONS

Claims for shortages, damage, or loss must be made within three days of receipt of tool. Atlantic Micro Tool reserves the right to revise listings and specifications in this catalog without notice. Atlantic Micro Tool is not responsible for any typographical errors in this catalog. Please verify current data at the time of you order.



SA

Cylinder Shape - No End Cut

Applications:

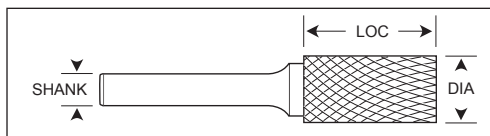
- **Deburring**

TOOL	DIA	LOC	SHANK	SINGLE CUT	DOUBLE CUT	ALUMA CUT
SA-61	1/16	1/4	3/32	343-B001001	343-B002001	
SA-41	1/16	1/4	1/8	343-B001002	343-B002002	
SA-41L2	1/16	1/4	1/8	343-B001002B	343-B002002B	
SA-41L3	1/16	1/4	1/8	343-B00100C	343-B002002C	
SA-63	3/32	3/8	3/32	343-B001007	343-B002007	
SA-42	3/32	7/16	1/8	343-B001004	343-B002004	
SA-42L2	3/32	7/16	1/8	343-B001004B	343-B002004B	
SA-42L3	3/32	7/16	1/8	343-B001004A	343-B002004A	
SA-11	1/8	1/2	1/4	343-B001005C	343-B002005C	
SA-43	1/8	9/16	1/8	343-B001006	343-B002006	
SA-43L2	1/8	9/16	1/8	343-B006025	343-B006050	
SA-43L3	1/8	9/16	1/8	343-B002631	343-B002006A	
SA-12	1/8	5/8	1/4	343-B001005D	343-B002005D	
SA-52	5/32	1/2	1/8	343-B001008	343-B002008	
SA-13	5/32	5/8	1/4	343-B001009	343-B002009C	
SA-53	3/16	1/2	1/8	343-B001010	343-B002010	
SA-81	3/16	5/8	3/16	343-B001011	343-B002011	
SA-14	3/16	5/8	1/4	343-B001012C	343-B002012C	
SA-50	1/4	3/16	1/8	343-B001013	343-B002013	
SA-51	1/4	1/2	1/8	343-B001015	343-B002015	
SA-1	1/4	5/8	1/4	343-B001017C	343-B002017C	
SA-1L6	1/4	1/2	1/4	343-B002601	343-B002701	
SA-1NF	1/4	5/8	1/4			343-B002518
SA-1L	1/4	1	1/4	343-B001936	343-B002936	
SA-2	5/16	3/4	1/4	343-B001018	343-B002018	
SA-3	3/8	3/4	1/4	343-B001019	343-B002019	
SA-3L6	3/8	3/4	1/4	343-B002602	343-B002702A	
SA-3NF	3/8	3/4	1/4			343-B002500
SA-3L	3/8	1	1/4	343-B001937	343-B002937	
SA-3X	3/8	1-1/2	1/4	343-B001702X	343-B002702X	
SA-4	7/16	1	1/4	343-B001020	343-B002020	
SA-5	1/2	1	1/4	343-B001021	343-B002021	
SA-5L6	1/2	1	1/4	343-B002603	343-B002703	
SA-5NF	1/2	1	1/4			343-B002501
SA-6	5/8	1	1/4	343-B001022	343-B002022	
SA-6NF	5/8	1	1/4			343-B002502
SA-15	3/4	1/2	1/4	343-B001023	343-B002023	
SA-16	3/4	3/4	1/4	343-B001024	343-B002024	
SA-7	3/4	1	1/4	343-B001025	343-B002025	
SA-7NF	3/4	1	1/4			343-B002539
SA-8	7/8	1	1/4	343-B001025A	343-B002025A	
SA-9	1	1	1/4	343-B001026	343-B002026	

SA-41, SA-42 & SA-43 have a 1-1/2" overall length • SA-1 burr has a 2" overall length
 L2 denotes 2" overall length • L3 denotes 3" overall length • L6 denotes a 6" shank length
 Diameters of 1/8, 5/32 & 3/16 with 1/4 shanks have a 2" overall length
 All cutting diameters of 5/16" and larger are brazed on a 1-3/4" long hardened steel shank

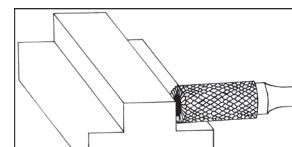
Atlantic Burr

PROUDLY MADE IN THE USA



SB

Cylinder Shape - with End Cut

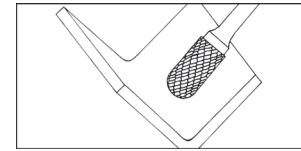
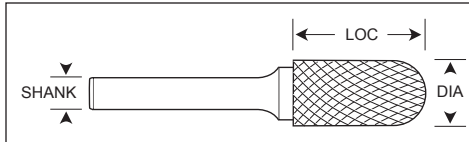


Applications:

- Peripheral Milling
- Face Milling

TOOL	DIA	LOC	SHANK	 SINGLE CUT	 DOUBLE CUT	 ALUMA CUT
SB-41	1/16	1/4	1/8	343-B001031	343-B002031	
SB-41L2	1/16	1/4	1/8	343-B001056	343-B002056	
SB-41L3	1/16	1/4	1/8	343-B001057	343-B002057	
SB-42	3/32	7/16	1/8	343-B001033	343-B002033	
SB-42L2	3/32	7/16	1/8	343-B001033A	343-B002033A	
SB-42L3	3/32	7/16	1/8	343-B001033B	343-B002033B	
SB-42-ECO D.E.	3/32		1/8	343-B002390		
SB-11	1/8	1/2	1/4	343-B001034C	343-B002034C	
SB-43	1/8	9/16	1/8	343-B001035	343-B002035	
SB-43L2	1/8	9/16	1/8	343-B001035E	343-B002035A	
SB-43L3	1/8	9/16	1/8	343-B001036A	343-B002036A	
SB-12	1/8	5/8	1/4	343-B001029	343-B002029	
SB-13	5/32	5/8	1/4	343-B001038C	343-B002038C	
SB-14	3/16	5/8	1/4	343-B001041C	343-B002041	
SB-51	1/4	3/16	1/8	343-B001044	343-B002044	
SB-51A	1/4	1/2	1/8	343-B001044A	343-B002044AA	
SB-1	1/4	5/8	1/4	343-B001046C	343-B002046C	
SB-1L6	1/4	5/8	1/4	343-B001027	343-B002027A	
SB-1NF	1/4	5/8	1/4			343-B002546
SB-1L	1/4	1	1/4	343-B001968	343-B002938	
SB-1-ECO D.E.	1/4		1/4	343-B002400		
SB-2	5/16	3/4	1/4	343-B001047	343-B002048	
SB-3	3/8	3/4	1/4	343-B001048	343-B002047	
SB-3L6	3/8	3/4	1/4	343-B002941	343-B002941A	
SB-3NF	3/8	3/4	1/4			343-B002588
SB-3L	3/8	1	1/4	343-B001939	343-B002939	
SB-3X	3/8	1-1/2	1/4	343-B001048A	343-B002047X	
SB-4	7/16	1	1/4	343-B001049	343-B002049	
SB-5	1/2	1	1/4	343-B001055	343-B002055	
SB-5L6	1/2	1	1/4	343-B004299	343-B004300	
SB-5NF	1/2	1	1/4			343-B002589
SB-6	5/8	1	1/4	343-B001050	343-B002050	
SB-6NF	5/8	1	1/4			343-B002590
SB-15	3/4	1/2	1/4	343-B001051	343-B002051	
SB-16	3/4	3/4	1/4	343-B001052	343-B002052	
SB-7	3/4	1	1/4	343-B001053	343-B002053	
SB-7NF	3/4	1	1/4			343-B002591
SB-8	7/8	1	1/4	343-B001053A	343-B002053A	
SB-9	1	1	1/4	343-B001054	343-B002054	

SB-41, SB-42 & SB-43 have a 1-1/2" overall length • SB-1 burr has a 2" overall length
 L2 denotes 2" overall length • L3 denotes 3" overall length • L6 denotes a 6" shank length
 Diameters of 1/8, 5/32 & 3/16 with 1/4 shanks have a 2" overall length
 All cutting diameters of 5/16" and larger are brazed on a 1-3/4" long hardened steel shank



SC

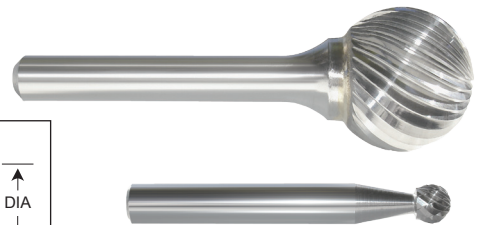
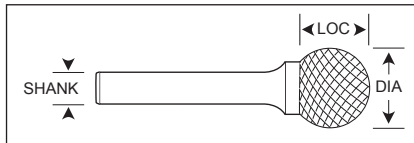
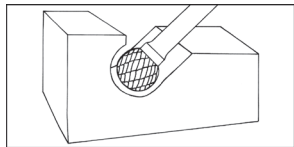
Cylinder Shape - Radius End

Applications:

- Surface Milling
- Contouring

TOOL	DIA	LOC	SHANK	SINGLE CUT	DOUBLE CUT	ALUMA CUT
SC-61	3/32	3/8	3/32	343-B001060	343-B002060	
SC-41	3/32	7/16	1/8	343-B001061	343-B002061	
SC-42	1/8	9/16	1/8	343-B001063	343-B002063	
SC-42L2	1/8	9/16	1/8	343-B006075	343-B006100	
SC-42L3	1/8	9/16	1/8	343-B001063A	343-B002732	
SC-11	1/8	1/2	1/4	343-B001062C	343-B002062C	
SC-12	1/8	5/8	1/4	343-B001062D	343-B002062D	
SC-52	5/32	1/2	1/8	343-B001070	343-B002070	
SC-13	5/32	5/8	1/4	343-B001065C	343-B002065C	
SC-53	3/16	1/2	1/8	343-B001066	343-B002066	
SC-81	3/16	5/8	3/16	343-B001067	343-B002067	
SC-14	3/16	5/8	1/4	343-B001068C	343-B002068C	
SC-51	1/4	1/2	1/8	343-B001069	343-B002069	
SC-1	1/4	5/8	1/4	343-B001071C	343-B002072C	
SC-1L	1/4	1	1/4	343-B001250	343-B002250	
SC-1L6	1/4	1/2	1/4	343-B002605	343-B002705	
SC-1NF	1/4	5/8	1/4			343-B002519
SC-2	5/16	3/4	1/4	343-B001072	343-B002071	
SC-3	3/8	3/4	1/4	343-B001073	343-B002073	
SC-3L	3/8	1	1/4	343-B001940	343-B002940	
SC-3L6	3/8	3/4	1/4	343-B002606	343-B002706	
SC-3X	3/8	1-1/2	1/4	343-B001706X	343-B002706X	
SC-3NF	3/8	3/4	1/4			343-B002503
SC-4	7/16	1	1/4	343-B001074	343-B002074	
SC-5	1/2	1	1/4	343-B001075	343-B002075	
SC-5L6	1/2	1	1/4	343-B002607	343-B002707	
SC-5NF	1/2	1	1/4			343-B002504
SC-6	5/8	1	1/4	343-B001076	343-B002076	
SC-6NF	5/8	1	1/4			343-B002505
SC-15	3/4	1/2	1/4	343-B001068A	343-B002068A	
SC-16	3/4	3/4	1/4	343-B001078A	343-B002078A	
SC-7	3/4	1	1/4	343-B001077	343-B002077	
SC-7NF	3/4	1	1/4			343-B002525
SC-9	1	1	1/4	343-B001079	343-B002078	

SC-41 & SC-42 have a 1-1/2" overall length • SC-1 burr has a 2" overall length
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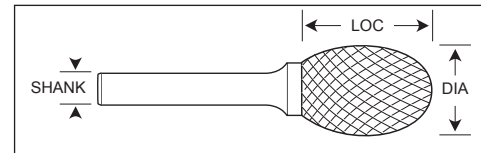
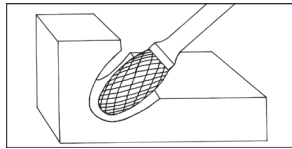
SD Ball Shape

Applications:

- Contouring
- Hole Deburring
- Build-up Welding Preparation

TOOL	DIA	LOC	SHANK			
						
				SINGLE CUT	DOUBLE CUT	ALUMA CUT
SD-40	1/16	1/16	1/8	343-B001079A	343-B002079	
SD-61	3/32	3/32	3/32	343-B001080	343-B002080	
SD-41	3/32	3/32	1/8	343-B001081	343-B002081	
SD-42	1/8	1/8	1/8	343-B001082	343-B002082	
SD-42L2	1/8	1/8	1/8	343-B006125	343-B006150	
SD-42L3	1/8	1/8	1/8	343-B001082A	343-B002733	
SD-11	1/8	3/32	1/4	343-B001083C	343-B002083C	
SD-52	5/32	5/32	1/8	343-B001088	343-B002088	
SD-53	3/16	5/32	1/8	343-B001084	343-B002084	
SD-81	3/16	5/32	3/16	343-B001085	343-B002085	
SD-14	3/16	1/8	1/4	343-B001086C	343-B002086C	
SD-51	1/4	7/32	1/8	343-B001087	343-B002087	
SD-1	1/4	7/32	1/4	343-B001089C	343-B002089C	
SD-1L6	1/4	7/32	1/4	343-B002609	343-B002709	
SD-1NF	1/4	7/32	1/4			343-B002520
SD-2	5/16	1/4	1/4	343-B001090	343-B002090	
SD-3	3/8	5/16	1/4	343-B001091	343-B002091	
SD-3L6	3/8	5/16	1/4	343-B002610	343-B002710	
SD-3NF	3/8	5/16	1/4			343-B002506
SD-4	7/16	3/8	1/4	343-B001092	343-B002092	
SD-5	1/2	7/16	1/4	343-B001093	343-B002093	
SD-5L6	1/2	7/16	1/4	343-B002611	343-B002711	
SD-5NF	1/2	7/16	1/4			343-B002507
SD-6	5/8	9/16	1/4	343-B001094	343-B002094	
SD-6NF	5/8	9/16	1/4			343-B002508
SD-7	3/4	11/16	1/4	343-B001095	343-B002095	
SD-7NF	3/4	11/16	1/4			343-B003005
SD-9	1	15/16	1/4	343-B001096	343-B002096	

SD-40, SD-41 & SD-42 have a 1-1/2" overall length • SD-1 burr has a 2" overall length
 L2 denotes 2" overall length • L3 denotes 3" overall length • L6 denotes a 6" shank length
 Diameters of 1/8, 5/32 & 3/16 with 1/4 shanks have a 2" overall length
 All cutting diameters of 5/16" and larger are brazed on a 1-3/4" long hardened steel shank



SE Oval / Egg Shape

Applications:

- Contouring

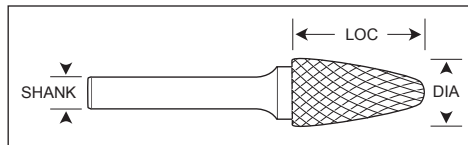
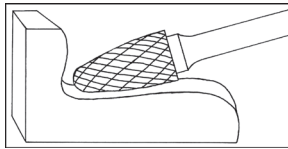
TOOL	DIA	LOC	SHANK	CUT TYPES		
				SINGLE CUT	DOUBLE CUT	ALUMA CUT
SE-61	3/32	1/8	3/32	343-B001108A	343-B002108A	
SE-41	1/8	7/32	1/8	343-B001100	343-B002100	
SE-41L2	1/8	7/32	1/8	343-B006175	343-B006200	
SE-41L3	1/8	7/32	1/8	343-B001100B	343-B002100A	
SE-53	3/16	9/32	1/8	343-B001101	343-B002101	
SE-81	3/16	9/32	3/16	343-B001102	343-B002102	
SE-11	3/16	5/16	1/4	343-B004127	343-B004128	
SE-51	1/4	3/8	1/8	343-B001103	343-B002103	
SE-1	1/4	3/8	1/4	343-B001105C	343-B002105C	
SE-1L6	1/4	3/8	1/4	343-B002613	343-B002713	
SE-3	3/8	5/8	1/4	343-B001106	343-B002106	
SE-3L6	3/8	5/8	1/4	343-B002614	343-B002714	
SE-3NF	3/8	5/8	1/4			343-B002509
SE-5	1/2	7/8	1/4	343-B001107	343-B002107	
SE-5L6	1/2	7/8	1/4	343-B005020	343-B002715	
SE-5NF	1/2	7/8	1/4			343-B002510
SE-6	5/8	1	1/4	343-B001108	343-B002108	
SE-6NF	5/8	1	1/4			343-B002511
SE-7	3/4	1	1/4	343-B001109	343-B002109	
SE-7NF	3/4	1	1/4			343-B004302

SE-41 has a 1-1/2" overall length • SE-1 burrs has a 2" overall length
 L2 denotes 2" overall length • L3 denotes 3" overall length • L6 denotes a 6" shank length
 Diameters of 1/8, 5/32 & 3/16 with 1/4 shanks have a 2" overall length
 All cutting diameters of 5/16" and larger are brazed on a 1-3/4" long hardened steel shank

Atlantic Burr

PROUDLY MADE IN THE USA

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BURR



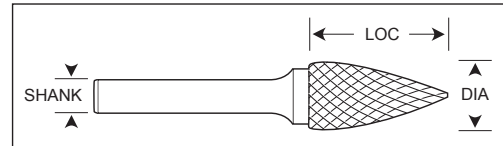
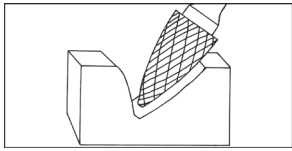
SF Tree Shape - Radius

Applications:

- *Narrow Contours*

TOOL	DIA	LOC	SHANK	SINGLE CUT	DOUBLE CUT	ALUMA CUT
SF-61	3/32	1/4	3/32	343-B003702A	343-B003702	
SF-41	1/8	1/4	1/8	343-B001110	343-B002110	
SF-42	1/8	1/2	1/8	343-B001111	343-B002111	
SF-42L2	1/8	1/2	1/8	343-B006225	343-B006250	
SF-42L3	1/8	1/2	1/8	343-B001146	343-B002735	
SF-11	1/8	1/2	1/4	343-B001112C	343-B002112C	
SF-53	3/16	1/2	1/8	343-B001113	343-B002113	
SF-81	3/16	1/2	3/16	343-B001114	343-B002114	
SF-51	1/4	1/2	1/8	343-B001115	343-B002115	
SF-1	1/4	5/8	1/4	343-B001117C	343-B002117C	
SF-1L6	1/4	1/2	1/4	343-B002617	343-B002717	
SF-1NF	1/4	5/8	1/4			343-B002521
SF-3	3/8	3/4	1/4	343-B001118	343-B002118	
SF-3L6	3/8	3/4	1/4	343-B002618	343-B002718	
SF-3NF	3/8	3/4	1/4			343-B002512
SF-4	7/16	1	1/4	343-B001119	343-B002119	
SF-13	1/2	3/4	1/4	343-B001120	343-B002120	
SF-5	1/2	1	1/4	343-B001121	343-B002121	
SF-5L6	1/2	1	1/4	343-B002619	343-B002719	
SF-5NF	1/2	1	1/4			343-B002513
SF-6	5/8	1	1/4	343-B001122	343-B002122	
SF-6NF	5/8	1	1/4			343-B002514
SF-7	3/4	1	1/4	343-B001123	343-B002123	
SF-7NF	3/4	1	1/4			343-B002544
SF-14	3/4	1-1/4	1/4	343-B001124	343-B002124C	
SF-14NF	3/4	1-1/4	1/4			343-B003006
SF-15	3/4	1-1/2	1/4	343-B001125	343-B002125	

SF-41 & SF-42 have a 1-1/2" overall length • SF-1 burr has a 2" overall length
 L2 denotes 2" overall length • L3 denotes 3" overall length • L6 denotes a 6" shank length
 Diameters of 1/8, 5/32 & 3/16 with 1/4 shanks have a 2" overall length
 All cutting diameters of 5/16" and larger are brazed on a 1-3/4" long hardened steel shank



SG Tree Shape - Pointed

Applications:

- Milling
- Acute Angle Milling
- Narrow Contouring

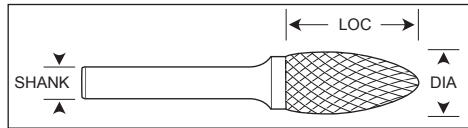
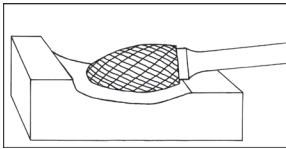
TOOL	DIA	LOC	SHANK		
					
				SINGLE CUT	DOUBLE CUT
SG-61	3/32	1/4	3/32	343-B002148	343-B002147
SG-41	1/8	1/4	1/8	343-B001130	343-B002130
SG-42	1/8	5/16	1/8	343-B001131	343-B002131
SG-43	1/8	3/8	1/8	343-B001132	343-B002132
SG-44	1/8	1/2	1/8	343-B001145	343-B002145
SG-44L2	1/8	1/2	1/8	343-B006275	343-B006300
SG-44L3	1/8	1/2	1/8	343-B006875	343-B006900
SG-53	3/16	1/2	1/8	343-B001133	343-B002133
SG-81	3/16	1/2	3/16	343-B001134	343-B002134
SG-51	1/4	1/2	1/8	343-B001135	343-B002135
SG-1	1/4	5/8	1/4	343-B001137C	343-B002137C
SG-1L6	1/4	1/2	1/4	343-B002621	343-B002721
SG-2	5/16	3/4	1/4	343-B001138	343-B002138
SG-3	3/8	3/4	1/4	343-B001139	343-B002139
SG-3L6	3/8	3/4	1/4	343-B002622	343-B002722
SG-13	1/2	3/4	1/4	343-B001140	343-B002140
SG-5	1/2	1	1/4	343-B001141	343-B002141
SG-5L6	1/2	1	1/4	343-B002623	343-B002723
SG-6	5/8	1	1/4	343-B001142	343-B002142
SG-7	3/4	1	1/4	343-B001143	343-B002143
SG-15	3/4	1-1/2	1/4	343-B001144	343-B002144

SG-41, SG-42, SG-43 & SG-44 have 1-1/2" overall length • SG-1 burr has a 2" overall length
 L2 denotes 2" overall length • L3 denotes 3" overall length • L6 denotes a 6" shank length
 Diameters of 1/8, 5/32 & 3/16 with 1/4 shanks have a 2" overall length
 All cutting diameters of 5/16" and larger are brazed on a 1-3/4" long hardened steel shank

Atlantic Burr

PROUDLY MADE IN THE USA

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BURR



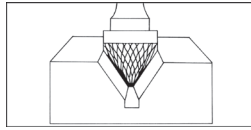
SH Flame Shape

Applications:

- Contouring
- Milling

TOOL	DIA	LOC	SHANK		
					
				SINGLE CUT	DOUBLE CUT
SH-41	1/8	1/4	1/8	343-B001150	343-B002150
SH-41L2	1/8	1/4	1/8	343-B006325	343-B006350
SH-41L3	1/8	1/4	1/8	343-B002637	343-B002737
SH-53	3/16	3/8	1/8	343-B001151	343-B002151
SH-1	1/4	5/8	1/4	343-B001157C	343-B002157C
SH-2	5/16	3/4	1/4	343-B001153	343-B002153
SH-2L6	5/16	3/4	1/4	343-B002629	343-B002729
SH-5	1/2	1-1/4	1/4	343-B001154	343-B002154
SH-5L6	1/2	1-1/4	1/4	343-B002630	343-B002730
SH-6	5/8	1-7/16	1/4	343-B001155	343-B002155
SH-7	3/4	1-5/8	1/4	343-B001156	343-B002156

SH-41 has a 1-1/2" overall length • SH-1 burr has a 2" overall length
 L2 denotes 2" overall length • L3 denotes 3" overall length • L6 denotes a 6" shank length
 Diameters of 1/8, 5/32 & 3/16 with 1/4 shanks have a 2" overall length
 All cutting diameters of 5/16" and larger are brazed on a 1-3/4" long hardened steel shank



Applications:

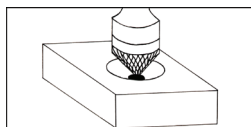
- Acute Angle Machining
- Chamfering
- Countersinking



SJ

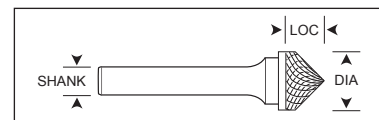
60° Cone Shape

TOOL	DIA	LOC	SHANK	SINGLE CUT	DOUBLE CUT
SJ-42	1/8	3/32	1/8	343-B001160	343-B002160
SJ-42 D.E.	1/8	3/32	1/8	343-B001160D	343-B002160D
SJ-81	3/16	9/64	3/16	343-B001168	343-B002161
SJ-81 D.E.	3/16	9/64	3/16	343-B001168D	
SJ-1	1/4	3/16	1/4	343-B001162	343-B002162
SJ-1 D.E.	1/4	3/16	1/4	343-B001162D	343-B002162D
SJ-3	3/8	5/16	1/4	343-B001163	343-B002163
SJ-5	1/2	7/16	1/4	343-B001164	343-B002164
SJ-6	5/8	9/16	1/4	343-B001165	343-B002165
SJ-7	3/4	11/16	1/4	343-B001166	343-B002166
SJ-9	1	15/16	1/4	343-B001167	343-B002167



Applications:

- Acute Angle Machining
- Chamfering
- Countersinking



SK

90° Cone Shape

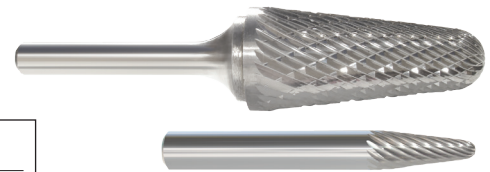
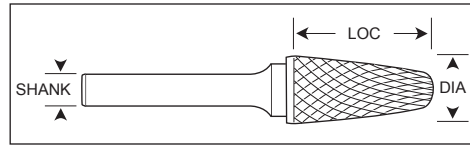
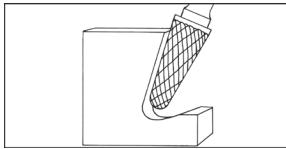
TOOL	DIA	LOC	SHANK	SINGLE CUT	DOUBLE CUT
SK-42	1/8	1/16	1/8	343-B001169	343-B002169
SK-42 D.E.	1/8	1/16	1/8	343-B001169D	343-B002169D
SK-81	3/16	3/32	3/16	343-B001171	343-B002171
SK-81 D.E.	3/16	3/32	3/16	343-B001171D	343-B002171D
SK-1	1/4	1/8	1/4	343-B001172	343-B002172C
SK-3	3/8	3/16	1/4	343-B001173	343-B002173
SK-5	1/2	1/4	1/4	343-B001174	343-B002174
SK-6	5/8	5/16	1/4	343-B001175	343-B002175
SK-7	3/4	3/8	1/4	343-B001176	343-B002176
SK-9	1	1/2	1/4	343-B001177C	343-B002177

SJ-42 & SK-42 have a 1-1/2" overall length • SJ-1 & SK-1 burr has a 2" overall length
 Diameters of 1/8, 5/32 & 3/16 with 1/4 shanks have a 2" overall length
 All cutting diameters of 5/16" and larger are brazed on a 1-3/4" long hardened steel shank

Atlantic Burr

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BURR



SL

Taper Shape - Radius

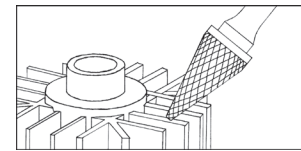
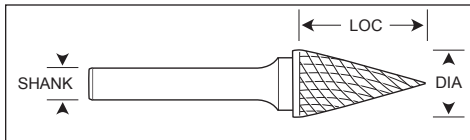
Applications:

- Surface Machining
- Narrow Contours & Surfaces

TOOL	DIA	LOC	SHANK	INCLUDED ANGLE			
					SINGLE CUT	DOUBLE CUT	ALUMA CUT
SL-41	1/8	3/8	1/8	14°	343-B001180	343-B002180	
SL-42	1/8	1/2	1/8	14°	343-B001181	343-B002181	
SL-42L2	1/8	1/2	1/8	14°	343-B001181A	343-B002181A	
SL-42L3	1/8	1/2	1/8	14°	343-B002640	343-B002740	
SL-53	3/16	1/2	1/8	14°	343-B001182	343-B002182	
SL-81	3/16	1/2	3/16	14°	343-B001183	343-B002183	
SL-51	1/4	1/2	1/8	14°	343-B001178	343-B002178	
SL-1	1/4	5/8	1/4	14°	343-B001184	343-B002184	
SL-1L6	1/4	5/8	1/4	14°	343-B002625	343-B002725	
SL-1NF	1/4	5/8	1/4	14°			343-B002547
SL-2	5/16	7/8	1/4	14°	343-B001185	343-B002185	
SL-3	3/8	1-1/16	1/4	14°	343-B001186	343-B002186	
SL-3L6	3/8	1-1/16	1/4	14°	343-B002626	343-B002726	
SL-3NF	3/8	1-1/16	1/4	14°			343-B002515
SL-4	1/2	1-1/8	1/4	14°	343-B001187	343-B002187	
SL-4L6	1/2	1-1/8	1/4	14°	343-B001187B	343-B002187B	
SL-4NF	1/2	1-1/8	1/4	14°			343-B002516
SL-5	5/8	1-3/16	1/4	14°	343-B001188	343-B002188	
SL-5NF	5/8	1-3/16	1/4	14°			343-B003007
SL-6	5/8	1-5/16	1/4	14°	343-B001179	343-B002179	
SL-6NF	5/8	1-5/16	1/4	14°			343-B002517
SL-7	3/4	1-1/2	1/4	14°	343-B001189	343-B002189	
SL-7NF	3/4	1-1/2	1/4	14°			343-B004303

SL-41 & SL-42 have a 1-1/2" overall length • SL-1 burr has a 2" overall length
 L2 denotes 2" overall length • L3 denotes 3" overall length • L6 denotes a 6" shank length
 Diameters of 1/8, 5/32 & 3/16 with 1/4 shanks have a 2" overall length
 All cutting diameters of 5/16" and larger are brazed on a 1-3/4" long hardened steel shank

Carbide Burrs



ATLANTIC
BURR

SM

Pointed Cone Shape

Applications:

- Surface Machining
- Narrow Contouring

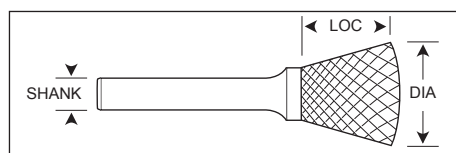
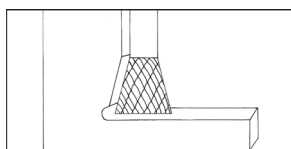
TOOL	DIA	LOC	SHANK	INCLUDED ANGLE		
					SINGLE CUT	DOUBLE CUT
SM-61	3/32	1/4	3/32	10°	343-B001190	343-B002190
SM-41	1/8	11/32	1/8	12°	343-B001191	343-B002191
SM-42	1/8	7/16	1/8	14°	343-B001192	343-B002192
SM-42L2	1/8	7/16	1/8	14°	343-B001192A	343-B002192A
SM-42L3	1/8	7/16	1/8	14°	343-B001192B	343-B002192B
SM-43	1/8	5/8	1/8	7°	343-B001193	343-B002193
SM-53	3/16	1/2	1/8	16°	343-B001194	343-B002194
SM-51	1/4	1/2	1/8	22°	343-B001196	343-B002196
SM-1	1/4	1/2	1/4	22°	343-B001198C	343-B002198C
SM-1L6	1/4	1/2	1/4	22°	343-B002753	343-B002754
SM-2	1/4	3/4	1/4	14°	343-B001199	343-B002199
SM-3	1/4	1	1/4	10°	343-B001200	343-B002200
SM-3L6	1/4	1	1/4	10°	343-B002850	343-B002851A
SM-4	3/8	5/8	1/4	28°	343-B001201	343-B002201
SM-4L6	3/8	5/8	1/4	28°	343-B002632	343-B002849
SM-5	1/2	7/8	1/4	28°	343-B001202	343-B002202
SM-5L6	1/2	7/8	1/4	28°	343-B002636	343-B002204
SM-6	5/8	1	1/4	31°	343-B001203	343-B002203

SM-41, SM-42 & SM-43 have 1-1/2" overall length • SM-1 burr has a 2" overall length
 L2 denotes 2" overall length • L3 denotes 3" overall length
 Diameters of 1/8, 5/32 & 3/16 with 1/4 shanks have a 2" overall length
 All cutting diameters of 5/16" and larger are brazed on a 1-3/4" long hardened steel shank

Atlantic Burr

PROUDLY MADE IN THE USA

ATLANTIC
BURR



SN

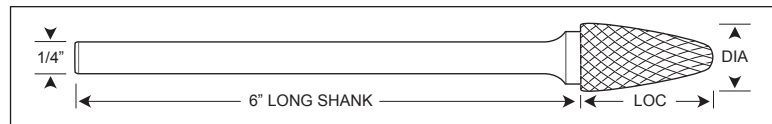
Inverted Cone Shape

Applications:

- Edge Milling
- Rear Machining on difficult to reach areas

TOOL	DIA	LOC	SHANK	INCLUDED ANGLE		
					SINGLE CUT	DOUBLE CUT
SN-61	3/32	1/8	3/32	10°	343-B001220	343-B002220
SN-41	3/32	1/8	1/8	10°	343-B001221	343-B002221
SN-42	1/8	3/16	1/8	10°	343-B001222	343-B002222
SN-53	3/16	1/4	1/8	10°	343-B001223	343-B002223
SN-81	3/16	1/4	3/16	10°	343-B001224	343-B002224
SN-51	1/4	1/4	1/8	10°	343-B001225	343-B002225
SN-1	1/4	5/16	1/4	10°	343-B001227	343-B002227
SN-2	3/8	3/8	1/4	13°	343-B001231	343-B002231
SN-4	1/2	1/2	1/4	28°	343-B001228	343-B002228
SN-6	5/8	3/4	1/4	18°	343-B001229	343-B002229
SN-7	3/4	5/8	1/4	30°	343-B001230	343-B002230

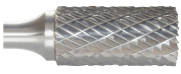
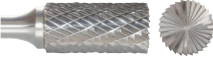
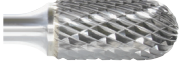
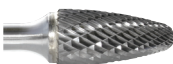
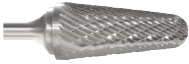
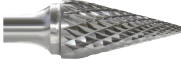
SN-41 & SN-42 have a 1-1/2" overall length • SN-1 burr has a 2" overall length
 Diameters of 1/8, 5/32 & 3/16 with 1/4 shanks have a 2" overall length
 All cutting diameters of 5/16" and larger are brazed on a 1-3/4" long hardened steel shank



LONG SHANK

Applications:

- Hard to reach areas

	TOOL	DIA	LOC	SHANK	INCLUDED ANGLE		
						SINGLE CUT	DOUBLE CUT
	SA-1L6	1/4	1/2	1/4		343-B002601	343-B002701
	SA-3L6	3/8	3/4	1/4		343-B002602	343-B002702A
	SA-5L6	1/2	1	1/4		343-B002603	343-B002703
	SB-1L6	1/4	5/8	1/4		343-B001027	343-B002027A
	SB-3L6	3/8	3/4	1/4		343-B002941	343-B002941A
	SB-5L6	1/2	1	1/4		343-B004299	343-B004300
	SC-1L6	1/4	1/2	1/4		343-B002605	343-B002705
	SC-3L6	3/8	3/4	1/4		343-B002606	343-B002706
	SC-5L6	1/2	1	1/4		343-B002607	343-B002707
	SD-1L6	1/4	7/32	1/4		343-B002609	343-B002709
	SD-3L6	3/8	5/16	1/4		343-B002610	343-B002710
	SD-5L6	1/2	7/16	1/4		343-B002611	343-B002711
	SE-1L6	1/4	3/8	1/4		343-B002613	343-B002713
	SE-3L6	3/8	5/8	1/4		343-B002614	343-B002714
	SE-5L6	1/2	7/8	1/4		343-B005020	343-B002715
	SF-1L6	1/4	1/2	1/4		343-B002617	343-B002717
	SF-3L6	3/8	3/4	1/4		343-B002618	343-B002718
	SF-5L6	1/2	1	1/4		343-B002619	343-B002719
	SG-1L6	1/4	1/2	1/4		343-B002621	343-B002721
	SG-3L6	3/8	3/4	1/4		343-B002622	343-B002722
	SG-5L6	1/2	1	1/4		343-B002623	343-B002723
	SH-2L6	5/16	3/4	1/4		343-B002629	343-B002729
	SH-5L6	1/2	1-1/4	1/4		343-B002630	343-B002730
	SL-1L6	1/4	5/8	1/4	14°	343-B002625	343-B002725
	SL-3L6	3/8	1-1/16	1/4	14°	343-B002626	343-B002726
	SL-4L6	1/2	1-1/8	1/4	14°	343-B001187B	343-B002187B
	SM-1L6	1/4	1/2	1/4	22°	343-B002753	343-B002754
	SM-3L6	1/4	1	1/4	10°	343-B002850	343-B002851A
	SM-4L6	3/8	5/8	1/4	28°	343-B002632	343-B002849
	SM-5L6	1/2	7/8	1/4	28°	343-B002636	343-B002204

All cutting diameters of 5/16" and larger are brazed on a 6" long hardened steel shank

MOLD TOOL & DIE

Applications:

- Engraving
- Dremel-type tools

	TOOL	DIA	LOC	SHANK	INCLUDED ANGLE		
						SINGLE CUT	DOUBLE CUT
	SA-41	1/16	1/4	1/8		343-B001002	343-B002002
	SA-41L2	1/16	1/4	1/8		343-B001002B	343-B002002B
	SA-41L3	1/16	1/4	1/8		343-B00100C	343-B002002C
	SA-42	3/32	7/16	1/8		343-B001004	343-B002004
	SA-42L2	3/32	7/16	1/8		343-B001004B	343-B002004B
	SA-42L3	3/32	7/16	1/8		343-B001004A	343-B002004A
	SA-43	1/8	9/16	1/8		343-B001006	343-B002006
	SA-43L2	1/8	9/16	1/8		343-B006025	343-B006050
	SA-43L3	1/8	9/16	1/8		343-B002631	343-B002006A
	SB-41	1/16	1/4	1/8		343-B001031	343-B002031
	SB-41L2	1/16	1/4	1/8		343-B001056	343-B002056
	SB-41L3	1/16	1/4	1/8		343-B001057	343-B002057
	SB-42	3/32	7/16	1/8		343-B001033	343-B002033
	SB-42L2	3/32	7/16	1/8		343-B001033A	343-B002033A
	SB-42L3	3/32	7/16	1/8		343-B001033B	343-B002033B
	SB-43	1/8	9/16	1/8		343-B001035	343-B002035
	SB-43L2	1/8	9/16	1/8		343-B001035E	343-B002035A
	SB-43L3	1/8	9/16	1/8		343-B001036A	343-B002036A
	SC-41	3/32	7/16	1/8		343-B001061	343-B002061
	SC-42	1/8	9/16	1/8		343-B001063	343-B002063
	SC-42L2	1/8	9/16	1/8		343-B006075	343-B006100
	SC-42L3	1/8	9/16	1/8		343-B001063A	343-B002732
	SD-41	3/32	3/32	1/8		343-B001081	343-B002081
	SD-42	1/8	1/8	1/8		343-B001082	343-B002082
	SD-42L2	1/8	1/8	1/8		343-B006125	343-B006150
	SD-42L3	1/8	1/8	1/8		343-B001082A	343-B002733
	SE-41	1/8	7/32	1/8		343-B001100	343-B002100
	SE-41L2	1/8	7/32	1/8		343-B006175	343-B006200
	SE-41L3	1/8	7/32	1/8		343-B001100B	343-B002100A
	SF-41	1/8	1/4	1/8		343-B001110	343-B002110
	SF-42	1/8	1/2	1/8		343-B001111	343-B002111
	SF-42L2	1/8	1/2	1/8		343-B006225	343-B006250
	SF-42L3	1/8	1/2	1/8		343-B001146	343-B002735
	SG-41	1/8	1/4	1/8		343-B001130	343-B002130
	SG-42	1/8	5/16	1/8		343-B001131	343-B002131
	SG-43	1/8	3/8	1/8		343-B001132	343-B002132
	SG-44	1/8	1/2	1/8		343-B001145	343-B002145
	SG-44L2	1/8	1/2	1/8		343-B006275	343-B006300
	SG-44L3	1/8	1/2	1/8		343-B006875	343-B006900
	SH-41	1/8	1/4	1/8		343-B001150	343-B002150
	SH-41L2	1/8	1/4	1/8		343-B006325	343-B006350
	SH-41L3	1/8	1/4	1/8		343-B002637	343-B002737
	SJ-42	1/8	3/32	1/8	60°	343-B001160	343-B002160
	SJ-42 D.E.	1/8	3/32	1/8	60°	343-B001160D	343-B002160D
	SK-42	1/8	1/16	1/8	90°	343-B001169	343-B002169
	SK-42 D.E.	1/8	1/16	1/8	90°	343-B001169D	343-B002169D
	SL-41	1/8	3/8	1/8	14°	343-B001180	343-B002180
	SL-42	1/8	1/2	1/8	14°	343-B001181	343-B002181
	SL-42L2	1/8	1/2	1/8	14°	343-B001181A	343-B002181A
	SL-42L3	1/8	1/2	1/8	14°	343-B002640	343-B002740
	SM-41	1/8	11/32	1/8	12°	343-B001191	343-B002191
	SM-42	1/8	7/16	1/8	14°	343-B001192	343-B002192
	SM-42L2	1/8	7/16	1/8	14°	343-B001192A	343-B002192A
	SM-42L3	1/8	7/16	1/8	14°	343-B001192B	343-B002192B
	SM-43	1/8	5/8	1/8	7°	343-B001193	343-B002193
	SN-41	3/32	1/8	1/8	10°	343-B001221	343-B002221
	SN-42	1/8	3/16	1/8	10°	343-B001222	343-B002222

CARBIDE BURR SETS



Miniature Burr Sets

		SET DESCRIPTION	 SINGLE CUT	 DOUBLE CUT
X	X	SET A SA-42, SA-43, SC-42, SD-42, SE-41, SF-41, SF-42, SG-41, SL-41, SM-43, SN-41, SN-42 <i>12 Pieces in a Rosewood Case</i>	343-B110001	343-B120001
X	X	SET B SA-41, SA-42, SC-41, SC-42, SD-42, SE-41, SF-41, SF-42, SH-41, SL-41, SL-42, SN-42 <i>12 Pieces in a Rosewood Case</i>	343-B110002	343-B120002
X	X	SET C SA-41, SB-41, SC-41, SD-41, SE-41, SF-41, SG-41, SH-41, SL-41, SM-41, SN-41 <i>11 Pieces in a Rosewood Case</i>	343-B110003	343-B120003
X	X	SET D SA-42, SB-42, SC-42, SD-42, SF-42, SG-42, SJ-42, SK-42, SL-42, SM-42, SN-42 <i>11 Pieces in a Rosewood Case</i>	343-B110004	343-B120004



Aluma Burr Sets

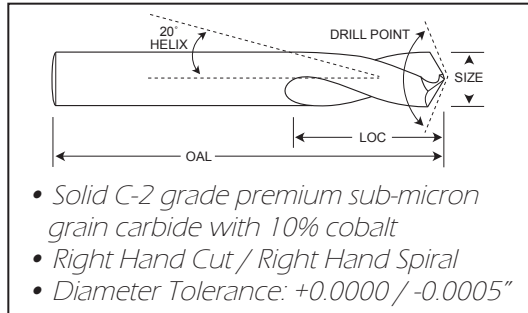
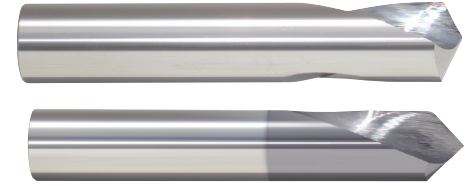
		SET DESCRIPTION	 ALUMA CUT
X	X	SET AL1 SA-1NF, SA-3NF, SB-3NF, SC-1NF, SC-3NF, SD-1NF, SD-3NF, SE-3NF, SF-3NF, SL-3NF <i>10 Pieces in a Rosewood Case</i>	343-B130001
X	X	SET AL2 SA-1NF, SA-3NF, SA-5NF, SC-1NF, SC-3NF, SC-5NF, SD-1NF, SD-3NF, SD-5NF, SF-1NF, SF-3NF, SF-5NF <i>12 Pieces in a Rosewood Case</i>	343-B130002
X	X	SET AL3 SA-1NF, SA-3NF, SA-5NF, SB-5NF, SD-1NF, SD-3NF, SD-5NF, SF-1NF, SF-3NF, SF-5NF, SL-3NF, SL-4NF <i>12 Pieces in a Rosewood Case</i>	343-B130003
X	X	SET AL4 SA-1NF, SA-3NF, SA-5NF, SC-1NF, SC-3NF, SC-5NF, SF-1NF, SF-3NF, SF-5NF, SL-3NF, SL-4NF <i>11 Pieces in a Rosewood Case</i>	343-B130004
X	X	SET AL5 SA-5NF, SB-5NF, SC-5NF, SD-5NF, SE-5NF, SF-5NF, SL-3NF, SL-4NF <i>8 Pieces in a Rosewood Case</i>	343-B130005
X	X	SET AL6 SA-3NF, SA-5NF, SD-3NF, SD-5NF, SE-3NF, SE-5NF, SF-3NF, SF-5NF, SL-3NF, SL-4NF <i>10 Pieces in a Rosewood Case</i>	343-B130006



Standard Burr Sets

SET DESCRIPTION								
1/8	5/32	3/16	1/4	3/8	1/2		SINGLE CUT	DOUBLE CUT
X	X	X	X			SET K SA-11, SB-14, SC-13, SD-14, SE-11, SF-11, SG-1, SH-1, SJ-1, SK-1, SM-1, SN-1	343-B110011	343-B120011
	X	X				SET F SA-52, SA-53, SC-52, SC-53, SD-52, SD-53, SE-53, SF-53, SG-53, SH-53, SM-53, SN-53	343-B110006	343-B120006
	X		X			SET H SA-51, SA-52, SB-51, SC-51, SC-52, SD-51, SD-52, SE-51, SF-51, SG-51, SM-51, SN-51	343-B110008	343-B120008
		X				SET E SA-53, SC-53, SD-53, SE-53, SF-53, SG-53, SH-53, SL-53, SM-53, SN-53	343-B110005	343-B120005
		X	X			SET L SA-1, SA-14, SC-1, SC-14, SD-1, SE-1, SF-1, SG-1, SJ-1, SL-1, SH-1, SN-1	343-B110012	343-B120012
			X			SET G SA-51, SB-51, SC-51, SD-51, SE-51, SF-51, SG-51, SM-51, SN-51	343-B110007	343-B120007
			X			SET I SA-1, SB-1, SC-1, SD-1, SE-1, SF-1, SG-1, SH-1, SJ-1, SK-1, SM-1, SN-1	343-B110009	343-B120009
			X			SET J SB-1, SC-1, SD-1, SE-1, SF-1, SG-1, SH-1, SJ-1, SK-1, SL-1, SM-1, SN-1	343-B110010	343-B120010
			X			SET AA SA-1, SB-1, SC-1, SD-1, SE-1, SF-1, SG-1, SH-1, SJ-1, SK-1, SL-1, SM-1	343-B110026	343-B120026
				X		SET AB SA-3, SB-3, SC-3, SD-3, SE-3, SF-3, SG-3, SJ-3, SK-3, SL-3, SM-4, SN-2	343-B110027	343-B120027
			X	X		SET M SA-3, SC-3, SD-3, SE-3, SF-3, SG-3, SJ-3, SM-3, SN-2	343-B110013	343-B120013
			X	X		SET N SB-3, SC-3, SD-3, SE-3, SF-3, SG-3, SK-3, SL-3, SM-3	343-B110014	343-B120014
			X	X	X	SET O SA-1, SA-3, SA-5, SD-1, SD-3, SD-5, SF-1, SF-3, SF-5, SG-1, SG-3, SG-5	343-B110021	343-B120021
			X	X	X	SET P SA-1, SA-3, SA-5, SC-1, SC-3, SC-5, SF-1, SF-3, SF-5	343-B110015	343-B120015
			X	X	X	SET Q SB-1, SB-3, SB-5, SD-1, SD-3, SD-5, SE-1, SE-3, SE-5	343-B110016	343-B120016
			X	X	X	SET R SA-1, SA-3, SA-5, SE-1, SE-3, SE-5, SN-1, SN-2, SN-4	343-B110017	343-B120017
			X	X	X	SET S SB-1, SB-3, SB-5, SC-1, SC-3, SC-5, SF-1, SF-3, SF-5	343-B110018	343-B120018
			X	X	X	SET V SA-1, SA-3, SA-5, SC-1, SC-3, SC-5, SE-1, SE-3, SE-5, SM-1, SM-3, SM-5	343-B110022	343-B120022
			X	X	X	SET W SB-1, SB-3, SB-5, SD-1, SD-3, SD-5, SF-1, SF-3, SF-5, SN-1, SN-2, SN-4	343-B110023	343-B120023
			X	X	X	SET X SA-1, SA-3, SA-5, SC-1, SC-3, SC-5, SG-1, SG-3, SG-5, SM-1, SM-3, SM-5	343-B110024	343-B120024
			X	X	X	SET Y SF-1, SF-3, SF-5, SG-1, SG-3, SG-5, SL-1, SL-3, SL-4, SM-1, SM-3, SM-5	343-B110025	343-B120025
				X		SET AC SA-5, SB-5, SC-5, SD-5, SE-5, SF-5, SG-5, SH-5, SJ-5, SK-5, SL-4, SM-5	343-B110028	343-B120028
				X		SET T SA-5, SC-5, SD-5, SE-5, SG-5, SH-5, SK-5, SM-5	343-B110019	343-B120019
				X		SET U SB-5, SC-5, SD-5, SF-5, SG-5, SH-5, SJ-5, SK-5	343-B110020	343-B120020

Spotting Drills



- Designed for exceptional precision & higher speeds and feeds
- Short flute & overall lengths provide superior rigidity
- Chamfers and centers in one operation

ATLANTIC
DRILL



SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiAIN Coated
1/8	0.1250	5/8	2	435-D125090	435-D125090B
3/16	0.1875	3/4	2	435-D187090	435-D187090B
1/4	0.2500	3/4	2-1/2	435-D250090	435-D250090B
5/16	0.3125	1	2-1/2	435-D312090	435-D312090B
3/8	0.3750	1	2-1/2	435-D375090	435-D375090B
1/2	0.5000	1-1/4	3	435-D500090	435-D500090B



SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiAIN Coated
1/8	0.1250	5/8	2	435-D125120	435-D125120B
3/16	0.1875	3/4	2	435-D187120	435-D187120B
1/4	0.2500	3/4	2-1/2	435-D250120	435-D250120B
5/16	0.3125	1	2-1/2	435-D312120	435-D312120B
3/8	0.3750	1	2-1/2	435-D375120	435-D375120B
1/2	0.5000	1-1/4	3	435-D500120	435-D500120B



SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiAIN Coated
1/8	0.1250	5/8	2	435-D125140	435-D125140B
3/16	0.1875	3/4	2	435-D187140	435-D187140B
1/4	0.2500	3/4	2-1/2	435-D250140	435-D250140B
5/16	0.3125	1	2-1/2	435-D312140	435-D312140B
3/8	0.3750	1	2-1/2	435-D375140	435-D375140B
1/2	0.5000	1-1/4	3	435-D500140	435-D500140B



Twist Drill - Jobber Length

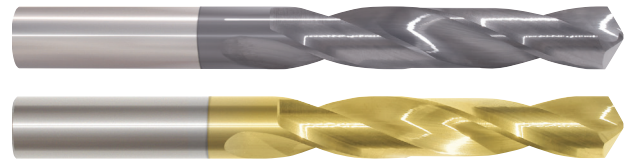
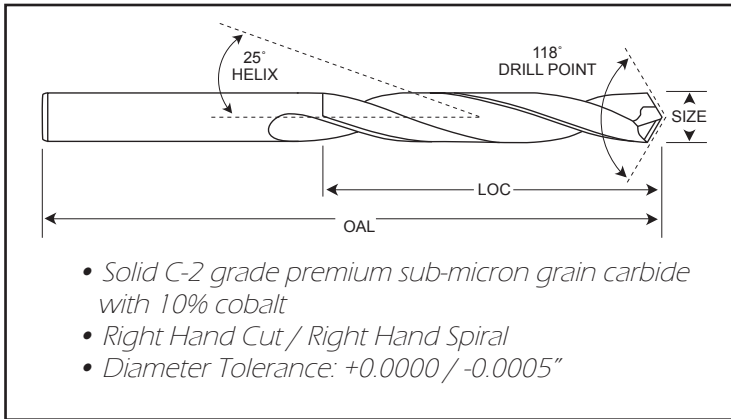
Materials:

- Non-ferrous alloys, cast iron, plastics, aluminum and highly abrasive materials

TWIST DRILLS

SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiN Coated	TiAlN Coated
#80	0.0135	3/16	1-1/4	483-D300135	483-D300135A	483-D300135B
#79	0.0145	3/16	1-1/4	483-D300145	483-D300145A	483-D300145B
1/64	0.0156	3/16	1-1/4	483-D100156	483-D100156A	483-D100156B
#78	0.0160	3/16	1-1/4	483-D300160	483-D300160A	483-D300160B
#77	0.0180	3/16	1-1/4	483-D300180	483-D300180A	483-D300180B
#76	0.0200	1/4	1-1/4	483-D300200	483-D300200A	483-D300200B
#75	0.0210	1/4	1-1/4	483-D300210	483-D300210A	483-D300210B
#74	0.0225	1/4	1-1/4	483-D300225	483-D300225A	483-D300225B
#73	0.0240	1/4	1-1/4	483-D300240	483-D300240A	483-D300240B
#72	0.0250	5/16	1-1/4	483-D300250	483-D300250A	483-D300250B
#71	0.0260	5/16	1-1/4	483-D300260	483-D300260A	483-D300260B
#70	0.0280	5/16	1-1/4	483-D300280	483-D300280A	483-D300280B
#69	0.0292	5/16	1-1/4	483-D300292	483-D300292A	483-D300292B
#68	0.0310	5/16	1-1/4	483-D300310	483-D300310A	483-D300310B
1/32	0.0312	5/16	1-1/4	483-D100312	483-D100312A	483-D100312B
#67	0.0320	5/16	1-1/4	483-D300320	483-D300320A	483-D300320B
#66	0.0330	5/16	1-1/4	483-D300330	483-D300330A	483-D300330B
#65	0.0350	5/8	1-3/8	483-D300350	483-D300350A	483-D300350B
#64	0.0360	5/8	1-3/8	483-D300360	483-D300360A	483-D300360B
#63	0.0370	5/8	1-3/8	483-D300370	483-D300370A	483-D300370B
#62	0.0380	5/8	1-3/8	483-D300380	483-D300380A	483-D300380B
#61	0.0390	5/8	1-3/8	483-D300390	483-D300390A	483-D300390B
1.0 mm	0.0394	16 mm	38 mm	483-D400394	483-D400394A	483-D400394B
#60	0.0400	3/4	1-1/2	483-D300400	483-D300400A	483-D300400B
#59	0.0410	3/4	1-1/2	483-D300410	483-D300410A	483-D300410B
#58	0.0420	3/4	1-1/2	483-D300420	483-D300420A	483-D300420B
#57	0.0430	3/4	1-1/2	483-D300430	483-D300430A	483-D300430B
#56	0.0465	3/4	1-1/2	483-D300465	483-D300465A	483-D300465B
3/64	0.0469	3/4	1-1/2	483-D100469	483-D100469A	483-D100469B
#55	0.0520	3/4	1-1/2	483-D300520	483-D300520A	483-D300520B
#54	0.0550	3/4	1-1/2	483-D300550	483-D300550A	483-D300550B
1.5 mm	0.0591	19 mm	38 mm	483-D400591	483-D400591A	483-D400591B
#53	0.0595	3/4	1-1/2	483-D300595	483-D300595A	483-D300595B
1/16	0.0625	3/4	1-1/2	483-D100625	483-D100625A	483-D100625B
#52	0.0635	3/4	1-1/2	483-D300635	483-D300635A	483-D300635B
#51	0.0670	3/4	1-1/2	483-D300670	483-D300670A	483-D300670B

Twist Drill - Jobber Length



TWIST DRILLS *Continued*

SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiN Coated	TiAlN Coated
#50	0.0700	7/8	1-3/4	483-D300700	483-D300700A	483-D300700B
#49	0.0730	7/8	1-3/4	483-D300730	483-D300730A	483-D300730B
#48	0.0760	7/8	1-3/4	483-D300760	483-D300760A	483-D300760B
5/64	0.0781	7/8	1-3/4	483-D100781	483-D100781A	483-D100781B
#47	0.0785	7/8	1-3/4	483-D300785	483-D300785A	483-D300785B
2.0 mm	0.0787	22 mm	45 mm	483-D400787	483-D400787A	483-D400787B
#46	0.0810	7/8	1-3/4	483-D300810	483-D300810A	483-D300810B
#45	0.0820	7/8	1-3/4	483-D300820	483-D300820A	483-D300820B
#44	0.0860	1	2	483-D300860	483-D300860A	483-D300860B
#43	0.0890	1	2	483-D300890	483-D300890A	483-D300890B
#42	0.0935	1	2	483-D300935	483-D300935A	483-D300935B
3/32	0.0938	1	2	483-D100938	483-D100938A	483-D100938B
#41	0.0960	1	2	483-D300960	483-D300960A	483-D300960B
#40	0.0980	1	2	483-D300980	483-D300980A	483-D300980B
2.5 mm	0.0984	25 mm	51 mm	483-D400984	483-D400984A	483-D400984B
#39	0.0995	1-1/4	2-1/4	483-D300995	483-D300995A	483-D300995B
#38	0.1015	1-1/4	2-1/4	483-D301015	483-D301015A	483-D301015B
#37	0.1040	1-1/4	2-1/4	483-D301040	483-D301040A	483-D301040B
#36	0.1065	1-1/4	2-1/4	483-D301065	483-D301065A	483-D301065B
7/64	0.1094	1-1/4	2-1/4	483-D101094	483-D101094A	483-D101094B
#35	0.1100	1-1/4	2-1/4	483-D301100	483-D301100A	483-D301100B
#34	0.1110	1-1/4	2-1/4	483-D301110	483-D301110A	483-D301110B
#33	0.1130	1-1/4	2-1/4	483-D301130	483-D301130A	483-D301130B
#32	0.1160	1-1/4	2-1/4	483-D301160	483-D301160A	483-D301160B
3.0 mm	0.1181	32 mm	57 mm	483-D401181	483-D401181A	483-D401181B
#31	0.1200	1-1/4	2-1/4	483-D301200	483-D301200A	483-D301200B
1/8	0.1250	1-1/4	2-1/4	483-D101250	483-D101250A	483-D101250B
#30	0.1285	1-1/4	2-1/4	483-D301285	483-D301285A	483-D301285B
#29	0.1360	1-3/8	2-1/2	483-D301360	483-D301360A	483-D301360B
3.5 mm	0.1378	35 mm	64 mm	483-D401378	483-D401378A	483-D401378B
#28	0.1405	1-3/8	2-1/2	483-D301405	483-D301405A	483-D301405B
9/64	0.1406	1-3/8	2-1/2	483-D101406	483-D101406A	483-D101406B
#27	0.1440	1-3/8	2-1/2	483-D301440	483-D301440A	483-D301440B
#26	0.1470	1-3/8	2-1/2	483-D301470	483-D301470A	483-D301470B
#25	0.1495	1-3/8	2-1/2	483-D301495	483-D301495A	483-D301495B
#24	0.1520	1-3/8	2-1/2	483-D301520	483-D301520A	483-D301520B

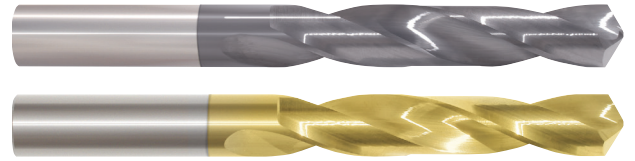


Twist Drill - Jobber Length

TWIST DRILLS *Continued*

SIZE	DECIMAL INCHES	LOC	OAL	  		
				UNCOATED	TiN Coated	TiAlN Coated
#23	0.1540	1-3/8	2-1/2	483-D301540	483-D301540A	483-D301540B
5/32	0.1562	1-3/8	2-1/2	483-D101562	483-D101562A	483-D101562B
#22	0.1570	1-3/8	2-1/2	483-D301570	483-D301570A	483-D301570B
4.0 mm	0.1575	35 mm	64 mm	483-D401575	483-D401575A	483-D401575B
#21	0.1590	1-3/8	2-1/2	483-D301590	483-D301590A	483-D301590B
#20	0.1610	1-3/8	2-1/2	483-D301610	483-D301610A	483-D301610B
#19	0.1660	1-5/8	2-3/4	483-D301660	483-D301660A	483-D301660B
#18	0.1695	1-5/8	2-3/4	483-D301695	483-D301695A	483-D301695B
11/64	0.1719	1-5/8	2-3/4	483-D101719	483-D101719A	483-D101719B
#17	0.1730	1-5/8	2-3/4	483-D301730	483-D301730A	483-D301730B
#16	0.1770	1-5/8	2-3/4	483-D301770	483-D301770A	483-D301770B
4.5 mm	0.1772	41 mm	70 mm	483-D401772	483-D401772A	483-D401772B
#15	0.1800	1-5/8	2-3/4	483-D301800	483-D301800A	483-D301800B
#14	0.1820	1-5/8	2-3/4	483-D301820	483-D301820A	483-D301820B
#13	0.1850	1-5/8	2-3/4	483-D301850	483-D301850A	483-D301850B
3/16	0.1875	1-5/8	2-3/4	483-D101875	483-D101875A	483-D101875B
#12	0.1890	1-5/8	2-3/4	483-D301890	483-D301890A	483-D301890B
#11	0.1910	1-5/8	2-3/4	483-D301910	483-D301910A	483-D301910B
#10	0.1935	1-5/8	2-3/4	483-D301935	483-D301935A	483-D301935B
#9	0.1960	1-3/4	3	483-D301960	483-D301960A	483-D301960B
5.0 mm	0.1969	45 mm	76 mm	483-D401969	483-D401969A	483-D401969B
#8	0.1990	1-3/4	3	483-D301990	483-D301990A	483-D301990B
#7	0.2010	1-3/4	3	483-D302010	483-D302010A	483-D302010B
13/64	0.2031	1-3/4	3	483-D102031	483-D102031A	483-D102031B
#6	0.2040	1-3/4	3	483-D302040	483-D302040A	483-D302040B
#5	0.2055	1-3/4	3	483-D302055	483-D302055A	483-D302055B
#4	0.2090	1-3/4	3	483-D302090	483-D302090A	483-D302090B
#3	0.2130	1-3/4	3	483-D302130	483-D302130A	483-D302130B
5.5 mm	0.2165	45 mm	76 mm	483-D402165	483-D402165A	483-D402165B
7/32	0.2188	1-3/4	3	483-D102188	483-D102188A	483-D102188B
#2	0.2210	1-3/4	3	483-D302210	483-D302210A	483-D302210B
#1	0.2280	1-3/4	3	483-D302280	483-D302280A	483-D302280B
A	0.2340	2	3-1/4	483-D202340	483-D202340A	483-D202340B
15/64	0.2344	2	3-1/4	483-D102344	483-D102344A	483-D102344B
6.0 mm	0.2362	51 mm	83 mm	483-D402362	483-D402362A	483-D402362B
B	0.2380	2	3-1/4	483-D202380	483-D202380A	483-D202380B
C	0.2420	2	3-1/4	483-D202420	483-D202420A	483-D202420B
D	0.2460	2	3-1/4	483-D202460	483-D202460A	483-D202460B
1/4	0.2500	2	3-1/4	483-D102500	483-D102500A	483-D102500B
E	0.2500	2	3-1/4	483-D202500	483-D202500A	483-D202500B
6.5 mm	0.2559	51 mm	83 mm	483-D402559	483-D402559A	483-D402559B
F	0.2570	2	3-1/4	483-D202570	483-D202570A	483-D202570B
G	0.2610	2-1/8	3-1/2	483-D202610	483-D202610A	483-D202610B
17/64	0.2656	2-1/8	3-1/2	483-D102656	483-D102656A	483-D102656B
H	0.2660	2-1/8	3-1/2	483-D202660	483-D202660A	483-D202660B

Twist Drill - Jobber Length



TWIST DRILLS *Continued*

SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiN Coated	TiAIN Coated
I	0.2720	2-1/8	3-1/2	483-	483-D202720A	483-D202720B
7.0 mm	0.2756	54 mm	89 mm	483-D402756	483-D402756A	483-D402756B
J	0.2770	2-1/8	3-1/2	483-D202770	483-D202770A	483-D202770B
K	0.2810	2-1/8	3-1/2	483-D202810	483-D202810A	483-D202810B
9/32	0.2812	2-1/8	3-1/2	483-D102812	483-D102812A	483-D102812B
L	0.2900	2-1/8	3-1/2	483-D202900	483-D202900A	483-D202900B
M	0.2950	2-3/8	3-3/4	483-D202950	483-D202950A	483-D202950B
7.5 mm	0.2953	60 mm	95 mm	483-D402953	483-D402953A	483-D402953B
19/64	0.2969	2-3/8	3-3/4	483-D102969	483-D102969A	483-D102969B
N	0.3020	2-3/8	3-3/4	483-D203020	483-D203020A	483-D203020B
5/16	0.3125	2-3/8	3-3/4	483-D103125	483-D103125A	483-D103125B
8.0 mm	0.3150	60 mm	95 mm	483-D403150	483-D403150A	483-D403150B
O	0.3160	2-3/8	3-3/4	483-D203160	483-D203160A	483-D203160B
P	0.3230	2-3/8	3-3/4	483-D203230	483-D203230A	483-D203230B
21/64	0.3281	2-1/2	4	483-D103281	483-D103281A	483-D103281B
Q	0.3320	2-1/2	4	483-D203320	483-D203320A	483-D203320B
8.5 mm	0.3346	64 mm	102 mm	483-D403346	483-D403346A	483-D403346B
R	0.3390	2-1/2	4	483-D203390	483-D203390A	483-D203390B
11/32	0.3438	2-1/2	4	483-D103438	483-D103438A	483-D103438B
S	0.3480	2-1/2	4	483-D203480	483-D203480A	483-D203480B
9.0 mm	0.3543	64 mm	102 mm	483-D403543	483-D403543A	483-D403543B
T	0.3580	2-3/4	4-1/4	483-D203580	483-D203580A	483-D203580B
23/64	0.3594	2-3/4	4-1/4	483-D103594	483-D103594A	483-D103594B
U	0.3680	2-3/4	4-1/4	483-D203680	483-D203680A	483-D203680B
9.5 mm	0.3740	70 mm	108 mm	483-D403740	483-D403740A	483-D403740B
3/8	0.3750	2-3/4	4-1/4	483-D103750	483-D103750A	483-D103750B
V	0.3770	2-3/4	4-1/4	483-D203770	483-D203770A	483-D203770B
W	0.3860	2-7/8	4-1/2	483-D203860	483-D203860A	483-D203860B
25/64	0.3906	2-7/8	4-1/2	483-D103906	483-D103906A	483-D103906B
10.0 mm	0.3937	73 mm	114 mm	483-D403937	483-D403937A	483-D403937B
X	0.3970	2-7/8	4-1/2	483-D203970	483-D203970A	483-D203970B
Y	0.4040	2-7/8	4-1/2	483-D204040	483-D204040A	483-D204040B
13/32	0.4062	2-7/8	4-1/2	483-D104062	483-D104062A	483-D104062B
Z	0.4130	2-7/8	4-1/2	483-D204130	483-D204130A	483-D204130B
10.5 mm	0.4134	73 mm	114 mm	483-D404134	483-D404134A	483-D404134B
27/64	0.4219	2-7/8	4-1/2	483-D104219	483-D104219A	483-D104219B
11.0 mm	0.4331	73 mm	114 mm	483-D404331	483-D404331A	483-D404331B
7/16	0.4375	2-7/8	4-1/2	483-D104375	483-D104375A	483-D104375B
11.5 mm	0.4528	76 mm	121 mm	483-D404528	483-D404528A	483-D404528B
29/64	0.4531	3	4-3/4	483-D104531	483-D104531A	483-D104531B
15/32	0.4688	3	4-3/4	483-D104688	483-D104688A	483-D104688B
12.0 mm	0.4724	76 mm	121 mm	483-D404724	483-D404724A	483-D404724B
31/64	0.4844	3	4-3/4	483-D104844	483-D104844A	483-D104844B
12.5 mm	0.4921	76 mm	121 mm	483-D404921	483-D404921A	483-D404921B
1/2	0.5000	3	4-3/4	483-D105000	483-D105000A	483-D105000B



Stub Drill - Screw Machine Length

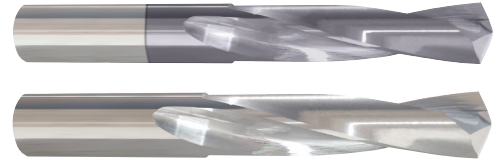
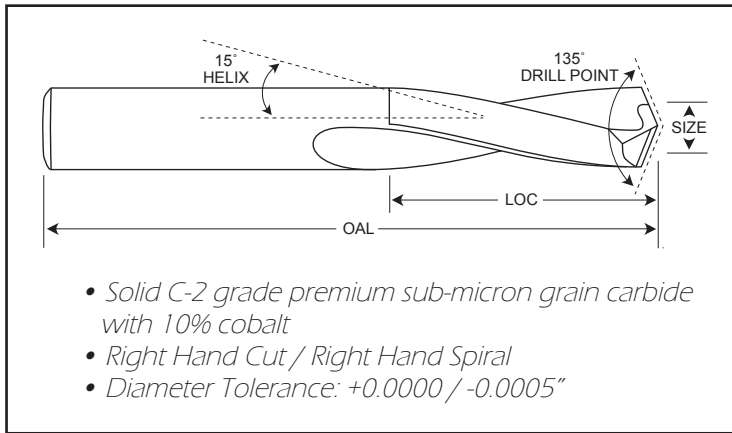
Materials:

- Cast iron, stainless steel, tool steel, titanium & nickel alloys

STUB DRILLS

SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiAIN Coated
1/32	0.0312	1/2	1-1/2	493-D100312	493-D100312B
1.0 mm	0.0394	13 mm	38 mm	493-D400394	493-D400394B
#60	0.0400	1/2	1-1/2	493-D300400	493-D300400B
#59	0.0410	1/2	1-1/2	493-D300410	493-D300410B
#58	0.0420	1/2	1-1/2	493-D300420	493-D300420B
#57	0.0430	1/2	1-1/2	493-D300430	493-D300430B
#56	0.0465	1/2	1-1/2	493-D300465	493-D300465B
3/64	0.0469	1/2	1-1/2	493-D100469	493-D100469B
#55	0.0520	1/2	1-1/2	493-D300520	493-D300520B
#54	0.0550	1/2	1-1/2	493-D300550	493-D300550B
1.5 mm	0.0591	13 mm	38 mm	493-D400591	493-D400591B
#53	0.0595	1/2	1-1/2	493-D300595	493-D300595B
1/16	0.0625	5/8	1-5/8	493-D100625	493-D100625B
#52	0.0635	11/16	1-11/16	493-D300635	493-D300635B
#51	0.0670	11/16	1-11/16	493-D300670	493-D300670B
#50	0.0700	11/16	1-11/16	493-D300700	493-D300700B
#49	0.0730	11/16	1-11/16	493-D300730	493-D300730B
#48	0.0760	11/16	1-11/16	493-D300760	493-D300760B
5/64	0.0781	11/16	1-11/16	493-D100781	493-D100781B
#47	0.0785	3/4	1-3/4	493-D300785	493-D300785B
2.0 mm	0.0787	19 mm	45 mm	493-D400787	493-D400787B
#46	0.0810	3/4	1-3/4	493-D300810	493-D300810B
#45	0.0820	3/4	1-3/4	493-D300820	493-D300820B
#44	0.0860	3/4	1-3/4	493-D300860	493-D300860B
#43	0.0890	3/4	1-3/4	493-D300890	493-D300890B
#42	0.0935	3/4	1-3/4	493-D300935	493-D300935B
3/32	0.0938	3/4	1-3/4	493-D100938	493-D100938B
#41	0.0960	13/16	1-13/16	493-D300960	493-D300960B
#40	0.0980	13/16	1-13/16	493-D300980	493-D300980B
2.5 mm	0.0984	21 mm	46 mm	493-D400984	493-D400984B
#39	0.0995	13/16	1-13/16	493-D300995	493-D300995B
#38	0.1015	13/16	1-13/16	493-D301015	493-D301015B
#37	0.1040	13/16	1-13/16	493-D301040	493-D301040B
#36	0.1065	13/16	1-13/16	493-D301065	493-D301065B

Stub Drill - Screw Machine Length



ATLANTIC
DRILL

STUB DRILLS *Continued*

SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiAlN Coated
7/64	0.1094	13/16	1-13/16	493-D101094	493-D101094B
#35	0.1100	7/8	1-7/8	493-D301100	493-D301100B
#34	0.1110	7/8	1-7/8	493-D301110	493-D301110B
#33	0.1130	7/8	1-7/8	493-D301130	493-D301130B
#32	0.1160	7/8	1-7/8	493-D301160	493-D301160B
3.0 mm	0.1181	22 mm	48 mm	493-D401181	493-D401181B
#31	0.1200	7/8	1-7/8	493-D301200	493-D301200B
1/8	0.1250	7/8	1-7/8	493-D101250	493-D101250B
#30	0.1285	15/16	1-15/16	493-D301285	493-D301285B
#29	0.1360	15/16	1-15/16	493-D301360	493-D301360B
3.5 mm	0.1378	24 mm	49 mm	493-D401378	493-D401378B
#28	0.1405	15/16	1-15/16	493-D301405	493-D301405B
9/64	0.1406	15/16	1-15/16	493-D101406	493-D101406B
#27	0.1440	1	2-1/16	493-D301440	493-D301440B
#26	0.1470	1	2-1/16	493-D301470	493-D301470B
#25	0.1495	1	2-1/16	493-D301495	493-D301495B
#24	0.1520	1	2-1/16	493-D301520	493-D301520B
#23	0.1540	1	2-1/16	493-D301540	493-D301540B
5/32	0.1562	1	2-1/16	493-D101562	493-D101562B
#22	0.1570	1-1/16	2-1/8	493-D301570	493-D301570B
4.0 mm	0.1575	27 mm	54 mm	493-D401575	493-D401575B
#21	0.1590	1-1/16	2-1/8	493-D301590	493-D301590B
#20	0.1610	1-1/16	2-1/8	493-D301610	493-D301610B
#19	0.1660	1-1/16	2-1/8	493-D301660	493-D301660B
#18	0.1695	1-1/16	2-1/8	493-D301695	493-D301695B
11/64	0.1719	1-1/16	2-1/8	493-D101719	493-D101719B
#17	0.1730	1-1/8	2-3/16	493-D301730	493-D301730B
#16	0.1770	1-1/8	2-3/16	493-D301770	493-D301770B
4.5 mm	0.1772	29 mm	56 mm	493-D401772	493-D401772B
#15	0.1800	1-1/8	2-3/16	493-D301800	493-D301800B
#14	0.1820	1-1/8	2-3/16	493-D301820	493-D301820B

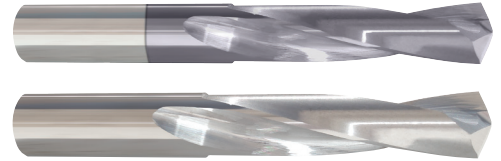


Stub Drill - Screw Machine Length

STUB DRILLS *Continued*

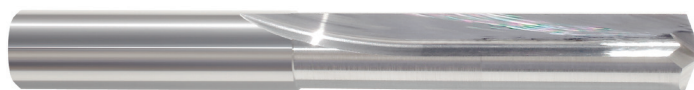
SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiAIN Coated
#13	0.1850	1-1/8	2-3/16	493-D301850	493-D301850B
3/16	0.1875	1-1/8	2-3/16	493-D101875	493-D101875B
#12	0.1890	1-3/16	2-1/4	493-D301890	493-D301890B
#11	0.1910	1-3/16	2-1/4	493-D301910	493-D301910B
#10	0.1935	1-3/16	2-1/4	493-D301935	493-D301935B
#9	0.1960	1-3/16	2-1/4	493-D301960	493-D301960B
5.0 mm	0.1969	30 mm	57 mm	493-D401969	493-D401969B
#8	0.1990	1-3/16	2-1/4	493-D301990	493-D301990B
#7	0.2010	1-3/16	2-1/4	493-D302010	493-D302010B
13/64	0.2031	1-3/16	2-1/4	493-D102031	493-D102031B
#6	0.2040	1-1/4	2-3/8	493-D302040	493-D302040B
#5	0.2055	1-1/4	2-3/8	493-D302055	493-D302055B
#4	0.2090	1-1/4	2-3/8	493-D302090	493-D302090B
#3	0.2130	1-1/4	2-3/8	493-D302130	493-D302130B
5.5 mm	0.2165	32 mm	60 mm	493-D402165	493-D402165B
7/32	0.2188	1-1/4	2-3/8	493-D102188	493-D102188B
#2	0.2210	1-5/16	2-7/16	493-D302210	493-D302210B
#1	0.2280	1-5/16	2-7/16	493-D302280	493-D302280B
A	0.2340	1-5/16	2-7/16	493-D202340	493-D202340B
15/64	0.2344	1-5/16	2-7/16	493-D102344	493-D102344B
6.0 mm	0.2362	33 mm	62 mm	493-D402362	493-D402362B
B	0.2380	1-3/8	2-1/2	493-D202380	493-D202380B
C	0.2420	1-3/8	2-1/2	493-D202420	493-D202420B
D	0.2460	1-3/8	2-1/2	493-D202460	493-D202460B
1/4	0.2500	1-3/8	2-1/2	493-D102500	493-D102500B
E	0.2500	1-3/8	2-1/2	493-D202500	493-D202500B
6.5 mm	0.2559	35 mm	64 mm	493-D402559	493-D402559B
F	0.2570	1-7/16	2-5/8	493-D202570	493-D202570B
G	0.2610	1-7/16	2-5/8	493-D202610	493-D202610B
17/64	0.2656	1-7/16	2-5/8	493-D102656	493-D102656B
H	0.2660	1-1/2	2-11/16	493-D202660	493-D202660B
I	0.2720	1-1/2	2-11/16	493-D202720	493-D202720B
7.0 mm	0.2756	38 mm	68 mm	493-D402756	493-D402756B
J	0.2770	1-1/2	2-11/16	493-D202770	493-D202770B
K	0.2810	1-1/2	2-11/16	493-D202810	493-D202810B
9/32	0.2812	1-1/2	2-11/16	493-D102812	493-D102812B
L	0.2900	1-9/16	2-3/4	493-D202900	493-D202900B
M	0.2950	1-9/16	2-3/4	493-D202950	493-D202950B
7.5 mm	0.2953	40 mm	70 mm	493-D402953	493-D402953B
19/64	0.2969	1-9/16	2-3/4	493-D102969	493-D102969B

Stub Drill - Screw Machine Length



STUB DRILLS *Continued*

SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiAlN Coated
N	0.3020	1-5/8	2-13/16	493-D203020	493-D203020B
5/16	0.3125	1-5/8	2-13/16	493-D103125	493-D103125B
8.0 mm	0.3150	41 mm	72 mm	493-D403150	493-D403150B
O	0.3160	1-11/16	2-15/16	493-D203160	493-D203160B
P	0.3230	1-11/16	2-15/16	493-D203230	493-D203230B
21/64	0.3281	1-11/16	2-15/16	493-D103281	493-D103281B
Q	0.3320	1-11/16	3	493-D203320	493-D203320B
8.5 mm	0.3346	43 mm	76 mm	493-D403346	493-D403346B
R	0.3390	1-11/16	3	493-D203390	493-D203390B
11/32	0.3438	1-11/16	3	493-D103438	493-D103438B
S	0.3480	1-3/4	3-1/16	493-D203480	493-D203480B
9.0 mm	0.3543	45 mm	78 mm	493-D403543	493-D403543B
T	0.3580	1-3/4	3-1/16	493-D203580	493-D203580B
23/64	0.3594	1-3/4	3-1/16	493-D103594	493-D103594B
U	0.3680	1-13/16	3-1/8	493-D203680	493-D203680B
9.5 mm	0.3740	46 mm	79 mm	493-D403740	493-D403740B
3/8	0.3750	1-13/16	3-1/8	493-D103750	493-D103750B
V	0.3770	1-7/8	3-1/4	493-D203770	493-D203770B
W	0.3860	1-7/8	3-1/4	493-D203860	493-D203860B
25/64	0.3906	1-7/8	3-1/4	493-D103906	493-D103906B
10.0 mm	0.3937	48 mm	83 mm	493-D403937	493-D403937B
X	0.3970	1-15/16	3-5/16	493-D203970	493-D203970B
Y	0.4040	1-15/16	3-5/16	493-D204040	493-D204040B
13/32	0.4062	1-15/16	3-5/16	493-D104062	493-D104062B
Z	0.4130	2	3-3/8	493-D204130	493-D204130B
10.5 mm	0.4134	51 mm	86 mm	493-D404134	493-D404134B
27/64	0.4219	2	3-3/8	493-D104219	493-D104219B
11.0 mm	0.4331	51 mm	86 mm	493-D404331	493-D404331B
7/16	0.4375	2-1/16	3-7/16	493-D104375	493-D104375B
11.5 mm	0.4528	52 mm	88 mm	493-D404528	493-D404528B
29/64	0.4531	2-1/8	3-9/16	493-D104531	493-D104531B
15/32	0.4688	2-1/8	3-5/8	493-D104688	493-D104688B
12.0 mm	0.4724	54 mm	92 mm	493-D404724	493-D404724B
31/64	0.4844	2-3/16	3-11/16	493-D104844	493-D104844B
12.5 mm	0.4921	56 mm	94 mm	493-D404921	493-D404921B
1/2	0.5000	2-1/4	3-3/4	493-D105000	493-D105000B
17/32	0.5312	2-3/8	3-7/8	493-D105312	493-D105312B
9/16	0.5625	2-1/2	4	493-D105625	493-D105625B
5/8	0.6250	2-3/4	4-1/4	493-D106250	493-D106250B
3/4	0.7500	3-1/8	5	493-D107500	493-D107500B



Straight Flute Drill

Applications:

- Capable of producing reamer type finishes in work hardened and abrasive materials

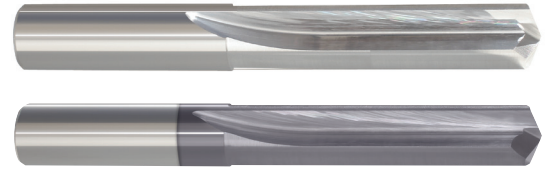
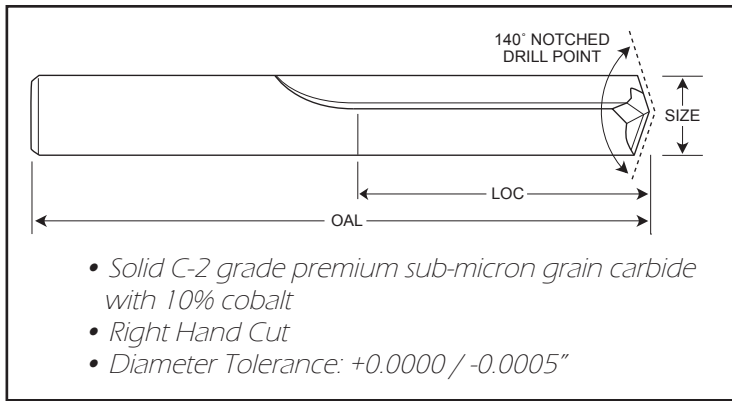
Materials:

- Chrome alloys, heat alloys, nickel alloys, titanium alloys, steel & stainless steel weldments

STRAIGHT FLUTE DRILLS

SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiAIN Coated
1/32	0.0312	1/2	1-1/2	503-D100312	503-D100312B
#65	0.0350	1/2	1-1/2	503-D300350	503-D300350B
#64	0.0360	1/2	1-1/2	503-D300360	503-D300360B
#63	0.0370	1/2	1-1/2	503-D300370	503-D300370B
#62	0.0380	1/2	1-1/2	503-D300380	503-D300380B
#61	0.0390	1/2	1-1/2	503-D300390	503-D300390B
1.0 mm	0.0394	13 mm	38 mm	503-D400394	503-D400394B
#60	0.0400	1/2	1-1/2	503-D300400	503-D300400B
#59	0.0410	1/2	1-1/2	503-D300410	503-D300410B
#58	0.0420	1/2	1-1/2	503-D300420	503-D300420B
#57	0.0430	1/2	1-1/2	503-D300430	503-D300430B
#56	0.0465	1/2	1-1/2	503-D300465	503-D300465B
3/64	0.0469	1/2	1-1/2	503-D100469	503-D100469B
#55	0.0520	1/2	1-1/2	503-D300520	503-D300520B
#54	0.0550	1/2	1-1/2	503-D300550	503-D300550B
1.5 mm	0.0591	13 mm	38 mm	503-D400591	503-D400591B
#53	0.0595	1/2	1-1/2	503-D300595	503-D300595B
1/16	0.0625	5/8	1-5/8	503-D100625	503-D100625B
#52	0.0635	11/16	1-11/16	503-D300635	503-D300635B
#51	0.0670	11/16	1-11/16	503-D300670	503-D300670B
#50	0.0700	11/16	1-11/16	503-D300700	503-D300700B
#49	0.0730	11/16	1-11/16	503-D300730	503-D300730B
#48	0.0760	11/16	1-11/16	503-D300760	503-D300760B
5/64	0.0781	11/16	1-11/16	503-D100781	503-D100781B
#47	0.0785	3/4	1-3/4	503-D300785	503-D300785B
2.0 mm	0.0787	19 mm	45 mm	503-D400787	503-D400787B
#46	0.0810	3/4	1-3/4	503-D300810	503-D300810B
#45	0.0820	3/4	1-3/4	503-D300820	503-D300820B
#44	0.0860	3/4	1-3/4	503-D300860	503-D300860B
#43	0.0890	3/4	1-3/4	503-D300890	503-D300890B
#42	0.0935	3/4	1-3/4	503-D300935	503-D300935B
3/32	0.0938	3/4	1-3/4	503-D100938	503-D100938B
#41	0.0960	13/16	1-13/16	503-D300960	503-D300960B
#40	0.0980	13/16	1-13/16	503-D300980	503-D300980B
2.5 mm	0.0984	21 mm	46 mm	503-D400984	503-D400984B

Straight Flute Drill

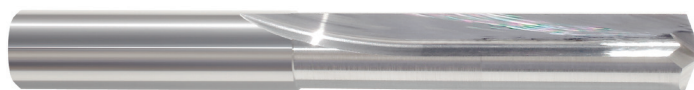


Specifically designed for edge strength & precision tight tolerance holes

ATLANTIC
DRILL

STRAIGHT FLUTE DRILLS *Continued*

SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiAlN Coated
#39	0.0995	13/16	1-13/16	503-D300995	503-D300995B
#38	0.1015	13/16	1-13/16	503-D301015	503-D301015B
#37	0.1040	13/16	1-13/16	503-D301040	503-D301040B
#36	0.1065	13/16	1-13/16	503-D301065	503-D301065B
7/64	0.1094	13/16	1-13/16	503-D101094	503-D101094B
#35	0.1100	7/8	1-7/8	503-D301100	503-D301100B
#34	0.1110	7/8	1-7/8	503-D301110	503-D301110B
#33	0.1130	7/8	1-7/8	503-D301130	503-D301130B
#32	0.1160	7/8	1-7/8	503-D301160	503-D301160B
3.0 mm	0.1181	22 mm	48 mm	503-D401181	503-D401181B
#31	0.1200	7/8	1-7/8	503-D301200	503-D301200B
1/8	0.1250	7/8	1-7/8	503-D101250	503-D101250B
#30	0.1285	15/16	1-15/16	503-D301285	503-D301285B
#29	0.1360	15/16	1-15/16	503-D301360	503-D301360B
3.5 mm	0.1378	24 mm	49 mm	503-D401378	503-D401378B
#28	0.1405	15/16	1-15/16	503-D301405	503-D301405B
9/64	0.1406	15/16	1-15/16	503-D101406	503-D101406B
#27	0.1440	1	2-1/16	503-D301440	503-D301440B
#26	0.1470	1	2-1/16	503-D301470	503-D301470B
#25	0.1495	1	2-1/16	503-D301495	503-D301495B
#24	0.1520	1	2-1/16	503-D301520	503-D301520B
#23	0.1540	1	2-1/16	503-D301540	503-D301540B
5/32	0.1562	1	2-1/16	503-D101562	503-D101562B
#22	0.1570	1-1/16	2-1/8	503-D301570	503-D301570B
4.0 mm	0.1575	27 mm	54 mm	503-D401575	503-D401575B
#21	0.1590	1-1/16	2-1/8	503-D301590	503-D301590B
#20	0.1610	1-1/16	2-1/8	503-D301610	503-D301610B
#19	0.1660	1-1/16	2-1/8	503-D301660	503-D301660B
#18	0.1695	1-1/16	2-1/8	503-D301695	503-D301695B
11/64	0.1719	1-1/16	2-1/8	503-D101719	503-D101719B
#17	0.1730	1-1/8	2-3/16	503-D301730	503-D301730B
#16	0.1770	1-1/8	2-3/16	503-D301770	503-D301770B
4.5 mm	0.1772	29 mm	56 mm	503-D401772	503-D401772B

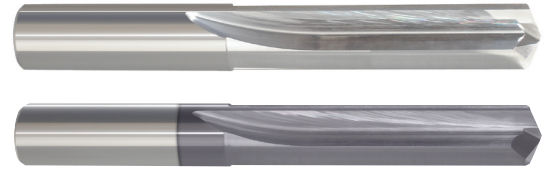


Straight Flute Drill

STRAIGHT FLUTE DRILLS *Continued*

SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiAIN Coated
#15	0.1800	1-1/8	2-3/16	503-D301800	503-D301800B
#14	0.1820	1-1/8	2-3/16	503-D301820	503-D301820B
#13	0.1850	1-1/8	2-3/16	503-D301850	503-D301850B
3/16	0.1875	1-1/8	2-3/16	503-D101875	503-D101875B
#12	0.1890	1-3/16	2-1/4	503-D301890	503-D301890B
#11	0.1910	1-3/16	2-1/4	503-D301910	503-D301910B
#10	0.1935	1-3/16	2-1/4	503-D301935	503-D301935B
#9	0.1960	1-3/16	2-1/4	503-D301960	503-D301960B
5.0 mm	0.1969	30 mm	57 mm	503-D401969	503-D401969B
#8	0.1990	1-3/16	2-1/4	503-D301990	503-D301990B
#7	0.2010	1-3/16	2-1/4	503-D302010	503-D302010B
13/64	0.2031	1-3/16	2-1/4	503-D102031	503-D102031B
#6	0.2040	1-1/4	2-3/8	503-D302040	503-D302040B
#5	0.2055	1-1/4	2-3/8	503-D302055	503-D302055B
#4	0.2090	1-1/4	2-3/8	503-D302090	503-D302090B
#3	0.2130	1-1/4	2-3/8	503-D302130	503-D302130B
5.5 mm	0.2165	32 mm	60 mm	503-D402165	503-D402165B
7/32	0.2188	1-1/4	2-3/8	503-D102188	503-D102188B
#2	0.2210	1-5/16	2-7/16	503-D302210	503-D302210B
#1	0.2280	1-5/16	2-7/16	503-D302280	503-D302280B
A	0.2340	1-5/16	2-7/16	503-D202340	503-D202340B
15/64	0.2344	1-5/16	2-7/16	503-D102344	503-D102344B
6.0 mm	0.2362	33 mm	62 mm	503-D402362	503-D402362B
B	0.2380	1-3/8	2-1/2	503-D202380	503-D202380B
C	0.2420	1-3/8	2-1/2	503-D202420	503-D202420B
D	0.2460	1-3/8	2-1/2	503-D202460	503-D202460B
1/4	0.2500	1-3/8	2-1/2	503-D102500	503-D102500B
E	0.2500	1-3/8	2-1/2	503-D202500	503-D202500B
6.5 mm	0.2559	35 mm	64 mm	503-D402559	503-D402559B
F	0.2570	1-7/16	2-5/8	503-D202570	503-D202570B
G	0.2610	1-7/16	2-5/8	503-D202610	503-D202610B
17/64	0.2656	1-7/16	2-5/8	503-D102656	503-D102656B
H	0.2660	1-1/2	2-11/16	503-D202660	503-D202660B
I	0.2720	1-1/2	2-11/16	503-D202720	503-D202720B
7.0 mm	0.2756	38 mm	68 mm	503-D402756	503-D402756B
J	0.2770	1-1/2	2-11/16	503-D202770	503-D202770B
K	0.2810	1-1/2	2-11/16	503-D202810	503-D202810B
9/32	0.2812	1-1/2	2-11/16	503-D102812	503-D102812B
L	0.2900	1-9/16	2-3/4	503-D202900	503-D202900B
M	0.2950	1-9/16	2-3/4	503-D202950	503-D202950B
7.5 mm	0.2953	38 mm	70 mm	503-D402953	503-D402953B

Straight Flute Drill



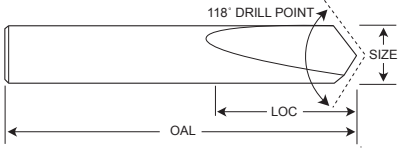
STRAIGHT FLUTE DRILLS *Continued*

SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED	TiAlN Coated
19/64	0.2969	1-9/16	2-3/4	503-D102969	503-D102969B
N	0.3020	1-5/8	2-13/16	503-D203020	503-D203020B
5/16	0.3125	1-5/8	2-13/16	503-D103125	503-D103125B
8.0 mm	0.3150	41 mm	71 mm	503-D403150	503-D403150B
O	0.3160	1-11/16	2-15/16	503-D203160	503-D203160B
P	0.3230	1-11/16	2-15/16	503-D203230	503-D203230B
21/64	0.3281	1-11/16	2-15/16	503-D103281	503-D103281B
Q	0.3320	1-11/16	3	503-D203320	503-D203320B
8.5 mm	0.3346	43 mm	76 mm	503-D403346	503-D403346B
R	0.3390	1-11/16	3	503-D203390	503-D203390B
11/32	0.3438	1-11/16	3	503-D103438	503-D103438B
S	0.3480	1-3/4	3-1/16	503-D203480	503-D203480B
9.0 mm	0.3543	45 mm	78 mm	503-D403543	503-D403543B
T	0.3580	1-3/4	3-1/16	503-D203580	503-D203580B
23/64	0.3594	1-3/4	3-1/16	503-D103594	503-D103594B
U	0.3680	1-13/16	3-1/8	503-D203680	503-D203680B
9.5 mm	0.3740	46 mm	79 mm	503-D403740	503-D403740B
3/8	0.3750	1-13/16	3-1/8	503-D103750	503-D103750B
V	0.3770	1-7/8	3-1/4	503-D203770	503-D203770B
W	0.3860	1-7/8	3-1/4	503-D203860	503-D203860B
25/64	0.3906	1-7/8	3-1/4	503-D103906	503-D103906B
10.0 mm	0.3937	48 mm	83 mm	503-D403937	503-D403937B
X	0.3970	1-15/16	3-5/16	503-D203970	503-D203970B
Y	0.4040	1-15/16	3-5/16	503-D204040	503-D204040B
13/32	0.4062	1-15/16	3-5/16	503-D104062	503-D104062B
Z	0.4130	2	3-3/8	503-D204130	503-D204130B
10.5 mm	0.4134	51 mm	86 mm	503-D404134	503-D404134B
27/64	0.4219	2	3-3/8	503-D104219	503-D104219B
11.0 mm	0.4331	51 mm	86 mm	503-D404331	503-D404331B
7/16	0.4375	2-1/16	3-7/16	503-D104375	503-D104375B
11.5 mm	0.4528	52 mm	87 mm	503-D404528	503-D404528B
29/64	0.4531	2-1/8	3-9/16	503-D104531	503-D104531B
15/32	0.4688	2-1/8	3-5/8	503-D104688	503-D104688B
12.0 mm	0.4724	54 mm	92 mm	503-D404724	503-D404724B
31/64	0.4844	2-3/16	3-11/16	503-D104844	503-D104844B
12.5 mm	0.4921	56 mm	94 mm	503-D404921	503-D404921B
1/2	0.5000	2-1/4	3-3/4	503-D105000	503-D105000B
9/16	0.5625	1-1/8	3-1/2	503-D105625	503-D105625B
5/8	0.6250	1-1/4	3-1/2	503-D106250	503-D106250B
3/4	0.7500	1-1/2	4	503-D107500	503-D107500B

Spade Drills



**Massive web construction reduces breakage
& ensures maximum tool life**



- Solid C-2 grade premium sub-micron grain carbide with 10% cobalt
- Right Hand Cut
- Diameter Tolerance: $+0.0000 / -0.0005$ "

Applications:

- Well suited for shallow-hole drilling & spot drilling

Materials:

- Ideal for drilling: thin sheet materials, hard steel, high strength materials & Rc-50

SPADE DRILLS

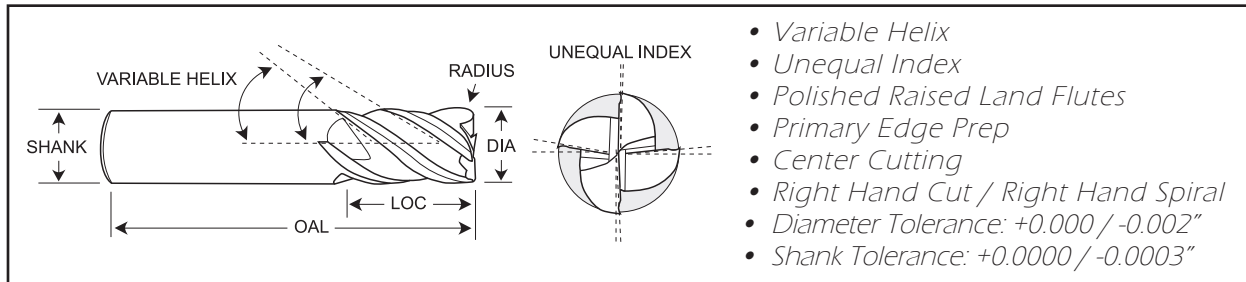
SIZE	DECIMAL INCHES	LOC	OAL	UNCOATED
1/32	0.0312	3/16	1-1/2	433-D001002
3/64	0.0469	7/32	1-1/2	433-D001005
1/16	0.0625	5/16	1-1/2	433-D001007
3/32	0.0938	7/16	1-1/2	433-D001010
7/64	0.1094	7/16	1-1/2	433-D001011
1/8	0.1250	1/2	1-1/2	433-D001020
9/64	0.1406	1/2	2	433-D001021
5/32	0.1562	9/16	2	433-D001030
11/64	0.1719	9/16	2	433-D001031
3/16	0.1875	11/16	2	433-D001040
7/32	0.2188	19/32	2	433-D001050
1/4	0.2500	11/16	2	433-D001060
9/32	0.2812	7/8	2-1/2	433-D001070
5/16	0.3125	7/8	2-1/2	433-D001080
11/32	0.3438	15/16	2-1/2	433-D001090
3/8	0.3750	1-1/8	2-1/2	433-D001100
13/32	0.4062	1-1/8	2-3/4	433-D001110
7/16	0.4375	1-3/16	2-3/4	433-D001120
15/32	0.4688	1-3/16	3	433-D001130
1/2	0.5000	1-3/16	3	433-D001140

High Performance
Variable Helix

HIGH PERFORMANCE 4 Flute - Variable Helix Unequal Index



- Reduces vibration and chatter
- Maximum material removal and feed rates
- Excellent finishes in high speed machining



Applications:

- Slotting, side milling, & pocketing
- Roughing & finishing

Materials:

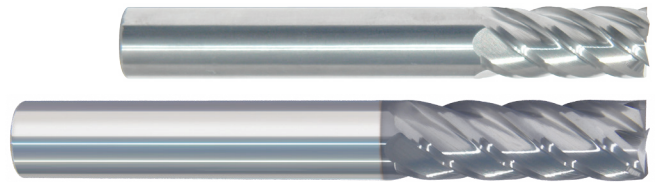
- Alloy, Carbon & Stainless steels
- Cast irons
- Titanium and nickel alloys

4 Flute Corner Radius

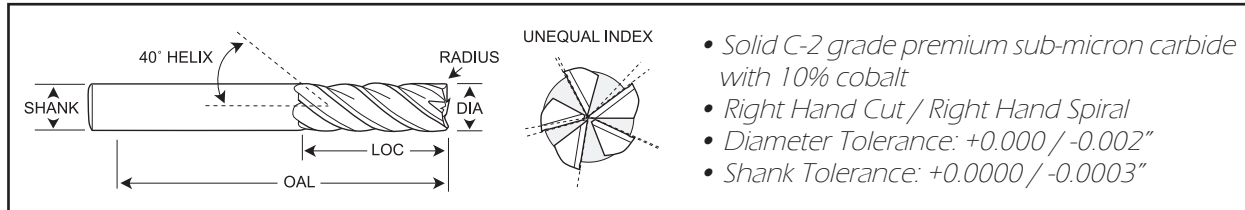
DIA	LOC	SHANK	OAL	RADIUS	AITiN coated
1/8	1/4	1/8	1-1/2	0.015	327-Z001011
1/8	1/2	1/8	1-1/2	0.015	327-Z002011
3/16	3/8	3/16	2	0.015	327-Z001021
3/16	5/8	3/16	2	0.015	327-Z002021
1/4	1/2	1/4	2	0.020	327-Z001031
1/4	3/4	1/4	2-1/2	0.020	327-Z002031
1/4	1-1/8	1/4	4	0.020	327-Z003031
5/16	5/8	5/16	2	0.030	327-Z001041
5/16	3/4	5/16	2-1/2	0.030	327-Z002041
3/8	5/8	3/8	2	0.030	327-Z001051
3/8	1	3/8	2-1/2	0.030	327-Z002051
3/8	1-1/2	3/8	4	0.030	327-Z003051
7/16	1	7/16	2-3/4	0.030	327-Z002056
1/2	5/8	1/2	2-1/2	0.030	327-Z001061
1/2	1-1/4	1/2	3	0.030	327-Z002061
1/2	2	1/2	4	0.030	327-Z003061
5/8	3/4	5/8	3	0.040	327-Z001071
5/8	1-1/4	5/8	3-1/2	0.040	327-Z002071
5/8	2-1/4	5/8	5	0.040	327-Z003071
3/4	1	3/4	3	0.050	327-Z001081
3/4	1-1/2	3/4	4	0.050	327-Z002081
3/4	2-1/4	3/4	5	0.050	327-Z003081
1	1-1/2	1	4	0.060	327-Z002091
1	2-1/4	1	5	0.060	327-Z003091

HIGH PERFORMANCE

5 Flute - 40° Helix Unequal Index



- *Progressive Geometry*
- *Smoother cutting action, reduces vibrations*
- *Maximum material removal and feed rates*
- *Excellent finishes in high speed machining*



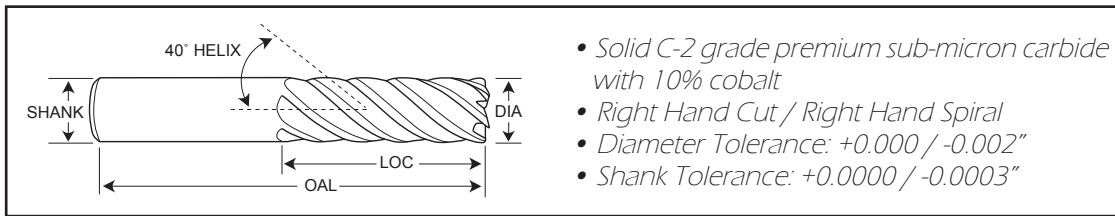
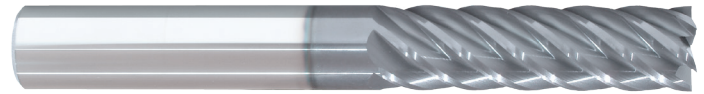
- *Solid C-2 grade premium sub-micron carbide with 10% cobalt*
- *Right Hand Cut / Right Hand Spiral*
- *Diameter Tolerance: +0.000 / -0.002"*
- *Shank Tolerance: +0.0000 / -0.0003"*

5 Flute Corner Radius

DIA	LOC	SHANK	OAL	RADIUS	UNCOATED	AlTiN Coated
1/8	1/4	1/8	2-1/2	.005-.010	328-Z010125	328-Z010125B
1/8	1/2	1/8	2-1/2	.005-.010	328-Z020125	328-Z020125B
3/16	3/8	3/16	2-1/2	.005-.010	328-Z010187	328-Z010187B
3/16	5/8	3/16	2-1/2	.005-.010	328-Z020187	328-Z020187B
1/4	3/8	1/4	2-1/2	.010-.020	328-Z010250	328-Z010250B
1/4	3/4	1/4	2-1/2	.010-.020	328-Z020250	328-Z020250B
1/4	1-1/4	1/4	4	.010-.020	328-Z030250	328-Z030250B
5/16	1/2	5/16	2-1/2	.010-.020	328-Z010312	328-Z010312B
5/16	13/16	5/16	2-1/2	.010-.020	328-Z020312	328-Z020312B
5/16	1-1/4	5/16	4	.010-.020	328-Z030312	328-Z030312B
3/8	1/2	3/8	2-1/2	.010-.020	328-Z010375	328-Z010375B
3/8	1	3/8	2-1/2	.010-.020	328-Z020375	328-Z020375B
3/8	1-1/2	3/8	4	.010-.020	328-Z030375	328-Z030375B
1/2	5/8	1/2	3	.010-.020	328-Z010500	328-Z010500B
1/2	1-1/4	1/2	3	.010-.020	328-Z020500	328-Z020500B
1/2	1-5/8	1/2	4	.010-.020	328-Z030490	328-Z030490B
1/2	2-1/8	1/2	4	.010-.020	328-Z030500	328-Z030500B
5/8	3/4	5/8	3-1/2	.010-.020	328-Z010625	328-Z010625B
5/8	1-1/4	5/8	3-1/2	.010-.020	328-Z020625	328-Z020625B
5/8	2-1/2	5/8	5	.010-.020	328-Z030625	328-Z030625B
3/4	1	3/4	4	.010-.020	328-Z010750	328-Z010750B
3/4	1-5/8	3/4	4	.010-.020	328-Z020750	328-Z020750B
3/4	2-1/2	3/4	5	.010-.020	328-Z030750	328-Z030750B
1	1-3/4	1	4	.010-.020	328-Z021000	328-Z021000B
1	2-5/8	1	6	.010-.020	328-Z031000	328-Z031000B

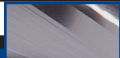
HIGH PERFORMANCE

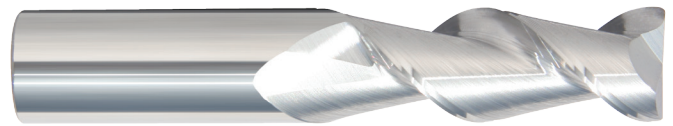
6 Flute - 40° Helix



- Offering maximum productivity in a wide range of materials by permitting higher feeds & improved tool life
- Suitable to machine any ferrous materials, including heat treated mold, die steels up to 60 Hcr

6 Flute Corner Radius

DIA	LOC	SHANK	OAL	RADIUS	 AITiN Coated
1/4	1/2	1/4	2	.010-.020	325-Z201133
1/4	3/4	1/4	2-1/2	.010-.020	325-Z301133
1/4	1-1/8	1/4	3	.010-.020	325-Z401133
1/4	1-1/2	1/4	4	.010-.020	325-Z501133
1/4	1-1/2	1/4	6	.010-.020	325-Z601133
5/16	13/16	5/16	2-1/2	.010-.020	325-Z301153
5/16	1-1/8	5/16	3	.010-.020	325-Z401153
5/16	1-5/8	5/16	4	.010-.020	325-Z501153
5/16	1-1/2	5/16	6	.010-.020	325-Z601153
3/8	5/8	3/8	2	.010-.020	325-Z201173
3/8	1	3/8	2-1/2	.010-.020	325-Z301173
3/8	1-1/8	3/8	3	.010-.020	325-Z401173
3/8	1-3/4	3/8	4	.010-.020	325-Z501173
3/8	1-1/2	3/8	6	.010-.020	325-Z601173
1/2	5/8	1/2	2-1/2	.010-.020	325-Z201203
1/2	1	1/2	3	.010-.020	325-Z301203
1/2	1-1/2	1/2	4	.010-.020	325-Z401193
1/2	2	1/2	4	.010-.020	325-Z401203
1/2	1-1/2	1/2	6	.010-.020	325-Z601203
1/2	3	1/2	6	.010-.020	325-Z501203
5/8	1	5/8	3	.010-.020	325-Z201223
5/8	1-1/4	5/8	3-1/2	.010-.020	325-Z301223
5/8	2-1/4	5/8	5	.010-.020	325-Z401223
5/8	1-1/2	5/8	6	.010-.020	325-Z601223
5/8	3-1/4	5/8	6	.010-.020	325-Z501223
3/4	1	3/4	3	.010-.020	325-Z201243
3/4	1-1/2	3/4	4	.010-.020	325-Z301243
3/4	2-1/4	3/4	5	.010-.020	325-Z401243
3/4	1-1/2	3/4	6	.010-.020	325-Z601233
3/4	3-1/4	3/4	6	.010-.020	325-Z501243
3/4	4	3/4	7	.010-.020	325-Z601243
1	1-3/4	1	4	.010-.020	325-Z301263
1	2-1/4	1	5	.010-.020	325-Z401263
1	1-1/2	1	6	.010-.020	325-Z601253
1	3-1/4	1	6	.010-.020	325-Z501263
1	4	1	7	.010-.020	325-Z601263



HIGH PERFORMANCE

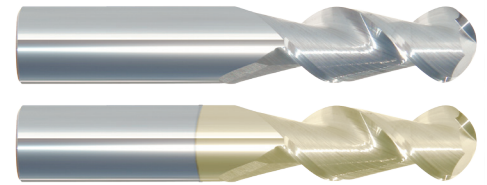
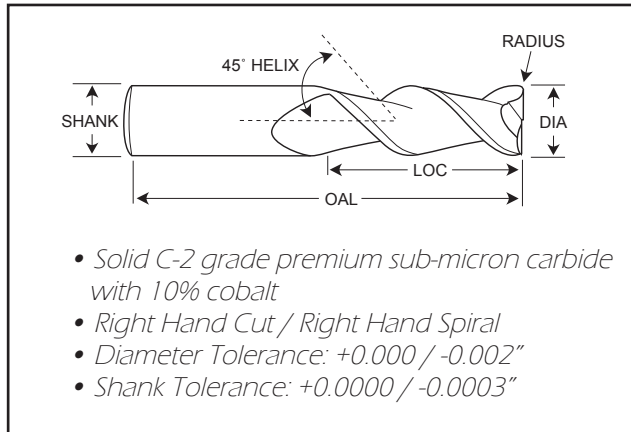
2 Flute - 45° Helix Aluminum Cutters

- Specifically designed for maximum productivity in non-ferrous materials
- Excellent work piece finish
- Extremely high feed rates
- ZrN coating offers excellent wear resistance & increased lubricity

2 Flute Corner Radius

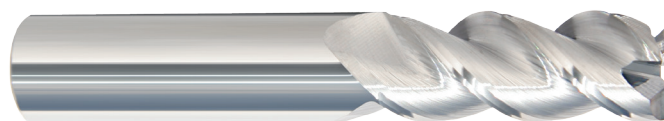
DIA	LOC	SHANK	OAL	RADIUS		
					UNCOATED	ZrN Coated
1/8	1/4	1/8	1-1/2	.005-.010	315-Z125250	315-Z125250D
1/8	1/2	1/8	1-1/2	.005-.010	315-Z125500	315-Z125500D
1/8	1-1/8	1/8	3	.005-.010	315-Z126112	315-Z126112D
5/32	5/8	3/16	2	.005-.010	315-Z156625	315-Z156625D
3/16	5/16	3/16	2	.005-.010	315-Z187312	315-Z187312D
3/16	5/8	3/16	2	.005-.010	315-Z187625	315-Z187625D
3/16	1-1/8	3/16	3	.005-.010	315-Z188112	315-Z188112D
7/32	3/4	1/4	2-1/2	.005-.010	315-Z218750	315-Z218750D
1/4	1/2	1/4	2	.005-.010	315-Z250500	315-Z250500D
1/4	3/4	1/4	2-1/2	.005-.010	315-Z250750	315-Z250750D
1/4	1-1/4	1/4	3	.005-.010	315-Z251500	315-Z251500D
1/4	2	1/4	4	.005-.010	315-Z252000	315-Z252000D
9/32	13/16	5/16	2-1/2	.005-.010	315-Z281812	315-Z281812D
5/16	1/2	5/16	2-1/2	.005-.010	315-Z312500	315-Z312500D
5/16	13/16	5/16	2-1/2	.005-.010	315-Z312812	315-Z312812D
5/16	1-3/8	5/16	3	.005-.010	315-Z313375	315-Z313375D
5/16	2	5/16	4	.005-.010	315-Z314000	315-Z314000D
3/8	5/8	3/8	2-1/2	.005-.010	315-Z370625	315-Z370625D
3/8	1-1/8	3/8	2-1/2	.005-.010	315-Z371125	315-Z371125D
3/8	1-3/8	3/8	3	.005-.010	315-Z371375	315-Z371375D
3/8	2	3/8	4	.005-.010	315-Z372000	315-Z372000D
3/8	3	3/8	6	.005-.010	315-Z373000	315-Z373000D
7/16	1-1/4	7/16	2-3/4	.005-.010	315-Z431250	315-Z431250D
1/2	3/4	1/2	2-1/2	.005-.010	315-Z500750	315-Z500750D
1/2	1-1/4	1/2	3	.005-.010	315-Z501250	315-Z501250D
1/2	2	1/2	4	.005-.010	315-Z502000	315-Z502000D
1/2	3-1/8	1/2	6	.005-.010	315-Z503125	315-Z503125D
5/8	1-1/4	5/8	3	.005-.010	315-Z621250	315-Z621250D
5/8	1-5/8	5/8	3-1/2	.005-.010	315-Z621625	315-Z621625D
5/8	2-1/2	5/8	5	.005-.010	315-Z622500	315-Z622500D
5/8	3-1/8	5/8	6	.005-.010	315-Z623125	315-Z623125D
3/4	1-1/4	3/4	3	.005-.010	315-Z751000	315-Z751000D
3/4	1-3/4	3/4	4	.005-.010	315-Z751750	315-Z751750D
3/4	2-1/2	3/4	5	.005-.010	315-Z752500	315-Z752500D
3/4	3-1/4	3/4	6	.005-.010	315-Z753250	315-Z753250D
1	1-3/4	1	4	.005-.010	315-Z911750	315-Z911750D
1	2-5/8	1	5	.005-.010	315-Z912625	315-Z912625D
1	3-1/4	1	6	.005-.010	315-Z913250	315-Z913250D
1	4-1/8	1	7	.005-.010	315-Z914125	315-Z914125D

High Performance Aluminum / Non-Ferrous Cutters



2 Flute Ballnose

DIA	LOC	SHANK	OAL		
				UNCOATED	ZrN Coated
1/8	1/2	1/8	1-1/2	315-Z125510	315-Z125510D
5/32	5/8	3/16	2	315-Z156635	315-Z156635D
3/16	5/8	3/16	2	315-Z187635	315-Z187635D
7/32	3/4	1/4	2-1/2	315-Z218760	315-Z218760D
1/4	3/4	1/4	2-1/2	315-Z250760	315-Z250760D
5/16	13/16	5/16	2-1/2	315-Z312822	315-Z312822D
3/8	1-1/8	3/8	2-1/2	315-Z371135	315-Z371135D
7/16	1-1/4	7/16	2-3/4	315-Z431260	315-Z431260D
1/2	1-1/4	1/2	3	315-Z501260	315-Z501260D
5/8	1-5/8	5/8	3-1/2	315-Z621635	315-Z621635D
3/4	1-3/4	3/4	4	315-Z751760	315-Z751760D
1	1-3/4	1	4	315-Z911760	315-Z911760D



HIGH PERFORMANCE

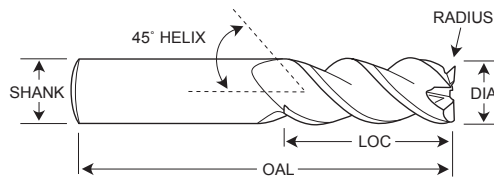
3 Flute - 45° Helix Aluminum Cutters

- Specifically designed for maximum productivity in non-ferrous materials
- Excellent work piece finish
- Extremely high feed rates
- ZrN coating offers excellent wear resistance & increased lubricity

3 Flute Corner Radius

DIA	LOC	SHANK	OAL	RADIUS		
					UNCOATED	ZrN Coated
1/8	1/4	1/8	1-1/2	.005-.010	316-Z125250	316-Z125250D
1/8	1/2	1/8	1-1/2	.005-.010	316-Z125500	316-Z125500D
1/8	1-1/8	1/8	3	.005-.010	316-Z126112	316-Z126112D
5/32	5/8	3/16	2	.005-.010	316-Z156625	316-Z156625D
3/16	5/16	3/16	2	.005-.010	316-Z187312	316-Z187312D
3/16	5/8	3/16	2	.005-.010	316-Z187625	316-Z187625D
3/16	1-1/8	3/16	3	.005-.010	316-Z188112	316-Z188112D
7/32	3/4	1/4	2-1/2	.005-.010	316-Z218750	316-Z218750D
1/4	1/2	1/4	2	.005-.010	316-Z250500	316-Z250500D
1/4	3/4	1/4	2-1/2	.005-.010	316-Z250750	316-Z250750D
1/4	1-1/4	1/4	3	.005-.010	316-Z251500	316-Z251500D
1/4	2	1/4	4	.005-.010	316-Z252000	316-Z252000D
9/32	13/16	5/16	2-1/2	.005-.010	316-Z281812	316-Z281812D
5/16	1/2	5/16	2-1/2	.005-.010	316-Z312500	316-Z312500D
5/16	13/16	5/16	2-1/2	.005-.010	316-Z312812	316-Z312812D
5/16	1-3/8	5/16	3	.005-.010	316-Z313375	316-Z313375D
5/16	2	5/16	4	.005-.010	316-Z314000	316-Z314000D
3/8	5/8	3/8	2-1/2	.005-.010	316-Z370625	316-Z370625D
3/8	1-1/8	3/8	2-1/2	.005-.010	316-Z371125	316-Z371125D
3/8	1-3/8	3/8	3	.005-.010	316-Z371375	316-Z371375D
3/8	2	3/8	4	.005-.010	316-Z372000	316-Z372000D
3/8	3	3/8	6	.005-.010	316-Z373000	316-Z373000D
7/16	1-1/4	7/16	2-3/4	.005-.010	316-Z431250	316-Z431250D
1/2	3/4	1/2	2-1/2	.005-.010	316-Z500750	316-Z500750D
1/2	1-1/4	1/2	3	.005-.010	316-Z501250	316-Z501250D
1/2	2	1/2	4	.005-.010	316-Z502000	316-Z502000D
1/2	3-1/8	1/2	6	.005-.010	316-Z503125	316-Z503125D
5/8	1-1/4	5/8	3	.005-.010	316-Z621250	316-Z621250D
5/8	1-5/8	5/8	3-1/2	.005-.010	316-Z621625	316-Z621625D
5/8	2-1/2	5/8	5	.005-.010	316-Z622500	316-Z622500D
5/8	3-1/8	5/8	6	.005-.010	316-Z623125	316-Z623125D
3/4	1-1/4	3/4	3	.005-.010	316-Z751000	316-Z751000D
3/4	1-3/4	3/4	4	.005-.010	316-Z751750	316-Z751750D
3/4	2-1/2	3/4	5	.005-.010	316-Z752500	316-Z752500D
3/4	3-1/4	3/4	6	.005-.010	316-Z753250	316-Z753250D
1	1-3/4	1	4	.005-.010	316-Z911750	316-Z911750D
1	2-5/8	1	5	.005-.010	316-Z912625	316-Z912625D
1	3-1/4	1	6	.005-.010	316-Z913250	316-Z913250D
1	4-1/8	1	7	.005-.010	316-Z914125	316-Z914125D

High Performance Aluminum / Non-Ferrous Cutters



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: +0.000 / -0.002"
- Shank Tolerance: +0.0000 / -0.0003"



3 Flute Ballnose

DIA	LOC	SHANK	OAL		
				UNCOATED	ZrN Coated
1/8	1/2	1/8	1-1/2	316-Z125510	316-Z125510D
5/32	5/8	3/16	2	316-Z156635	316-Z156635D
3/16	5/8	3/16	2	316-Z187635	316-Z187635D
7/32	3/4	1/4	2-1/2	316-Z218760	316-Z218760D
1/4	3/4	1/4	2-1/2	316-Z250760	316-Z250760D
5/16	13/16	5/16	2-1/2	316-Z312822	316-Z312822D
3/8	1-1/8	3/8	2-1/2	316-Z371135	316-Z371135D
7/16	1-1/4	7/16	2-3/4	316-Z431260	316-Z431260D
1/2	1-1/4	1/2	3	316-Z501260	316-Z501260D
5/8	1-5/8	5/8	3-1/2	316-Z621635	316-Z621635D
3/4	1-3/4	3/4	4	316-Z751760	316-Z751760D
1	1-3/4	1	4	316-Z911760	316-Z911760D



HIGH PERFORMANCE

Rougher-Finishers Chipbreaker Style

- *Designed without tooth overlap to produce fairly smooth part finish*
- *Extremely high feed rates in roughing operations*
- *Minimizes cutting forces for longer tool life*
- *Corner Radius promotes increased edge strength for longer tool life*

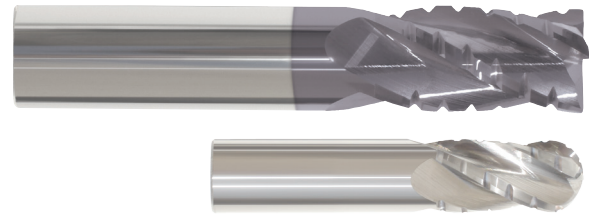
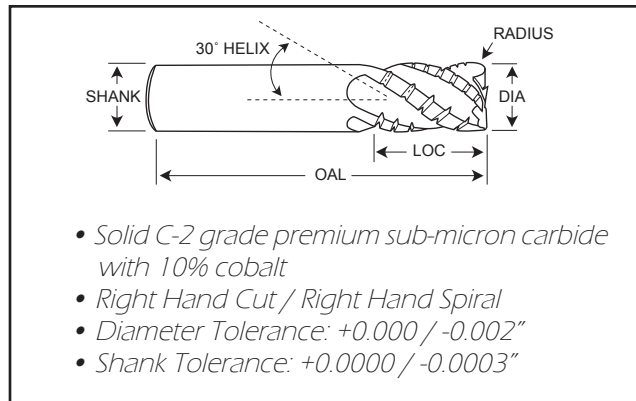
3 Flute Corner Radius

DIA	LOC	SHANK	OAL	RADIUS		
					UNCOATED	TiAlN Coated
1/8	1/2	1/8	1-1/2	.005-.010	300-Z125500	300-Z125503
3/16	5/8	3/16	2	.005-.010	300-Z187625	300-Z187628
1/4	3/4	1/4	2-1/2	.005-.010	300-Z250750	300-Z250753
5/16	13/16	5/16	2-1/2	.005-.010	300-Z312812	300-Z312815
3/8	1	3/8	2-1/2	.010-.015	300-Z375875	300-Z375878
7/16	1	7/16	2-3/4	.010-.015	300-Z437100	300-Z437103
1/2	1	1/2	3	.010-.015	300-Z500100	300-Z500103
5/8	1-1/4	5/8	3-1/2	.015-.020	300-Z625114	300-Z625117
3/4	1-1/2	3/4	4	.015-.020	300-Z750112	300-Z750115
1	1-1/2	1	4	.015-.020	300-Z100112	300-Z100115

3 Flute Ballnose

DIA	LOC	SHANK	OAL		
				UNCOATED	TiAlN Coated
1/8	1/2	1/8	1-1/2	301-Z125500	301-Z125503
3/16	5/8	3/16	2	301-Z187625	301-Z187628
1/4	3/4	1/4	2-1/2	301-Z250750	301-Z250753
5/16	13/16	5/16	2-1/2	301-Z312812	301-Z312815
3/8	1	3/8	2-1/2	301-Z375875	301-Z375878
7/16	1	7/16	2-3/4	301-Z437100	301-Z437103
1/2	1	1/2	3	301-Z500100	301-Z500103
5/8	1-1/4	5/8	3-1/2	301-Z625114	301-Z625117
3/4	1-1/2	3/4	4	301-Z750112	301-Z750115
1	1-1/2	1	4	301-Z100112	301-Z100115

High Performance Chipbreakers

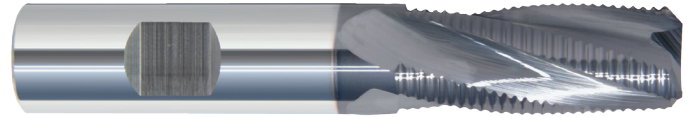


4 Flute Corner Radius

DIA	LOC	SHANK	OAL	RADIUS	UNCOATED	TiAIN Coated
1/8	1/2	1/8	1-1/2	.005-.010	290-Z125500	290-Z125503
3/16	5/8	3/16	2	.005-.010	290-Z187625	290-Z187628
1/4	3/4	1/4	2-1/2	.005-.010	290-Z250750	290-Z250753
5/16	13/16	5/16	2-1/2	.005-.010	290-Z312812	290-Z312815
3/8	1	3/8	2-1/2	.010-.015	290-Z375875	290-Z375878
7/16	1	7/16	2-3/4	.010-.015	290-Z437100	290-Z437103
1/2	1	1/2	3	.010-.015	290-Z500100	290-Z500103
5/8	1-1/4	5/8	3-1/2	.015-.020	290-Z625114	290-Z625117
3/4	1-1/2	3/4	4	.015-.020	290-Z750112	290-Z750115
1	1-1/2	1	4	.015-.020	290-Z100112	290-Z100115

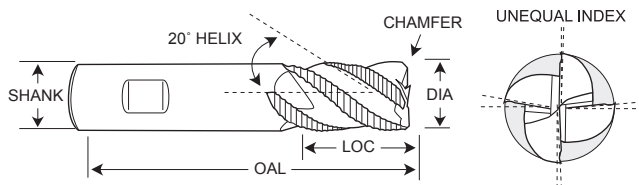
4 Flute Ballnose

DIA	LOC	SHANK	OAL	UNCOATED	TiAIN Coated
1/8	1/2	1/8	1-1/2	291-Z125500	291-Z125503
3/16	5/8	3/16	2	291-Z187625	291-Z187628
1/4	3/4	1/4	2-1/2	291-Z250750	291-Z250753
5/16	13/16	5/16	2-1/2	291-Z312812	291-Z312815
3/8	1	3/8	2-1/2	291-Z375875	291-Z375878
7/16	1	7/16	2-3/4	291-Z437100	291-Z437103
1/2	1	1/2	3	291-Z500100	291-Z500103
5/8	1-1/4	5/8	3-1/2	291-Z625114	291-Z625117
3/4	1-1/2	3/4	4	291-Z750112	291-Z750115
1	1-1/2	1	4	291-Z100112	291-Z100115



HIGH PERFORMANCE

Roughers Progressive Unequal Index Geometry



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- Right Hand Cut / Right Hand Spiral
- Weldon Flats
- Diameter Tolerance: $+0.000 / -0.003$ "
- Shank Tolerance: $+0.0000 / -0.0003$ "

Applications:

- Shallow slotting
- Peripheral milling

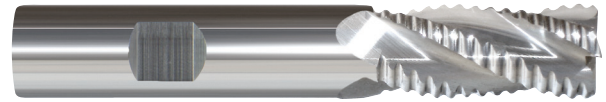
Materials:

- Difficult to Machine & abrasive materials

Fine Pitch Roughers

FLUTES	DIA	LOC	SHANK	OAL	CHAMFER		
						UNCOATED	AlTiN Coated
4	1/4	1/2	1/4	2	.020	321-Z100240	321-Z100240B
4	1/4	3/4	1/4	2-1/2	.020	321-Z100250	321-Z100250B
4	5/16	1/2	5/16	2	.020	321-Z100302	321-Z100302B
4	5/16	13/16	5/16	2-1/2	.020	321-Z100312	321-Z100312B
4	3/8	5/8	3/8	2	.020	321-Z100365	321-Z100365B
4	3/8	1	3/8	2-1/2	.020	321-Z100375	321-Z100375B
4	7/16	1	7/16	2-3/4	.020	321-Z100437	321-Z100437B
4	1/2	5/8	1/2	2-1/2	.025	321-Z100490	321-Z100490B
4	1/2	1-1/4	1/2	3	.025	321-Z100500	321-Z100500B
4	1/2	2	1/2	4	.025	321-Z200500	321-Z200500B
4	5/8	3/4	5/8	3	.025	321-Z100615	321-Z100615B
4	5/8	1-5/8	5/8	4	.025	321-Z100625	321-Z100625B
4	3/4	1	3/4	3-1/2	.025	321-Z100740	321-Z100740B
4	3/4	1-3/4	3/4	4	.025	321-Z100750	321-Z100750B
4	3/4	2-1/4	3/4	5	.025	321-Z200750	321-Z200750B
4	3/4	3	3/4	6	.025	321-Z300750	321-Z300750B
5	1	2	1	5	.025	321-Z101000	321-Z101000B
5	1	2-5/8	1	5	.025	321-Z201000	321-Z201000B
5	1	3-1/4	1	6	.025	321-Z301000	321-Z301000B
5	1	4-1/8	1	7	.025	321-Z301100	321-Z301100B

High Performance Unequal Index Roughers



- *Reduced chatter and vibration*
- *Maximum material removal rates*

- *Solid C-2 grade premium sub-micron carbide with 10% cobalt*
- *Right Hand Cut / Right Hand Spiral*
- *Weldon Flats*
- *Diameter Tolerance: +0.000 / -0.003"*
- *Shank Tolerance: +0.0000 / -0.0003"*

ATLANTIC
MEGA

Applications:

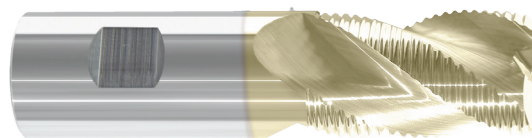
- *Slotting*
- *Peripheral milling*

Materials:

- *Difficult to Machine & abrasive materials*

Medium Pitch Roughers

FLUTES	DIA	LOC	SHANK	OAL	CHAMFER		
						UNCOATED	AlTiN Coated
3	3/16	5/8	3/16	2	.020	289-Z187625	289-Z187628
4	1/4	3/4	1/4	2-1/2	.020	289-Z250750	289-Z250753
4	5/16	3/4	5/16	2-1/2	.020	289-Z312812	289-Z312815
4	3/8	7/8	3/8	2-1/2	.020	289-Z375875	289-Z375878
4	7/16	1	7/16	2-3/4	.025	289-Z437100	289-Z437103
4	1/2	1-1/4	1/2	3	.025	289-Z500100	289-Z500103
4	5/8	1-1/4	5/8	3-1/2	.025	289-Z625114	289-Z625117
4	3/4	1-5/8	3/4	4	.025	289-Z750112	289-Z750115
5	1	1-3/4	1	4	.025	289-Z100112	289-Z100115



HIGH PERFORMANCE

Roughers

Progressive Unequal Index Geometry

- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- Right Hand Cut / Right Hand Spiral
- Weldon Flats
- Diameter Tolerance: $+0.000 / -0.003$ "
- Shank Tolerance: $+0.0000 / -0.0003$ "

Applications:

- Rough milling
- Profiling
- Open ended slots

Materials:

- Difficult to Machine & abrasive materials

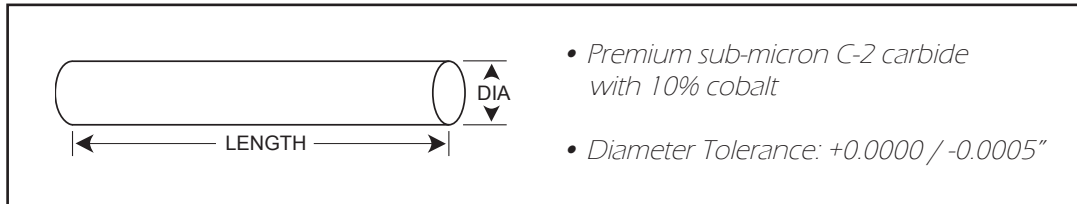
Coarse Pitch Roughers

FLUTES	DIA	LOC	SHANK	OAL	CHAMFER		
						UNCOATED	ZrN Coated
3	3/16	3/4	3/16	2	.020	321-Z050187	321-Z050187D
3	1/4	3/4	1/4	2-1/2	.020	321-Z050250	321-Z050250D
3	5/16	7/8	5/16	2-1/2	.020	321-Z050312	321-Z050312D
3	3/8	1	3/8	2-1/2	.020	321-Z050375	321-Z050375D
3	1/2	1-1/4	1/2	3	.025	321-Z050500	321-Z050500D
3	5/8	1-1/4	5/8	3-1/2	.025	321-Z050625	321-Z050625D
3	3/4	1-5/8	3/4	4	.025	321-Z050750	321-Z050750D
3	1	1-3/4	1	4	.025	321-Z051000	321-Z051000D

Solid Carbide Rod



CARBIDE ROUNDS



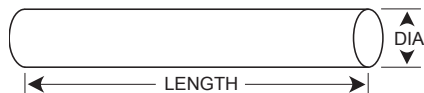
STYLE	DIA	LENGTH	PART #
SR-44	1/8	1/2	735-M000300
SR-46	1/8	3/4	735-M000400
SR-48	1/8	1	735-M000500
SR-55	5/32	5/8	735-M000600
SR-63	3/16	3/8	735-M000700
SR-64	3/16	1/2	735-M000800
SR-65	3/16	5/8	735-M000890
SR-66	3/16	3/4	735-M000900
SR-68	3/16	1	735-M000950
SR-69	3/16	1-1/8	735-M001000
SR-77	7/32	7/8	735-M001100
SR-84	1/4	1/2	735-M001190
SR-86	1/4	3/4	735-M001195
SR-88	1/4	1	735-M001200
SR-810	1/4	1-1/4	735-M001300
SR-812	1/4	1-1/2	735-M001400
SR-814	1/4	1-3/4	735-M001500
SR-1010	5/16	1-1/4	735-M001600
SR-1210	3/8	1-1/2	735-M001700
SR-1610	1/2	1-1/2	735-M001800



CUT TO LENGTH ROD

CENTERLESS GROUND

DIA	LENGTH	PART #
.025	1-1/2	734-M001000
1/32	1-1/2	734-M001150
3/64	1-1/2	734-M001350
3/64	2	734-M001450
1/16	1-1/2	734-M001550
1/16	3	734-M001595
5/64	2	734-M001750
3/32	1-1/2	734-M001850
3/32	2	734-M001950
3/32	2-1/2	734-M002050
3/32	3	734-M002055
7/64	2	734-M002250
7/64	2-1/2	734-M002350
1/8	1	734-M002370
1/8	1-1/8	734-M002375
1/8	1-1/4	734-M002380
1/8	1-1/2	734-M002450
1/8	1-3/4	734-M002455
1/8	2	734-M002550
1/8	2-1/8	734-M002575
1/8	2-1/4	734-M002650
1/8	2-1/2	734-M002750
1/8	3	734-M002850
1/8	4	734-M002950
1/8	6	735-M005900
5/32	1-1/2	734-M003050
5/32	2	734-M003053
5/32	2-1/2	734-M003066
3/16	1-1/2	734-M003250
3/16	2	734-M003350
3/16	2-1/2	734-M003550
3/16	2-3/4	734-M003585
3/16	3	734-M003650
3/16	4	734-M003750
3/16	6	735-M006300
1/4	2	734-M003850
1/4	2-1/4	734-M003950
1/4	2-1/2	734-M004050
1/4	3	734-M004150
1/4	4	734-M004250
1/4	6	735-M006750
5/16	2	734-M004350
5/16	2-1/8	734-M004360
5/16	2-1/2	734-M004450
5/16	3	734-M004550
5/16	3-1/4	734-M004551
5/16	4	734-M004650
5/16	6	735-M007150



- Premium sub-micron C-2 carbide with 10% cobalt

Diameter Tolerance:

- Ground: $+0.0000 / -0.0005$ "
- Unground: $+size$ Grind Stock

DIA	LENGTH	PART #
3/8	1-1/2	734-M004690
3/8	2	734-M004750
3/8	2-1/2	734-M004850
3/8	3	734-M004950
3/8	3-1/8	734-M004959
3/8	3-1/2	734-M005050
3/8	4	734-M005150
3/8	6	734-M005250
7/16	2-1/2	734-M005350
7/16	2-3/4	734-M005450
7/16	3	734-M005490
7/16	4	734-M005550
7/16	6	734-M005650
1/2	2	734-M005750
1/2	2-1/2	734-M005850
1/2	3	734-M005950
1/2	3-1/2	734-M005975
1/2	4	734-M006050
1/2	6	734-M006150
9/16	3-1/2	734-M006250
9/16	6	735-M007850
5/8	3	734-M006280
5/8	3-1/2	734-M006350
5/8	4	734-M006355
5/8	5	734-M006450
5/8	6	734-M006550
3/4	3	734-M006690
3/4	3-1/2	734-M006696
3/4	4	734-M006750
3/4	5	734-M006850
3/4	6	734-M006950
3/4	7	734-M007050
7/8	4	734-M007150
7/8	6	735-M008150
1	4	734-M007250
1	5	734-M007350
1	6	734-M007450
1	7	734-M007550

12" RANDOM ROD



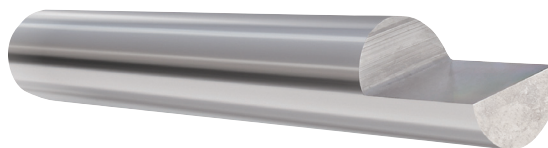
CENTERLESS GROUND

DIA	LENGTH	PART #
1/32	12	735-M100200
3/64	12	735-M100350
1/16	12	735-M100450
5/64	12	735-M100550
3/32	12	735-M100650
7/64	12	735-M100750
1/8	12	735-M100900
9/64	12	735-M101000
5/32	12	735-M101100
11/64	12	735-M101200
3/16	12	735-M101300
13/64	12	735-M101450
7/32	12	735-M101550
15/64	12	735-M101650
1/4	12	735-M101750
17/64	12	735-M101850
9/32	12	735-M101950
19/64	12	735-M102050
5/16	12	735-M102150
21/64	12	735-M102250
11/32	12	735-M102350
23/64	12	735-M102450
3/8	12	735-M102550
25/64	12	735-M102650
13/32	12	735-M102750
27/64	12	735-M102770
7/16	12	735-M102850
29/64	12	735-M102890
15/32	12	735-M102950
31/64	12	735-M102995
1/2	12	735-M103050
17/32	12	735-M103080
9/16	12	735-M103150
5/8	12	735-M103250
11/16	12	735-M103350
3/4	12	735-M103450
13/16	12	735-M103550
7/8	12	735-M103650
1	12	735-M103850

UNGROUND

DIA	LENGTH	PART #
1/32	12	735-M100150
3/64	12	735-M100300
1/16	12	735-M100400
5/64	12	735-M100500
3/32	12	735-M100600
7/64	12	735-M100700
1/8	12	735-M100850
9/64	12	735-M100950
5/32	12	735-M101050
11/64	12	735-M101150
3/16	12	735-M101250
13/64	12	735-M101400
7/32	12	735-M101500
15/64	12	735-M101600
1/4	12	735-M101700
17/64	12	735-M101800
9/32	12	735-M101900
19/64	12	735-M102000
5/16	12	735-M102100
21/64	12	735-M102200
11/32	12	735-M102300
23/64	12	735-M102400
3/8	12	735-M102500
25/64	12	735-M102600
13/32	12	735-M102700
27/64	12	735-M102760
7/16	12	735-M102800
29/64	12	735-M102880
15/32	12	735-M102900
31/64	12	735-M102990
1/2	12	735-M103000
17/32	12	735-M103070
9/16	12	735-M103100
5/8	12	735-M103200
11/16	12	735-M103300
3/4	12	735-M103400
13/16	12	735-M103500
7/8	12	735-M103600
1	12	735-M103800

SPLIT END BLANKS



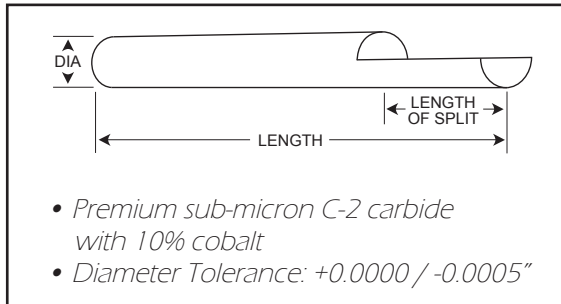
Applications:

- Used for special engraving tools & cutting tools

SINGLE END

DIA	LENGTH	LENGTH OF SPLIT	PART #
1/8	1-1/2	3/8	743-M125150
1/8	2	3/8	743-M125200
1/8	3	3/8	743-M125300
1/8	4	3/8	743-M125400
1/8	6	3/8	743-M125600
3/16	2	1/2	743-M187200
3/16	2-1/2	1/2	743-M187250
3/16	3	1/2	743-M187300
3/16	4	1/2	743-M187400
3/16	6	1/2	743-M187600
1/4	2	1/2	743-M250200
1/4	2-1/2	1/2	743-M250250
1/4	3	1/2	743-M250300
1/4	4	1/2	743-M250400
1/4	6	1/2	743-M250600
5/16	2-1/2	1/2	743-M312250
5/16	3	1/2	743-M312300
5/16	4	1/2	743-M312400
5/16	6	1/2	743-M312600
3/8	2-1/2	1/2	743-M375250
3/8	3	1/2	743-M375300
3/8	4	1/2	743-M375400
3/8	6	1/2	743-M375600
7/16	2-1/2	5/8	743-M437250
7/16	3	5/8	743-M437300
7/16	4	5/8	743-M437400
7/16	6	5/8	743-M437600
1/2	3	5/8	743-M500300
1/2	4	5/8	743-M500400
1/2	6	5/8	743-M500600

Split End Blanks



DOUBLE END

DIA	LENGTH	LENGTH OF SPLIT	PART #
1/8	1-1/2	3/8	753-M125150
1/8	2	3/8	753-M125200
1/8	3	3/8	753-M125300
1/8	4	3/8	753-M125400
1/8	6	3/8	753-M125600
3/16	2	1/2	753-M187200
3/16	2-1/2	1/2	753-M187250
3/16	3	1/2	753-M187300
3/16	4	1/2	753-M187400
3/16	6	1/2	753-M187600
1/4	2	1/2	753-M250200
1/4	2-1/2	1/2	753-M250250
1/4	3	1/2	753-M250300
1/4	4	1/2	753-M250400
1/4	6	1/2	753-M250600
5/16	2-1/2	1/2	753-M312250
5/16	3	1/2	753-M312300
5/16	4	1/2	753-M312400
5/16	6	1/2	753-M312600
3/8	2-1/2	1/2	753-M375250
3/8	3	1/2	753-M375300
3/8	4	1/2	753-M375400
3/8	6	1/2	753-M375600
7/16	2-1/2	5/8	753-M437250
7/16	3	5/8	753-M437300
7/16	4	5/8	753-M437400
7/16	6	5/8	753-M437600
1/2	3	5/8	753-M500300
1/2	4	5/8	753-M500400
1/2	6	5/8	753-M500600

STANDARD UNGROUND BLANKS 1000 SERIES



Applications:

- Custom components and assemblies
- Replacement tips for brazed cutting tools

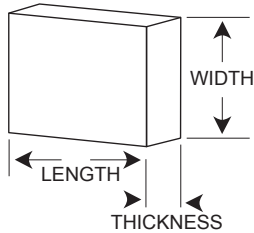
C-2 GRADE

STYLE	THICKNESS	WIDTH	LENGTH	C-2 GRADE
1010	1/16	1/8	5/8	733-M007001
1020	1/16	3/16	1/4	733-M007005
1030	1/16	1/4	5/16	733-M007010
1040	3/32	3/16	5/16	733-M007012
1050	3/32	3/16	1/2	733-M007012B
1060	3/32	1/4	3/8	733-M007011
1070	3/32	1/4	1/2	733-M007013
1080	3/32	5/16	3/8	733-M007014
1090	3/32	3/8	3/8	733-M007016
1100	3/32	3/8	1/2	733-M007020
1105	3/32	7/16	1/2	733-M007030
1110	1/8	3/16	3/4	733-M007035
1120	1/8	1/4	1/2	733-M007055
1130	1/8	1/4	5/8	733-M007057
1140	1/8	1/4	3/4	733-M007049A
1150	1/8	5/16	7/16	733-M007050
1160	1/8	5/16	1/2	733-M007059
1170	1/8	5/16	5/8	733-M007070
1180	1/8	3/8	1/2	733-M007080
1190	1/8	3/8	3/4	733-M007082
1200	1/8	1/2	1/2	733-M007084
1210	1/8	1/2	3/4	733-M007086
1215	1/8	3/4	3/4	733-M007088
1220	5/32	3/8	9/16	733-M007089
1230	5/32	3/8	3/4	733-M007098A
1240	5/32	5/8	5/8	733-M007099
1250	3/16	5/16	7/16	733-M007099A
1260	3/16	5/16	5/8	733-M007099B
1270	3/16	3/8	1/2	733-M007091
1280	3/16	3/8	5/8	733-M007092
1290	3/16	3/8	3/4	733-M007090
1300	3/16	7/16	5/8	733-M007110
1310	3/16	7/16	13/16	733-M007150
1320	3/16	1/2	1/2	733-M007160
1330	3/16	1/2	3/4	733-M007180
1340	3/16	3/4	3/4	733-M007190

STYLE	THICKNESS	WIDTH	LENGTH	C-2 GRADE
1350	1/4	3/8	9/16	733-M007200
1360	1/4	3/8	3/4	733-M007200A
1370	1/4	7/16	5/8	733-M007311
1380	1/4	1/2	3/4	733-M007203
1390	1/4	9/16	1	733-M007202
1400	1/4	5/8	5/8	733-M007208
1405	1/4	3/4	3/4	733-M007208B
1410	1/4	3/4	1	733-M007201
1430	5/16	7/16	15/16	733-M007312
1440	5/16	1/2	3/4	733-M007209
1450	5/16	1/2	1	733-M007313
1460	5/16	5/8	1	733-M007314
1470	5/16	3/4	3/4	733-M007315
1475	5/16	3/4	1	733-M007317
1480	5/16	3/4	1-1/4	733-M007316
1490	3/8	1/2	3/4	733-M007209B
1500	3/8	1/2	1	733-M007209C
1510	3/8	5/8	1	733-M007318
1520	3/8	3/4	1-1/4	733-M007319
1525	3/8	3/4	1-1/2	733-M007320
1530	1/2	3/4	1	733-M007321
1540	1/2	3/4	1-1/4	733-M007322
1550	1/2	3/4	1-1/2	733-M007323

Standard Unground Blanks

1000 Series



Solid premium medium grain carbide

- C-2 grade contains 6-8% cobalt
- C-5 Grade contains 9-10% cobalt



Minimum grind stock on all dimensions:

- Thickness from: 1/16 - 5/16" +0.004 - +0.015"
- Thickness from: 3/8 - 1" +0.006 - +0.020"

C-5 GRADE

STYLE	THICKNESS	WIDTH	LENGTH	C-5 GRADE
1010	1/16	1/8	5/8	733-M007001A
1020	1/16	3/16	1/4	733-M007005A
1030	1/16	1/4	5/16	733-M007010A
1040	3/32	3/16	5/16	733-M007012A
1050	3/32	3/16	1/2	733-M007012C
1060	3/32	1/4	3/8	733-M007011A
1070	3/32	1/4	1/2	733-M007013A
1080	3/32	5/16	3/8	733-M007014A
1090	3/32	3/8	3/8	733-M007017
1100	3/32	3/8	1/2	733-M007020A
1105	3/32	7/16	1/2	733-M007032
1110	1/8	3/16	3/4	733-M007035A
1120	1/8	1/4	1/2	733-M007056
1130	1/8	1/4	5/8	733-M007057A
1140	1/8	1/4	3/4	733-M007049
1160	1/8	5/16	1/2	733-M007060
1180	1/8	3/8	1/2	733-M007081
1190	1/8	3/8	3/4	733-M007083
1200	1/8	1/2	1/2	733-M007085
1210	1/8	1/2	3/4	733-M007087
1215	1/8	3/4	3/4	733-M007088A
1250	3/16	5/16	7/16	733-M007099D
1260	3/16	5/16	5/8	733-M007099C
1270	3/16	3/8	1/2	733-M007093
1290	3/16	3/8	3/4	733-M007100
1310	3/16	7/16	13/16	733-M007150A
1320	3/16	1/2	1/2	733-M007160A
1330	3/16	1/2	3/4	733-M007180A
1340	3/16	3/4	3/4	733-M007190A
1380	1/4	1/2	3/4	733-M007204
1410	1/4	3/4	1	733-M007206

ATLANTIC
METAL

STANDARD UNGROUND BLANKS 2000 SERIES



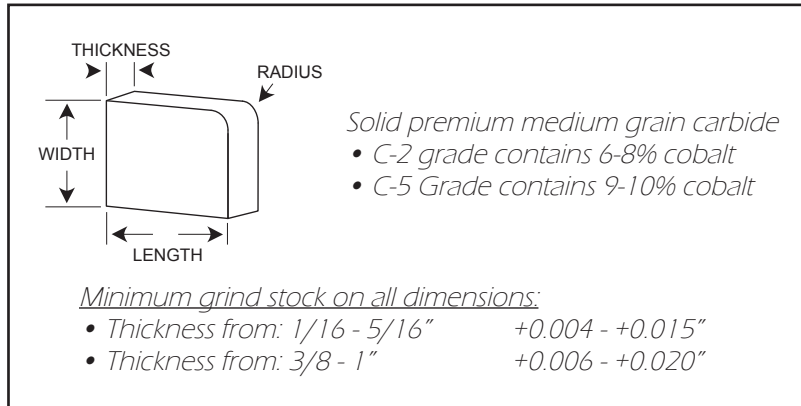
Applications:

- Custom components and assemblies
- Replacement tips for brazed cutting tools

C-2 GRADE

STYLE	THICKNESS	WIDTH	LENGTH	RADIUS	C-2 GRADE
2010	1/16	1/8	5/8	1/8	733-M007208A
2020	1/16	3/16	1/4	1/8	733-M007209A
2030	1/16	1/4	5/16	1/8	733-M007210
2040	3/32	3/16	5/16	1/8	733-M007211
2050	3/32	3/16	1/2	1/8	733-M007213
2060	3/32	1/4	3/8	1/8	733-M007215
2070	3/32	1/4	1/2	1/8	733-M007218
2080	3/32	5/16	3/8	3/16	733-M007220
2090	3/32	3/8	3/8	3/16	733-M007221
2100	3/32	3/8	1/2	3/16	733-M007226
2105	3/32	7/16	1/2	1/4	733-M007228
2110	1/8	3/16	3/4	1/8	733-M007230
2120	1/8	1/4	1/2	1/8	733-M007232
2130	1/8	1/4	5/8	1/8	733-M007233
2140	1/8	1/4	3/4	1/8	733-M007235
2150	1/8	5/16	7/16	3/16	733-M007236
2160	1/8	5/16	1/2	3/16	733-M007237
2170	1/8	5/16	5/8	3/16	733-M007241
2180	1/8	3/8	1/2	3/16	733-M007243
2190	1/8	3/8	3/4	3/16	733-M007245B
2200	1/8	1/2	1/2	1/4	733-M007247
2210	1/8	1/2	3/4	1/4	733-M007260
2215	1/8	3/4	3/4	1/4	733-M007270
2220	5/32	3/8	9/16	3/16	733-M007276
2230	5/32	3/8	3/4	3/16	733-M007280
2240	5/32	5/8	5/8	1/4	733-M007282
2250	3/16	5/16	7/16	3/16	733-M007284
2260	3/16	5/16	5/8	3/16	733-M007290
2270	3/16	3/8	1/2	3/16	733-M007292
2280	3/16	3/8	5/8	3/16	733-M007294
2290	3/16	3/8	3/4	3/16	733-M007300
2300	3/16	7/16	5/8	1/4	733-M007302
2310	3/16	7/16	13/16	1/4	733-M007304
2320	3/16	1/2	1/2	1/4	733-M007306
2330	3/16	1/2	3/4	1/4	733-M007308
2340	3/16	3/4	3/4	1/4	733-M007310

Standard Unground Blanks 2000 Series

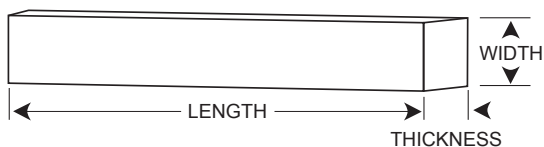


C-5 GRADE

STYLE	THICKNESS	WIDTH	LENGTH	RADIUS	C-5 GRADE
2020	1/16	3/16	1/4	1/8	733-M007209D
2030	1/16	1/4	5/16	1/8	733-M007210A
2040	3/32	3/16	5/16	1/8	733-M007211A
2050	3/32	3/16	1/2	1/8	733-M007214
2060	3/32	1/4	3/8	1/8	733-M007216
2070	3/32	1/4	1/2	1/8	733-M007219
2100	3/32	3/8	1/2	3/16	733-M007226A
2110	1/8	3/16	3/4	1/8	733-M007231
2120	1/8	1/4	1/2	1/8	733-M007232A
2130	1/8	1/4	5/8	1/8	733-M007234
2140	1/8	1/4	3/4	1/8	733-M007235A
2170	1/8	5/16	5/8	3/16	733-M007242
2180	1/8	3/8	1/2	3/16	733-M007244
2190	1/8	3/8	3/4	3/16	733-M007245A
2210	1/8	1/2	3/4	1/4	733-M007265
2215	1/8	3/4	3/4	1/4	733-M007275
2310	3/16	7/16	13/16	1/4	733-M007304A
2320	3/16	1/2	1/2	1/4	733-M007306A
2330	3/16	1/2	3/4	1/4	733-M007308A



STB & STB-L Carbide Strips



- Premium medium grain C-2 carbide with 6-8% cobalt
- Parallelism & Flatness Tolerances: within 0.020"

• Minimum grind stock:
Thickness: +0.008" Width: +0.012" Length: +0.008"

Applications:

- Wear Parts
- Grinder Rests
- Tools
- Appliance Parts

STYLE	THICKNESS	WIDTH	LENGTH	PART #
STB-12	1/32	1/16	1	810-M001038
STB-12A	1/32	1/16	1-1/2	810-M001039
STB-13A	3/64	3/32	13/16	810-M001041
STB-13	3/64	3/32	1	810-M001040
STB-22L	1/16	1/16	6	810-M001042
STB-24A	1/16	1/8	1	810-M001047
STB-24C	1/16	1/8	1-1/4	810-M001047E
STB-24D	1/16	1/8	1-1/2	810-M001047F
STB-24B	1/16	1/8	3	810-M001047B
STB-24L	1/16	1/8	6	810-M001047G
STB-26A	1/16	3/16	1	810-M001048
STB-26C	1/16	3/16	3	810-M001048C
STB-26L	1/16	3/16	6	810-M001048H
STB-28A	1/16	1/4	1	810-M001059
STB-28B	1/16	1/4	1-1/4	810-M001059A
STB-28D	1/16	1/4	3	810-M001060
STB-28L	1/16	1/4	6	810-M001061
STB-210L	1/16	5/16	6	810-M001062
STB-212L	1/16	3/8	6	810-M001067
STB-216L	1/16	1/2	6	810-M001067A
STB-220L	1/16	5/8	6	810-M001067B
STB-224L	1/16	3/4	6	810-M001067C
STB-232L	1/16	1	6	810-M001067D
STB-14	5/64	1/8	1-1/8	810-M001045
STB-34	3/32	1/8	5	810-M001068
STB-34L	3/32	1/8	8	810-M001068A
STB-36	3/32	3/16	1-1/8	810-M001064

STB & STB-L Carbide Strips



STB STRIPS *Continued*

STYLE	THICKNESS	WIDTH	LENGTH	PART #
STB-36A	3/32	3/16	1-1/4	810-M001069
STB-36L	3/32	3/16	8	810-M001069A
STB-38A	3/32	1/4	1	810-M001050C
STB-38B	3/32	1/4	1-1/2	810-M001050D
STB-38D	3/32	1/4	5	810-M001050
STB-38L	3/32	1/4	8	810-M001050E
STB-310A	3/32	5/16	2	810-M001065
STB-310B	3/32	5/16	3	810-M001065A
STB-310C	3/32	5/16	5	810-M001066
STB-310L	3/32	5/16	8	810-M001066C
STB-312	3/32	3/8	5	810-M001070
STB-312C	3/32	3/8	6	810-M001070D
STB-312L	3/32	3/8	8	810-M001070C
STB-316	3/32	1/2	6	810-M001072
STB-316L	3/32	1/2	8	810-M001072A
STB-320	3/32	5/8	6	810-M001079
STB-320L	3/32	5/8	8	810-M001079A
STB-324	3/32	3/4	6	810-M001073
STB-328	3/32	7/8	6	810-M001074
STB-332	3/32	1	6	810-M001076
STB-336	3/32	1-1/8	6	810-M001077
STB-340	3/32	1-1/4	6	810-M001078
STB-348	3/32	1-1/2	6	810-M001080
STB-44L	1/8	1/8	12	810-M001083
STB-46	1/8	3/16	6	810-M001086
STB-46L	1/8	3/16	12	810-M001086A
STB-48A	1/8	1/4	1	810-M001052C
STB-48B	1/8	1/4	1-1/4	810-M001052D
STB-48F	1/8	1/4	1-1/2	810-M001052E
STB-48C	1/8	1/4	2-1/4	810-M001052F
STB-48D	1/8	1/4	3	810-M001052G
STB-48E	1/8	1/4	6	810-M001052H
STB-48L	1/8	1/4	12	810-M001052I
STB-410A	1/8	5/16	1-1/2	810-M001080E
STB-410B	1/8	5/16	3	810-M001080F
STB-410	1/8	5/16	6	810-M001080B
STB-410L	1/8	5/16	12	810-M001080G
STB-412D	1/8	3/8	1	810-M001082
STB-412A	1/8	3/8	2	810-M001081D
STB-412B	1/8	3/8	3	810-M001081
STB-412C	1/8	3/8	6	810-M001082A
STB-412L	1/8	3/8	12	810-M001082E



STB STRIPS *Continued*

STYLE	THICKNESS	WIDTH	LENGTH	PART #
STB-416A	1/8	1/2	1	810-M001085
STB-416B	1/8	1/2	1-1/2	810-M001090
STB-416C	1/8	1/2	3	810-M001087
STB-416	1/8	1/2	6	810-M001084
STB-416L	1/8	1/2	12	810-M001084A
STB-420	1/8	5/8	6	810-M001091
STB-420L	1/8	5/8	12	810-M001091A
STB-424	1/8	3/4	6	810-M001095
STB-424L	1/8	3/4	12	810-M001095A
STB-428	1/8	7/8	6	810-M001096
STB-432	1/8	1	6	810-M001055
STB-432L	1/8	1	12	810-M001055A
STB-436	1/8	1-1/8	6	810-M010555
STB-440	1/8	1-1/4	6	810-M0140554
STB-448	1/8	1-1/2	6	810-M010553
STB-456	1/8	1-3/4	6	810-M010552
STB-512C	5/32	3/8	6	810-M010551
STB-516	5/32	1/2	6	810-M010550
STB-520	5/32	5/8	6	810-M010549
STB-524	5/32	3/4	6	810-M010548
STB-528	5/32	7/8	6	810-M010547
STB-532	5/32	1	6	810-M010546
STB-536	5/32	1-1/8	6	810-M010545
STB-540	5/32	1-1/4	6	810-M010544
STB-544	5/32	1-3/8	6	810-M010543
STB-548	5/32	1-1/2	6	810-M010542
STB-564	5/32	2	6	810-M010541
STB-66L	3/16	3/16	12	810-M001056
STB-68A	3/16	1/4	3	810-M001058B
STB-68	3/16	1/4	6	810-M001058
STB-68L	3/16	1/4	12	810-M001058A
STB-610A	3/16	5/16	3	810-M001115
STB-610	3/16	5/16	6	810-M001116
STB-610L	3/16	5/16	12	810-M001117
STB-612A	3/16	3/8	3	810-M001100A
STB-612	3/16	3/8	6	810-M001100
STB-612L	3/16	3/8	12	810-M001100B
STB-616A	3/16	1/2	3	810-M001110
STB-616	3/16	1/2	6	810-M001110A

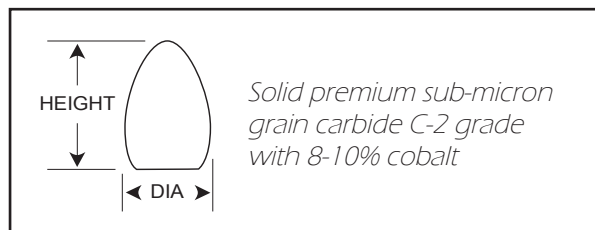
STB & STB-L Carbide Strips



STB STRIPS *Continued*

STYLE	THICKNESS	WIDTH	LENGTH	PART #
STB-616L	3/16	1/2	12	810-M001110B
STB-620A	3/16	5/8	3	810-M001057A
STB-620	3/16	5/8	6	810-M001057
STB-620L	3/16	5/8	12	810-M001057B
STB-624B	3/16	3/4	2	810-M001051B
STB-624A	3/16	3/4	4	810-M001051A
STB-624	3/16	3/4	6	810-M001051
STB-624L	3/16	3/4	12	810-M001051C
STB-628	3/16	7/8	6	810-M001151
STB-632	3/16	1	6	810-M001114A
STB-632L	3/16	1	12	810-M001114
STB-640	3/16	1-1/4	6	810-M001113A
STB-640L	3/16	1-1/4	12	810-M001113
STB-648	3/16	1-1/2	6	810-M010113
STB-88L	1/4	1/4	12	810-M001450
STB-812A	1/4	3/8	3	810-M001190
STB-812	1/4	3/8	6	810-M001188
STB-812L	1/4	3/8	12	810-M001190A
STB-816C	1/4	1/2	2	810-M001195C
STB-816A	1/4	1/2	3	810-M001195A
STB-816B	1/4	1/2	4	810-M001195B
STB-816	1/4	1/2	6	810-M001195
STB-816L	1/4	1/2	12	810-M001195D
STB-820A	1/4	5/8	3	810-M001210B
STB-820	1/4	5/8	6	810-M001210
STB-820L	1/4	5/8	12	810-M001210A
STB-824A	1/4	3/4	3	810-M001290A
STB-824	1/4	3/4	6	810-M001290
STB-824L	1/4	3/4	12	810-M001290B
STB-832	1/4	1	6	810-M001350
STB-832L	1/4	1	12	810-M001400
STB-840L	1/4	1-1/4	12	810-M001420
STB-1010L	5/16	5/16	12	810-M001427
STB-1212L	3/8	3/8	12	810-M001421
STB-1216L	3/8	1/2	12	810-M001422
STB-1224L	3/8	3/4	12	810-M001423
STB-1232L	3/8	1	12	810-M001424
STB-1616L	1/2	1/2	12	810-M001425
STB-1624L	1/2	3/4	12	810-M001426

SOLID CARBIDE BURR BLANKS



STYLE	DIA	HEIGHT	PART #
BSA-52	5/32	1/2	733-M008150A
BSA-53	3/16	1/2	733-M008151
BSA-51	1/4	1/2	733-M008150
BSA-2	5/16	3/4	733-M008169
BSA-3	3/8	3/4	733-M008170
BSA-3L	3/8	1	733-M008194
BSA-3X	3/8	1-1/2	733-M008172
BSA-4	7/16	1	733-M008175
BSA-5	1/2	1	733-M008180
BSA-6	5/8	1	733-M008181
BSA-15	3/4	1/2	733-M008182B
BSA-16	3/4	3/4	733-M008182C
BSA-7	3/4	1	733-M008182
BSA-8	7/8	1	733-M008182A
BSA-17	1	1/4	733-M008182D
BSA-9	1	1	733-M008183
BSB-51	1/4	3/16	733-M008186
BSC-52	5/32	1/2	733-M008187A
BSC-53	3/16	1/2	733-M008188
BSC-51	1/4	1/2	733-M008187
BSC-2	5/16	3/4	733-M008189
BSC-3	3/8	3/4	733-M008190
BSC-3L	3/8	1	733-M008193
BSC-3X	3/8	1-1/2	733-M008192
BSC-4	7/16	1	733-M008199
BSC-5	1/2	1	733-M008200
BSC-6	5/8	1	733-M008201
BSC-15	3/4	1/2	733-M008202A
BSC-16	3/4	3/4	733-M008202B
BSC-7	3/4	1	733-M008202
BSC-9	1	1	733-M008203

Burr Blanks



BURR BLANKS *Continued*

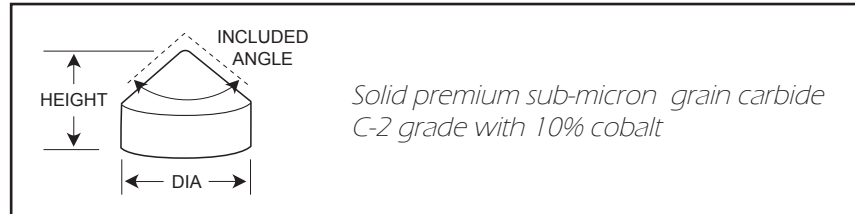
STYLE	DIA	HEIGHT	PART #
BSD-52	5/32	5/32	733-M008210A
BSD-53	3/16	5/32	733-M008211
BSD-51	1/4	7/32	733-M008210
BSD-2	5/16	1/4	733-M008215
BSD-3	3/8	5/16	733-M008220
BSD-4	7/16	3/8	733-M008223
BSD-5	1/2	7/16	733-M008225
BSD-6	5/8	9/16	733-M008226
BSD-7	3/4	11/16	733-M008226A
BSD-9	1	15/16	733-M008226B
BSE-53	3/16	9/32	733-M008228
BSE-51	1/4	3/8	733-M008227
BSE-2	5/16	7/16	733-M008229
BSE-3	3/8	5/8	733-M008230
BSE-5	1/2	7/8	733-M008240
BSE-6	5/8	1	733-M008241
BSE-7	3/4	1	733-M008242
BSF-53	3/16	1/2	733-M008246
BSF-51	1/4	1/2	733-M008245
BSF-3	3/8	3/4	733-M008250
BSF-4	7/16	1	733-M008251
BSF-13	1/2	3/4	733-M008263
BSF-5	1/2	1	733-M008260
BSF-6	5/8	1	733-M008261
BSF-7	3/4	1	733-M008262
BSF-14	3/4	1-1/4	733-M008263A
BSF-15	3/4	1-1/2	733-M008264
BSF-17	1-1/8	2	733-M008266
BSG-53	3/16	1/2	733-M008269A
BSG-51	1/4	1/2	733-M008265
BSG-2	5/16	3/4	733-M008269
BSG-3	3/8	3/4	733-M008270
BSG-13	1/2	3/4	733-M008282A
BSG-5	1/2	1	733-M008280
BSG-6	5/8	1	733-M008281
BSG-7	3/4	1	733-M008282
BSG-15	3/4	1-1/2	733-M008282B



BURR BLANKS *Continued*

STYLE	DIA	HEIGHT	PART #
BSH-53	3/16	3/8	733-M008282C
BSH-2	5/16	3/4	733-M008283
BSH-5	1/2	1-1/4	733-M008286
BSH-6	5/8	1-7/16	733-M008284
BSH-7	3/4	1-5/8	733-M008286A
BSJ-3	3/8	5/16	733-M008286B
BSJ-5	1/2	7/16	733-M008310
BSJ-6	5/8	9/16	733-M008312
BSJ-7	3/4	11/16	733-M008311
BSJ-9	1	15/16	733-M008335
BSK-3	3/8	3/16	733-M008328
BSK-5	1/2	1/4	733-M008287A
BSK-6	5/8	5/16	733-M008331
BSK-7	3/4	3/8	733-M008332
BSK-9	1	1/2	733-M008334
BSL-53	3/16	1/2	733-M008287B
BSL-2	5/16	7/8	733-M008287
BSL-3	3/8	1-1/16	733-M008288
BSL-4	1/2	1-1/8	733-M008289
BSL-5	5/8	1-3/16	733-M008289B
BSL-6	5/8	1-5/16	733-M008289A
BSL-7	3/4	1-1/2	733-M008289C
BSM-53	3/16	1/2	733-M008292
BSM-51	1/4	1/2	733-M008291
BSM-4	3/8	5/8	733-M008295
BSM-5	1/2	7/8	733-M008300
BSM-6	5/8	1	733-M008301
BSN-53	3/16	1/4	733-M008303
BSN-51	1/4	1/4	733-M008320
BSN-2	3/8	3/8	733-M008305
BSN-4	1/2	1/2	733-M008306
BSN-6	5/8	3/4	733-M008308
BSN-7	3/4	5/8	733-M008309
BST-3	3/8	1/4	733-M008338
BST-5	1/2	3/8	733-M008339
BST-6	5/8	7/16	733-M008340
BST-7	3/4	1/2	733-M008341
BST-9	1	5/8	733-M008342

SOLID CARBIDE COUNTERSINK BLANKS

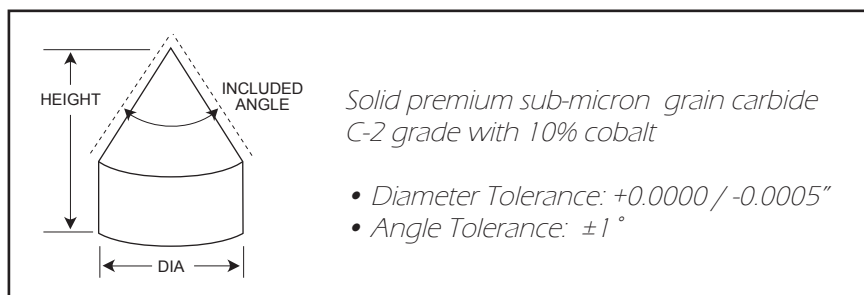


DIA	HEIGHT	INCLUDED ANGLE	PART #
5/16	13/16	60°	748-M0010312
5/16	11/16	82°	748-M0020312
5/16	11/16	90°	748-M0030312
5/16	11/16	100°	748-M0040312
5/16	11/16	120°	748-M0050312
3/8	13/16	60°	748-M0010375
3/8	11/16	82°	748-M0020375
3/8	11/16	90°	748-M0030375
3/8	11/16	100°	748-M0040375
3/8	11/16	120°	748-M0050375
1/2	7/8	60°	748-M0010500
1/2	3/4	82°	748-M0020500
1/2	3/4	90°	748-M0030500
1/2	3/4	100°	748-M0040500
1/2	3/4	120°	748-M0050500
5/8	1	60°	748-M0010625
5/8	7/8	82°	748-M0020625
5/8	3/4	90°	748-M0030625
5/8	3/4	100°	748-M0040625
5/8	3/4	120°	748-M0050625
3/4	1	60°	748-M0010750
3/4	7/8	82°	748-M0020750
3/4	7/8	90°	748-M0030750
3/4	7/8	100°	748-M0040750
3/4	7/8	120°	748-M0050750

DIA	HEIGHT	INCLUDED ANGLE	PART #
7/8	1-1/8	60°	748-M0010775
7/8	15/16	82°	748-M0020775
7/8	15/16	90°	748-M0030775
7/8	15/16	100°	748-M0040775
7/8	15/16	120°	748-M0050775
1	1-1/4	60°	748-M0011000
1	1	82°	748-M0021000
1	1	90°	748-M0031000
1	1	100°	748-M0041000
1	1	120°	748-M0051000
1-1/4	1-1/2	60°	748-M0011250
1-1/4	1-1/4	82°	748-M0021250
1-1/4	1-1/4	90°	748-M0031250
1-1/4	1-1/4	100°	748-M0041250
1-1/4	1-1/4	120°	748-M0051250
1-1/2	1-3/4	60°	748-M0011500
1-1/2	1-1/2	82°	748-M0021500
1-1/2	1-1/2	90°	748-M0031500
1-1/2	1-1/2	100°	748-M0041500
1-1/2	1-1/2	120°	748-M0051500



SOLID CARBIDE CENTER TIPPED BLANKS

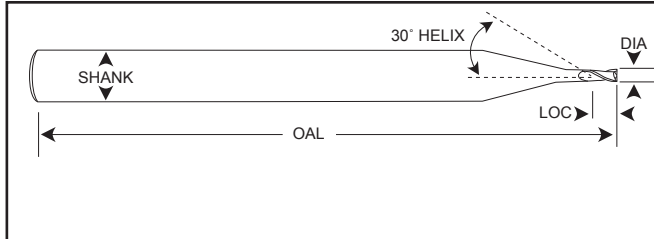


STYLE	DIA	HEIGHT	INCLUDED ANGLE	PART #
CT-40	1/4	7/16	60°	749-M000001
CT-50	5/16	9/16	60°	749-M000002
CT-60	3/8	11/16	60°	749-M000003
CT-80	1/2	7/8	60°	749-M000004
CT-100	5/8	1-1/16	60°	749-M000005
CT-120	3/4	1-1/4	60°	749-M000006
CT-140	7/8	1-3/8	60°	749-M000007
CT-160	1"	1-1/2"	60°	749-M000008
CT-200	1-1/4	1-3/4	60°	749-M000009

- Stub length promotes rigidity
- AlTiN coating provides for longer tool life, especially when milling steels, alloy steels and hardened steels

MINIATURE END MILLS - SQUARE

2 FLUTE - STUB



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- Center Cutting
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: ± 0.0005 "
- Length of Cut Tolerance: $+0.0000 / +0.0120$ "
- Shank Tolerance: $+0.0000 / -0.0003$ "

2FL STUB SQUARE

DIA	LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.001	0.002	0.125	1.50	283-U300060	—
0.002	0.003	0.125	1.50	283-U300070	—
0.003	0.005	0.125	1.50	283-U300080	—
0.004	0.006	0.125	1.50	283-U300090	—
0.005	0.008	0.125	1.50	283-U300100	—
0.006	0.009	0.125	1.50	283-U300110	—
0.007	0.011	0.125	1.50	283-U300120	—
0.008	0.012	0.125	1.50	283-U300130	—
0.009	0.014	0.125	1.50	283-U300140	—
0.010	0.015	0.125	1.50	283-U300150	283-U300150B
0.011	0.017	0.125	1.50	283-U300160	283-U300160B
0.012	0.018	0.125	1.50	283-U300170	283-U300170B
0.013	0.020	0.125	1.50	283-U300180	283-U300180B
0.014	0.021	0.125	1.50	283-U300190	283-U300190B
0.015	0.023	0.125	1.50	283-U300200	283-U300200B
0.016	0.024	0.125	1.50	283-U300210	283-U300210B
0.017	0.026	0.125	1.50	283-U300220	283-U300220B
0.018	0.027	0.125	1.50	283-U300230	283-U300230B
0.019	0.029	0.125	1.50	283-U300240	283-U300240B
0.020	0.030	0.125	1.50	283-U300250	283-U300250B
0.021	0.032	0.125	1.50	283-U300260	283-U300260B
0.022	0.033	0.125	1.50	283-U300270	283-U300270B
0.023	0.035	0.125	1.50	283-U300280	283-U300280B
0.024	0.036	0.125	1.50	283-U300290	283-U300290B
0.025	0.038	0.125	1.50	283-U300300	283-U300300B
0.026	0.039	0.125	1.50	283-U300310	283-U300310B
0.027	0.041	0.125	1.50	283-U300320	283-U300320B
0.028	0.042	0.125	1.50	283-U300330	283-U300330B
0.029	0.044	0.125	1.50	283-U300340	283-U300340B
0.030	0.045	0.125	1.50	283-U300350	283-U300350B
0.031	0.047	0.125	1.50	283-U300360	283-U300360B
0.032	0.048	0.125	1.50	283-U300370	283-U300370B
0.033	0.050	0.125	1.50	283-U300380	283-U300380B
0.034	0.051	0.125	1.50	283-U300390	283-U300390B

Atlantic Micro

PROUDLY MADE IN THE USA

MINIATURE END MILLS - SQUARE

2 FLUTE - STUB



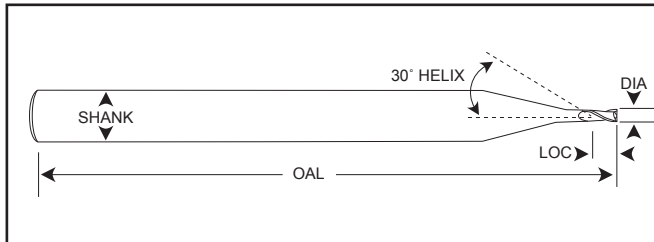
2FL STUB SQUARE *Continued*

DIA	LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.035	0.053	0.125	1.50	283-U300400	283-U300400B
0.036	0.054	0.125	1.50	283-U300410	283-U300410B
0.037	0.056	0.125	1.50	283-U300420	283-U300420B
0.038	0.057	0.125	1.50	283-U300430	283-U300430B
0.039	0.059	0.125	1.50	283-U300440	283-U300440B
0.040	0.060	0.125	1.50	283-U300450	283-U300450B
0.041	0.062	0.125	1.50	283-U300460	283-U300460B
0.042	0.063	0.125	1.50	283-U300470	283-U300470B
0.043	0.065	0.125	1.50	283-U300480	283-U300480B
0.044	0.066	0.125	1.50	283-U300490	283-U300490B
0.045	0.068	0.125	1.50	283-U300500	283-U300500B
0.046	0.069	0.125	1.50	283-U300510	283-U300510B
0.047	0.071	0.125	1.50	283-U300520	283-U300520B
0.048	0.072	0.125	1.50	283-U300530	283-U300530B
0.049	0.074	0.125	1.50	283-U300540	283-U300540B
0.050	0.075	0.125	1.50	283-U300550	283-U300550B
0.051	0.077	0.125	1.50	283-U300560	283-U300560B
0.052	0.078	0.125	1.50	283-U300570	283-U300570B
0.053	0.080	0.125	1.50	283-U300580	283-U300580B
0.054	0.081	0.125	1.50	283-U300590	283-U300590B
0.055	0.083	0.125	1.50	283-U300600	283-U300600B
0.056	0.084	0.125	1.50	283-U300610	283-U300610B
0.057	0.086	0.125	1.50	283-U300620	283-U300620B
0.058	0.087	0.125	1.50	283-U300630	283-U300630B
0.059	0.089	0.125	1.50	283-U300640	283-U300640B
0.060	0.090	0.125	1.50	283-U300650	283-U300650B
0.061	0.092	0.125	1.50	283-U300660	283-U300660B
0.062	0.093	0.125	1.50	283-U300670	283-U300670B
0.063	0.095	0.125	1.50	283-U300680	283-U300680B
0.064	0.096	0.125	1.50	283-U300690	283-U300690B
0.065	0.098	0.125	1.50	283-U300700	283-U300700B
0.070	0.105	0.125	1.50	283-U300750	283-U300750B
0.075	0.113	0.125	1.50	283-U300800	283-U300800B
0.080	0.120	0.125	1.50	283-U300850	283-U300850B
0.085	0.128	0.125	1.50	283-U300900	283-U300900B
0.090	0.135	0.125	1.50	283-U300950	283-U300950B
0.095	0.143	0.125	1.50	283-U301000	283-U301000B
0.100	0.150	0.125	1.50	283-U301050	283-U301050B
0.105	0.158	0.125	1.50	283-U301100	283-U301100B
0.110	0.165	0.125	1.50	283-U301150	283-U301150B
0.115	0.173	0.125	1.50	283-U301200	283-U301200B
0.120	0.180	0.125	1.50	283-U301250	283-U301250B

MINIATURE END MILLS - SQUARE

2 FLUTE - REGULAR

- AlTiN coating provides for provides for increased lubricity & heat resistance for longer tool life



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- Center Cutting
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: ± 0.0005 "
- Length of Cut Tolerance: $+0.0000 / +0.0120$ "
- Shank Tolerance: $+0.0000 / -0.0003$ "

2FL REG SQUARE

DIA	LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.001	0.003	0.125	1.50	283-U100006	—
0.002	0.006	0.125	1.50	283-U100007	—
0.003	0.009	0.125	1.50	283-U100008	—
0.004	0.012	0.125	1.50	283-U100009	—
0.005	0.015	0.125	1.50	283-U100010	—
0.006	0.018	0.125	1.50	283-U200110	—
0.007	0.021	0.125	1.50	283-U200120	—
0.008	0.024	0.125	1.50	283-U200130	—
0.009	0.027	0.125	1.50	283-U200140	—
0.010	0.030	0.125	1.50	283-U100030	283-U100030B
0.011	0.033	0.125	1.50	283-U200160	283-U200160B
0.012	0.036	0.125	1.50	283-U200170	283-U200170B
0.013	0.039	0.125	1.50	283-U200180	283-U200180B
0.014	0.042	0.125	1.50	283-U200190	283-U200190B
0.015	0.045	0.125	1.50	283-U100050	283-U100050B
0.016	0.048	0.125	1.50	283-U200210	283-U200210B
0.017	0.051	0.125	1.50	283-U200220	283-U200220B
0.018	0.054	0.125	1.50	283-U200230	283-U200230B
0.019	0.057	0.125	1.50	283-U200240	283-U200240B
0.020	0.060	0.125	1.50	283-U100070	283-U100070B
0.021	0.063	0.125	1.50	283-U200260	283-U200260B
0.022	0.066	0.125	1.50	283-U200270	283-U200270B
0.023	0.069	0.125	1.50	283-U200280	283-U200280B
0.024	0.072	0.125	1.50	283-U200290	283-U200290B
0.025	0.075	0.125	1.50	283-U100090	283-U100090B
0.026	0.078	0.125	1.50	283-U200310	283-U200310B
0.027	0.081	0.125	1.50	283-U200320	283-U200320B
0.028	0.084	0.125	1.50	283-U200330	283-U200330B
0.029	0.087	0.125	1.50	283-U200340	283-U200340B
0.030	0.090	0.125	1.50	283-U100110	283-U100110B
0.031	0.093	0.125	1.50	283-U200360	283-U200360B
0.032	0.096	0.125	1.50	283-U200370	283-U200370B
0.033	0.099	0.125	1.50	283-U200380	283-U200380B

Atlantic Micro

PROUDLY MADE IN THE USA



MINIATURE END MILLS - SQUARE

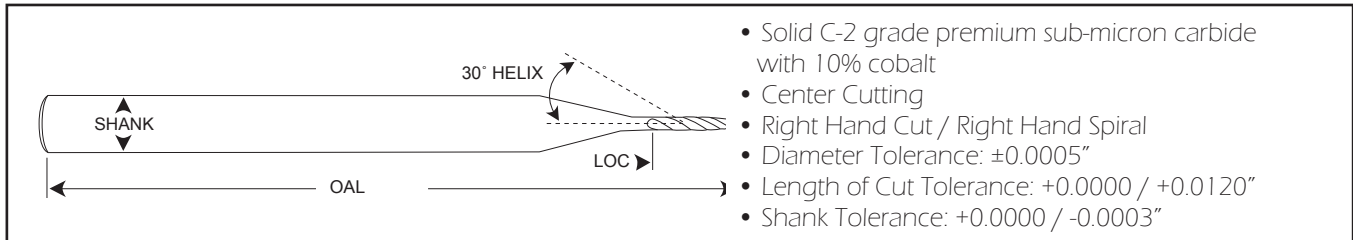
2 FLUTE - REGULAR

2FL REG SQUARE *Continued*

DIA	LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.034	0.102	0.125	1.50	283-U200390	283-U200390B
0.035	0.105	0.125	1.50	283-U100130	283-U100130B
0.036	0.108	0.125	1.50	283-U200410	283-U200410B
0.037	0.111	0.125	1.50	283-U200420	283-U200420B
0.038	0.114	0.125	1.50	283-U200430	283-U200430B
0.039	0.117	0.125	1.50	283-U200440	283-U200440B
0.040	0.120	0.125	1.50	283-U100150	283-U100150B
0.041	0.123	0.125	1.50	283-U200460	283-U200460B
0.042	0.126	0.125	1.50	283-U200470	283-U200470B
0.043	0.129	0.125	1.50	283-U200480	283-U200480B
0.044	0.132	0.125	1.50	283-U200490	283-U200490B
0.045	0.135	0.125	1.50	283-U100170	283-U100170B
0.046	0.138	0.125	1.50	283-U200510	283-U200510B
0.047	0.141	0.125	1.50	283-U200520	283-U200520B
0.048	0.144	0.125	1.50	283-U200530	283-U200530B
0.049	0.147	0.125	1.50	283-U200540	283-U200540B
0.050	0.150	0.125	1.50	283-U100190	283-U100190B
0.051	0.153	0.125	1.50	283-U200560	283-U200560B
0.052	0.156	0.125	1.50	283-U200570	283-U200570B
0.053	0.159	0.125	1.50	283-U200580	283-U200580B
0.054	0.162	0.125	1.50	283-U200590	283-U200590B
0.055	0.165	0.125	1.50	283-U100210	283-U100210B
0.056	0.168	0.125	1.50	283-U200610	283-U200610B
0.057	0.171	0.125	1.50	283-U200620	283-U200620B
0.058	0.174	0.125	1.50	283-U200630	283-U200630B
0.059	0.177	0.125	1.50	283-U200640	283-U200640B
0.060	0.180	0.125	1.50	283-U100230	283-U100230B
0.061	0.183	0.125	1.50	283-U200660	283-U200660B
0.062	0.186	0.125	1.50	283-U200670	283-U200670B
0.063	0.189	0.125	1.50	283-U200680	283-U200680B
0.064	0.192	0.125	1.50	283-U200690	283-U200690B
0.065	0.195	0.125	1.50	283-U100250	283-U100250B
0.070	0.210	0.125	1.50	283-U100270	283-U100270B
0.075	0.225	0.125	1.50	283-U100290	283-U100290B
0.080	0.240	0.125	1.50	283-U100310	283-U100310B
0.085	0.255	0.125	1.50	283-U100330	283-U100330B
0.090	0.270	0.125	1.50	283-U100350	283-U100350B
0.095	0.285	0.125	1.50	283-U100370	283-U100370B
0.100	0.300	0.125	1.50	283-U100390	283-U100390B
0.105	0.315	0.125	1.50	283-U100401	283-U100401B
0.110	0.330	0.125	1.50	283-U100403	283-U100403B
0.115	0.345	0.125	1.50	283-U100406	283-U100406B
0.120	0.360	0.125	1.50	283-U100408	283-U100408B

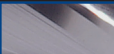
MINIATURE END MILLS - SQUARE

2 FLUTE - LONG



- Long flute lengths up - to 16x the diameter
- AlTiN coating provides for longer tool life, especially when milling steels, alloy steels and hardened steels

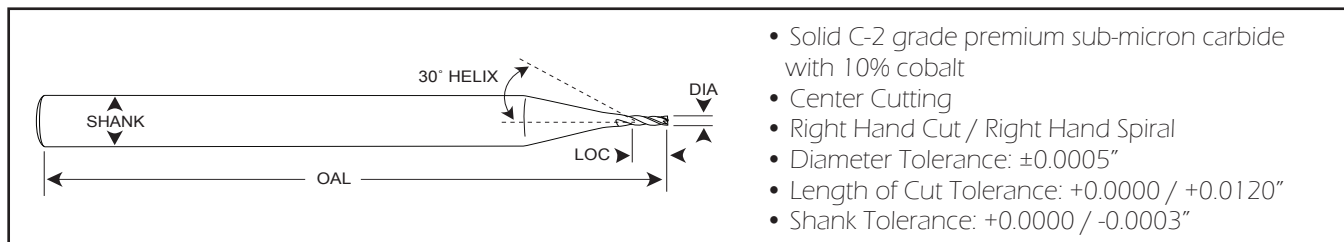
2FL LONG SQUARE

						
DIA		LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.015	1/64	0.125	0.125	2.50	284-U001000	284-U001000B
0.031	1/32	0.250	0.125	2.50	284-U001001	284-U001001B
0.031	1/32	0.375	0.125	2.50	284-U001002	284-U001002B
0.047	3/64	0.250	0.125	2.50	284-U001010	284-U001010B
0.047	3/64	0.375	0.125	2.50	284-U001011	284-U001011B
0.047	3/64	0.500	0.125	2.50	284-U001013	284-U001013B
0.062	1/16	0.500	0.125	2.50	284-U001020	284-U001020B
0.062	1/16	0.750	0.125	2.50	284-U001021	284-U001021B
0.062	1/16	1.000	0.125	2.50	284-U001022	284-U001022B
0.078	5/64	0.500	0.125	2.50	284-U001030	284-U001030B
0.093	3/32	0.500	0.125	2.50	284-U001040	284-U001040B
0.093	3/32	0.750	0.125	2.50	284-U001041	284-U001041B



MINIATURE END MILLS - SQUARE

4 FLUTE - STUB



- Stub length promotes rigidity
- AlTiN coating provides for provides for increased lubricity & heat resistance for longer tool life

4FL STUB SQUARE

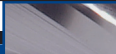
DIA	LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.005	0.008	0.125	1.50	283-U305100	—
0.006	0.009	0.125	1.50	283-U305110	—
0.007	0.011	0.125	1.50	283-U305120	—
0.008	0.012	0.125	1.50	283-U305130	—
0.009	0.014	0.125	1.50	283-U305140	—
0.010	0.015	0.125	1.50	283-U305150	283-U305150B
0.011	0.017	0.125	1.50	283-U305160	283-U305160B
0.012	0.018	0.125	1.50	283-U305170	283-U305170B
0.013	0.020	0.125	1.50	283-U305180	283-U305180B
0.014	0.021	0.125	1.50	283-U305190	283-U305190B
0.015	0.023	0.125	1.50	283-U305200	283-U305200B
0.016	0.024	0.125	1.50	283-U305210	283-U305210B
0.017	0.026	0.125	1.50	283-U305220	283-U305220B
0.018	0.027	0.125	1.50	283-U305230	283-U305230B
0.019	0.029	0.125	1.50	283-U305240	283-U305240B
0.020	0.030	0.125	1.50	283-U305250	283-U305250B
0.021	0.032	0.125	1.50	283-U305260	283-U305260B
0.022	0.033	0.125	1.50	283-U305270	283-U305270B
0.023	0.035	0.125	1.50	283-U305280	283-U305280B
0.024	0.036	0.125	1.50	283-U305290	283-U305290B
0.025	0.038	0.125	1.50	283-U305300	283-U305300B
0.026	0.039	0.125	1.50	283-U305310	283-U305310B
0.027	0.041	0.125	1.50	283-U305320	283-U305320B
0.028	0.042	0.125	1.50	283-U305330	283-U305330B
0.029	0.044	0.125	1.50	283-U305340	283-U305340B
0.030	0.045	0.125	1.50	283-U305350	283-U305350B

MINIATURE END MILLS - SQUARE

4 FLUTE - STUB



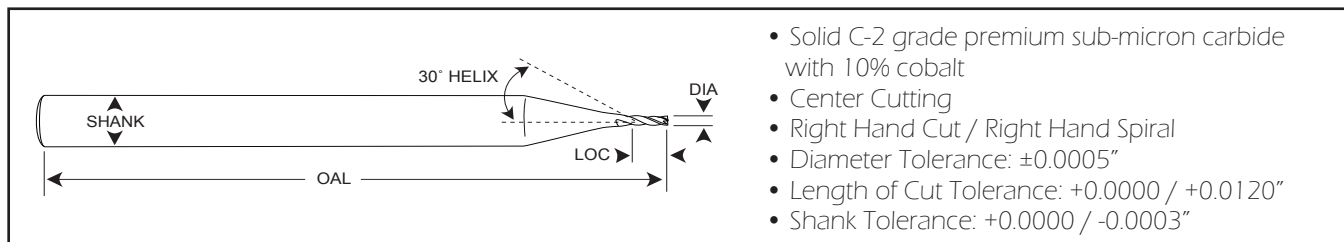
4FL STUB SQUARE *Continued*

DIA	LOC	SHANK	OAL	 	
				UNCOATED	ATIN COATED
0.031	0.047	0.125	1.50	283-U305360	283-U305360B
0.032	0.048	0.125	1.50	283-U305370	283-U305370B
0.033	0.050	0.125	1.50	283-U305380	283-U305380B
0.034	0.051	0.125	1.50	283-U305390	283-U305390B
0.035	0.053	0.125	1.50	283-U305400	283-U305400B
0.036	0.054	0.125	1.50	283-U305410	283-U305410B
0.037	0.056	0.125	1.50	283-U305420	283-U305420B
0.038	0.057	0.125	1.50	283-U305430	283-U305430B
0.039	0.059	0.125	1.50	283-U305440	283-U305440B
0.040	0.060	0.125	1.50	283-U305450	283-U305450B
0.041	0.062	0.125	1.50	283-U305460	283-U305460B
0.042	0.063	0.125	1.50	283-U305470	283-U305470B
0.043	0.065	0.125	1.50	283-U305480	283-U305480B
0.044	0.066	0.125	1.50	283-U305490	283-U305490B
0.045	0.068	0.125	1.50	283-U305500	283-U305500B
0.046	0.069	0.125	1.50	283-U305510	283-U305510B
0.047	0.071	0.125	1.50	283-U305520	283-U305520B
0.048	0.072	0.125	1.50	283-U305530	283-U305530B
0.049	0.074	0.125	1.50	283-U305540	283-U305540B
0.050	0.075	0.125	1.50	283-U305550	283-U305550B
0.051	0.077	0.125	1.50	283-U305560	283-U305560B
0.052	0.078	0.125	1.50	283-U305570	283-U305570B
0.053	0.080	0.125	1.50	283-U305580	283-U305580B
0.054	0.081	0.125	1.50	283-U305590	283-U305590B
0.055	0.083	0.125	1.50	283-U305600	283-U305600B
0.056	0.084	0.125	1.50	283-U305610	283-U305610B
0.057	0.086	0.125	1.50	283-U305620	283-U305620B
0.058	0.087	0.125	1.50	283-U305630	283-U305630B
0.059	0.089	0.125	1.50	283-U305640	283-U305640B
0.060	0.090	0.125	1.50	283-U305650	283-U305650B
0.061	0.092	0.125	1.50	283-U305660	283-U305660B
0.062	0.093	0.125	1.50	283-U305670	283-U305670B
0.063	0.095	0.125	1.50	283-U305680	283-U305680B
0.064	0.096	0.125	1.50	283-U305690	283-U305690B
0.065	0.098	0.125	1.50	283-U305700	283-U305700B
0.070	0.105	0.125	1.50	283-U305750	283-U305750B
0.075	0.113	0.125	1.50	283-U305800	283-U305800B
0.080	0.120	0.125	1.50	283-U305850	283-U305850B
0.085	0.128	0.125	1.50	283-U305900	283-U305900B
0.090	0.135	0.125	1.50	283-U305950	283-U305950B
0.095	0.143	0.125	1.50	283-U306000	283-U306000B
0.100	0.150	0.125	1.50	283-U306050	283-U306050B
0.105	0.158	0.125	1.50	283-U306100	283-U306100B
0.110	0.165	0.125	1.50	283-U306150	283-U306150B
0.115	0.173	0.125	1.50	283-U306200	283-U306200B
0.120	0.180	0.125	1.50	283-U306250	283-U306250B



MINIATURE END MILLS - SQUARE

4 FLUTE - REGULAR



- AlTiN coating provides for longer tool life, especially when milling steels, alloy steels and hardened steels

4FL REG SQUARE

DIA	LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.005	0.015	0.125	1.50	283-U100410	—
0.006	0.018	0.125	1.50	283-U205110	—
0.007	0.021	0.125	1.50	283-U205120	—
0.008	0.024	0.125	1.50	283-U205130	—
0.009	0.027	0.125	1.50	283-U205140	—
0.010	0.030	0.125	1.50	283-U100430	283-U100430B
0.011	0.033	0.125	1.50	283-U205160	283-U205160B
0.012	0.036	0.125	1.50	283-U205170	283-U205170B
0.013	0.039	0.125	1.50	283-U205180	283-U205180B
0.014	0.042	0.125	1.50	283-U205190	283-U205190B
0.015	0.045	0.125	1.50	283-U100450	283-U100450B
0.016	0.048	0.125	1.50	283-U205210	283-U205210B
0.017	0.051	0.125	1.50	283-U205220	283-U205220B
0.018	0.054	0.125	1.50	283-U205230	283-U205230B
0.019	0.057	0.125	1.50	283-U205240	283-U205240B
0.020	0.060	0.125	1.50	283-U100470	283-U100470B
0.021	0.063	0.125	1.50	283-U205260	283-U205260B
0.022	0.066	0.125	1.50	283-U205270	283-U205270B
0.023	0.069	0.125	1.50	283-U205280	283-U205280B
0.024	0.072	0.125	1.50	283-U205290	283-U205290B
0.025	0.075	0.125	1.50	283-U100490	283-U100490B
0.026	0.078	0.125	1.50	283-U205310	283-U205310B
0.027	0.081	0.125	1.50	283-U205320	283-U205320B
0.028	0.084	0.125	1.50	283-U205330	283-U205330B
0.029	0.087	0.125	1.50	283-U205340	283-U205340B
0.030	0.090	0.125	1.50	283-U100510	283-U100510B
0.031	0.093	0.125	1.50	283-U205360	283-U205360B
0.032	0.096	0.125	1.50	283-U205370	283-U205370B
0.033	0.099	0.125	1.50	283-U205380	283-U205380B
0.034	0.102	0.125	1.50	283-U205390	283-U205390B

MINIATURE END MILLS - SQUARE

4 FLUTE - REGULAR



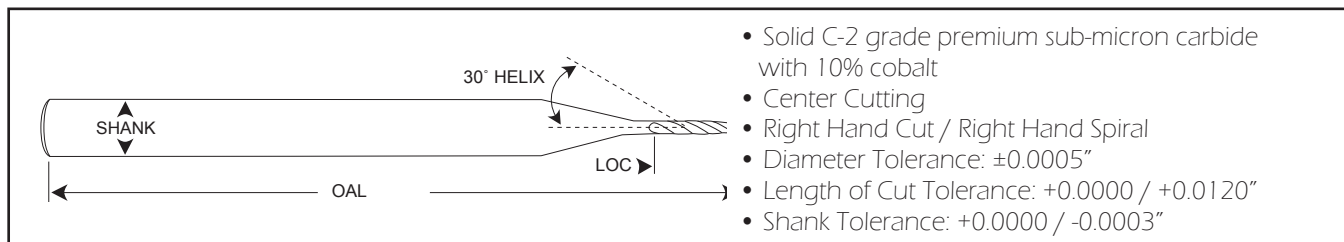
4FL REG SQUARE *Continued*

DIA	LOC	SHANK	OAL		
				UNCOATED	AITIN COATED
0.035	0.105	0.125	1.50	283-U100530	283-U100530B
0.036	0.108	0.125	1.50	283-U205410	283-U205410B
0.037	0.111	0.125	1.50	283-U205420	283-U205420B
0.038	0.114	0.125	1.50	283-U205430	283-U205430B
0.039	0.117	0.125	1.50	283-U205440	283-U205440B
0.040	0.120	0.125	1.50	283-U100550	283-U100550B
0.041	0.123	0.125	1.50	283-U205460	283-U205460B
0.042	0.126	0.125	1.50	283-U205470	283-U205470B
0.043	0.129	0.125	1.50	283-U205480	283-U205480B
0.044	0.132	0.125	1.50	283-U205490	283-U205490B
0.045	0.135	0.125	1.50	283-U100570	283-U100570B
0.046	0.138	0.125	1.50	283-U205510	283-U205510B
0.047	0.141	0.125	1.50	283-U205520	283-U205520B
0.048	0.144	0.125	1.50	283-U205530	283-U205530B
0.049	0.147	0.125	1.50	283-U205540	283-U205540B
0.050	0.150	0.125	1.50	283-U100590	283-U100590B
0.051	0.153	0.125	1.50	283-U205560	283-U205560B
0.052	0.156	0.125	1.50	283-U205570	283-U205570B
0.053	0.159	0.125	1.50	283-U205580	283-U205580B
0.054	0.162	0.125	1.50	283-U205590	283-U205590B
0.055	0.165	0.125	1.50	283-U100610	283-U100610B
0.056	0.168	0.125	1.50	283-U205610	283-U205610B
0.057	0.171	0.125	1.50	283-U205620	283-U205620B
0.058	0.174	0.125	1.50	283-U205630	283-U205630B
0.059	0.177	0.125	1.50	283-U205640	283-U205640B
0.060	0.180	0.125	1.50	283-U100630	283-U100630B
0.061	0.183	0.125	1.50	283-U205660	283-U205660B
0.062	0.186	0.125	1.50	283-U205670	283-U205670B
0.063	0.189	0.125	1.50	283-U205680	283-U205680B
0.064	0.192	0.125	1.50	283-U205690	283-U205690B
0.065	0.195	0.125	1.50	283-U100650	283-U100650B
0.070	0.210	0.125	1.50	283-U100670	283-U100670B
0.075	0.225	0.125	1.50	283-U100690	283-U100690B
0.080	0.240	0.125	1.50	283-U100710	283-U100710B
0.085	0.255	0.125	1.50	283-U100730	283-U100730B
0.090	0.270	0.125	1.50	283-U100750	283-U100750B
0.095	0.285	0.125	1.50	283-U100770	283-U100770B
0.100	0.300	0.125	1.50	283-U100790	283-U100790B
0.105	0.315	0.125	1.50	283-U100801	283-U100801B
0.110	0.330	0.125	1.50	283-U100803	283-U100803B
0.115	0.345	0.125	1.50	283-U100805	283-U100805B
0.120	0.360	0.125	1.50	283-U100807	283-U100807B



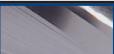
MINIATURE END MILLS - SQUARE

4 FLUTE - LONG



- Long flute lengths up - to 16x the diameter
- AlTiN coating provides for provides for increased lubricity & heat resistance for longer tool life

4FL LONG SQUARE

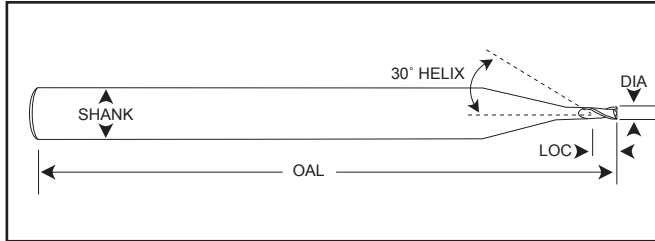
						
DIA		LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.015	1/64	0.125	0.125	2.50	284-U002000	284-U002000B
0.031	1/32	0.250	0.125	2.50	284-U002001	284-U002001B
0.031	1/32	0.375	0.125	2.50	284-U002002	284-U002002B
0.047	3/64	0.250	0.125	2.50	284-U002010	284-U002010B
0.047	3/64	0.375	0.125	2.50	284-U002011	284-U002011B
0.047	3/64	0.500	0.125	2.50	284-U002013	284-U002013B
0.062	1/16	0.500	0.125	2.50	284-U002020	284-U002020B
0.062	1/16	0.750	0.125	2.50	284-U002021	284-U002021B
0.062	1/16	1.000	0.125	2.50	284-U002022	284-U002022B
0.078	5/64	0.500	0.125	2.50	284-U002030	284-U002030B
0.093	3/32	0.500	0.125	2.50	284-U002040	284-U002040B
0.093	3/32	0.750	0.125	2.50	284-U002041	284-U002041B

• Stub length promotes rigidity

• AlTiN coating provides for longer tool life, especially when milling steels, alloy steels and hardened steels

MINIATURE END MILLS - BALLNOSE

2 FLUTE - STUB



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- Center Cutting
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: ± 0.0005 "
- Length of Cut Tolerance: $+0.0000$ / $+0.0120$ "
- Shank Tolerance: $+0.0000$ / -0.0003 "

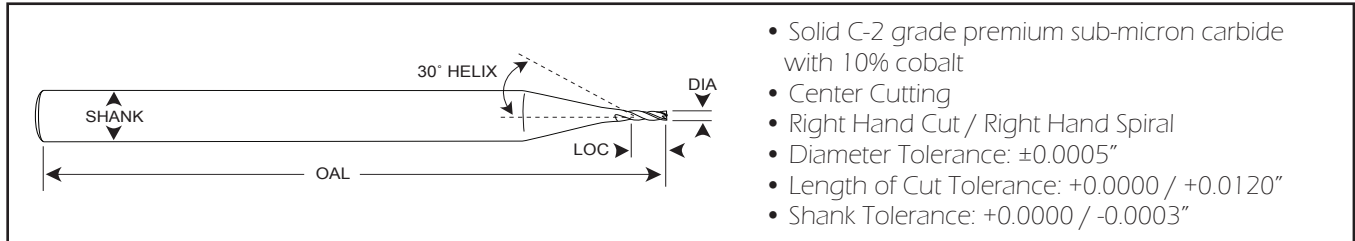
2FL STUB BALLNOSE

DIA	LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.003	0.009	0.125	1.50	283-U360030	283-U360030B
0.004	0.012	0.125	1.50	283-U360040	283-U360040B
0.005	0.015	0.125	1.50	283-U360050	283-U360050B
0.006	0.018	0.125	1.50	283-U360060	283-U360060B
0.007	0.021	0.125	1.50	283-U360070	283-U360070B
0.008	0.024	0.125	1.50	283-U360080	283-U360080B
0.009	0.07	0.125	1.50	283-U360090	283-U360090B
0.010	0.015	0.125	1.50	283-U360100	283-U360100B
0.015	0.023	0.125	1.50	283-U360200	283-U360200B
0.020	0.030	0.125	1.50	283-U360250	283-U360250B
0.025	0.038	0.125	1.50	283-U360300	283-U360300B
0.030	0.045	0.125	1.50	283-U360350	283-U360350B
0.035	0.053	0.125	1.50	283-U360400	283-U360400B
0.040	0.060	0.125	1.50	283-U360450	283-U360450B
0.045	0.068	0.125	1.50	283-U360500	283-U360500B
0.050	0.075	0.125	1.50	283-U360550	283-U360550B
0.055	0.083	0.125	1.50	283-U360600	283-U360600B
0.060	0.090	0.125	1.50	283-U360620	283-U360620B
0.065	0.098	0.125	1.50	283-U360640	283-U360640B
0.070	0.105	0.125	1.50	283-U360660	283-U360660B
0.075	0.113	0.125	1.50	283-U360680	283-U360680B
0.080	0.120	0.125	1.50	283-U360700	283-U360700B
0.085	0.128	0.125	1.50	283-U360720	283-U360720B
0.090	0.135	0.125	1.50	283-U360740	283-U360740B
0.095	0.143	0.125	1.50	283-U360760	283-U360760B
0.100	0.150	0.125	1.50	283-U360780	283-U360780B
0.105	0.158	0.125	1.50	283-U360800	283-U360800B
0.110	0.165	0.125	1.50	283-U360820	283-U360820B
0.115	0.173	0.125	1.50	283-U360840	283-U360840B
0.120	0.180	0.125	1.50	283-U360860	283-U360860B



MINIATURE END MILLS - BALLNOSE 2 FLUTE - REGULAR

• **AlTiN coating provides for longer tool life, especially when milling steels, alloy steels and hardened steels**



2FL REG BALLNOSE

DIA	LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.003	0.009	0.125	1.50	283-U320003	—
0.004	0.012	0.125	1.50	283-U320004	—
0.005	0.015	0.125	1.50	283-U320005	—
0.006	0.018	0.125	1.50	283-U320006	—
0.007	0.021	0.125	1.50	283-U320007	—
0.008	0.024	0.125	1.50	283-U320008	—
0.009	0.027	0.125	1.50	283-U320009	—
0.010	0.030	0.125	1.50	283-U320010	283-U320010B
0.011	0.033	0.125	1.50	283-U320011	283-U320011B
0.012	0.036	0.125	1.50	283-U320012	283-U320012B
0.013	0.039	0.125	1.50	283-U320013	283-U320013B
0.014	0.042	0.125	1.50	283-U320014	283-U320014B
0.015	0.045	0.125	1.50	283-U320015	283-U320015B
0.016	0.048	0.125	1.50	283-U320016	283-U320016B
0.017	0.051	0.125	1.50	283-U320017	283-U320017B
0.018	0.054	0.125	1.50	283-U320018	283-U320018B
0.019	0.057	0.125	1.50	283-U320019	283-U320019B
0.020	0.060	0.125	1.50	283-U320020	283-U320020B
0.021	0.063	0.125	1.50	283-U320021	283-U320021B
0.022	0.066	0.125	1.50	283-U320022	283-U320022B
0.023	0.069	0.125	1.50	283-U320023	283-U320023B
0.024	0.072	0.125	1.50	283-U320024	283-U320024B
0.025	0.075	0.125	1.50	283-U320025	283-U320025B
0.026	0.078	0.125	1.50	283-U320026	283-U320026B
0.027	0.081	0.125	1.50	283-U320027	283-U320027B
0.028	0.084	0.125	1.50	283-U320028	283-U320028B
0.029	0.087	0.125	1.50	283-U320029	283-U320029B
0.030	0.090	0.125	1.50	283-U320030	283-U320030B
0.031	0.093	0.125	1.50	283-U320031	283-U320031B
0.032	0.096	0.125	1.50	283-U320032	283-U320032B
0.033	0.099	0.125	1.50	283-U320033	283-U320033B
0.034	0.102	0.125	1.50	283-U320034	283-U320034B
0.035	0.105	0.125	1.50	283-U320035	283-U320035B

MINIATURE END MILLS - BALLNOSE

2 FLUTE - REGULAR



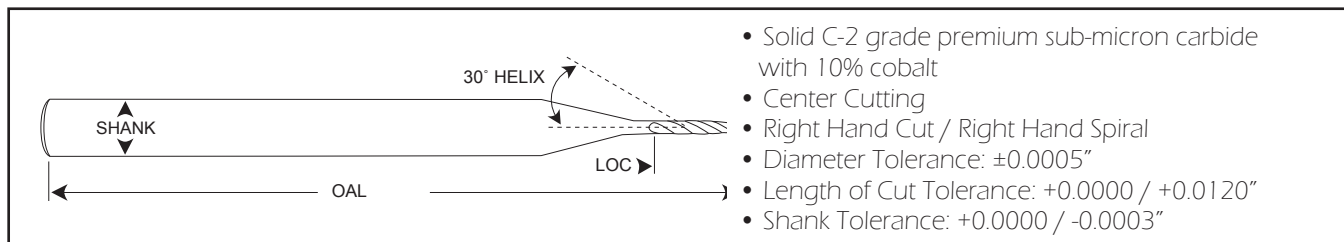
2FL REG BALLNOSE *Continued*

DIA	LOC	SHANK	OAL	UNCOATED	ATIN COATED
0.036	0.108	0.125	1.50	283-U320036	283-U320036B
0.037	0.111	0.125	1.50	283-U320037	283-U320037B
0.038	0.114	0.125	1.50	283-U320038	283-U320038B
0.039	0.117	0.125	1.50	283-U320039	283-U320039B
0.040	0.120	0.125	1.50	283-U320040	283-U320040B
0.041	0.123	0.125	1.50	283-U320041	283-U320041B
0.042	0.126	0.125	1.50	283-U320042	283-U320042B
0.043	0.129	0.125	1.50	283-U320043	283-U320043B
0.044	0.132	0.125	1.50	283-U320044	283-U320044B
0.045	0.135	0.125	1.50	283-U320045	283-U320045B
0.046	0.138	0.125	1.50	283-U320046	283-U320046B
0.047	0.141	0.125	1.50	283-U320047	283-U320047B
0.048	0.144	0.125	1.50	283-U320048	283-U320048B
0.049	0.147	0.125	1.50	283-U320049	283-U320049B
0.050	0.150	0.125	1.50	283-U320050	283-U320050B
0.051	0.153	0.125	1.50	283-U320051	283-U320051B
0.052	0.156	0.125	1.50	283-U320052	283-U320052B
0.053	0.159	0.125	1.50	283-U320053	283-U320053B
0.054	0.162	0.125	1.50	283-U320054	283-U320054B
0.055	0.165	0.125	1.50	283-U320055	283-U320055B
0.056	0.168	0.125	1.50	283-U320056	283-U320056B
0.057	0.171	0.125	1.50	283-U320057	283-U320057B
0.058	0.174	0.125	1.50	283-U320058	283-U320058B
0.059	0.177	0.125	1.50	283-U320059	283-U320059B
0.060	0.180	0.125	1.50	283-U320060	283-U320060B
0.061	0.183	0.125	1.50	283-U320061	283-U320061B
0.062	0.186	0.125	1.50	283-U320062	283-U320062B
0.063	0.189	0.125	1.50	283-U320063	283-U320063B
0.064	0.192	0.125	1.50	283-U320064	283-U320064B
0.065	0.195	0.125	1.50	283-U320065	283-U320065B
0.070	0.210	0.125	1.50	283-U320070	283-U320070B
0.075	0.225	0.125	1.50	283-U320075	283-U320075B
0.080	0.240	0.125	1.50	283-U320080	283-U320080B
0.085	0.255	0.125	1.50	283-U320085	283-U320085B
0.090	0.270	0.125	1.50	283-U320090	283-U320090B
0.095	0.285	0.125	1.50	283-U320095	283-U320095B
0.100	0.300	0.125	1.50	283-U320100	283-U320100B
0.105	0.315	0.125	1.50	283-U320105	283-U320105B
0.110	0.330	0.125	1.50	283-U320110	283-U320110B
0.115	0.345	0.125	1.50	283-U320115	283-U320115B
0.120	0.360	0.125	1.50	283-U320120	283-U320120B



MINIATURE END MILLS - BALLNOSE

2 FLUTE - LONG



- Long flute lengths up - to 16x the diameter
- AlTiN coating provides for provides for increased lubricity & heat resistance for longer tool life

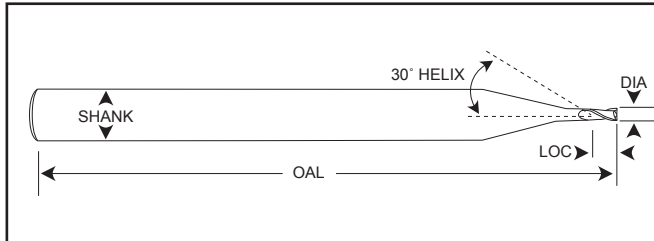
2FL LONG BALLNOSE

2FL LONG BALL NOSE

						
DIA		LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.015	1/64	0.125	0.125	2.50	284-U001100	284-U001100B
0.031	1/32	0.250	0.125	2.50	284-U001101	284-U001101B
0.031	1/32	0.375	0.125	2.50	284-U001102	284-U001102B
0.047	3/64	0.250	0.125	2.50	284-U001110	284-U001110B
0.047	3/64	0.375	0.125	2.50	284-U001111	284-U001111B
0.047	3/64	0.500	0.125	2.50	284-U001112	284-U001112B
0.062	1/16	0.500	0.125	2.50	284-U001120	284-U001120B
0.062	1/16	0.750	0.125	2.50	284-U001121	284-U001121B
0.062	1/16	1.000	0.125	2.50	284-U001122	284-U001122B
0.078	5/64	0.500	0.125	2.50	284-U001130	284-U001130B
0.093	3/32	0.500	0.125	2.50	284-U001140	284-U001140B
0.093	3/32	0.750	0.125	2.50	284-U001141	284-U001141B

MINIATURE END MILLS - BALLNOSE

4 FLUTE - STUB



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- Center Cutting
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: ± 0.0005 "
- Length of Cut Tolerance: $+0.0000 / +0.0120$ "
- Shank Tolerance: $+0.0000 / -0.0003$ "

- Stub length promotes rigidity
- AlTiN coating provides for longer tool life, especially when milling steels, alloy steels and hardened steels

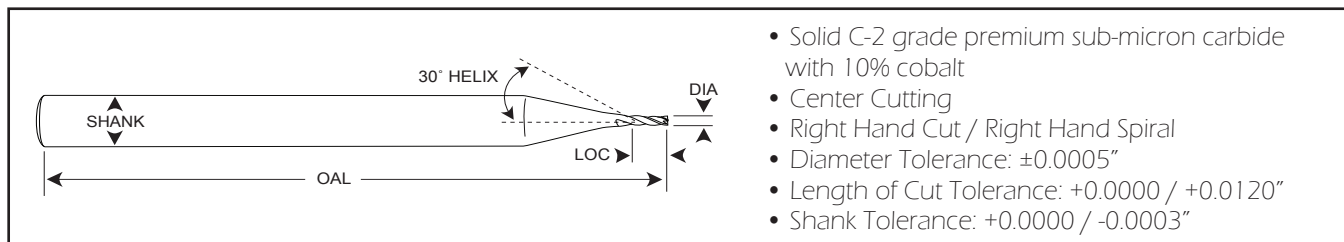
4FL STUB BALLNOSE

DIA	LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.010	0.015	0.125	1.50	283-U370150	283-U370150B
0.015	0.023	0.125	1.50	283-U370200	283-U370200B
0.020	0.030	0.125	1.50	283-U370250	283-U370250B
0.025	0.038	0.125	1.50	283-U370300	283-U370300B
0.030	0.045	0.125	1.50	283-U370350	283-U370350B
0.035	0.053	0.125	1.50	283-U370400	283-U370400B
0.040	0.060	0.125	1.50	283-U370450	283-U370450B
0.045	0.068	0.125	1.50	283-U370500	283-U370500B
0.050	0.075	0.125	1.50	283-U370550	283-U370550B
0.055	0.083	0.125	1.50	283-U370600	283-U370600B
0.060	0.090	0.125	1.50	283-U370620	283-U370620B
0.065	0.098	0.125	1.50	283-U370640	283-U370640B
0.070	0.105	0.125	1.50	283-U370660	283-U370660B
0.075	0.113	0.125	1.50	283-U370680	283-U370680B
0.080	0.120	0.125	1.50	283-U370700	283-U370700B
0.085	0.128	0.125	1.50	283-U370720	283-U370720B
0.090	0.135	0.125	1.50	283-U370740	283-U370740B
0.095	0.143	0.125	1.50	283-U370760	283-U370760B
0.100	0.150	0.125	1.50	283-U370780	283-U370780B
0.105	0.158	0.125	1.50	283-U370800	283-U370800B
0.110	0.165	0.125	1.50	283-U370820	283-U370820B
0.115	0.173	0.125	1.50	283-U370840	283-U370840B
0.120	0.180	0.125	1.50	283-U370860	283-U370860B



MINIATURE END MILLS - BALLNOSE

4 FLUTE - REGULAR



- AlTiN coating provides for longer tool life, especially when milling steels, alloy steels and hardened steels

4FL REG BALLNOSE

DIA	LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.010	0.030	0.125	1.50	283-U340010	283-U340010B
0.011	0.033	0.125	1.50	283-U340011	283-U340011B
0.012	0.036	0.125	1.50	283-U340012	283-U340012B
0.013	0.039	0.125	1.50	283-U340013	283-U340013B
0.014	0.042	0.125	1.50	283-U340014	283-U340014B
0.015	0.045	0.125	1.50	283-U340015	283-U340015B
0.016	0.048	0.125	1.50	283-U340016	283-U340016B
0.017	0.051	0.125	1.50	283-U340017	283-U340017B
0.018	0.054	0.125	1.50	283-U340018	283-U340018B
0.019	0.057	0.125	1.50	283-U340019	283-U340019B
0.020	0.060	0.125	1.50	283-U340020	283-U340020B
0.021	0.063	0.125	1.50	283-U340021	283-U340021B
0.022	0.066	0.125	1.50	283-U340022	283-U340022B
0.023	0.069	0.125	1.50	283-U340023	283-U340023B
0.024	0.072	0.125	1.50	283-U340024	283-U340024B
0.025	0.075	0.125	1.50	283-U340025	283-U340025B
0.026	0.078	0.125	1.50	283-U340026	283-U340026B
0.027	0.081	0.125	1.50	283-U340027	283-U340027B
0.028	0.084	0.125	1.50	283-U340028	283-U340028B
0.029	0.087	0.125	1.50	283-U340029	283-U340029B
0.030	0.090	0.125	1.50	283-U340030	283-U340030B
0.031	0.093	0.125	1.50	283-U340031	283-U340031B
0.032	0.096	0.125	1.50	283-U340032	283-U340032B
0.033	0.099	0.125	1.50	283-U340033	283-U340033B
0.034	0.102	0.125	1.50	283-U340034	283-U340034B
0.035	0.105	0.125	1.50	283-U340035	283-U340035B
0.036	0.108	0.125	1.50	283-U340036	283-U340036B
0.037	0.111	0.125	1.50	283-U340037	283-U340037B

MINIATURE END MILLS - BALLNOSE

4 FLUTE - REGULAR



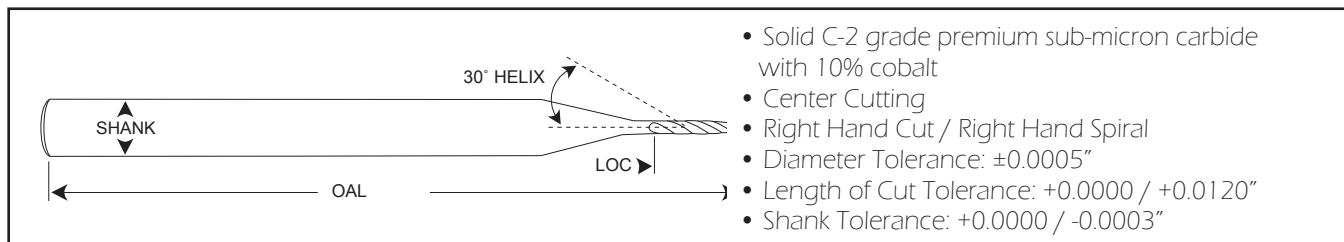
4FL REG BALLNOSE *Continued*

DIA	LOC	SHANK	OAL	UNCOATED	AINITIN COATED
0.038	0.114	0.125	1.50	283-U340038	283-U340038B
0.039	0.117	0.125	1.50	283-U340039	283-U340039B
0.040	0.120	0.125	1.50	283-U340040	283-U340040B
0.041	0.123	0.125	1.50	283-U340041	283-U340041B
0.042	0.126	0.125	1.50	283-U340042	283-U340042B
0.043	0.129	0.125	1.50	283-U340043	283-U340043B
0.044	0.132	0.125	1.50	283-U340044	283-U340044B
0.045	0.135	0.125	1.50	283-U340045	283-U340045B
0.046	0.138	0.125	1.50	283-U340046	283-U340046B
0.047	0.141	0.125	1.50	283-U340047	283-U340047B
0.048	0.144	0.125	1.50	283-U340048	283-U340048B
0.049	0.147	0.125	1.50	283-U340049	283-U340049B
0.050	0.150	0.125	1.50	283-U340050	283-U340050B
0.051	0.153	0.125	1.50	283-U340051	283-U340051B
0.052	0.156	0.125	1.50	283-U340052	283-U340052B
0.053	0.159	0.125	1.50	283-U340053	283-U340053B
0.054	0.162	0.125	1.50	283-U340054	283-U340054B
0.055	0.165	0.125	1.50	283-U340055	283-U340055B
0.056	0.168	0.125	1.50	283-U340056	283-U340056B
0.057	0.171	0.125	1.50	283-U340057	283-U340057B
0.058	0.174	0.125	1.50	283-U340058	283-U340058B
0.059	0.177	0.125	1.50	283-U340059	283-U340059B
0.060	0.180	0.125	1.50	283-U340060	283-U340060B
0.061	0.183	0.125	1.50	283-U340061	283-U340061B
0.062	0.186	0.125	1.50	283-U340062	283-U340062B
0.063	0.189	0.125	1.50	283-U340063	283-U340063B
0.064	0.192	0.125	1.50	283-U340064	283-U340064B
0.065	0.195	0.125	1.50	283-U340065	283-U340065B
0.070	0.210	0.125	1.50	283-U340070	283-U340070B
0.075	0.225	0.125	1.50	283-U340075	283-U340075B
0.080	0.240	0.125	1.50	283-U340080	283-U340080B
0.085	0.255	0.125	1.50	283-U340085	283-U340085B
0.090	0.270	0.125	1.50	283-U340090	283-U340090B
0.095	0.285	0.125	1.50	283-U340095	283-U340095B
0.100	0.300	0.125	1.50	283-U340100	283-U340100B
0.105	0.315	0.125	1.50	283-U340105	283-U340105B
0.110	0.330	0.125	1.50	283-U340110	283-U340110B
0.115	0.345	0.125	1.50	283-U340115	283-U340115B
0.120	0.360	0.125	1.50	283-U340120	283-U340120B



MINIATURE END MILLS - BALLNOSE

4 FLUTE - LONG



- Long flute lengths up - to 16x the diameter
- AlTiN coating provides for longer tool life, especially when milling steels, alloy steels and hardened steels

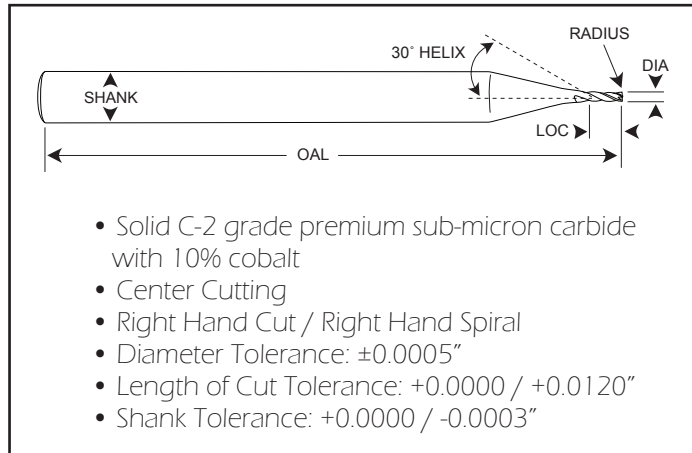
4FL LONG BALLNOSE

4FL LONG BALLNOSE

						
DIA		LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.015	1/64	0.125	0.125	2.50	284-U002100	284-U002100B
0.031	1/32	0.250	0.125	2.50	284-U002101	284-U002101B
0.031	1/32	0.375	0.125	2.50	284-U002102	284-U002102B
0.047	3/64	0.250	0.125	2.50	284-U002110	284-U002110B
0.047	3/64	0.375	0.125	2.50	284-U002111	284-U002111B
0.047	3/64	0.500	0.125	2.50	284-U002112	284-U002112B
0.062	1/16	0.500	0.125	2.50	284-U002120	284-U002120B
0.062	1/16	0.750	0.125	2.50	284-U002121	284-U002121B
0.062	1/16	1.000	0.125	2.50	284-U002122	284-U002122B
0.078	5/64	0.500	0.125	2.50	284-U002130	284-U002130B
0.093	3/32	0.500	0.125	2.50	284-U002140	284-U002140B
0.093	3/32	0.750	0.125	2.50	284-U002141	284-U002141B

MINIATURE END MILLS - CORNER RADIUS

2 FLUTE - STUB



- Corner radius promotes additional strength for longer tool life resulting in greater productivity



2FL STUB RADIUS

DIA	LOC	SHANK	OAL	RADIUS	UNCOATED	AlTiN Coated
0.010	0.015	0.125	1.50	.002	283-U6201002	283-U6201002B
0.015	0.023	0.125	1.50	.002	283-U6201502	283-U6201502B
0.020	0.030	0.125	1.50	.005	283-U6202005	283-U6202005B
0.025	0.038	0.125	1.50	.005	283-U6202505	283-U6202505B
0.030	0.045	0.125	1.50	.005	283-U6203005	283-U6203005B
0.030	0.045	0.125	1.50	.010	283-U6203010	283-U6203010B
0.031	0.047	0.125	1.50	.005	283-U6203105	283-U6203105B
0.031	0.047	0.125	1.50	.010	283-U6203110	283-U6203110B
0.035	0.053	0.125	1.50	.005	283-U6203505	283-U6203505B
0.035	0.053	0.125	1.50	.010	283-U6203510	283-U6203510B
0.040	0.060	0.125	1.50	.005	283-U6204005	283-U6204005B
0.040	0.060	0.125	1.50	.010	283-U6204010	283-U6204010B
0.045	0.068	0.125	1.50	.005	283-U6204505	283-U6204505B
0.045	0.068	0.125	1.50	.010	283-U6204510	283-U6204510B
0.045	0.068	0.125	1.50	.015	283-U6204515	283-U6204515B
0.047	0.071	0.125	1.50	.005	283-U6204705	283-U6204705B
0.047	0.071	0.125	1.50	.010	283-U6204710	283-U6204710B
0.047	0.071	0.125	1.50	.015	283-U6204715	283-U6204715B
0.050	0.075	0.125	1.50	.005	283-U6205005	283-U6205005B
0.050	0.075	0.125	1.50	.010	283-U6205010	283-U6205010B
0.050	0.075	0.125	1.50	.015	283-U6205015	283-U6205015B
0.055	0.083	0.125	1.50	.005	283-U6205505	283-U6205505B
0.055	0.083	0.125	1.50	.010	283-U6205510	283-U6205510B
0.055	0.083	0.125	1.50	.015	283-U6205515	283-U6205515B
0.060	0.090	0.125	1.50	.005	283-U6206005	283-U6206005B
0.060	0.090	0.125	1.50	.010	283-U6206010	283-U6206010B
0.060	0.090	0.125	1.50	.015	283-U6206015	283-U6206015B
0.062	0.093	0.125	1.50	.005	283-U6206205	283-U6206205B
0.062	0.093	0.125	1.50	.010	283-U6206210	283-U6206210B
0.062	0.093	0.125	1.50	.015	283-U6206215	283-U6206215B

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MINIATURE END MILLS - CORNER RADIUS

2 FLUTE - STUB

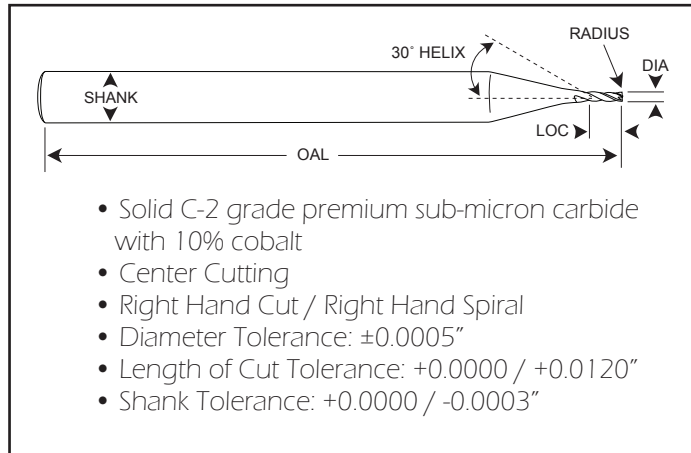


2FL STUB RADIUS *Continued*

DIA	LOC	SHANK	OAL	RADIUS	UNCOATED	AlTiN Coated
0.065	0.098	0.125	1.50	.005	283-U6206505	283-U6206505B
0.065	0.098	0.125	1.50	.010	283-U6206510	283-U6206510B
0.065	0.098	0.125	1.50	.015	283-U6206515	283-U6206515B
0.070	0.105	0.125	1.50	.005	283-U6207005	283-U6207005B
0.070	0.105	0.125	1.50	.010	283-U6207010	283-U6207010B
0.070	0.105	0.125	1.50	.015	283-U6207015	283-U6207015B
0.075	0.113	0.125	1.50	.005	283-U6207505	283-U6207505B
0.075	0.113	0.125	1.50	.010	283-U6207510	283-U6207510B
0.075	0.113	0.125	1.50	.015	283-U6207515	283-U6207515B
0.078	0.117	0.125	1.50	.005	283-U6207805	283-U6207805B
0.078	0.117	0.125	1.50	.010	283-U6207810	283-U6207810B
0.078	0.117	0.125	1.50	.015	283-U6207815	283-U6207815B
0.080	0.120	0.125	1.50	.005	283-U6208005	283-U6208005B
0.080	0.120	0.125	1.50	.010	283-U6208010	283-U6208010B
0.080	0.120	0.125	1.50	.015	283-U6208015	283-U6208015B
0.085	0.128	0.125	1.50	.005	283-U6208505	283-U6208505B
0.085	0.128	0.125	1.50	.010	283-U6208510	283-U6208510B
0.085	0.128	0.125	1.50	.015	283-U6208515	283-U6208515B
0.090	0.135	0.125	1.50	.005	283-U6209005	283-U6209005B
0.090	0.135	0.125	1.50	.010	283-U6209010	283-U6209010B
0.090	0.135	0.125	1.50	.015	283-U6209015	283-U6209015B
0.093	0.140	0.125	1.50	.005	283-U6209305	283-U6209305B
0.093	0.140	0.125	1.50	.010	283-U6209310	283-U6209310B
0.093	0.140	0.125	1.50	.015	283-U6209315	283-U6209315B
0.095	0.143	0.125	1.50	.005	283-U6209505	283-U6209505B
0.095	0.143	0.125	1.50	.010	283-U6209510	283-U6209510B
0.095	0.143	0.125	1.50	.015	283-U6209515	283-U6209515B
0.100	0.150	0.125	1.50	.005	283-U6210005	283-U6210005B
0.100	0.150	0.125	1.50	.010	283-U6210010	283-U6210010B
0.100	0.150	0.125	1.50	.015	283-U6210015	283-U6210015B
0.105	0.158	0.125	1.50	.010	283-U6210510	283-U6210510B
0.105	0.158	0.125	1.50	.015	283-U6210515	283-U6210515B
0.105	0.158	0.125	1.50	.020	283-U6210520	283-U6210520B
0.110	0.165	0.125	1.50	.010	283-U6211010	283-U6211010B
0.110	0.165	0.125	1.50	.015	283-U6211015	283-U6211015B
0.110	0.165	0.125	1.50	.020	283-U6211020	283-U6211020B
0.115	0.173	0.125	1.50	.010	283-U6211510	283-U6211510B
0.115	0.173	0.125	1.50	.015	283-U6211515	283-U6211515B
0.115	0.173	0.125	1.50	.020	283-U6211520	283-U6211520B
0.120	0.180	0.125	1.50	.010	283-U6212010	283-U6212010B
0.120	0.180	0.125	1.50	.015	283-U6212015	283-U6212015B
0.120	0.180	0.125	1.50	.020	283-U6212020	283-U6212020B

MINIATURE END MILLS - CORNER RADIUS

2 FLUTE - REGULAR



- Corner radius promotes additional strength for longer tool life resulting in greater productivity



2FL REG RADIUS

DIA	LOC	SHANK	OAL	RADIUS	UNCOATED	AlTiN Coated
0.010	0.030	0.125	1.50	.002	283-U5201002	283-U5201002B
0.015	0.045	0.125	1.50	.002	283-U5201502	283-U5201502B
0.020	0.060	0.125	1.50	.005	283-U5202005	283-U5202005B
0.025	0.075	0.125	1.50	.005	283-U5202505	283-U5202505B
0.030	0.090	0.125	1.50	.005	283-U5203005	283-U5203005B
0.030	0.090	0.125	1.50	.010	283-U5203010	283-U5203010B
0.031	0.093	0.125	1.50	.005	283-U5203105	283-U5203105B
0.031	0.093	0.125	1.50	.010	283-U5203110	283-U5203110B
0.035	0.105	0.125	1.50	.005	283-U5203505	283-U5203505B
0.035	0.105	0.125	1.50	.010	283-U5203510	283-U5203510B
0.040	0.120	0.125	1.50	.005	283-U5204005	283-U5204005B
0.040	0.120	0.125	1.50	.010	283-U5204010	283-U5204010B
0.045	0.135	0.125	1.50	.005	283-U5204505	283-U5204505B
0.045	0.135	0.125	1.50	.010	283-U5204510	283-U5204510B
0.045	0.135	0.125	1.50	.015	283-U5204515	283-U5204515B
0.047	0.141	0.125	1.50	.005	283-U5204705	283-U5204705B
0.047	0.141	0.125	1.50	.010	283-U5204710	283-U5204710B
0.047	0.141	0.125	1.50	.015	283-U5204715	283-U5204715B
0.050	0.150	0.125	1.50	.005	283-U5205005	283-U5205005B
0.050	0.150	0.125	1.50	.010	283-U5205010	283-U5205010B
0.050	0.150	0.125	1.50	.015	283-U5205015	283-U5205015B
0.055	0.165	0.125	1.50	.005	283-U5205505	283-U5205505B
0.055	0.165	0.125	1.50	.010	283-U5205510	283-U5205510B
0.055	0.165	0.125	1.50	.015	283-U5205515	283-U5205515B
0.060	0.180	0.125	1.50	.005	283-U5206005	283-U5206005B
0.060	0.180	0.125	1.50	.010	283-U5206010	283-U5206010B
0.060	0.180	0.125	1.50	.015	283-U5206015	283-U5206015B
0.062	0.186	0.125	1.50	.005	283-U5206205	283-U5206205B
0.062	0.186	0.125	1.50	.010	283-U5206210	283-U5206210B
0.062	0.186	0.125	1.50	.015	283-U5206215	283-U5206215B

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PROUDLY MADE IN THE USA

MINIATURE END MILLS - CORNER RADIUS

2 FLUTE - REGULAR



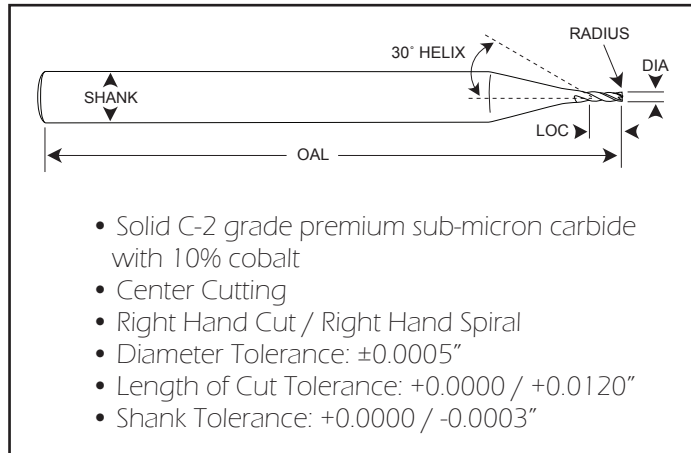
- AlTiN coating provides for provides for increased lubricity & heat resistance for longer tool life

2FL REG RADIUS *Continued*

DIA	LOC	SHANK	OAL	RADIUS	UNCOATED	AlTiN Coated
0.065	0.195	0.125	1.50	.005	283-U5206505	283-U5206505B
0.065	0.195	0.125	1.50	.010	283-U5206510	283-U5206510B
0.065	0.195	0.125	1.50	.015	283-U5206515	283-U5206515B
0.070	0.210	0.125	1.50	.005	283-U5207005	283-U5207005B
0.070	0.210	0.125	1.50	.010	283-U5207010	283-U5207010B
0.070	0.210	0.125	1.50	.015	283-U5207015	283-U5207015B
0.075	0.225	0.125	1.50	.005	283-U5207505	283-U5207505B
0.075	0.225	0.125	1.50	.010	283-U5207510	283-U5207510B
0.075	0.225	0.125	1.50	.015	283-U5207515	283-U5207515B
0.078	0.234	0.125	1.50	.005	283-U5207805	283-U5207805B
0.078	0.234	0.125	1.50	.010	283-U5207810	283-U5207810B
0.078	0.234	0.125	1.50	.015	283-U5207815	283-U5207815B
0.080	0.240	0.125	1.50	.005	283-U5208005	283-U5208005B
0.080	0.240	0.125	1.50	.010	283-U5208010	283-U5208010B
0.080	0.240	0.125	1.50	.015	283-U5208015	283-U5208015B
0.085	0.255	0.125	1.50	.005	283-U5208505	283-U5208505B
0.085	0.255	0.125	1.50	.010	283-U5208510	283-U5208510B
0.085	0.255	0.125	1.50	.015	283-U5208515	283-U5208515B
0.090	0.270	0.125	1.50	.005	283-U5209005	283-U5209005B
0.090	0.270	0.125	1.50	.010	283-U5209010	283-U5209010B
0.090	0.270	0.125	1.50	.015	283-U5209015	283-U5209015B
0.093	0.279	0.125	1.50	.005	283-U5209305	283-U5209305B
0.093	0.279	0.125	1.50	.010	283-U5209310	283-U5209310B
0.093	0.279	0.125	1.50	.015	283-U5209315	283-U5209315B
0.095	0.285	0.125	1.50	.005	283-U5209505	283-U5209505B
0.095	0.285	0.125	1.50	.010	283-U5209510	283-U5209510B
0.095	0.285	0.125	1.50	.015	283-U5209515	283-U5209515B
0.100	0.300	0.125	1.50	.005	283-U5210005	283-U5210005B
0.100	0.300	0.125	1.50	.010	283-U5210010	283-U5210010B
0.100	0.300	0.125	1.50	.015	283-U5210015	283-U5210015B
0.105	0.315	0.125	1.50	.010	283-U5210510	283-U5210510B
0.105	0.315	0.125	1.50	.015	283-U5210515	283-U5210515B
0.105	0.315	0.125	1.50	.020	283-U5210520	283-U5210520B
0.110	0.330	0.125	1.50	.010	283-U5211010	283-U5211010B
0.110	0.330	0.125	1.50	.015	283-U5211015	283-U5211015B
0.110	0.330	0.125	1.50	.020	283-U5211020	283-U5211020B
0.115	0.345	0.125	1.50	.010	283-U5211510	283-U5211510B
0.115	0.345	0.125	1.50	.015	283-U5211515	283-U5211515B
0.115	0.345	0.125	1.50	.020	283-U5211520	283-U5211520B
0.120	0.360	0.125	1.50	.010	283-U5212010	283-U5212010B
0.120	0.360	0.125	1.50	.015	283-U5212015	283-U5212015B
0.120	0.360	0.125	1.50	.020	283-U5212020	283-U5212020B

MINIATURE END MILLS - CORNER RADIUS

4 FLUTE - STUB



- Corner radius promotes additional strength for longer tool life resulting in greater productivity



4FL STUB RADIUS

DIA	LOC	SHANK	OAL	RADIUS	UNCOATED	AlTiN Coated
0.010	0.015	0.125	1.50	.002	283-U6401002	283-U6401002B
0.015	0.023	0.125	1.50	.002	283-U6401502	283-U6401502B
0.020	0.030	0.125	1.50	.005	283-U6402005	283-U6402005B
0.025	0.038	0.125	1.50	.005	283-U6402505	283-U6402505B
0.030	0.045	0.125	1.50	.005	283-U6403005	283-U6403005B
0.030	0.045	0.125	1.50	.010	283-U6403010	283-U6403010B
0.031	0.047	0.125	1.50	.005	283-U6403105	283-U6403105B
0.031	0.047	0.125	1.50	.010	283-U6403110	283-U6403110B
0.035	0.053	0.125	1.50	.005	283-U6403505	283-U6403505B
0.035	0.053	0.125	1.50	.010	283-U6403510	283-U6403510B
0.040	0.060	0.125	1.50	.005	283-U6404005	283-U6404005B
0.040	0.060	0.125	1.50	.010	283-U6404010	283-U6404010B
0.045	0.068	0.125	1.50	.005	283-U6404505	283-U6404505B
0.045	0.068	0.125	1.50	.010	283-U6404510	283-U6404510B
0.045	0.068	0.125	1.50	.015	283-U6404515	283-U6404515B
0.047	0.071	0.125	1.50	.005	283-U6404705	283-U6404705B
0.047	0.071	0.125	1.50	.010	283-U6404710	283-U6404710B
0.047	0.071	0.125	1.50	.015	283-U6404715	283-U6404715B
0.050	0.075	0.125	1.50	.005	283-U6405005	283-U6405005B
0.050	0.075	0.125	1.50	.010	283-U6405010	283-U6405010B
0.050	0.075	0.125	1.50	.015	283-U6405015	283-U6405015B
0.055	0.083	0.125	1.50	.005	283-U6405505	283-U6405505B
0.055	0.083	0.125	1.50	.010	283-U6405510	283-U6405510B
0.055	0.083	0.125	1.50	.015	283-U6405515	283-U6405515B
0.060	0.090	0.125	1.50	.005	283-U6406005	283-U6406005B
0.060	0.090	0.125	1.50	.010	283-U6406010	283-U6406010B
0.060	0.090	0.125	1.50	.015	283-U6406015	283-U6406015B
0.062	0.093	0.125	1.50	.005	283-U6406205	283-U6406205B
0.062	0.093	0.125	1.50	.010	283-U6406210	283-U6406210B
0.062	0.093	0.125	1.50	.015	283-U6406215	283-U6406215B

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MINIATURE END MILLS - CORNER RADIUS

4 FLUTE - STUB

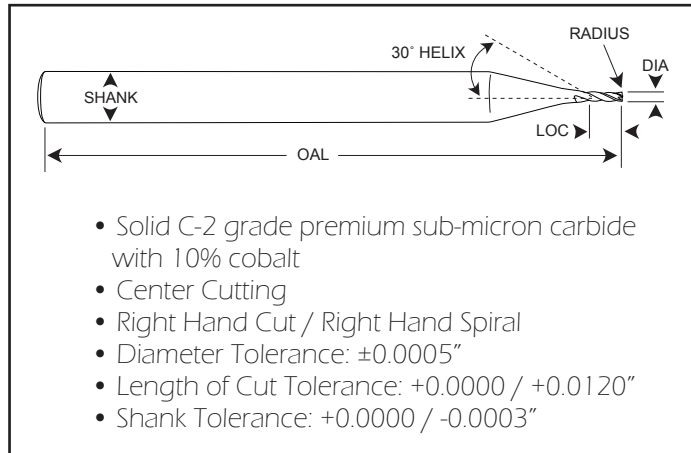


4FL STUB RADIUS *Continued*

DIA	LOC	SHANK	OAL	RADIUS	UNCOATED	AlTiN Coated
0.065	0.098	0.125	1.50	.005	283-U6406505	283-U6406505B
0.065	0.098	0.125	1.50	.010	283-U6406510	283-U6406510B
0.065	0.098	0.125	1.50	.015	283-U6406515	283-U6406515B
0.070	0.105	0.125	1.50	.005	283-U6407005	283-U6407005B
0.070	0.105	0.125	1.50	.010	283-U6407010	283-U6407010B
0.070	0.105	0.125	1.50	.015	283-U6407015	283-U6407015B
0.075	0.113	0.125	1.50	.005	283-U6407505	283-U6407505B
0.075	0.113	0.125	1.50	.010	283-U6407510	283-U6407510B
0.075	0.113	0.125	1.50	.015	283-U6407515	283-U6407515B
0.078	0.117	0.125	1.50	.005	283-U6407805	283-U6407805B
0.078	0.117	0.125	1.50	.010	283-U6407810	283-U6407810B
0.078	0.117	0.125	1.50	.015	283-U6407815	283-U6407815B
0.080	0.120	0.125	1.50	.005	283-U6408005	283-U6408005B
0.080	0.120	0.125	1.50	.010	283-U6408010	283-U6408010B
0.080	0.120	0.125	1.50	.015	283-U6408015	283-U6408015B
0.085	0.128	0.125	1.50	.005	283-U6408505	283-U6408505B
0.085	0.128	0.125	1.50	.010	283-U6408510	283-U6408510B
0.085	0.128	0.125	1.50	.015	283-U6408515	283-U6408515B
0.090	0.135	0.125	1.50	.005	283-U6409005	283-U6409005B
0.090	0.135	0.125	1.50	.010	283-U6409010	283-U6409010B
0.090	0.135	0.125	1.50	.015	283-U6409015	283-U6409015B
0.093	0.140	0.125	1.50	.005	283-U6409305	283-U6409305B
0.093	0.140	0.125	1.50	.010	283-U6409310	283-U6409310B
0.093	0.140	0.125	1.50	.015	283-U6409315	283-U6409315B
0.095	0.143	0.125	1.50	.005	283-U6409505	283-U6409505B
0.095	0.143	0.125	1.50	.010	283-U6409510	283-U6409510B
0.095	0.143	0.125	1.50	.015	283-U6409515	283-U6409515B
0.100	0.150	0.125	1.50	.005	283-U6410005	283-U6410005B
0.100	0.150	0.125	1.50	.010	283-U6410010	283-U6410010B
0.100	0.150	0.125	1.50	.015	283-U6410015	283-U6410015B
0.105	0.158	0.125	1.50	.010	283-U6410510	283-U6410510B
0.105	0.158	0.125	1.50	.015	283-U6410515	283-U6410515B
0.105	0.158	0.125	1.50	.020	283-U6410520	283-U6410520B
0.110	0.165	0.125	1.50	.010	283-U6411010	283-U6411010B
0.110	0.165	0.125	1.50	.015	283-U6411015	283-U6411015B
0.110	0.165	0.125	1.50	.020	283-U6411020	283-U6411020B
0.115	0.173	0.125	1.50	.010	283-U6411510	283-U6411510B
0.115	0.173	0.125	1.50	.015	283-U6411515	283-U6411515B
0.115	0.173	0.125	1.50	.020	283-U6411520	283-U6411520B
0.120	0.180	0.125	1.50	.010	283-U6412010	283-U6412010B
0.120	0.180	0.125	1.50	.015	283-U6412015	283-U6412015B
0.120	0.180	0.125	1.50	.020	283-U6412020	283-U6412020B

MINIATURE END MILLS - CORNER RADIUS

4 FLUTE - REGULAR



- Corner radius promotes additional strength for longer tool life resulting in greater productivity



4FL REG RADIUS

DIA	LOC	SHANK	OAL	RADIUS	UNCOATED	AlTiN Coated
0.010	0.030	0.125	1.50	.002	283-U5401002	283-U5401002B
0.015	0.045	0.125	1.50	.002	283-U5401502	283-U5401502B
0.020	0.060	0.125	1.50	.005	283-U5402005	283-U5402005B
0.025	0.075	0.125	1.50	.005	283-U5402505	283-U5402505B
0.030	0.090	0.125	1.50	.005	283-U5403005	283-U5403005B
0.030	0.090	0.125	1.50	.010	283-U5403010	283-U5403010B
0.031	0.093	0.125	1.50	.005	283-U5403105	283-U5403105B
0.031	0.093	0.125	1.50	.010	283-U5403110	283-U5403110B
0.035	0.105	0.125	1.50	.005	283-U5403505	283-U5403505B
0.035	0.105	0.125	1.50	.010	283-U5403510	283-U5403510B
0.040	0.120	0.125	1.50	.005	283-U5404005	283-U5404005B
0.040	0.120	0.125	1.50	.010	283-U5404010	283-U5404010B
0.045	0.135	0.125	1.50	.005	283-U5404505	283-U5404505B
0.045	0.135	0.125	1.50	.010	283-U5404510	283-U5404510B
0.045	0.135	0.125	1.50	.015	283-U5404515	283-U5404515B
0.047	0.141	0.125	1.50	.005	283-U5404705	283-U5404705B
0.047	0.141	0.125	1.50	.010	283-U5404710	283-U5404710B
0.047	0.141	0.125	1.50	.015	283-U5404715	283-U5404715B
0.050	0.150	0.125	1.50	.005	283-U5405005	283-U5405005B
0.050	0.150	0.125	1.50	.010	283-U5405010	283-U5405010B
0.050	0.150	0.125	1.50	.015	283-U5405015	283-U5405015B
0.055	0.165	0.125	1.50	.005	283-U5405505	283-U5405505B
0.055	0.165	0.125	1.50	.010	283-U5405510	283-U5405510B
0.055	0.165	0.125	1.50	.015	283-U5405515	283-U5405515B
0.060	0.180	0.125	1.50	.005	283-U5406005	283-U5406005B
0.060	0.180	0.125	1.50	.010	283-U5406010	283-U5406010B
0.060	0.180	0.125	1.50	.015	283-U5406015	283-U5406015B
0.062	0.186	0.125	1.50	.005	283-U5406205	283-U5406205B
0.062	0.186	0.125	1.50	.010	283-U5406210	283-U5406210B
0.062	0.186	0.125	1.50	.015	283-U5406215	283-U5406215B

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PROUDLY MADE IN THE USA

MINIATURE END MILLS - CORNER RADIUS

4 FLUTE - REGULAR



- AlTiN coating provides for provides for increased lubricity & heat resistance for longer tool life

4FL REG RADIUS *Continued*

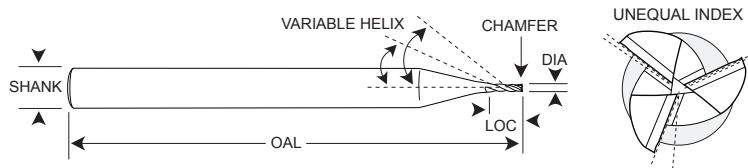
DIA	LOC	SHANK	OAL	RADIUS	UNCOATED	AlTiN Coated
0.065	0.195	0.125	1.50	.005	283-U5406505	283-U5406505B
0.065	0.195	0.125	1.50	.010	283-U5406510	283-U5406510B
0.065	0.195	0.125	1.50	.015	283-U5406515	283-U5406515B
0.070	0.210	0.125	1.50	.005	283-U5407005	283-U5407005B
0.070	0.210	0.125	1.50	.010	283-U5407010	283-U5407010B
0.070	0.210	0.125	1.50	.015	283-U5407015	283-U5407015B
0.075	0.225	0.125	1.50	.005	283-U5407505	283-U5407505B
0.075	0.225	0.125	1.50	.010	283-U5407510	283-U5407510B
0.075	0.225	0.125	1.50	.015	283-U5407515	283-U5407515B
0.078	0.234	0.125	1.50	.005	283-U5407805	283-U5407805B
0.078	0.234	0.125	1.50	.010	283-U5407810	283-U5407810B
0.078	0.234	0.125	1.50	.015	283-U5407815	283-U5407815B
0.080	0.240	0.125	1.50	.005	283-U5408005	283-U5408005B
0.080	0.240	0.125	1.50	.010	283-U5408010	283-U5408010B
0.080	0.240	0.125	1.50	.015	283-U5408015	283-U5408015B
0.085	0.255	0.125	1.50	.005	283-U5408505	283-U5408505B
0.085	0.255	0.125	1.50	.010	283-U5408510	283-U5408510B
0.085	0.255	0.125	1.50	.015	283-U5408515	283-U5408515B
0.090	0.270	0.125	1.50	.005	283-U5409005	283-U5409005B
0.090	0.270	0.125	1.50	.010	283-U5409010	283-U5409010B
0.090	0.270	0.125	1.50	.015	283-U5409015	283-U5409015B
0.093	0.279	0.125	1.50	.005	283-U5409305	283-U5409305B
0.093	0.279	0.125	1.50	.010	283-U5409310	283-U5409310B
0.093	0.279	0.125	1.50	.015	283-U5409315	283-U5409315B
0.095	0.285	0.125	1.50	.005	283-U5409505	283-U5409505B
0.095	0.285	0.125	1.50	.010	283-U5409510	283-U5409510B
0.095	0.285	0.125	1.50	.015	283-U5409515	283-U5409515B
0.100	0.300	0.125	1.50	.005	283-U5410005	283-U5410005B
0.100	0.300	0.125	1.50	.010	283-U5410010	283-U5410010B
0.100	0.300	0.125	1.50	.015	283-U5410015	283-U5410015B
0.105	0.315	0.125	1.50	.010	283-U5410510	283-U5410510B
0.105	0.315	0.125	1.50	.015	283-U5410515	283-U5410515B
0.105	0.315	0.125	1.50	.020	283-U5410520	283-U5410520B
0.110	0.330	0.125	1.50	.010	283-U5411010	283-U5411010B
0.110	0.330	0.125	1.50	.015	283-U5411015	283-U5411015B
0.110	0.330	0.125	1.50	.020	283-U5411020	283-U5411020B
0.115	0.345	0.125	1.50	.010	283-U5411510	283-U5411510B
0.115	0.345	0.125	1.50	.015	283-U5411515	283-U5411515B
0.115	0.345	0.125	1.50	.020	283-U5411520	283-U5411520B
0.120	0.360	0.125	1.50	.010	283-U5412010	283-U5412010B
0.120	0.360	0.125	1.50	.015	283-U5412015	283-U5412015B
0.120	0.360	0.125	1.50	.020	283-U5412020	283-U5412020B

HIGH PERFORMANCE MINIATURE END MILLS

Unequal Index / Variable Helix



- Designed for aerospace materials, exotic alloys & difficult to machine ferrous & non-ferrous materials



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- Center Cutting
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: $\pm 0.0005"$
- Length of Cut Tolerance: $+0.0000 / +0.0120"$
- Shank Tolerance: $+0.0000 / -0.0003"$

3FL STUB LENGTH CHAMFERED CORNER

DIA	LOC	SHANK	OAL	CHAMFER	UNCOATED	AlTiN Coated
0.031 1/32	0.0465	0.125	1.50	.002 - .004	284-U003005	284-U003005B
0.047 3/64	0.0705	0.125	1.50	.002 - .004	284-U003025	284-U003025B
0.062 1/16	0.0930	0.125	1.50	.002 - .004	284-U003045	284-U003045B
0.078 5/64	0.1170	0.125	1.50	.002 - .004	284-U003065	284-U003065B
0.093 3/32	0.1395	0.125	1.50	.002 - .004	284-U003085	284-U003085B
0.125 1/8	0.1875	0.125	1.50	.002 - .004	284-U003105	284-U003105B

3FL REGULAR LENGTH CHAMFERED CORNER

DIA	LOC	SHANK	OAL	CHAMFER	UNCOATED	AlTiN Coated
0.031 1/32	0.0930	0.125	1.50	.002 - .004	284-U003010	284-U003010B
0.047 3/64	0.1410	0.125	1.50	.002 - .004	284-U003030	284-U003030B
0.062 1/16	0.1860	0.125	1.50	.002 - .004	284-U003050	284-U003050B
0.078 5/64	0.2340	0.125	1.50	.002 - .004	284-U003070	284-U003070B
0.093 3/32	0.2790	0.125	1.50	.002 - .004	284-U003090	284-U003090B
0.125 1/8	0.3750	0.125	1.50	.002 - .004	284-U003110	284-U003110B

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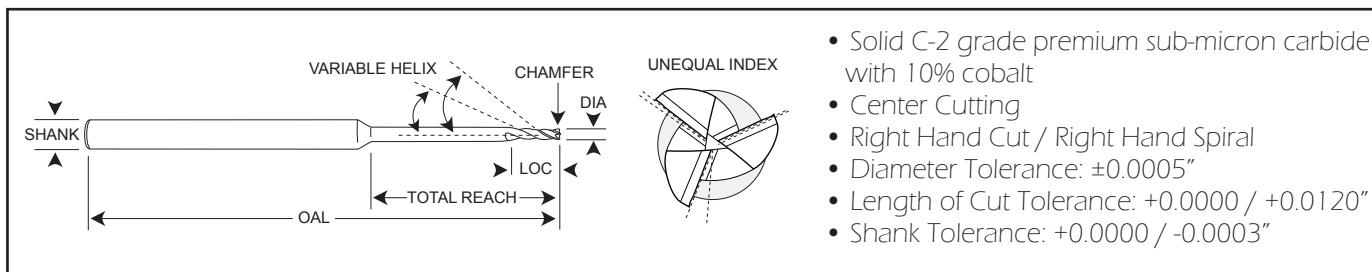
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HIGH PERFORMANCE MINIATURE END MILLS

Unequal Index / Variable Helix

- Reduced Harmonics & chatter
- Superior material removal rates
- Finer surface finishes



3FL LONG LENGTH CHAMFERED CORNER

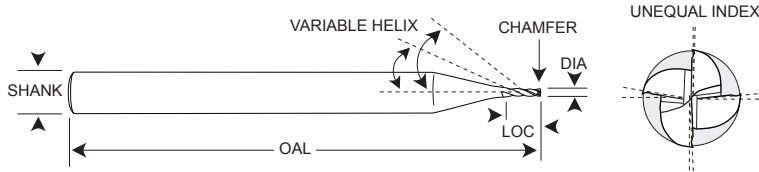
DIA	LOC	SHANK	OAL	CHAMFER	TOTAL REACH	UNCOATED	AlTiN Coated
0.031 1/32	0.0620	0.125	2.50	.002 - .004	0.1870	284-U003015	284-U003015B
0.047 3/64	0.0940	0.125	2.50	.002 - .004	0.2820	284-U003035	284-U003035B
0.062 1/16	0.1240	0.125	2.50	.002 - .004	0.3750	284-U003055	284-U003055B
0.078 5/64	0.1560	0.125	2.50	.002 - .004	0.4680	284-U003075	284-U003075B
0.093 3/32	0.1860	0.125	2.50	.002 - .004	0.5620	284-U003095	284-U003095B
0.125 1/8	0.2500	0.125	2.50	.002 - .004	0.7500	284-U003115	284-U003115B

3FL X/LONG LENGTH CHAMFERED CORNER

DIA	LOC	SHANK	OAL	CHAMFER	TOTAL REACH	UNCOATED	AlTiN Coated
0.031 1/32	0.0620	0.125	2.50	.002 - .004	0.3120	284-U003020	284-U003020B
0.047 3/64	0.0940	0.125	2.50	.002 - .004	0.4700	284-U003040	284-U003040B
0.062 1/16	0.1240	0.125	2.50	.002 - .004	0.6250	284-U003060	284-U003060B
0.078 5/64	0.1560	0.125	2.50	.002 - .004	0.7810	284-U003080	284-U003080B
0.093 3/32	0.1860	0.125	2.50	.002 - .004	0.9380	284-U003100	284-U003100B
0.125 1/8	0.2500	0.125	2.50	.002 - .004	1.2500	284-U003120	284-U003120B

HIGH PERFORMANCE MINIATURE END MILLS

Unequal Index / Variable Helix



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- Center Cutting
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: $\pm 0.0005''$
- Length of Cut Tolerance: $+0.0000 / +0.0120''$
- Shank Tolerance: $+0.0000 / -0.0003''$

- Designed for aerospace materials, exotic alloys & difficult to machine ferrous & non-ferrous materials

4FL STUB LENGTH CHAMFERED CORNER

DIA	LOC	SHANK	OAL	CHAMFER	UNCOATED	AlTiN Coated
0.031 1/32	0.0465	0.125	1.50	.002 - .004	284-U004005	284-U004005B
0.047 3/64	0.0705	0.125	1.50	.002 - .004	284-U004025	284-U004025B
0.062 1/16	0.0930	0.125	1.50	.002 - .004	284-U004045	284-U004045B
0.078 5/64	0.1170	0.125	1.50	.002 - .004	284-U004065	284-U004065B
0.093 3/32	0.1395	0.125	1.50	.002 - .004	284-U004085	284-U004085B
0.125 1/8	0.1875	0.125	1.50	.002 - .004	284-U004105	284-U004105B

4FL REGULAR LENGTH CHAMFERED CORNER

DIA	LOC	SHANK	OAL	CHAMFER	UNCOATED	AlTiN Coated
0.031 1/32	0.0930	0.125	1.50	.002 - .004	284-U004010	284-U004010B
0.047 3/64	0.1410	0.125	1.50	.002 - .004	284-U004030	284-U004030B
0.062 1/16	0.1860	0.125	1.50	.002 - .004	284-U004050	284-U004050B
0.078 5/64	0.2340	0.125	1.50	.002 - .004	284-U004070	284-U004070B
0.093 3/32	0.2790	0.125	1.50	.002 - .004	284-U004090	284-U004090B
0.125 1/8	0.3750	0.125	1.50	.002 - .004	284-U004110	284-U004110B

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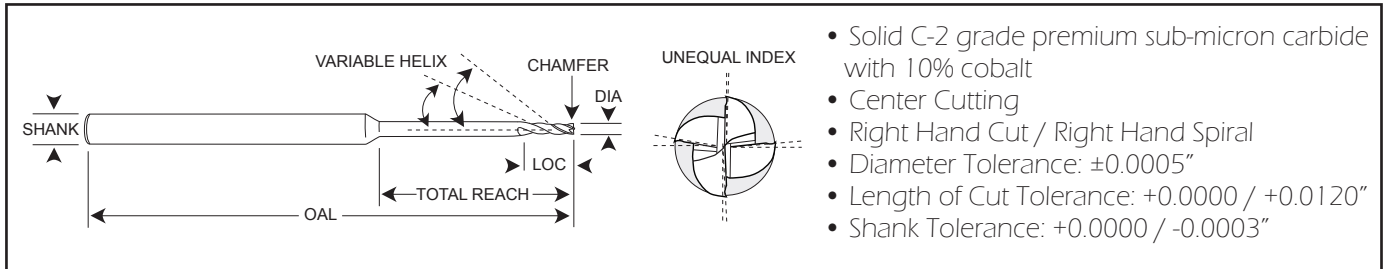
PROUDLY MADE IN THE USA



HIGH PERFORMANCE MINIATURE END MILLS

Unequal Index / Variable Helix

- Reduced Harmonics & chatter
- Superior material removal rates
- Finer surface finishes



- Designed for aerospace materials, exotic alloys & difficult to machine ferrous & non-ferrous materials

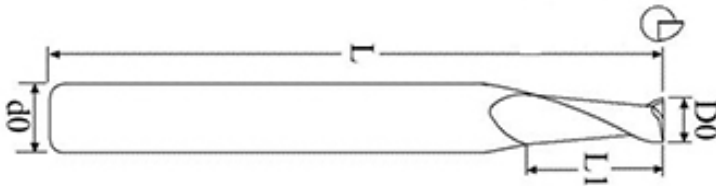
4FL LONG LENGTH CHAMFERED CORNER

DIA	LOC	SHANK	OAL	CHAMFER	TOTAL REACH	UNCOATED	AlTiN Coated
0.031 1/32	0.0620	0.125	2.50	.002 - .004	0.1870	284-U004015	284-U004015B
0.047 3/64	0.0940	0.125	2.50	.002 - .004	0.2820	284-U004035	284-U004035B
0.062 1/16	0.1240	0.125	2.50	.002 - .004	0.3750	284-U004055	284-U004055B
0.078 5/64	0.1560	0.125	2.50	.002 - .004	0.4680	284-U004075	284-U004075B
0.093 3/32	0.1860	0.125	2.50	.002 - .004	0.5620	284-U004095	284-U004095B
0.125 1/8	0.2500	0.125	2.50	.002 - .004	0.7500	284-U004115	284-U004115B

4FL X/LONG LENGTH CHAMFERED CORNER

DIA	LOC	SHANK	OAL	CHAMFER	TOTAL REACH	UNCOATED	AlTiN Coated
0.031 1/32	0.0620	0.125	2.50	.002 - .004	0.3120	284-U004020	284-U004020B
0.047 3/64	0.0940	0.125	2.50	.002 - .004	0.4700	284-U004040	284-U004040B
0.062 1/16	0.1240	0.125	2.50	.002 - .004	0.6250	284-U004060	284-U004060B
0.078 5/64	0.1560	0.125	2.50	.002 - .004	0.7810	284-U004080	284-U004080B
0.093 3/32	0.1860	0.125	2.50	.002 - .004	0.9380	284-U004100	284-U004100B
0.125 1/8	0.2500	0.125	2.50	.002 - .004	1.2500	284-U004120	284-U004120B

MINIATURE END MILLS - SINGLE FLUTE - REGULAR



- Solid premium sub-micron carbide
- High Rake Angle Designed to Maximize Shearing
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: ± 0.0005 "
- Length of Cut Tolerance: $+0.0000$ / $+0.0120$ "
- Shank Tolerance: $+0.0000$ / -0.0003 "
- Designed for softer materials: Teflon, Plastics, Etc.

SINGLE FLUTE - REGULAR



DIA	LOC	SHANK	OAL	UNCOATED	AlTiN COATED
0.0040	0.0120	0.125	1.50	283-U7010010	special order
0.0080	0.0240	0.125	1.50	283-U7010020	special order
0.0100	0.0300	0.125	1.50	283-U7010030	special order
0.0156	0.0470	0.125	1.50	283-U7010040	special order
0.0197	0.0650	0.125	1.50	283-U7010050	special order
0.0250	0.0750	0.125	1.50	283-U7010060	special order
0.0290	0.0900	0.125	1.50	283-U7010070	special order
0.0312	0.0940	0.125	1.50	283-U7010080	special order
0.0360	0.0940	0.125	1.50	283-U7010090	special order
0.0374	0.1250	0.125	1.50	283-U7010100	special order
0.0400	0.1250	0.125	1.50	283-U7010110	special order
0.0433	0.1250	0.125	1.50	283-U7010120	special order
0.0453	0.1250	0.125	1.50	283-U7010130	special order
0.0469	0.1250	0.125	1.50	283-U7010140	special order
0.0492	0.1250	0.125	1.50	283-U7010150	special order
0.0512	0.1500	0.125	1.50	283-U7010160	special order
0.0591	0.1500	0.125	1.50	283-U7010170	special order
0.0625	0.1880	0.125	1.50	283-U7010180	special order
0.0700	0.1880	0.125	1.50	283-U7010190	special order
0.0781	0.2500	0.125	1.50	283-U7010200	special order
0.0938	0.3750	0.125	1.50	283-U7010210	special order
0.1250	0.4000	0.125	1.50	283-U7010220	special order

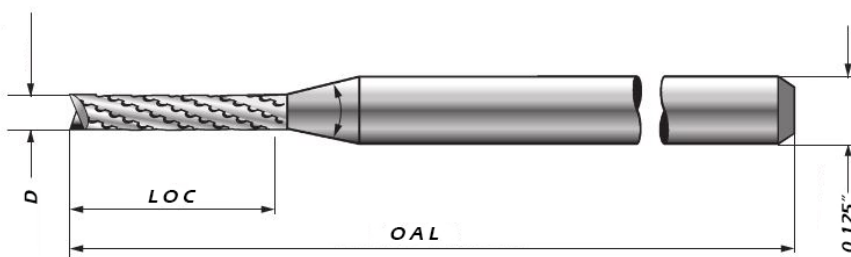
Atlantic Micro

PROUDLY MADE IN THE USA

HIGH PERFORMANCE Routers

Diamond Cut / Chipbreaker

- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: $\pm 0.0003"$
- Length of Cut Tolerance: $+0.0000 / +0.0120"$
- Shank Tolerance: $+0.0000 / -0.0001"$
- Also available in "Downdraft" geometry



Diamond Cut



Chipbreaker



- Diamond Cut geometry can be used for contour routing of substrates
- Great swarf/chip evacuation even with higher aspect ratios
- Designed for improved dimensional accuracy and reduced breakage
- Aggressive geometry coupled with accelerated parameters extends tool life
- The Chipbreaker is suitable for general purpose routing and slitting
- Specialized geometry pulverizes swarf into smaller pieces
- Great for substrates with a metalized surface
- Offers smoother finish where chattering is prone.

Size	DIA	LOC	SHANK	OAL	Diamond Cut	Chipbreaker
0.60mm	0.0240	0.160	0.125	1.50	283-U5206505	283-U9010010
0.80mm (1/32")	0.0312	0.180	0.125	1.50	283-U5206510	283-U9010020
0.90mm	0.0355	0.180	0.125	1.50	283-U5206515	283-U9010030
1.00mm	0.0394	0.260	0.125	1.50	283-U5207005	283-U9010040
1.10mm	0.0433	0.260	0.125	1.50	283-U5207010	283-U9010050
1.20mm (3/64")	0.0469	0.260	0.125	1.50	283-U5207015	283-U9010060
1.30mm	0.0512	0.260	0.125	1.50	283-U5207505	283-U9010070
1.40mm	0.0552	0.260	0.125	1.50	283-U5207510	283-U9010080
1.50mm	0.0591	0.320	0.125	1.50	283-U5207515	283-U9010090
1.60mm (1/16")	0.0625	0.320	0.125	1.50	283-U5207805	283-U9010100
1.70mm	0.0670	0.320	0.125	1.50	283-U5207810	283-U9010110
1.80mm	0.0709	0.320	0.125	1.50	283-U5207815	283-U9010120
1.90mm	0.0749	0.375	0.125	1.50	283-U5208005	283-U9010130
2.00mm (5/64")	0.0781	0.375	0.125	1.50	283-U5208010	283-U9010140
2.10mm	0.0827	0.375	0.125	1.50	283-U5208015	283-U9010150
2.20mm	0.0867	0.375	0.125	1.50	283-U5208505	283-U9010160
2.30mm	0.0906	0.375	0.125	1.50	283-U5208510	283-U9010170
2.40mm (3/32")	0.0938	0.375	0.125	1.50	283-U5208515	283-U9010180
2.50mm	0.0985	0.375	0.125	1.50	283-U5209005	283-U9010190
2.60mm	0.1024	0.375	0.125	1.50	283-U5209010	283-U9010200
2.70mm	0.1064	0.375	0.125	1.50	283-U5209015	283-U9010210
2.80mm	0.1094	0.375	0.125	1.50	283-U5209305	283-U9010220
2.90mm	0.1143	0.375	0.125	1.50	283-U5209310	283-U9010230
3.00mm	0.1182	0.400	0.125	1.50	283-U5209315	283-U9010240
3.10mm	0.1221	0.400	0.125	1.50	283-U5209505	283-U9010250
3.175mm (1/8")	0.1250	0.400	0.125	1.50	283-U5209510	283-U9010260

Standard Endmills 2 Flute Square

STANDARD ENDMILLS 2 FLUTE



2 Flute geometry allows for maximum chip removal and roughing capabilities

Applications:

- Slotting, pocketing and plunging

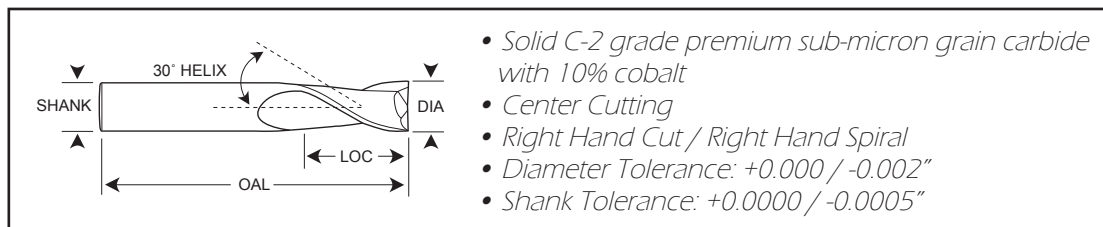
Materials:

- Cast iron, non-ferrous metals, plastics and abrasive materials

STUB LENGTH: Reduces tool deflection and promotes rigidity - Maintains excellent surface finishes

REGULAR LENGTH: Standard flute lengths for general all purpose milling

LONG, XLONG & EXTENDED LENGTHS: For deep pocket milling and long reach applications



ATLANTIC
MILL

2 FLUTE SQUARE

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
1/64	0.0156	3/64	1/8	1-1/2	Regular	237-L001000	237-L000995	—	237-L000997
1/32	0.0312	1/16	1/8	1-1/2	Stub	235-L001001	235-L001002	235-L001003	235-L001004
1/32	0.0312	1/8	1/8	1-1/2	Regular	237-L001001	237-L001002	237-L001003	237-L001005
1.0 mm	0.0394	4.0 mm	3.0 mm	39.0 mm	Regular	237-L001275	—	—	237-L001270B
1.0 mm	0.0394	5.5 mm	3.0 mm	39.0 mm	Regular	237-L001277	—	—	—
3/64	0.0469	3/32	1/8	1-1/2	Stub	235-L001010	235-L001011	235-L001012	235-L001013
3/64	0.0469	1/8	1/8	1-1/2	Regular	237-L001010	237-L001011	237-L021010	237-L001013
1.5 mm	0.0591	5.0 mm	3.0 mm	39.0 mm	Regular	237-L001285	—	—	237-L001285B
1.5 mm	0.0591	6.5 mm	3.0 mm	39.0 mm	Regular	237-L001288	—	—	—
1/16	0.0625	1/8	1/8	1-1/2	Stub	235-L001020	235-L001021	235-L001022	235-L001023
1/16	0.0625	1/4	1/8	1-1/2	Regular	237-L001020	237-L001021	237-L001022	237-L001023



2 FLUTE SQUARE *Continued*

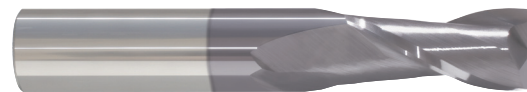
DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
5/64	0.0781	5/32	1/8	1-1/2	Stub	235-L001030	235-L001031	235-L001032	235-L001033
5/64	0.0781	1/4	1/8	1-1/2	Regular	237-L001030	237-L001032	237-L001033	237-L001036
2.0 mm	0.0787	8.0 mm	3.0 mm	39.0 mm	Regular	237-L001295	—	—	237-L001295B
3/32	0.0938	3/16	1/8	1-1/2	Stub	235-L001040	235-L001041	235-L001042	235-L001043
3/32	0.0938	3/8	1/8	1-1/2	Regular	237-L001040	237-L001041	237-L001042	237-L001043
2.5 mm	0.0984	9.5 mm	3.0 mm	39.0 mm	Regular	237-L001301	—	—	237-L001297B
7/64	0.1094	7/32	1/8	1-1/2	Stub	235-L001050	235-L001051	235-L001052	235-L001053
7/64	0.1094	3/8	1/8	1-1/2	Regular	237-L001050	237-L001052	237-L021050	237-L001055
3.0 mm	0.1181	12.0 mm	3.0 mm	39.0 mm	Regular	237-L001313	—	—	237-L001311B
1/8	0.1250	1/4	1/8	1-1/2	Stub	235-L001060	235-L001061	235-L001062	235-L001063
1/8	0.1250	1/2	1/8	1-1/2	Regular	237-L001060	237-L001061	237-L001062	237-L001063
1/8	0.1250	3/4	1/8	2-1/4	Long	246-L001001	246-L001002	246-L001003	246-L001004
1/8	0.1250	1	1/8	3	XLong	249-L001001	249-L001002	249-L001003	249-L001004
3.5 mm	0.1378	12.0 mm	4.0 mm	51.0 mm	Regular	237-L001321	—	—	237-L001321B
9/64	0.1406	9/32	3/16	2	Stub	235-L001070	235-L001071	235-L001072	235-L001073
9/64	0.1406	9/16	3/16	2	Regular	237-L001070	237-L001072	237-L021070	237-L001074
5/32	0.1562	5/16	3/16	2	Stub	235-L001080	235-L001081	235-L001082	235-L001083
5/32	0.1562	9/16	3/16	2	Regular	237-L001080	237-L001081	237-L001083	237-L001084
5/32	0.1562	3/4	3/16	2-1/2	Long	246-L001005	246-L001006	246-L001007	246-L001008
5/32	0.1562	1-1/8	3/16	3	XLong	249-L001005	249-L001006	249-L001007	249-L001008
4.0 mm	0.1575	14.0 mm	4.0 mm	51.0 mm	Regular	237-L001330	—	—	237-L001330B
11/64	0.1719	5/16	3/16	2	Stub	235-L001090	235-L001091	235-L001092	235-L001093
11/64	0.1719	9/16	3/16	2	Regular	237-L001090	237-L001092	237-L021090	237-L001094
4.5 mm	0.1772	16.0 mm	5.0 mm	51.0 mm	Regular	237-L001341	—	—	237-L001341B
3/16	0.1875	3/8	3/16	2	Stub	235-L001100	235-L001101	235-L001102	235-L001103
3/16	0.1875	5/8	3/16	2	Regular	237-L001100	237-L001101	237-L001103	237-L001104
3/16	0.1875	3/4	3/16	2-1/2	Long	246-L001012	246-L001013	246-L001016	246-L001014
3/16	0.1875	1-1/8	3/16	3	XLong	249-L001010	249-L001011	249-L001012	249-L001013

Standard Endmills 2 Flute Square



2 FLUTE SQUARE *Continued*

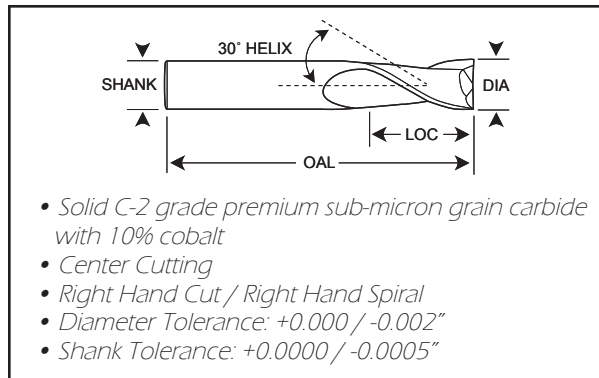
DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
5.0 mm	0.1969	16.0 mm	5.0 mm	51.0 mm	Regular	237-L001351	—	—	237-L001351B
13/64	0.2031	3/8	1/4	2	Stub	235-L001110	235-L001111	235-L001112	235-L001113
13/64	0.2031	5/8	1/4	2-1/2	Regular	237-L001110	237-L001112	237-L021110	237-L001114
7/32	0.2188	7/16	1/4	2	Stub	235-L001120	235-L001121	235-L001122	235-L001123
7/32	0.2188	5/8	1/4	2-1/2	Regular	237-L001120	237-L001121	237-L001123	237-L001124
15/64	0.2344	7/16	1/4	2	Stub	235-L001125	235-L001126	235-L001127	235-L001128
15/64	0.2344	3/4	1/4	2-1/2	Regular	237-L001125	237-L001127	237-L021125	237-L001129
6.0 mm	0.2362	19.0 mm	6.0 mm	63.0 mm	Regular	237-L001361	—	—	237-L001361B
1/4	0.2500	1/2	1/4	2	Stub	235-L001130	235-L001131	235-L001132	235-L001133
1/4	0.2500	3/4	1/4	2-1/2	Regular	237-L001130	237-L001131	237-L001133	237-L001134
1/4	0.2500	1-1/8	1/4	3	Long	246-L001020	246-L001021	246-L001022	246-L001023
1/4	0.2500	1-1/2	1/4	4	XLong	249-L001020	249-L001021	249-L001022	249-L001023
1/4	0.2500	1-1/2	1/4	6	Ext XXL	249-L001025	249-L001027	249-L001028	249-L001029
17/64	0.2656	3/4	5/16	2-1/2	Regular	237-L001135	237-L001137	237-L021181	237-L001139
7.0 mm	0.2756	19.0 mm	8.0 mm	63.0 mm	Regular	237-L001371	—	—	237-L001371B
9/32	0.2812	3/4	5/16	2-1/2	Regular	237-L001140	237-L001141	237-L001143	237-L001144
19/64	0.2969	13/16	5/16	2-1/2	Regular	237-L001145	237-L001148	237-L021145	237-L031145
5/16	0.3125	1/2	5/16	2	Stub	235-L001150	235-L001151	235-L001152	235-L001153
5/16	0.3125	13/16	5/16	2-1/2	Regular	237-L001150	237-L001151	237-L001155	237-L001153
5/16	0.3125	1-1/8	5/16	3	Long	246-L001030	246-L001031	246-L001032	246-L001033
5/16	0.3125	1-1/2	5/16	6	Ext XXL	249-L001034	249-L001035	249-L001036	249-L001034A
5/16	0.3125	1-5/8	5/16	4	XLong	249-L001030	249-L001031	249-L001032	249-L001033
8.0 mm	0.3150	20.0 mm	8.0 mm	63.0 mm	Regular	237-L001381	—	—	237-L001381B
21/64	0.3281	1	3/8	2-1/2	Regular	237-L001154	237-L001157	237-L021154	237-L031154
11/32	0.3438	1	3/8	2-1/2	Regular	237-L001160	237-L001162	237-L001163	237-L001164
9.0 mm	0.3543	22.0 mm	10.0 mm	63.0 mm	Regular	237-L001391	—	—	237-L001391B
23/64	0.3594	1	3/8	2-1/2	Regular	237-L001165	237-L001166	237-L021165	237-L031165



2 FLUTE SQUARE *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
3/8	0.3750	5/8	3/8	2	Stub	235-L001170	235-L001171	235-L001172	235-L001173
3/8	0.3750	1	3/8	2-1/2	Regular	237-L001170	237-L001171	237-L001179	237-L001173
3/8	0.3750	1-1/8	3/8	3	Long	246-L001040	246-L001009	246-L001015	246-L001010
3/8	0.3750	1-1/2	3/8	6	Ext XXL	249-L001045	249-L001046	249-L001047	249-L001048
3/8	0.3750	1-3/4	3/8	4	XLong	249-L001040	249-L001041	249-L001042	249-L001043
25/64	0.3906	1	7/16	2-3/4	Regular	237-L001175	237-L001178	237-L021175	237-L031175
10.0 mm	0.3937	22.0 mm	10.0 mm	76.0 mm	Regular	237-L001400	—	—	237-L001400B
13/32	0.4063	1	7/16	2-3/4	Regular	237-L001180	237-L001182	237-L021180	237-L001184
27/64	0.4219	1	7/16	2-3/4	Regular	237-L001185	237-L001187	237-L021185	237-L031185
11.0 mm	0.4331	25.0 mm	12.0 mm	76.0 mm	Regular	237-L001410	—	—	237-L001410B
7/16	0.4375	5/8	7/16	2-1/2	Stub	235-L001190	235-L001191	235-L001192	235-L001193
7/16	0.4375	1	7/16	2-3/4	Regular	237-L001190	237-L001191	237-L001189	237-L001198
7/16	0.4375	2	7/16	4	Long	246-L001050	246-L001051	246-L001053	246-L001052
7/16	0.4375	3	7/16	6	XLong	249-L001050	249-L001051	249-L001052	249-L001053
29/64	0.4531	1	1/2	3	Regular	237-L001192	237-L001194	237-L021192	237-L031192
15/32	0.4688	1	1/2	3	Regular	237-L001193	237-L001197	237-L021193	237-L001196
12.0 mm	0.4724	25.0 mm	12.0 mm	76.0 mm	Regular	237-L001420	—	—	237-L001420B
31/64	0.4844	1	1/2	3	Regular	237-L001195	237-L001199	237-L021195	237-L031195
1/2	0.5000	5/8	1/2	2-1/2	Stub	235-L001200	235-L001201	235-L001202	235-L001203
1/2	0.5000	1	1/2	3	Regular	237-L001200	237-L001201	237-L001202	237-L001205
1/2	0.5000	1-1/4	1/2	3	Regular	237-L001200A	—	—	237-L001205A
1/2	0.5000	1-1/2	1/2	4	Medium	246-L001059	246-L001056	246-L001062	246-L001063
1/2	0.5000	1-1/2	1/2	6	Ext XLong	249-L001053A	249-L001057	249-L001058	249-L001059
1/2	0.5000	2	1/2	4	Long	246-L001060	246-L001061	246-L001065	246-L001064
1/2	0.5000	3	1/2	6	XLong	249-L001054	249-L001061	249-L001062	249-L001063
33/64	0.5156	1-1/4	9/16	3-1/2	Regular	237-L001206	—	—	—
17/32	0.5313	1-1/4	9/16	3-1/2	Regular	237-L001207	—	—	—

Standard Endmills 2 Flute Square



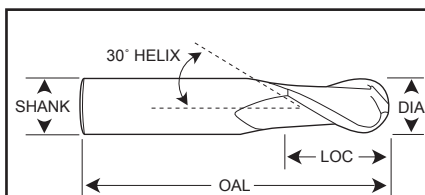
2 FLUTE SQUARE *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
14.0 mm	0.5512	32.0 mm	14.0 mm	90.0 mm	Regular	237-L001430	—	—	237-L001430B
9/16	0.5625	1-1/4	9/16	3-1/2	Regular	237-L001210	237-L001209	237-L001211	237-L001212
5/8	0.6250	3/4	5/8	3	Stub	235-L001220	235-L001221	235-L001222	235-L001223
5/8	0.6250	1-1/4	5/8	3-1/2	Regular	237-L001220	237-L001222	237-L001225	237-L001224
5/8	0.6250	1-1/2	5/8	6	Ext XLong	249-L001074	249-L001076	249-L001075	249-L001074A
5/8	0.6250	2-1/4	5/8	5	Long	246-L001070	246-L001071	246-L001072	246-L001073
5/8	0.6250	3	5/8	6	XLong	249-L001070	249-L001071	249-L001072	249-L001073
16.0 mm	0.6299	38.0 mm	16.0 mm	102.0 mm	Regular	237-L001440	—	—	237-L001440B
11/16	0.6875	1-1/2	3/4	4	Regular	237-L001230	237-L001231	237-L001233	237-L001232
18.0 mm	0.7087	38.0 mm	18.0 mm	102.0 mm	Regular	237-L001450	—	—	237-L001450B
3/4	0.7500	1	3/4	3	Stub	235-L001240	235-L001241	235-L001242	235-L001243
3/4	0.7500	1-1/2	3/4	4	Regular	237-L001240	237-L001241	237-L001243	237-L001242
3/4	0.7500	1-1/2	3/4	6	Ext XLong	249-L001084	249-L001085	249-L001086	249-L001084A
3/4	0.7500	2-1/4	3/4	5	Long	246-L001080	246-L001081	246-L001082	246-L001083
3/4	0.7500	3	3/4	6	XLong	249-L001080	249-L001081	249-L001082	249-L001083
3/4	0.7500	4	3/4	7	XXL	249-L001087	—	—	—
20.0 mm	0.7874	38.0 mm	20.0 mm	102.0 mm	Regular	237-L001460	—	—	237-L001460B
22.0 mm	0.8661	38.0 mm	22.0 mm	102.0 mm	Regular	237-L001470	—	—	237-L001470B
7/8	0.8750	1-1/2	7/8	4	Regular	237-L001250	237-L001251	237-L001252	237-L001253
25.0 mm	0.9843	38.0 mm	25.0 mm	102.0 mm	Regular	237-L001480	—	—	237-L001480B
1	1.0000	1-1/2	1	4	Regular	237-L001260	237-L001261	237-L001262	237-L001263
1	1.0000	1-1/2	1	6	Ext XLong	249-L001095	249-L001097	249-L001098	249-L001096
1	1.0000	2-1/4	1	5	Long	246-L001090	246-L001091	246-L001092	246-L001093
1	1.0000	3	1	6	XLong	249-L001090	249-L001091	249-L001092	249-L001093
1	1.0000	4	1	7	XXL	249-L001099	—	—	—

STANDARD ENDMILLS 2 FLUTE



2 Flute geometry allows for maximum chip removal and roughing capabilities



- Solid C-2 grade premium sub-micron grain carbide with 10% cobalt
- Center Cutting
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: +0.000 / -0.002"
- Shank Tolerance: +0.0000 / -0.0005"

Applications:

- Slotting, pocketing and plunging
- Ball end allows for three axis contour slotting and contour finishing

Materials:

- Cast iron, non-ferrous metals, plastics and abrasive materials

STUB LENGTH: Reduces tool deflection and promotes rigidity - Maintains excellent surface finishes

REGULAR LENGTH: Standard flute lengths for general all purpose milling

LONG, XLONG & EXTENDED LENGTHS: For deep pocket milling and long reach applications

2 FLUTE BALLNOSE

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TIN Coated	TICN Coated	TiAIN Coated
1/64	0.0156	3/64	1/8	1-1/2	Regular	254-L001000	254-L000995	254-L000996	254-L000997
1/32	0.0312	1/16	1/8	1-1/2	Stub	252-L001001	252-L001002	252-L001003	252-L001004
1/32	0.0312	1/8	1/8	1-1/2	Regular	254-L001005	254-L001006	254-L021005	254-L001016
1.0 mm	0.0394	4.0 mm	3.0 mm	39.0 mm	Regular	254-L001395	—	—	—
1.0 mm	0.0394	5.5 mm	3.0 mm	39.0 mm	Regular	254-L001400	—	—	254-L001400B
3/64	0.0469	3/32	1/8	1-1/2	Stub	252-L001010	252-L001011	252-L001012	252-L001013
3/64	0.0469	1/8	1/8	1-1/2	Regular	254-L001007	254-L001004	254-L021007	254-L001013
1.5 mm	0.0591	5.0 mm	3.0 mm	39.0 mm	Regular	254-L001410	—	—	254-L001410B
1/16	0.0625	1/8	1/8	1-1/2	Stub	252-L001020	252-L001021	252-L001022	252-L001023
1/16	0.0625	1/4	1/8	1-1/2	Regular	254-L001008AA	254-L001002	254-L000999	254-L001003
5/64	0.0781	5/32	1/8	1-1/2	Stub	252-L001025	252-L011025	252-L021025	252-L031025
5/64	0.0781	1/4	1/8	1-1/2	Regular	254-L001009	254-L001008	254-L021009	254-L001018
2.0 mm	0.0787	8.0 mm	3.0 mm	39.0 mm	Regular	254-L001420	—	—	254-L001420B

Standard Endmills

2 Flute Ballnose



2 FLUTE BALLNOSE *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
3/32	0.0938	3/16	1/8	1-1/2	Stub	252-L001030	252-L001031	252-L001032	252-L001033
3/32	0.0938	3/8	1/8	1-1/2	Regular	254-L001010	254-L001011	254-L001012	254-L001019
2.5 mm	0.0984	9.5 mm	3.0 mm	39.0 mm	Regular	254-L001425	—	—	254-L001425B
7/64	0.1094	7/32	1/8	1-1/2	Stub	252-L001035	252-L011035	252-L021035	252-L031035
7/64	0.1094	3/8	1/8	1-1/2	Regular	254-L001014	254-L001015	254-L021014	254-L001017
3.0 mm	0.1181	12.0 mm	3.0 mm	39.0 mm	Regular	254-L001430	—	—	254-L001430B
1/8	0.1250	1/4	1/8	1-1/2	Stub	252-L001040	252-L001041	252-L001042	252-L001043
1/8	0.1250	1/2	1/8	1-1/2	Regular	254-L001020	254-L001021	254-L001026	254-L001023
1/8	0.1250	3/4	1/8	2-1/4	Long	257-L001001	257-L001002	257-L001003	257-L001004
1/8	0.1250	1	1/8	3	XLong	260-L001001	260-L001002	260-L001003	260-L001004
3.5 mm	0.1378	12.0 mm	4.0 mm	51.0 mm	Regular	254-L001435	—	—	254-L001435B
9/64	0.1406	9/32	3/16	2	Stub	252-L001045	252-L011045	252-L021045	252-L031045
9/64	0.1406	9/16	3/16	2	Regular	254-L001024	254-L001025	254-L021024	254-L001027
5/32	0.1562	5/16	3/16	2	Stub	252-L001050	252-L001051	252-L001052	252-L001053
5/32	0.1562	9/16	3/16	2	Regular	254-L001030	254-L001031	254-L001032	254-L001033
5/32	0.1562	3/4	3/16	2-1/2	Long	257-L001005	257-L001006	257-L001007	257-L001008
5/32	0.1562	1-1/8	3/16	3	XLong	260-L001005	260-L001006	260-L001007	260-L001008
4.0 mm	0.1575	14.0 mm	4.0 mm	51.0 mm	Regular	254-L001440	—	—	254-L001440B
11/64	0.1719	5/16	3/16	2	Stub	252-L001055	252-L011055	252-L021055	252-L031055
11/64	0.1719	9/16	3/16	2	Regular	254-L001034	254-L001035	254-L021034	254-L001037
4.5 mm	0.1772	16.0 mm	5.0 mm	51.0 mm	Regular	254-L001445	—	—	254-L001445B
3/16	0.1875	3/8	3/16	2	Stub	252-L001060	252-L001061	252-L001062	252-L001063
3/16	0.1875	5/8	3/16	2	Regular	254-L001040	254-L001041	254-L001042	254-L001043
3/16	0.1875	3/4	3/16	2-1/2	Long	257-L001012	257-L001013	257-L001014	257-L001015
3/16	0.1875	1-1/8	3/16	3	XLong	260-L001010	260-L001011	260-L001012	260-L001013
5.0 mm	0.1969	16.0 mm	5.0 mm	51.0 mm	Regular	254-L001450	—	—	254-L001450B
13/64	0.2031	3/8	1/4	2	Stub	252-L001065	252-L011065	252-L021065	252-L031065
13/64	0.2031	5/8	1/4	2-1/2	Regular	254-L001044	254-L001045	254-L021044	254-L001047
7/32	0.2188	7/16	1/4	2	Stub	252-L001070	252-L001071	252-L001072	252-L001073
7/32	0.2188	5/8	1/4	2-1/2	Regular	254-L001050	254-L001051	254-L001052	254-L001053
15/64	0.2344	7/16	1/4	2	Stub	252-L001075	252-L011075	252-L021075	252-L031075
15/64	0.2344	3/4	1/4	2-1/2	Regular	254-L001054	254-L001055	254-L021054	254-L001057
6.0 mm	0.2362	19.0 mm	6.0 mm	63.0 mm	Regular	254-L001460	—	—	254-L001460B



2 FLUTE BALLNOSE *Continued*

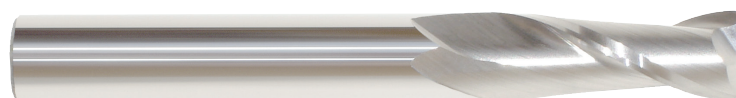
DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
1/4	0.2500	1/2	1/4	2	Stub	252-L001080	252-L001081	252-L001082	252-L001083
1/4	0.2500	3/4	1/4	2-1/2	Regular	254-L001060	254-L001061	254-L001059	254-L001062
1/4	0.2500	1-1/8	1/4	3	Long	257-L001020	257-L001021	257-L001022	257-L001023
1/4	0.2500	1-1/2	1/4	4	XLong	260-L001020	260-L001021	260-L001022	260-L001023
1/4	0.2500	1-1/2	1/4	6	Ext XXL	260-L001025	260-L001027	260-L001028	260-L001029
17/64	0.2656	3/4	5/16	2-1/2	Regular	254-L001063	254-L001064	254-L001065	254-L001066
7.0 mm	0.2756	19.0 mm	8.0 mm	63.0 mm	Regular	254-L001470	—	—	254-L001470B
9/32	0.2812	3/4	5/16	2-1/2	Regular	254-L001070	254-L001071	254-L001072	254-L001073
19/64	0.2969	13/16	5/16	2-1/2	Regular	254-L001075	254-L001076	254-L001077	254-L001078
5/16	0.3125	1/2	5/16	2	Stub	252-L001090	252-L001091	252-L001092	252-L001093
5/16	0.3125	13/16	5/16	2-1/2	Regular	254-L001080	254-L001081	254-L001082	254-L001079
5/16	0.3125	1-1/8	5/16	3	Long	257-L001030	257-L001031	257-L001032	257-L001033
5/16	0.3125	1-1/2	5/16	6	Ext XXL	260-L001033A	260-L001033C	260-L001033D	260-L001033B
5/16	0.3125	1-5/8	5/16	4	XLong	260-L001030	260-L001031	260-L001032	260-L001033
8.0 mm	0.3150	20.0 mm	8.0 mm	63.0 mm	Regular	254-L001480	—	—	254-L001480B
21/64	0.3281	1	3/8	2-1/2	Regular	254-L001083	254-L001084	254-L021083	254-L031083
11/32	0.3438	1	3/8	2-1/2	Regular	254-L001085	254-L001086	254-L001165	254-L001087
9.0 mm	0.3543	22.0 mm	10.0 mm	63.0 mm	Regular	254-L001490	—	—	254-L001490B
23/64	0.3594	1	3/8	2-1/2	Regular	254-L001088	254-L001089	254-L021088	254-L031088
3/8	0.3750	5/8	3/8	2	Stub	252-L001100	252-L001101	252-L001102	252-L001103
3/8	0.3750	1	3/8	2-1/2	Regular	254-L001090	254-L001095	254-L001167	254-L001091
3/8	0.3750	1-1/8	3/8	3	Long	257-L001040	257-L001041	257-L001042	257-L001044
3/8	0.3750	1-1/2	3/8	6	Ext XXL	260-L001035	260-L001049	260-L001037	260-L001035A
3/8	0.3750	1-3/4	3/8	4	XLong	260-L001040	260-L001041	260-L001042	260-L001043
25/64	0.3906	1	7/16	2-3/4	Regular	254-L001093	254-L001094	254-L021093	254-L031093
10.0 mm	0.3937	22.0 mm	10.0 mm	76.0 mm	Regular	254-L001500	—	—	254-L001500B
13/32	0.4062	1	7/16	2-3/4	Regular	254-L001096	254-L001097	254-L021096	254-L001118
27/64	0.4219	1	7/16	2-3/4	Regular	254-L001098	254-L001099	254-L021099	254-L031099
11.0 mm	0.4331	25.0 mm	12.0 mm	76.0 mm	Regular	254-L001510	—	—	254-L001510B
7/16	0.4375	5/8	7/16	2-1/2	Stub	252-L001110	252-L001111	252-L001112	252-L001113
7/16	0.4375	1	7/16	2-3/4	Regular	254-L001100	254-L001101	254-L001104	254-L001119
7/16	0.4375	2	7/16	4	Long	257-L001050	257-L001051	257-L001052	257-L001053
7/16	0.4375	3	7/16	6	XLong	260-L001050	260-L001051	260-L001052	260-L001053

Standard Endmills 2 Flute Ballnose



2 FLUTE BALLNOSE *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
29/64	0.4531	1	1/2	3	Regular	254-L001102	254-L001103	254-L021102	254-L031102
15/32	0.4688	1	1/2	3	Regular	254-L001105	254-L001106	254-L021105	254-L001123
12.0 mm	0.4724	25.0 mm	12.0 mm	76.0 mm	Regular	254-L001520	—	—	254-L001520B
31/64	0.4844	1	1/2	3	Regular	254-L001108	254-L001109	254-L021108	254-L031108
1/2	0.5000	5/8	1/2	2-1/2	Stub	252-L001120	252-L001121	252-L001122	252-L001123
1/2	0.5000	1	1/2	3	Regular	254-L001110	254-L001115	254-L001116	254-L001117
1/2	0.5000	1-1/2	1/2	4	Medium	257-L001059	—	—	257-L001059B
1/2	0.5000	1-1/2	1/2	6	Ext XLong	260-L001053A	260-L001057	260-L001058	260-L001059
1/2	0.5000	2	1/2	4	Long	257-L001060	257-L001061	257-L001062	257-L001063
1/2	0.5000	3	1/2	6	XLong	260-L001054	260-L001061	260-L001062	260-L001064
14.0 mm	0.5512	32.0 mm	14.0 mm	90.0 mm	Regular	254-L001540	—	—	254-L001540B
9/16	0.5625	1-1/4	9/16	3-1/2	Regular	254-L001120	254-L001121	254-L001125	254-L001124
5/8	0.6250	3/4	5/8	3	Stub	252-L001130	252-L001131	252-L001132	252-L001133
5/8	0.6250	1-1/4	5/8	3-1/2	Regular	254-L001130	254-L001131	254-L001133	254-L001134
5/8	0.6250	1-1/2	5/8	6	Ext XLong	260-L001073A	260-L001073C	260-L001073D	260-L001073B
5/8	0.6250	2-1/4	5/8	5	Long	257-L001070	257-L001071	257-L001072	257-L001073
5/8	0.6250	3	5/8	6	XLong	260-L001070	260-L001071	260-L001072	260-L001074
16.0 mm	0.6299	32.0 mm	16.0 mm	102.0 mm	Regular	254-L001560	—	—	254-L001560B
11/16	0.6875	1-1/2	3/4	4	Regular	254-L001140	254-L001141	254-L021140	254-L031140
18.0 mm	0.7087	38.0 mm	18.0 mm	102.0 mm	Regular	254-L001580	—	—	254-L001580B
3/4	0.7500	1	3/4	3	Stub	252-L001140	252-L001141	252-L001142	252-L001143
3/4	0.7500	1-1/2	3/4	4	Regular	254-L001150	254-L001151	254-L001153	254-L001154
3/4	0.7500	1-1/2	3/4	6	Ext XLong	260-L001085	260-L001085A	260-L001085B	260-L001086
3/4	0.7500	2-1/4	3/4	5	Long	257-L001080	257-L001081	257-L001082	257-L001083
3/4	0.7500	3	3/4	6	XLong	260-L001080	260-L001081	260-L001082	260-L001084
20.0 mm	0.7874	38.0 mm	20.0 mm	102.0 mm	Regular	254-L001600	—	—	254-L001600B
22.0 mm	0.8661	38.0 mm	22.0 mm	102.0 mm	Regular	254-L001620	—	—	254-L001620B
7/8	0.8750	1-1/2	7/8	4	Regular	254-L001155	254-L001156	254-L021155	254-L001158
25.0 mm	0.9843	38.0 mm	25.0 mm	102.0 mm	Regular	254-L001650	—	—	254-L001650B
1	1.0000	1-1/2	1	4	Regular	254-L001160	254-L001161	254-L001163	254-L001164
1	1.0000	1-1/2	1	6	Ext XLong	260-L001088	260-L001088A	260-L001088C	260-L001089
1	1.0000	2-1/4	1	5	Long	257-L001090	257-L001091	257-L001092	257-L001093
1	1.0000	3	1	6	XLong	260-L001090	260-L001091	260-L001092	260-L001094



STANDARD ENDMILLS 2 FLUTE

Applications:

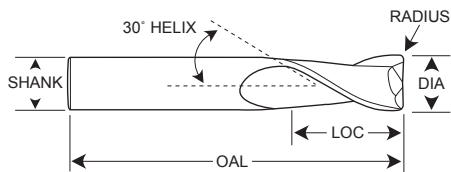
- Profiling, slotting, production milling, finishing applications
- Corner Radius promotes additional strength for longer tool life resulting in greater productivity
- Use for generating corner radius on work piece

Materials:

- Cast iron, non-ferrous metals, plastics and abrasive materials

2 FLUTE CORNER RADIUS

DIA	Decimal Inches	LOC	SHANK	OAL	RADIUS	LENGTH	UNCOATED	TIN Coated	TICN Coated	TiAIN COATED
1/8	0.1250	1/2	1/8	1-1/2	.010	Regular	237-L602300	237-L602301	237-L602302	237-L602303
1/8	0.1250	1/2	1/8	1-1/2	.015	Regular	237-L602306	237-L602307	237-L602308	237-L602309
1/8	0.1250	1/2	1/8	1-1/2	.020	Regular	237-L602312	237-L602313	237-L602314	237-L602315
1/8	0.1250	1/2	1/8	1-1/2	.030	Regular	237-L602318	237-L602319	237-L602320	237-L602321
3/16	0.1875	5/8	3/16	2	.010	Regular	237-L602424	237-L602425	237-L602426	237-L602427
3/16	0.1875	5/8	3/16	2	.015	Regular	237-L602430	237-L602431	237-L602432	237-L602433
3/16	0.1875	5/8	3/16	2	.020	Regular	237-L602436	237-L602437	237-L602438	237-L602439
3/16	0.1875	5/8	3/16	2	.030	Regular	237-L602442	237-L602443	237-L602444	237-L602445
3/16	0.1875	5/8	3/16	2	.045	Regular	237-L602448	237-L602449	237-L602450	237-L602451
3/16	0.1875	5/8	3/16	2	.060	Regular	237-L602452	—	—	—
1/4	0.2500	3/4	1/4	2-1/2	.015	Regular	237-L602551	237-L602552	237-L602553	237-L602554
1/4	0.2500	3/4	1/4	2-1/2	.020	Regular	237-L602557	237-L602558	237-L602559	237-L602560
1/4	0.2500	3/4	1/4	2-1/2	.025	Regular	237-L602563	237-L602564	237-L602565	237-L602566
1/4	0.2500	3/4	1/4	2-1/2	.030	Regular	237-L602569	237-L602570	237-L602571	237-L602572
1/4	0.2500	3/4	1/4	2-1/2	.045	Regular	237-L602575	237-L602576	237-L602577	237-L602578
1/4	0.2500	3/4	1/4	2-1/2	.060	Regular	237-L602581	237-L602582	237-L602583	237-L602584
5/16	0.3125	13/16	5/16	2-1/2	.015	Regular	237-L602684	237-L602685	237-L602686	237-L602687
5/16	0.3125	13/16	5/16	2-1/2	.020	Regular	237-L602690	237-L602691	237-L602692	237-L602693
5/16	0.3125	13/16	5/16	2-1/2	.025	Regular	237-L602696	237-L602697	237-L602698	237-L602699
5/16	0.3125	13/16	5/16	2-1/2	.030	Regular	237-L602702	237-L602703	237-L602704	237-L602705
5/16	0.3125	13/16	5/16	2-1/2	.045	Regular	237-L602708	237-L602709	237-L602710	237-L602711
5/16	0.3125	13/16	5/16	2-1/2	.060	Regular	237-L602714	237-L602715	237-L602716	237-L602717
3/8	0.3750	1	3/8	2-1/2	.015	Regular	237-L602820	237-L602821	237-L602822	237-L602823
3/8	0.3750	1	3/8	2-1/2	.020	Regular	237-L602826	237-L602827	237-L602828	237-L602829
3/8	0.3750	1	3/8	2-1/2	.025	Regular	237-L602832	237-L602833	237-L602834	237-L602835
3/8	0.3750	1	3/8	2-1/2	.030	Regular	237-L602838	237-L602839	237-L602840	237-L602841
3/8	0.3750	1	3/8	2-1/2	.045	Regular	237-L602844	237-L602845	237-L602846	237-L602847
3/8	0.3750	1	3/8	2-1/2	.060	Regular	237-L602850	237-L602851	237-L602852	237-L602853
3/8	0.3750	1	3/8	2-1/2	.090	Regular	237-L602856	237-L602857	237-L602858	237-L602859
3/8	0.3750	1	3/8	2-1/2	.125	Regular	237-L999375	—	—	—
7/16	0.4375	1	7/16	2-3/4	.015	Regular	237-L602961	237-L602962	237-L602963	237-L602964
7/16	0.4375	1	7/16	2-3/4	.020	Regular	237-L602967	237-L602968	237-L602969	237-L602970
7/16	0.4375	1	7/16	2-3/4	.025	Regular	237-L602974	237-L602975	237-L602976	237-L602977
7/16	0.4375	1	7/16	2-3/4	.030	Regular	237-L602980	237-L602981	237-L602982	237-L602983
7/16	0.4375	1	7/16	2-3/4	.045	Regular	237-L602986	237-L602987	237-L602988	237-L602989
7/16	0.4375	1	7/16	2-3/4	.060	Regular	237-L602992	237-L602993	237-L602994	237-L602995
7/16	0.4375	1	7/16	2-3/4	.090	Regular	237-L602998	237-L602999	237-L603000	237-L603001



- Solid C-2 grade premium sub-micron grain carbide with 10% cobalt
- Center Cutting
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: +0.000 / -0.002"
- Shank Tolerance: +0.0000 / -0.0005"



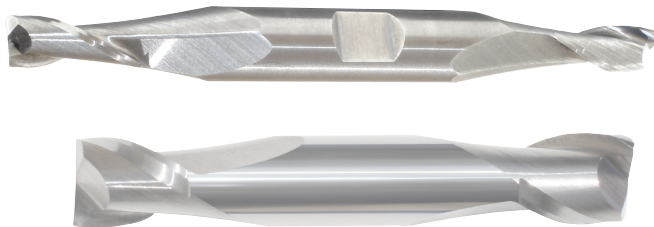
Standard Endmills 2 Flute Corner Radius



2 FLUTE CORNER RADIUS *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	RADIUS	LENGTH	UNCOATED	TIN Coated	TICN Coated	TIAIN COATED
1/2	0.5000	1	1/2	3	.015	Regular	237-L603003	237-L603004	237-L603005	237-L603006
1/2	0.5000	1	1/2	3	.020	Regular	237-L603009	237-L603010	237-L603011	237-L603012
1/2	0.5000	1	1/2	3	.025	Regular	237-L603015	237-L603016	237-L603017	237-L603018
1/2	0.5000	1	1/2	3	.030	Regular	237-L603021	237-L603022	237-L603023	237-L603024
1/2	0.5000	1	1/2	3	.045	Regular	237-L603027	237-L603028	237-L603029	237-L603030
1/2	0.5000	1	1/2	3	.060	Regular	237-L603033	237-L603034	237-L603035	237-L603036
1/2	0.5000	1	1/2	3	.090	Regular	237-L603039	237-L603040	237-L603041	237-L603042
1/2	0.5000	1	1/2	3	.125	Regular	237-L603045	237-L603046	237-L603047	237-L603048
5/8	0.6250	1-1/4	5/8	3-1/2	.015	Regular	237-L603150	237-L603151	237-L603152	237-L603153
5/8	0.6250	1-1/4	5/8	3-1/2	.020	Regular	237-L603156	237-L603157	237-L603158	237-L603159
5/8	0.6250	1-1/4	5/8	3-1/2	.025	Regular	237-L603162	237-L603163	237-L603164	237-L603165
5/8	0.6250	1-1/4	5/8	3-1/2	.030	Regular	237-L603168	237-L603169	237-L603170	237-L603171
5/8	0.6250	1-1/4	5/8	3-1/2	.045	Regular	237-L603174	237-L603175	237-L603176	237-L603177
5/8	0.6250	1-1/4	5/8	3-1/2	.060	Regular	237-L603180	237-L603181	237-L603182	237-L603183
5/8	0.6250	1-1/4	5/8	3-1/2	.090	Regular	237-L603186	237-L603187	237-L603188	237-L603189
5/8	0.6250	1-1/4	5/8	3-1/2	.125	Regular	237-L603192	237-L603193	237-L603194	237-L603195
5/8	0.6250	1-1/4	5/8	3-1/2	.250	Regular	237-L603196	—	—	—
3/4	0.7500	1-1/2	3/4	4	.015	Regular	237-L603297	237-L603298	237-L603299	237-L603300
3/4	0.7500	1-1/2	3/4	4	.020	Regular	237-L603303	237-L603304	237-L603305	237-L603306
3/4	0.7500	1-1/2	3/4	4	.025	Regular	237-L603309	237-L603310	237-L603311	237-L603312
3/4	0.7500	1-1/2	3/4	4	.030	Regular	237-L603315	237-L603316	237-L603317	237-L603318
3/4	0.7500	1-1/2	3/4	4	.045	Regular	237-L603321	237-L603322	237-L603323	237-L603324
3/4	0.7500	1-1/2	3/4	4	.060	Regular	237-L603327	237-L603328	237-L603329	237-L603330
3/4	0.7500	1-1/2	3/4	4	.090	Regular	237-L603333	237-L603334	237-L603335	237-L603336
3/4	0.7500	1-1/2	3/4	4	.125	Regular	237-L603339	237-L603340	237-L603341	237-L603342
3/4	0.7500	1-1/2	3/4	4	.190	Regular	237-L603345	237-L603346	237-L603347	237-L603348
3/4	0.7500	1-1/2	3/4	4	.250	Regular	237-L603349	—	—	—
1	1.0000	1-1/2	1	4	.015	Regular	237-L603450	237-L603451	237-L603452	237-L603453
1	1.0000	1-1/2	1	4	.020	Regular	237-L603456	237-L603457	237-L603458	237-L603459
1	1.0000	1-1/2	1	4	.025	Regular	237-L603462	237-L603463	237-L603464	237-L603465
1	1.0000	1-1/2	1	4	.030	Regular	237-L603468	237-L603469	237-L603470	237-L603471
1	1.0000	1-1/2	1	4	.045	Regular	237-L603474	237-L603475	237-L603476	237-L603477
1	1.0000	1-1/2	1	4	.060	Regular	237-L603480	237-L603481	237-L603482	237-L603483
1	1.0000	1-1/2	1	4	.090	Regular	237-L603486	237-L603487	237-L603488	237-L603489
1	1.0000	1-1/2	1	4	.125	Regular	237-L603492	237-L603493	237-L603494	237-L603495
1	1.0000	1-1/2	1	4	.190	Regular	237-L603498	237-L603499	237-L603500	237-L603501
1	1.0000	1-1/2	1	4	.250	Regular	237-L603504	237-L603505	237-L603506	237-L603507

STANDARD ENDMILLS 2 FLUTE DOUBLE END



Applications:

- Pocketing, production milling and finishing applications

Materials:

- Cast iron, non-ferrous metals, plastics and abrasive materials

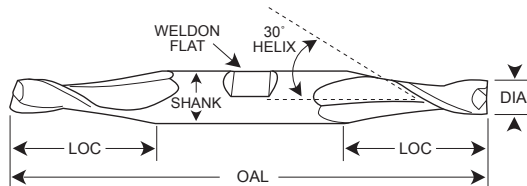
STUB LENGTH: Reduces tool deflection and promotes rigidity - Maintains excellent surface finishes

REGULAR LENGTH: Standard flute lengths for general all purpose milling

2 FLUTE SQUARE

DIA	Decimal Inches	LOC	SHANK	OAL	WELDON FLAT	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
1/32	0.0312	1/16	1/8	1-1/2	No	Stub	267-L001001	267-L001002	267-L001003	267-L001004
3/64	0.0469	3/32	1/8	1-1/2	No	Stub	267-L001010	267-L001011	267-L021010	267-L031010
1/16	0.0625	1/8	1/8	1-1/2	No	Stub	267-L001011A	267-L001021	267-L001022	267-L001015
5/64	0.0781	1/8	1/8	1-1/2	No	Stub	267-L001012	267-L001013	267-L001014	267-L001024
3/32	0.0938	3/16	1/8	1-1/2	No	Stub	267-L001030	267-L001031	267-L001033	267-L001034
7/64	0.1094	3/16	1/8	1-1/2	No	Stub	267-L001035	267-L001036	267-L001037	267-L001038
1/8	0.1250	1/4	1/8	1-1/2	No	Stub	267-L001040	267-L001041	267-L021040	267-L001044
1/8	0.1250	3/8	3/8	3	Yes	Regular	270-L001001	—	—	270-L001004
9/64	0.1406	5/16	3/16	2	No	Stub	267-L001042	267-L001043	267-L001048	267-L001049
5/32	0.1562	5/16	3/16	2	No	Stub	267-L001050	267-L001051	267-L001052	267-L001054
5/32	0.1562	7/16	3/8	3	Yes	Regular	270-L001010	—	—	270-L001013
11/64	0.1719	5/16	3/16	2	No	Stub	267-L001055	267-L001056	267-L001057	267-L001058
3/16	0.1875	3/8	3/16	2	No	Stub	267-L001060	267-L001061	267-L021061	267-L001059
3/16	0.1875	1/2	3/8	3	Yes	Regular	270-L001020	—	—	270-L001023
13/64	0.2031	1/2	1/4	2-1/2	No	Stub	267-L001063	267-L001064	267-L001065	267-L001066

Standard Endmills 2 Flute Double End Square

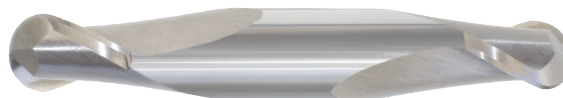


- Solid C-2 grade premium sub-micron grain carbide with 10% cobalt
- Center Cutting
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: $+0.000 / -0.002$ "
- Shank Tolerance: $+0.0000 / -0.0005$ "

2 FLUTE SQUARE *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	WELDON FLAT	LENGTH	UNCOATED	TIN Coated	TICN Coated	TiAIN Coated
7/32	0.2188	1/2	1/4	2-1/2	No	Stub	267-L001070	267-L001071	267-L001072	267-L001074
7/32	0.2188	9/16	3/8	3-1/2	Yes	Regular	270-L001030	—	—	270-L001033
15/64	0.2344	1/2	1/4	2-1/2	No	Stub	267-L001075	267-L001076	267-L001077	267-L001078
1/4	0.2500	1/2	1/4	2-1/2	No	Stub	267-L001080	267-L001081	267-L021081	267-L001084
1/4	0.2500	5/8	3/8	3-1/2	Yes	Regular	270-L001040	—	—	270-L001043
9/32	0.2812	1/2	5/16	2-1/2	No	Stub	267-L001082	267-L001086	267-L001087	267-L001088
9/32	0.2812	11/16	3/8	3-1/2	Yes	Regular	270-L001050	—	—	270-L001053
5/16	0.3125	1/2	5/16	2-1/2	No	Stub	267-L001090	267-L001091	267-L001092	267-L001093
5/16	0.3125	3/4	3/8	3-1/2	Yes	Regular	270-L001060	—	—	270-L001063
11/32	0.3438	9/16	3/8	2-1/2	No	Stub	267-L001094	267-L001095	267-L001096	267-L001098
11/32	0.3438	3/4	3/8	3-1/2	Yes	Regular	270-L001070	—	—	270-L001073
3/8	0.3750	9/16	3/8	2-1/2	No	Stub	267-L001100	267-L001101	267-L001102	267-L001104
3/8	0.3750	3/4	3/8	3-1/2	Yes	Regular	270-L001080	—	—	270-L001083
7/16	0.4375	9/16	7/16	2-3/4	No	Stub	267-L001110	267-L001111	267-L021111	267-L001114
7/16	0.4375	7/8	1/2	4	Yes	Regular	270-L001090	—	—	270-L001093
1/2	0.5000	5/8	1/2	3	No	Stub	267-L001120	267-L001121	267-L021121	267-L001124
1/2	0.5000	1	1/2	4	Yes	Regular	270-L001100	—	—	270-L001103

STANDARD ENDMILLS 2 FLUTE DOUBLE END



Application:

- Pocketing, production milling and finishing applications
- Ball end allows for three axis contour slotting and contour finishing

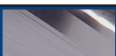
Materials:

- Cast iron, non-ferrous metals, plastics and abrasive materials

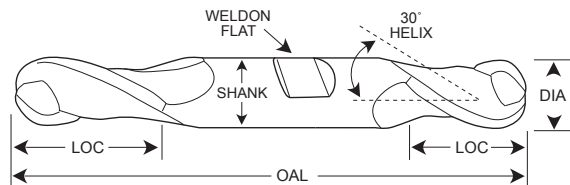
STUB LENGTH: Reduces tool deflection and promotes rigidity - Maintains excellent surface finishes

REGULAR LENGTH: Standard flute lengths for general all purpose milling

2 FLUTE BALLNOSE

DIA	Decimal Inches	LOC	SHANK	OAL	WELDON FLAT	LENGTH	   			
							UNCOATED	TIN Coated	TICN Coated	TiAIN Coated
1/32	0.0312	1/16	1/8	1-1/2	No	Stub	273-L001001	273-L001005	273-L021001	273-L031001
3/64	0.0469	3/32	1/8	1-1/2	No	Stub	273-L001001A	273-L001011	273-L021010	273-L031010
1/16	0.0625	1/8	1/8	1-1/2	No	Stub	273-L001002	273-L001021	273-L021002	273-L031003
5/64	0.0781	1/8	1/8	1-1/2	No	Stub	273-L001003	273-L001013	273-L021003	273-L031002
3/32	0.0938	3/16	1/8	1-1/2	No	Stub	273-L001003A	273-L001031	273-L021030	273-L031030
7/64	0.1094	3/16	1/8	1-1/2	No	Stub	273-L001004	273-L001036	273-L021004	273-L031004
1/8	0.1250	1/4	1/8	1-1/2	No	Stub	273-L001040	273-L001041	273-L021040	273-L031040
1/8	0.1250	3/8	3/8	3	Yes	Regular	276-L001001	—	—	276-L001004
9/64	0.1406	5/16	3/16	2	No	Stub	273-L001044	273-L001043	273-L021044	273-L031044
5/32	0.1562	5/16	3/16	2	No	Stub	273-L001050	273-L001051	273-L021050	273-L031050
5/32	0.1562	7/16	3/8	3	Yes	Regular	276-L001010	—	—	276-L001013
11/64	0.1719	5/16	3/16	2	No	Stub	273-L001055	273-L001056	273-L001057	273-L031055
3/16	0.1875	3/8	3/16	2	No	Stub	273-L001060	273-L001061	273-L021060	273-L031060
3/16	0.1875	1/2	3/8	3	Yes	Regular	276-L001020	—	—	276-L001023
13/64	0.2031	1/2	1/4	2-1/2	No	Stub	273-L001065	273-L001066	273-L021065	273-L031065

Standard Endmills 2 Flute Double End Ballnose



- Solid C-2 grade premium sub-micron grain carbide with 10% cobalt
- Center Cutting
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: +0.000 / -0.002"
- Shank Tolerance: +0.0000 / -0.0005"

2 FLUTE BALLNOSE *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	WELDON FLAT	LENGTH	UNCOATED	TIN Coated	TICN Coated	TIAIN Coated
7/32	0.2188	1/2	1/4	2-1/2	No	Stub	273-L001070	273-L001071	273-L021070	273-L031070
7/32	0.2188	9/16	3/8	3-1/2	Yes	Regular	276-L001030	—	—	276-L001033
15/64	0.2344	1/2	1/4	2-1/2	No	Stub	273-L001075	273-L001076	273-L021075	273-L031075
1/4	0.2500	1/2	1/4	2-1/2	No	Stub	273-L001080	273-L001081	273-L021080	273-L031080
1/4	0.2500	5/8	3/8	3-1/2	Yes	Regular	276-L001040	—	—	276-L001043
9/32	0.2812	1/2	5/16	2-1/2	No	Stub	273-L001085	273-L001086	273-L021085	273-L031085
9/32	0.2812	11/16	3/8	3-1/2	Yes	Regular	276-L001050	—	—	276-L001053
5/16	0.3125	1/2	5/16	2-1/2	No	Stub	273-L001090	273-L001091	273-L021090	273-L031090
5/16	0.3125	3/4	3/8	3-1/2	Yes	Regular	276-L001060	—	—	276-L001063
11/32	0.3438	9/16	3/8	2-1/2	No	Stub	273-L001094	273-L001095	273-L021094	273-L031094
11/32	0.3438	3/4	3/8	3-1/2	Yes	Regular	276-L001070	—	—	276-L001073
3/8	0.3750	9/16	3/8	2-1/2	No	Stub	273-L001100	273-L001101	273-L021100	273-L031100
3/8	0.3750	3/4	3/8	3-1/2	Yes	Regular	276-L001080	—	—	276-L001083
7/16	0.4375	9/16	7/16	2-3/4	No	Stub	273-L001110	273-L001111	273-L021110	273-L031110
7/16	0.4375	7/8	1/2	4	Yes	Regular	276-L001090	—	—	276-L001093
1/2	0.5000	5/8	1/2	3	No	Stub	273-L001120	273-L001121	273-L021120	273-L031120
1/2	0.5000	1	1/2	4	Yes	Regular	276-L001100	—	—	276-L001103

REGULAR LENGTH 3 FLUTE



3 Flute geometry allows for less chatter and better work piece finishes, using a stronger geometry than 2 flute endmills

Applications:

- Slotting and Pocketing

Materials:

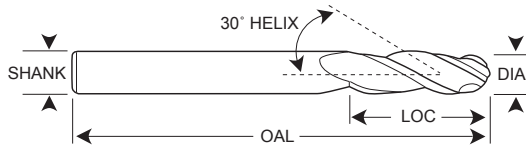
- Cast iron, non-ferrous metals, plastics and abrasive type materials

3 FLUTE SQUARE

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TIN Coated	TICN Coated	TiAIN COATED
1/32	0.0312	1/8	1/8	1-1/2	Regular	238-L001001	238-L001002	238-L001003	238-L001004
3/64	0.0469	1/8	1/8	1-1/2	Regular	238-L001020	238-L001021	238-L001022	238-L001023
1/16	0.0625	1/4	1/8	1-1/2	Regular	238-L001030	238-L001031	238-L001032	238-L001033
5/64	0.0781	1/4	1/8	1-1/2	Regular	238-L001040	238-L001041	238-L001042	238-L001043
3/32	0.0938	3/8	1/8	1-1/2	Regular	238-L001050	238-L001051	238-L001052	238-L001053
7/64	0.1094	3/8	1/8	1-1/2	Regular	238-L001060	238-L001061	238-L001062	238-L001063
1/8	0.1250	1/2	1/8	1-1/2	Regular	238-L001070	238-L001071	238-L001072	238-L001073
5/32	0.1562	9/16	3/16	2	Regular	238-L001090	238-L001091	238-L001092	238-L001093
3/16	0.1875	5/8	3/16	2	Regular	238-L001110	238-L001111	238-L001112	238-L001113
7/32	0.2188	5/8	1/4	2-1/2	Regular	238-L001130	238-L001131	238-L001132	238-L001133
1/4	0.2500	3/4	1/4	2-1/2	Regular	238-L001140	238-L001143	238-L021140	238-L031140
9/32	0.2812	3/4	5/16	2-1/2	Regular	238-L001150	—	—	—
5/16	0.3125	13/16	5/16	2-1/2	Regular	238-L001160	238-L001161	238-L001162	238-L001163
3/8	0.3750	1	3/8	2-1/2	Regular	238-L001180	238-L001184	238-L001185	238-L001186
25/64	0.3906	1	7/16	2-3/4	Regular	238-L001188	—	—	—
7/16	0.4375	1	7/16	2-3/4	Regular	238-L001200	238-L001201	238-L001202	238-L001203
1/2	0.5000	1	1/2	3	Regular	238-L001210	238-L001214	238-L001215	238-L001216
9/16	0.5625	1-1/4	9/16	3-1/2	Regular	238-L001220	—	—	—
5/8	0.6250	1-1/4	5/8	3-1/2	Regular	238-L001230	238-L001231	238-L001232	238-L001233
3/4	0.7500	1-1/2	3/4	4	Regular	238-L001250	238-L001251	238-L001252	238-L001253
1	1.0000	1-1/2	1	4	Regular	238-L001270	238-L001271	238-L001272	238-L001273

Standard Endmills

3 Flute



- Solid C-2 grade premium sub-micron grain carbide with 10% cobalt
- Center Cutting
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: $+0.000 / -0.002$ "
- Shank Tolerance: $+0.0000 / -0.0005$ "

3 FLUTE BALLNOSE

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TIN Coated	TiCN Coated	TiAIN COATED
1/32	0.0312	1/8	1/8	1-1/2	Regular	255-L001001	255-L001002	255-L001003	255-L001004
3/64	0.0469	1/8	1/8	1-1/2	Regular	255-L001020	255-L001021	255-L001022	255-L001023
1/16	0.0625	1/4	1/8	1-1/2	Regular	255-L001030	255-L001031	255-L001032	255-L001033
5/64	0.0781	1/4	1/8	1-1/2	Regular	255-L001040	255-L001041	255-L001042	255-L001043
3/32	0.0938	3/8	1/8	1-1/2	Regular	255-L001050	255-L001051	255-L001052	255-L001053
7/64	0.1094	3/8	1/8	1-1/2	Regular	255-L001060	255-L001061	255-L001062	255-L001063
1/8	0.1250	1/2	1/8	1-1/2	Regular	255-L001070	255-L001071	255-L001072	255-L001073
5/32	0.1562	9/16	3/16	2	Regular	255-L001090	255-L001091	255-L001092	255-L001093
3/16	0.1875	5/8	3/16	2	Regular	255-L001110	255-L001111	255-L001112	255-L001113
7/32	0.2188	5/8	1/4	2-1/2	Regular	255-L001130	255-L001131	255-L001132	255-L001133
1/4	0.2500	3/4	1/4	2-1/2	Regular	255-L001140	255-L001141	255-L001142	255-L001143
9/32	0.2812	3/4	5/16	2-1/2	Regular	255-L001150	—	—	—
5/16	0.3125	13/16	5/16	2-1/2	Regular	255-L001160	255-L001161	255-L001162	255-L001163
3/8	0.3750	1	3/8	2-1/2	Regular	255-L001180	255-L001181	255-L001182	255-L001183
25/64	0.3906	1	7/16	2-3/4	Regular	255-L001185	—	—	—
7/16	0.4375	1	7/16	2-3/4	Regular	255-L001200	255-L001201	255-L001202	255-L001203
1/2	0.5000	1	1/2	3	Regular	255-L001210	255-L001211	255-L001212	255-L001213
9/16	0.5625	1-1/4	9/16	3-1/2	Regular	255-L001220	—	—	—
5/8	0.6250	1-1/4	5/8	3-1/2	Regular	255-L001230	255-L001231	255-L001232	255-L001233
3/4	0.7500	1-1/2	3/4	4	Regular	255-L001250	255-L001251	255-L001252	255-L001253
1	1.0000	1-1/2	1	4	Regular	255-L001270	255-L001271	255-L001272	255-L001273

STANDARD ENDMILLS 4 FLUTE



4 flute geometry offers increased core strength

Applications:

- Profiling, slotting, production milling and finishing applications

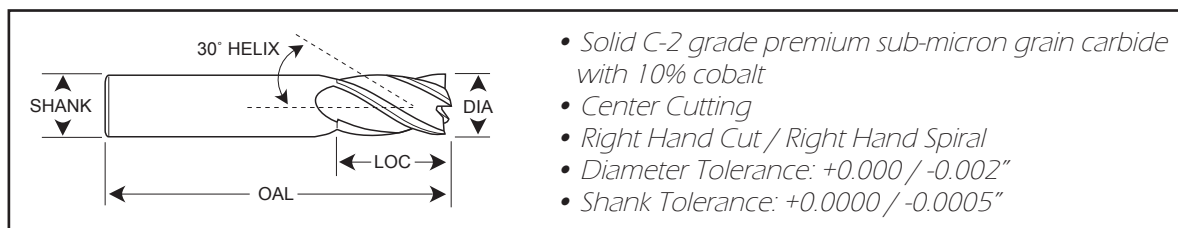
Materials:

- A wide range of ferrous metals, including stainless steels and high temperature alloys

STUB LENGTH: Reduces tool deflection and promotes rigidity - Maintains excellent surface finishes

REGULAR LENGTH: Standard flute lengths for general all purpose milling

LONG, XLONG & EXTENDED LENGTHS: For deep pocket milling and long reach applications

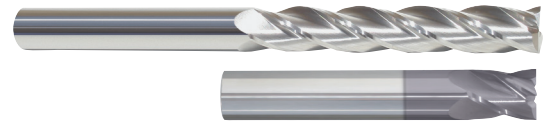


4 FLUTE SQUARE

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
1/64	0.0156	3/64	1/8	1-1/2	Regular	239-L001000	239-L000995	—	239-L000997
1/32	0.0312	1/16	1/8	1-1/2	Stub	236-L001001	236-L001002	236-L001003	236-L001004
1/32	0.0312	1/8	1/8	1-1/2	Regular	239-L001001	239-L001002	239-L001003	239-L001005
1.0 mm	0.0394	4.0 mm	3.0 mm	39.0 mm	Regular	239-L001275	—	—	239-L001272
1.0 mm	0.0394	5.5 mm	3.0 mm	39.0 mm	Regular	239-L001279	—	—	—
3/64	0.0469	3/32	1/8	1-1/2	Stub	236-L001010	236-L001011	236-L001012	236-L001013
3/64	0.0469	1/8	1/8	1-1/2	Regular	239-L001010	239-L001011	239-L001013	239-L001015
1.5 mm	0.0591	5.0 mm	3.0 mm	39.0 mm	Regular	239-L001285	—	—	239-L001287
1.5 mm	0.0591	6.5 mm	3.0 mm	39.0 mm	Regular	239-L001286AA	—	—	—
1/16	0.0625	1/8	1/8	1-1/2	Stub	236-L001020	236-L001021	236-L001022	236-L001023
1/16	0.0625	1/4	1/8	1-1/2	Regular	239-L001020	239-L001021	239-L001022	239-L001027

Standard Endmills

4 Flute Square



4 FLUTE SQUARE *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
5/64	0.0781	5/32	1/8	1-1/2	Stub	236-L001030	236-L001031	236-L001032	236-L001033
5/64	0.0781	1/4	1/8	1-1/2	Regular	239-L001030	239-L001031	239-L001032	239-L001036
2.0 mm	0.0787	8.0 mm	3.0 mm	39.0 mm	Regular	239-L001295	—	—	239-L001292
3/32	0.0938	3/16	1/8	1-1/2	Stub	236-L001040	236-L001041	236-L001042	236-L001043
3/32	0.0938	3/8	1/8	1-1/2	Regular	239-L001040	239-L001041	239-L001042	239-L001044
2.5 mm	0.0984	9.5 mm	3.0 mm	39.0 mm	Regular	239-L001300	—	—	239-L001302
7/64	0.1094	7/32	1/8	1-1/2	Stub	236-L001050	236-L001051	236-L001052	236-L001053
7/64	0.1094	3/8	1/8	1-1/2	Regular	239-L001050	239-L001051	239-L001052	239-L001053
3.0 mm	0.1181	12.0 mm	3.0 mm	39.0 mm	Regular	239-L001313	—	—	239-L001314
1/8	0.1250	1/4	1/8	1-1/2	Stub	236-L001060	236-L001061	236-L001062	236-L001063
1/8	0.1250	1/2	1/8	1-1/2	Regular	239-L001060	239-L001061	239-L001063	239-L001067
1/8	0.1250	3/4	1/8	2-1/4	Long	248-L001001	248-L001002	248-L001003	248-L001004
1/8	0.1250	1	1/8	3	XLong	251-L001001	251-L001002	251-L001003	251-L001004
3.5 mm	0.1378	12.0 mm	4.0 mm	51.0 mm	Regular	239-L001320	—	—	239-L001322
9/64	0.1406	9/32	3/16	2	Stub	236-L001070	236-L001071	236-L001072	236-L001073
9/64	0.1406	9/16	3/16	2	Regular	239-L001070	239-L001071	239-L001072	239-L001073
5/32	0.1562	5/16	3/16	2	Stub	236-L001080	236-L001081	236-L001082	236-L001083
5/32	0.1562	9/16	3/16	2	Regular	239-L001080	239-L001081	239-L001082	239-L001083
5/32	0.1562	3/4	3/16	2-1/2	Long	248-L001005	248-L001006	248-L001007	248-L001008
5/32	0.1562	1-1/8	3/16	3	XLong	251-L001005	251-L001006	251-L001007	251-L001008
4.0 mm	0.1575	14.0 mm	4.0 mm	51.0 mm	Regular	239-L001330	—	—	239-L001330B
11/64	0.1719	5/16	3/16	2	Stub	236-L001090	236-L001091	236-L001092	236-L001093
11/64	0.1719	9/16	3/16	2	Regular	239-L001090	239-L001091	239-L021090	239-L001093
4.5 mm	0.1772	16.0 mm	5.0 mm	51.0 mm	Regular	239-L001340	—	—	239-L001340B
3/16	0.1875	3/8	3/16	2	Stub	236-L001100	236-L001101	236-L001105	236-L001103
3/16	0.1875	5/8	3/16	2	Regular	239-L001100	239-L001101	239-L001102	239-L001107
3/16	0.1875	3/4	3/16	2-1/2	Long	248-L001012	248-L001013	248-L001014	248-L001015
3/16	0.1875	1	3/16	4	Ext XLong	251-L001015	—	—	—
3/16	0.1875	1-1/8	3/16	3	XLong	251-L001010	251-L001011	251-L001012	251-L001013
5.0 mm	0.1969	16.0 mm	5.0 mm	51.0 mm	Regular	239-L001350	—	—	239-L001350B



4 FLUTE SQUARE *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TIAlN Coated
13/64	0.2031	3/8	1/4	2	Stub	236-L001110	236-L001111	236-L001112	236-L001113
13/64	0.2031	5/8	1/4	2-1/2	Regular	239-L001110	239-L001111	239-L021110	239-L001113
7/32	0.2188	7/16	1/4	2	Stub	236-L001120	236-L001121	236-L001122	236-L001123
7/32	0.2188	5/8	1/4	2-1/2	Regular	239-L001120	239-L001121	239-L001122	239-L001123
15/64	0.2344	7/16	1/4	2	Stub	236-L001125	236-L001126	236-L001127	236-L001128
15/64	0.2344	3/4	1/4	2-1/2	Regular	239-L001125	239-L001126	239-L021125	239-L001128
6.0 mm	0.2362	19.0 mm	6.0 mm	63.0 mm	Regular	239-L001360	—	—	239-L001360B
1/4	0.2500	1/2	1/4	2	Stub	236-L001130	236-L001131	236-L001132	236-L001133
1/4	0.2500	3/4	1/4	2-1/2	Regular	239-L001130	239-L001131	239-L001132	239-L001137
1/4	0.2500	1	1/4	4	Ext XLong	251-L001019	—	—	—
1/4	0.2500	1-1/8	1/4	3	Long	248-L001020	248-L001021	248-L001022	248-L001023
1/4	0.2500	1-1/2	1/4	4	XLong	251-L001020	251-L001021	251-L001024	251-L001023
1/4	0.2500	1-1/2	1/4	6	Ext XXL	251-L001025	251-L001026	251-L001027	251-L001028
17/64	0.2656	3/4	5/16	2-1/2	Regular	239-L001133	239-L001135	239-L021133	239-L001136
7.0 mm	0.2756	19.0 mm	8.0 mm	63.0 mm	Regular	239-L001370	—	—	—
7.0 mm	0.2756	20.0 mm	8.0 mm	63.0 mm	Regular	—	—	—	239-L001372
9/32	0.2812	3/4	5/16	2-1/2	Regular	239-L001140	239-L001142	239-L001143	239-L001144
19/64	0.2969	13/16	5/16	2-1/2	Regular	239-L001147	239-L001145	239-L021147	239-L031147
5/16	0.3125	1/2	5/16	2	Stub	236-L001150	236-L001151	236-L001152	236-L001153
5/16	0.3125	13/16	5/16	2-1/2	Regular	239-L001150	239-L001151	239-L001152	239-L001153
5/16	0.3125	1-1/8	5/16	3	Long	248-L001030	248-L001033	248-L001029	248-L001028
5/16	0.3125	1-1/2	5/16	6	Ext XXL	251-L001029	251-L001029AA	251-L001029B	251-L001029A
5/16	0.3125	1-5/8	5/16	4	XLong	251-L001030	251-L001031	251-L001032	251-L001033
8.0 mm	0.3150	20.0 mm	8.0 mm	63.0 mm	Regular	239-L001380	—	—	239-L001380B
21/64	0.3281	1	3/8	2-1/2	Regular	239-L001154	239-L001157	239-L021154	239-L031154
11/32	0.3438	1	3/8	2-1/2	Regular	239-L001160	239-L001161	239-L001162	239-L001163
9.0 mm	0.3543	22.0 mm	10.0 mm	63.0 mm	Regular	239-L001390	—	—	239-L001390B
23/64	0.3594	1	3/8	2-1/2	Regular	239-L001169	239-L001165	239-L021169	239-L031169
3/8	0.3750	5/8	3/8	2	Stub	236-L001170	236-L001171	236-L001172	236-L001173
3/8	0.3750	1	3/8	2-1/2	Regular	239-L001170	239-L001171	239-L001176	239-L001177

Standard Endmills

4 Flute Square



4 FLUTE SQUARE *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TIN Coated	TICN Coated	TIAlN Coated
3/8	0.3750	1	3/8	4	XLong	251-L001035	—	—	251-L001037
3/8	0.3750	1-1/8	3/8	3	Long	248-L001040	248-L001041	248-L001044	248-L001043
3/8	0.3750	1-1/2	3/8	6	Ext XXL	251-L001045	251-L001046	251-L001048	251-L001047
3/8	0.3750	1-3/4	3/8	4	XLong	251-L001040	251-L001039	251-L001036	251-L001038
25/64	0.3906	1	7/16	2-3/4	Regular	239-L001175	239-L001178	239-L021175	239-L031175
10.0 mm	0.3937	22.0 mm	10.0 mm	76.0 mm	Regular	239-L001400	—	—	239-L001402
13/32	0.4062	1	7/16	2-3/4	Regular	239-L001180	239-L001181	239-L001182	239-L001183
27/64	0.4219	1	7/16	2-3/4	Regular	239-L001185	239-L001187	239-L021185	239-L031185
11.0 mm	0.4331	25.0 mm	12.0 mm	76.0 mm	Regular	239-L001410	—	—	239-L001412
7/16	0.4375	5/8	7/16	2-1/2	Stub	236-L001190	236-L001191	236-L001192	236-L001193
7/16	0.4375	1	7/16	2-3/4	Regular	239-L001190	239-L001191	239-L001192	239-L001193
7/16	0.4375	2	7/16	4	Long	248-L001050	248-L001051	248-L001052	248-L001053
7/16	0.4375	3	7/16	6	XLong	251-L001050	251-L001051	251-L001052	251-L001053
29/64	0.4531	1	1/2	3	Regular	239-L001195	239-L001194	239-L021195	239-L031195
15/32	0.4688	1	1/2	3	Regular	239-L001198	239-L001196	239-L021198	239-L001206
12.0 mm	0.4724	25.0 mm	12.0 mm	76.0 mm	Regular	239-L001420	—	—	239-L001420B
31/64	0.4844	1	1/2	3	Regular	239-L001199	239-L001197	239-L021199	239-L031199
1/2	0.5000	5/8	1/2	2-1/2	Stub	236-L001200	236-L001201	236-L001202	236-L001203
1/2	0.5000	1	1/2	3	Regular	239-L001200	239-L001201	239-L001204	239-L001207
1/2	0.5000	1	1/2	4	Medium	248-L001054	—	—	248-L001054B
1/2	0.5000	1-1/4	1/2	3	Regular	239-L001203	—	—	239-L001203A
1/2	0.5000	1-1/2	1/2	4	Medium	248-L001059	248-L001058	248-L001057	248-L001056
1/2	0.5000	1-1/2	1/2	6	Ext XLong	251-L001053A	251-L001061	251-L001062	251-L001059
1/2	0.5000	2	1/2	4	Long	248-L001060	248-L001063	248-L001065	248-L001067
1/2	0.5000	3	1/2	6	XLong	251-L001053AA	251-L001056	251-L001057	251-L001058
33/64	0.5156	1-1/4	9/16	3-1/2	Regular	239-L001208	—	—	239-L001218
17/32	0.5312	1-1/4	9/16	3-1/2	Regular	239-L001209	—	—	239-L001219
14.0 mm	0.5512	32.0 mm	14.0 mm	90.0 mm	Regular	239-L001430	—	—	239-L001430B
9/16	0.5625	1-1/4	9/16	3-1/2	Regular	239-L001210	239-L001211	239-L001212	239-L001213
19/32	0.5938	1-1/4	5/8	3-1/2	Regular	239-L001217	—	—	239-L001217B



4 FLUTE SQUARE *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
5/8	0.6250	3/4	5/8	3	Stub	236-L001220	236-L001221	236-L001222	236-L001223
5/8	0.6250	1-1/4	5/8	3-1/2	Regular	239-L001220	239-L001221	239-L001225	239-L001226
5/8	0.6250	1-1/2	5/8	6	Ext XLong	251-L001074	251-L001075	251-L001076	251-L001074A
5/8	0.6250	2-1/4	5/8	5	Long	248-L001070	248-L001071	248-L001072	248-L001073
5/8	0.6250	3	5/8	6	XLong	251-L001070	251-L001071	251-L001072	251-L001073
16.0 mm	0.6299	32.0 mm	16.0 mm	102.0 mm	Regular	239-L001440	—	—	239-L001442
41/64	0.6406	1-1/2	3/4	4	Regular	239-L001236	—	—	239-L001237
21/32	0.6562	1-1/2	3/4	4	Regular	239-L001228	—	—	239-L001228B
11/16	0.6875	1-1/2	3/4	4	Regular	239-L001230	239-L001231	239-L001232	239-L001233
18.0 mm	0.7087	38.0 mm	18.0 mm	102.0 mm	Regular	239-L001450	—	—	239-L001452
47/64	0.7344	1-1/2	3/4	4	Regular	239-L001237F	—	—	239-L001237FB
3/4	0.7500	1	3/4	3	Stub	236-L001240	236-L001241	236-L001242	236-L001243
3/4	0.7500	1	3/4	4	Regular	239-L001238	—	—	239-L001238B
3/4	0.7500	1-1/2	3/4	4	Regular	239-L001239	239-L001241	239-L001243	239-L001244
3/4	0.7500	1-1/2	3/4	6	Ext XLong	251-L001101	251-L001101A	251-L001101B	251-L001102
3/4	0.7500	2-1/4	3/4	5	Long	248-L001080	248-L001081	248-L001082	248-L001083
3/4	0.7500	3	3/4	6	XLong	251-L001080	251-L001082	251-L001086	251-L001079
3/4	0.7500	4	3/4	7	XXLong	251-L001081	251-L001083	251-L001087	251-L001084
20.0 mm	0.7874	38.0 mm	20.0 mm	102.0 mm	Regular	239-L001460	—	—	239-L001460B
13/16	0.8125	1-1/2	7/8	4	Regular	239-L001245	—	—	239-L001246
22.0 mm	0.8661	38.0 mm	22.0 mm	102.0 mm	Regular	239-L001470	—	—	239-L001470B
7/8	0.8750	1-1/2	7/8	4	Regular	239-L001250	239-L001251	239-L001252	239-L001254
15/16	0.9375	1-1/2	1	4	Regular	239-L001255	—	—	239-L001256
25.0 mm	0.9843	38.0 mm	25.0 mm	102.0 mm	Regular	239-L001480	—	—	239-L001480B
1	1.0000	1	1	3	Stub	236-L001260	236-L001261	—	236-L001263
1	1.0000	1	1	4	Regular	239-L001259	—	—	239-L001259B
1	1.0000	1-1/2	1	4	Regular	239-L001260	239-L001261	239-L001263	239-L001264
1	1.0000	1-1/2	1	6	Ext XLong	251-L001103	251-L001105	251-L001106	251-L001104
1	1.0000	2-1/4	1	5	Long	248-L001090	248-L001091	248-L001092	248-L001093
1	1.0000	3	1	6	XLong	251-L001090	251-L001088	251-L001097	251-L001094
1	1.0000	4	1	7	XXLong	251-L001091	251-L001089	251-L001098	251-L001095
1-1/4	1.2500	2	1-1/4	4-1/2	Regular	239-L001266	—	—	—

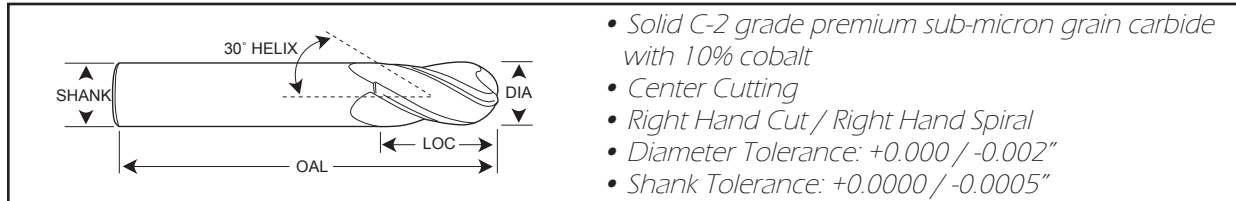
Standard Endmills

4 Flute Ballnose

STANDARD ENDMILLS 4 FLUTE BALLNOSE



4 flute geometry offers increased core strength



Applications:

- Profiling, slotting, production milling and finishing applications
- Ball end allows for three axis contour slotting and contour finishing

Materials:

- A wide range of ferrous metals, including stainless steels and high temperature alloys

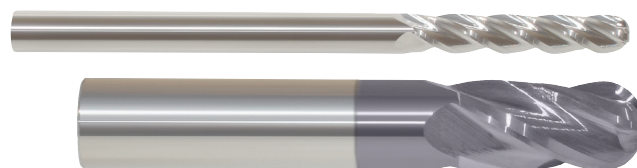
STUB LENGTH: Reduces tool deflection and promotes rigidity - Maintains excellent surface finishes

REGULAR LENGTH: Standard flute lengths for general all purpose milling

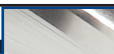
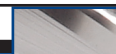
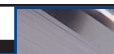
LONG, XLONG & EXTENDED LENGTHS: For deep pocket milling and long reach applications

4 FLUTE BALLNOSE

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
1/64	0.0156	3/64	1/8	1-1/2	Regular	256-L000998	256-L000995	256-L020998	256-L001007
1/32	0.0312	1/16	1/8	1-1/2	Stub	253-L001001	253-L001002	253-L001003	253-L001004
1/32	0.0312	1/8	1/8	1-1/2	Regular	256-L000999	256-L001003	256-L000996	256-L001009
1.0 mm	0.0394	4.0 mm	3.0 mm	39.0 mm	Regular	256-L001400	—	—	256-L001400B
1.0 mm	0.0394	5.5 mm	3.0 mm	39.0 mm	Regular	256-L001401	—	—	—
3/64	0.0469	3/32	1/8	1-1/2	Stub	253-L001010	253-L001011	253-L001012	253-L001013
3/64	0.0469	1/8	1/8	1-1/2	Regular	256-L001000	256-L001004	256-L021000	256-L001014
1.5 mm	0.0591	5.0 mm	3.0 mm	39.0 mm	Regular	256-L001405	—	—	256-L001410B
1.5 mm	0.0591	6.5 mm	3.0 mm	39.0 mm	Regular	256-L001410	—	—	—
1/16	0.0625	1/8	1/8	1-1/2	Stub	253-L001020	253-L001022	253-L001021	253-L001023
1/16	0.0625	1/4	1/8	1-1/2	Regular	256-L001001	256-L001002	256-L001015	256-L001016
5/64	0.0781	5/32	1/8	1-1/2	Stub	253-L001025	253-L011025	253-L021025	253-L031025
5/64	0.0781	1/4	1/8	1-1/2	Regular	256-L001005	256-L001006	256-L001008	256-L001019
2.0 mm	0.0787	8.0 mm	3.0 mm	39.0 mm	Regular	256-L001421	—	—	256-L001420B
3/32	0.0938	3/16	1/8	1-1/2	Stub	253-L001030	253-L001032	253-L001031	253-L001033
3/32	0.0938	3/8	1/8	1-1/2	Regular	256-L001010	256-L001011	256-L001012	256-L001013
2.5 mm	0.0984	9.5 mm	3.0 mm	39.0 mm	Regular	256-L001425	—	—	256-L001425B
7/64	0.1094	7/32	1/8	1-1/2	Stub	253-L001035	253-L011035	253-L021035	253-L031035
7/64	0.1094	3/8	1/8	1-1/2	Regular	256-L001017	256-L001052	256-L021051	256-L001039
3.0 mm	0.1181	12.0 mm	3.0 mm	39.0 mm	Regular	256-L001430	—	—	256-L001430B
1/8	0.1250	1/4	1/8	1-1/2	Stub	253-L001040	253-L001042	253-L001041	253-L001043
1/8	0.1250	1/2	1/8	1-1/2	Regular	256-L001020	256-L001021	256-L001023	256-L001028
1/8	0.1250	3/4	1/8	2-1/4	Long	259-L001001	259-L001002	259-L001003	259-L001004
1/8	0.1250	1	1/8	3	XLONG	262-L001001	262-L001002	262-L001003	262-L001004
3.5 mm	0.1378	12.0 mm	4.0 mm	51.0 mm	Regular	256-L001435	—	—	256-L001435B



4 FLUTE BALLNOSE *Continued*

									
DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
9/64	0.1406	9/32	3/16	2	Stub	253-L001045	253-L011045	253-L021045	253-L031045
9/64	0.1406	9/16	3/16	2	Regular	256-L001025	256-L001026	256-L001027	256-L001029
5/32	0.1562	5/16	3/16	2	Stub	253-L001050	253-L001052	253-L001051	253-L001053
5/32	0.1562	9/16	3/16	2	Regular	256-L001030	256-L001031	256-L001033	256-L001032
5/32	0.1562	3/4	3/16	2-1/2	Long	259-L001005	259-L001006	259-L001008	259-L001007
5/32	0.1562	1-1/8	3/16	3	XLong	262-L001005	262-L001006	262-L001008	262-L001009
4.0 mm	0.1575	14.0 mm	4.0 mm	51.0 mm	Regular	256-L001440	—	—	256-L001440B
11/64	0.1719	5/16	3/16	2	Stub	253-L001055	253-L011055	253-L021055	253-L031055
11/64	0.1719	9/16	3/16	2	Regular	256-L001035	256-L001055	256-L021054	256-L001043
4.5 mm	0.1772	16.0 mm	5.0 mm	51.0 mm	Regular	256-L001445	—	—	256-L001445B
3/16	0.1875	3/8	3/16	2	Stub	253-L001060	253-L001062	253-L001061	253-L001063
3/16	0.1875	5/8	3/16	2	Regular	256-L001040	256-L001041	256-L001042	256-L001034
3/16	0.1875	3/4	3/16	2-1/2	Long	259-L001012	259-L001013	259-L001014	259-L001016
3/16	0.1875	1	3/16	4	Ext XLong	262-L001015	—	—	—
3/16	0.1875	1-1/8	3/16	3	XLong	262-L001010	262-L001011	262-L001012	262-L001014
5.0 mm	0.1969	16.0 mm	5.0 mm	51.0 mm	Regular	256-L001450	—	—	256-L001450B
13/64	0.2031	3/8	1/4	2	Stub	253-L001065	253-L011065	253-L021065	253-L031065
13/64	0.2031	5/8	1/4	2-1/2	Regular	256-L001046	256-L001059	256-L021058	256-L001047
7/32	0.2188	7/16	1/4	2	Stub	253-L001070	253-L001072	253-L001071	253-L001073
7/32	0.2188	5/8	1/4	2-1/2	Regular	256-L001050	256-L001056	256-L001037	256-L001036
15/64	0.2344	7/16	1/4	2	Stub	253-L001075	253-L011075	253-L021075	253-L031075
15/64	0.2344	3/4	1/4	2-1/2	Regular	256-L001053	256-L001057	256-L021053	256-L001045
6.0 mm	0.2362	19.0 mm	6.0 mm	63.0 mm	Regular	256-L001460	—	—	256-L001460B
1/4	0.2500	1/2	1/4	2	Stub	253-L001080	253-L001082	253-L001081	253-L001083
1/4	0.2500	3/4	1/4	2-1/2	Regular	256-L001060	256-L001062	256-L001063	256-L001066
1/4	0.2500	1	1/4	4	Ext XLong	262-L001019	—	—	—
1/4	0.2500	1-1/8	1/4	3	Long	259-L001020	259-L001021	259-L001022	259-L001024
1/4	0.2500	1-1/2	1/4	4	XLong	262-L001020	262-L001021	262-L001022	262-L001024
1/4	0.2500	1-1/2	1/4	6	Ext XXL	262-L001026	262-L001026A	262-L001026C	262-L001027
17/64	0.2656	3/4	5/16	2-1/2	Regular	256-L001061	256-L001064	256-L021061	256-L031061
7.0 mm	0.2756	19.0 mm	8.0 mm	63.0 mm	Regular	256-L001470	—	—	256-L001470B
9/32	0.2812	3/4	5/16	2-1/2	Regular	256-L001070	256-L001065	256-L001067	256-L001068
19/64	0.2969	13/16	5/16	2-1/2	Regular	256-L001071	256-L001072	256-L021071	256-L031071
5/16	0.3125	1/2	5/16	2	Stub	253-L001090	253-L001092	253-L001091	253-L001093
5/16	0.3125	13/16	5/16	2-1/2	Regular	256-L001080	256-L001082	256-L001083	256-L001073
5/16	0.3125	1-1/8	5/16	3	Long	259-L001030	259-L001031	259-L001032	259-L001034
5/16	0.3125	1-1/2	5/16	6	Ext XXL	262-L001035	262-L001035A	262-L001035C	262-L001036
5/16	0.3125	1-5/8	5/16	4	XLong	262-L001030	262-L001031	262-L001032	262-L001034
8.0 mm	0.3150	20.0 mm	8.0 mm	63.0 mm	Regular	256-L001480	—	—	256-L001480B
21/64	0.3281	1	3/8	2-1/2	Regular	256-L001084	256-L001085	256-L021084	256-L031084
11/32	0.3438	1	3/8	2-1/2	Regular	256-L001086	256-L001087	256-L001169	256-L001115
9.0 mm	0.3543	22.0 mm	10.0 mm	63.0 mm	Regular	256-L001490	—	—	256-L001490B
23/64	0.3594	1	3/8	2-1/2	Regular	256-L001088	256-L001089	256-L021088	256-L031088

Standard Endmills

4 Flute Ballnose



4 FLUTE BALLNOSE *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
3/8	0.3750	5/8	3/8	2	Stub	253-L001100	253-L001101	253-L001102	253-L001103
3/8	0.3750	1	3/8	2-1/2	Regular	256-L001090	256-L001092	256-L001093	256-L001116
3/8	0.3750	1-1/8	3/8	3	Long	259-L001040	259-L001041	259-L001042	259-L001044
3/8	0.3750	1-1/2	3/8	6	Ext XXL	262-L001046	262-L001048	262-L001049	262-L001047
3/8	0.3750	1-3/4	3/8	4	XLong	262-L001040	262-L001041	262-L001042	262-L001044
25/64	0.3906	1	7/16	2-3/4	Regular	256-L001094	256-L001096	256-L021094	256-L031094
10.0 mm	0.3937	22.0 mm	10.0 mm	76.0 mm	Regular	256-L001500	—	—	256-L001500B
13/32	0.4062	1	7/16	2-3/4	Regular	256-L001095	256-L001097	256-L021095	256-L001117
27/64	0.4219	1	7/16	2-3/4	Regular	256-L001098	256-L001099	256-L021098	256-L031098
11.0 mm	0.4331	25.0 mm	12.0 mm	76.0 mm	Regular	256-L001510	—	—	256-L001510B
7/16	0.4375	5/8	7/16	2-1/2	Stub	253-L001110	253-L001111	253-L001112	253-L001113
7/16	0.4375	1	7/16	2-3/4	Regular	256-L001100	256-L001101	256-L001102	256-L001118
7/16	0.4375	2	7/16	4	Long	259-L001050	259-L001051	259-L001052	259-L001054
7/16	0.4375	3	7/16	6	XLong	262-L001050	262-L001051	262-L001052	262-L001053
29/64	0.4531	1	1/2	3	Regular	256-L001103	256-L001104	256-L021103	256-L031103
15/32	0.4688	1	1/2	3	Regular	256-L001105	256-L001107	256-L001121	256-L001119
12.0 mm	0.4724	25.0 mm	12.0 mm	76.0 mm	Regular	256-L001520	—	—	256-L001520B
31/64	0.4844	1	1/2	3	Regular	256-L001109	256-L001108	256-L021108	256-L031108
1/2	0.5000	5/8	1/2	2-1/2	Stub	253-L001120	253-L001121	253-L001122	253-L001123
1/2	0.5000	1	1/2	3	Regular	256-L001110	256-L001111	256-L001112	256-L001114
1/2	0.5000	1-1/2	1/2	4	Medium	259-L001059	259-L001057	259-L001058	259-L001059A
1/2	0.5000	1-1/2	1/2	6	Ext XLong	262-L001053A	262-L001055	262-L001056	262-L001057
1/2	0.5000	2	1/2	4	Long	259-L001060	259-L001061	259-L001062	259-L001064
1/2	0.5000	3	1/2	6	XLong	262-L001053AA	262-L001066	262-L001067	262-L001068
14.0 mm	0.5512	32.0 mm	14.0 mm	90.0 mm	Regular	256-L001540	—	—	256-L001540B
9/16	0.5625	1-1/4	9/16	3-1/2	Regular	256-L001120	256-L001125	256-L001126	256-L001127
5/8	0.6250	3/4	5/8	3	Stub	253-L001130	253-L001131	253-L001132	253-L001133
5/8	0.6250	1-1/4	5/8	3-1/2	Regular	256-L001130	256-L001131	256-L001132	256-L001135
5/8	0.6250	1-1/2	5/8	6	Ext XLong	262-L001076	262-L001076A	262-L001076C	262-L001077
5/8	0.6250	2-1/4	5/8	5	Long	259-L001070	259-L001071	259-L001072	259-L001074
5/8	0.6250	3	5/8	6	XLong	262-L001070	262-L001071	262-L001072	262-L001074
16.0 mm	0.6299	32.0 mm	16.0 mm	102.0 mm	Regular	256-L001560	—	—	256-L001560B
11/16	0.6875	1-1/2	3/4	4	Regular	256-L001140	256-L001155	256-L021156	256-L001167
18.0 mm	0.7087	38.0 mm	18.0 mm	102.0 mm	Regular	256-L001580	—	—	256-L001580B
3/4	0.7500	1	3/4	3	Stub	253-L001140	253-L001141	253-L001142	253-L001143
3/4	0.7500	1-1/2	3/4	4	Regular	256-L001150	256-L001151	256-L001152	256-L001154
3/4	0.7500	1-1/2	3/4	6	Ext XLong	262-L001085	262-L001085A	262-L001085C	262-L001086
3/4	0.7500	2-1/4	3/4	5	Long	259-L001080	259-L001081	259-L001082	259-L001084
3/4	0.7500	3	3/4	6	XLong	262-L001080	262-L001081	262-L001082	262-L001084
20.0 mm	0.7874	38.0 mm	20.0 mm	102.0 mm	Regular	256-L001600	—	—	256-L001600B
22.0 mm	0.8661	38.0 mm	22.0 mm	102.0 mm	Regular	256-L001620	—	—	256-L001620B
7/8	0.8750	1-1/2	7/8	4	Regular	256-L001157	256-L001159	256-L021157	256-L001165
25.0 mm	0.9843	38.0 mm	25.0 mm	102.0 mm	Regular	256-L001650	—	—	256-L001650B
1	1.0000	1-1/2	1	4	Regular	256-L001160	256-L001161	256-L001162	256-L001163
1	1.0000	1-1/2	1	6	Ext XLong	262-L001095	262-L001095A	262-L001095C	262-L001096
1	1.0000	2-1/4	1	5	Long	259-L001090	259-L001091	259-L001092	259-L001097
1	1.0000	3	1	6	XLong	262-L001090	262-L001091	262-L001092	262-L001094



STANDARD ENDMILLS 4 FLUTE

Applications:

- Profiling, slotting, production milling, finishing applications & generating corner radius on work piece
- Corner Radius promotes additional strength for longer tool life resulting in greater productivity
- Use for generating corner radius on work piece

Materials:

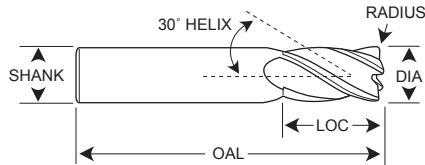
- A wide range of ferrous metals, including stainless steels and high temperature alloys

REGULAR LENGTH: Standard flute lengths for general all purpose milling

4 FLUTE CORNER RADIUS

DIA	Decimal Inches	LOC	SHANK	OAL	RADIUS	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAIN COATED
1/8	0.1250	1/2	1/8	1-1/2	.005	Regular	239-L602297	—	—	239-L602298
1/8	0.1250	1/2	1/8	1-1/2	.010	Regular	239-L602300	239-L602301	239-L602302	239-L602303
1/8	0.1250	1/2	1/8	1-1/2	.015	Regular	239-L602306	239-L602307	239-L602308	239-L602309
1/8	0.1250	1/2	1/8	1-1/2	.020	Regular	239-L602312	239-L602313	239-L602314	239-L602315
1/8	0.1250	1/2	1/8	1-1/2	.030	Regular	239-L602318	239-L602319	239-L602320	239-L602321
3/16	0.1875	5/8	3/16	2	.010	Regular	239-L602424	239-L602425	239-L602426	239-L602427
3/16	0.1875	5/8	3/16	2	.015	Regular	239-L602430	239-L602431	239-L602432	239-L602433
3/16	0.1875	5/8	3/16	2	.020	Regular	239-L602436	239-L602437	239-L602438	239-L602439
3/16	0.1875	5/8	3/16	2	.030	Regular	239-L602442	239-L602443	239-L602444	239-L602445
3/16	0.1875	5/8	3/16	2	.045	Regular	239-L602448	239-L602449	239-L602450	239-L602451
3/16	0.1875	5/8	3/16	2	.050	Regular	239-L602452	—	—	239-L602455
3/16	0.1875	5/8	3/16	2	.060	Regular	239-L602453	—	—	239-L602456
1/4	0.2500	3/4	1/4	2-1/2	.010	Regular	239-L602548	—	—	239-L602549
1/4	0.2500	3/4	1/4	2-1/2	.015	Regular	239-L602551	239-L602552	239-L602553	239-L602554
1/4	0.2500	3/4	1/4	2-1/2	.020	Regular	239-L602557	239-L602558	239-L602559	239-L602560
1/4	0.2500	3/4	1/4	2-1/2	.025	Regular	239-L602563	239-L602564	239-L602565	239-L602566
1/4	0.2500	3/4	1/4	2-1/2	.030	Regular	239-L602569	239-L602570	239-L602571	239-L602572
1/4	0.2500	3/4	1/4	2-1/2	.045	Regular	239-L602575	239-L602576	239-L602577	239-L602578
1/4	0.2500	3/4	1/4	2-1/2	.060	Regular	239-L602581	239-L602582	239-L602583	239-L602584
1/4	0.2500	3/4	1/4	2-1/2	.090	Regular	239-L602595	—	—	239-L602598

Standard Endmills 4 Flute Corner Radius



- Solid C-2 grade premium sub-micron grain carbide with 10% cobalt
- Center Cutting
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: +0.000 / -0.002"
- Shank Tolerance: +0.0000 / -0.0005"



4 FLUTE CORNER RADIUS *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	RADIUS	LENGTH	UNCOATED	TIN Coated	TiCN Coated	TiAIN COATED
5/16	0.3125	13/16	5/16	2-1/2	.015	Regular	239-L602684	239-L602685	239-L602686	239-L602687
5/16	0.3125	13/16	5/16	2-1/2	.020	Regular	239-L602690	239-L602691	239-L602692	239-L602693
5/16	0.3125	13/16	5/16	2-1/2	.025	Regular	239-L602696	239-L602697	239-L602698	239-L602699
5/16	0.3125	13/16	5/16	2-1/2	.030	Regular	239-L602702	239-L602703	239-L602704	239-L602705
5/16	0.3125	13/16	5/16	2-1/2	.045	Regular	239-L602708	239-L602709	239-L602710	239-L602711
5/16	0.3125	13/16	5/16	2-1/2	.060	Regular	239-L602714	239-L602715	239-L602716	239-L602717
5/16	0.3125	13/16	5/16	2-1/2	.090	Regular	239-L602719	—	—	239-L602722
5/16	0.3125	13/16	5/16	2-1/2	.125	Regular	239-L602723	—	—	239-L602726
3/8	0.3750	1	3/8	2-1/2	.015	Regular	239-L602820	239-L602821	239-L602822	239-L602823
3/8	0.3750	1	3/8	2-1/2	.020	Regular	239-L602826	239-L602827	239-L602828	239-L602829
3/8	0.3750	1	3/8	2-1/2	.025	Regular	239-L602832	239-L602833	239-L602834	239-L602835
3/8	0.3750	1	3/8	2-1/2	.030	Regular	239-L602838	239-L602839	239-L602840	239-L602841
3/8	0.3750	1	3/8	2-1/2	.045	Regular	239-L602844	239-L602845	239-L602846	239-L602847
3/8	0.3750	1	3/8	2-1/2	.060	Regular	239-L602850	239-L602851	239-L602852	239-L602853
3/8	0.3750	1	3/8	2-1/2	.090	Regular	239-L602856	239-L602857	239-L602858	239-L602859
3/8	0.3750	1	3/8	2-1/2	.125	Regular	239-L602860	—	—	239-L602863
7/16	0.4375	1	7/16	2-3/4	.015	Regular	239-L602961	239-L602962	239-L602963	239-L602964
7/16	0.4375	1	7/16	2-3/4	.020	Regular	239-L602967	239-L602968	239-L602969	239-L602970
7/16	0.4375	1	7/16	2-3/4	.025	Regular	239-L602974	239-L602975	239-L602976	239-L602977
7/16	0.4375	1	7/16	2-3/4	.030	Regular	239-L602980	239-L602981	239-L602982	239-L602983
7/16	0.4375	1	7/16	2-3/4	.045	Regular	239-L602986	239-L602987	239-L602988	239-L602989
7/16	0.4375	1	7/16	2-3/4	.060	Regular	239-L602992	239-L602993	239-L602994	239-L602995
7/16	0.4375	1	7/16	2-3/4	.090	Regular	239-L602998	239-L602999	239-L603000	239-L603001

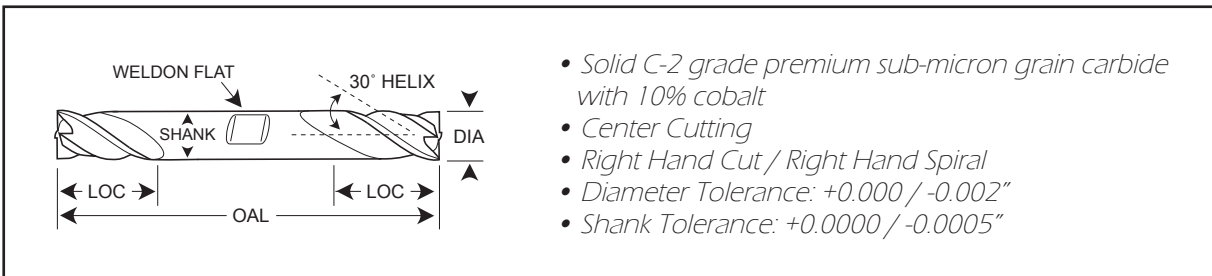
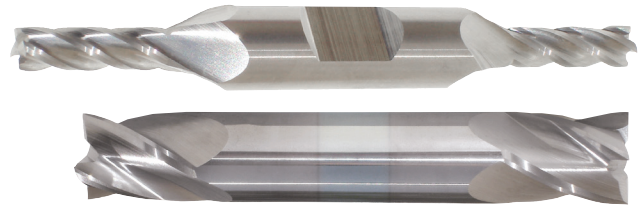


4 FLUTE CORNER RADIUS *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	RADIUS	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN COATED
1/2	0.5000	1	1/2	3	.015	Regular	239-L603003	239-L603004	239-L603005	239-L603006
1/2	0.5000	1	1/2	3	.020	Regular	239-L603009	239-L603010	239-L603011	239-L603012
1/2	0.5000	1	1/2	3	.025	Regular	239-L603015	239-L603016	239-L603017	239-L603018
1/2	0.5000	1	1/2	3	.030	Regular	239-L603021	239-L603022	239-L603023	239-L603024
1/2	0.5000	1	1/2	3	.045	Regular	239-L603027	239-L603028	239-L603029	239-L603030
1/2	0.5000	1	1/2	3	.060	Regular	239-L603033	239-L603034	239-L603035	239-L603036
1/2	0.5000	1	1/2	3	.090	Regular	239-L603039	239-L603040	239-L603041	239-L603042
1/2	0.5000	1	1/2	3	.125	Regular	239-L603045	239-L603046	239-L603047	239-L603048
5/8	0.6250	1-1/4	5/8	3-1/2	.015	Regular	239-L603150	239-L603151	239-L603152	239-L603153
5/8	0.6250	1-1/4	5/8	3-1/2	.020	Regular	239-L603156	239-L603157	239-L603158	239-L603159
5/8	0.6250	1-1/4	5/8	3-1/2	.025	Regular	239-L603162	239-L603163	239-L603164	239-L603165
5/8	0.6250	1-1/4	5/8	3-1/2	.030	Regular	239-L603168	239-L603169	239-L603170	239-L603171
5/8	0.6250	1-1/4	5/8	3-1/2	.045	Regular	239-L603174	239-L603175	239-L603176	239-L603177
5/8	0.6250	1-1/4	5/8	3-1/2	.060	Regular	239-L603180	239-L603181	239-L603182	239-L603183
5/8	0.6250	1-1/4	5/8	3-1/2	.090	Regular	239-L603186	239-L603187	239-L603188	239-L603189
5/8	0.6250	1-1/4	5/8	3-1/2	.125	Regular	239-L603192	239-L603193	239-L603194	239-L603195
3/4	0.7500	1-1/2	3/4	4	.015	Regular	239-L603297	239-L603298	239-L603299	239-L603300
3/4	0.7500	1-1/2	3/4	4	.020	Regular	239-L603303	239-L603304	239-L603305	239-L603306
3/4	0.7500	1-1/2	3/4	4	.025	Regular	239-L603309	239-L603310	239-L603311	239-L603312
3/4	0.7500	1-1/2	3/4	4	.030	Regular	239-L603315	239-L603316	239-L603317	239-L603318
3/4	0.7500	1-1/2	3/4	4	.045	Regular	239-L603321	239-L603322	239-L603323	239-L603324
3/4	0.7500	1-1/2	3/4	4	.060	Regular	239-L603327	239-L603328	239-L603329	239-L603330
3/4	0.7500	1-1/2	3/4	4	.090	Regular	239-L603333	239-L603334	239-L603335	239-L603336
3/4	0.7500	1-1/2	3/4	4	.125	Regular	239-L603339	239-L603340	239-L603341	239-L603342
3/4	0.7500	1-1/2	3/4	4	.190	Regular	239-L603345	239-L603346	239-L603347	239-L603348
3/4	0.7500	1-1/2	3/4	4	.250	Regular	239-L603350	—	—	239-L603353
1	1.0000	1-1/2	1	4	.015	Regular	239-L603450	239-L603451	239-L603452	239-L603453
1	1.0000	1-1/2	1	4	.020	Regular	239-L603456	239-L603457	239-L603458	239-L603459
1	1.0000	1-1/2	1	4	.025	Regular	239-L603462	239-L603463	239-L603464	239-L603465
1	1.0000	1-1/2	1	4	.030	Regular	239-L603468	239-L603469	239-L603470	239-L603471
1	1.0000	1-1/2	1	4	.045	Regular	239-L603474	239-L603475	239-L603476	239-L603477
1	1.0000	1-1/2	1	4	.060	Regular	239-L603480	239-L603481	239-L603482	239-L603483
1	1.0000	1-1/2	1	4	.090	Regular	239-L603486	239-L603487	239-L603488	239-L603489
1	1.0000	1-1/2	1	4	.125	Regular	239-L603492	239-L603493	239-L603494	239-L603495
1	1.0000	1-1/2	1	4	.190	Regular	239-L603498	239-L603499	239-L603500	239-L603501
1	1.0000	1-1/2	1	4	.250	Regular	239-L603504	239-L603505	239-L603506	239-L603507

Standard Endmills 4 Flute Double End Square

STANDARD ENDMILLS 4 FLUTE DOUBLE END



Applications:

- Profiling, slotting, production milling and finishing applications

Materials:

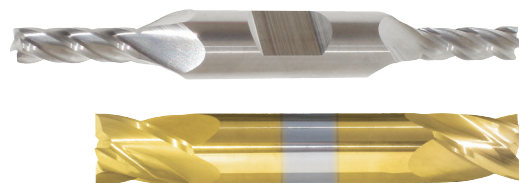
- A wide range of ferrous metals, including stainless steels and high temperature alloys

STUB LENGTH: Reduces tool deflection and promotes rigidity - Maintains excellent surface finishes

REGULAR LENGTH: Standard flute lengths for general all purpose milling

4 FLUTE SQUARE

DIA	Decimal Inches	LOC	SHANK	OAL	WELDON FLAT	LENGTH	UNCOATED	TiN Coated	TiCN Coated	TiAlN Coated
1/32	0.0312	1/16	1/8	1-1/2	No	Stub	269-L001001	269-L001011	269-L001003	269-L001004
3/64	0.0469	3/32	1/8	1-1/2	No	Stub	269-L001010	269-L001012	269-L001013	269-L001014
1/16	0.0625	1/8	1/8	1-1/2	No	Stub	269-L001020	269-L001021	269-L001028	269-L031025
5/64	0.0781	1/8	1/8	1-1/2	No	Stub	269-L001025	269-L001026	269-L021025	269-L001027
3/32	0.0938	3/16	1/8	1-1/2	No	Stub	269-L001030	269-L001031	269-L001037	269-L001034
7/64	0.1094	3/16	1/8	1-1/2	No	Stub	269-L001035	269-L001036	269-L021036	269-L031035
1/8	0.1250	1/4	1/8	1-1/2	No	Stub	269-L001040	269-L001041	269-L001045	269-L001047
1/8	0.1250	3/8	3/8	3	Yes	Regular	272-L001001	—	—	272-L001003

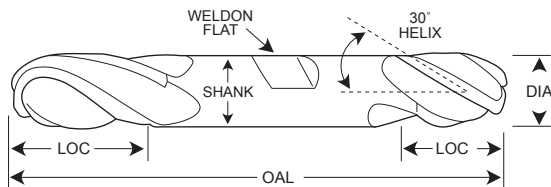


4 FLUTE SQUARE *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	WELDON FLAT	LENGTH	UNCOATED	TIN Coated	TiCN Coated	TiAIN Coated
9/64	0.1406	5/16	3/16	2	No	Stub	269-L001042	269-L001044	269-L021044	269-L031042
5/32	0.1562	5/16	3/16	2	No	Stub	269-L001050	269-L001051	269-L001053	269-L001054
5/32	0.1562	7/16	3/8	3	Yes	Regular	272-L001010	—	—	272-L001013
11/64	0.1719	5/16	3/16	2	No	Stub	269-L001055	269-L001056	269-L021055	269-L001057
3/16	0.1875	3/8	3/16	2	No	Stub	269-L001060	269-L001061	269-L001062	269-L001064
3/16	0.1875	1/2	3/8	3	Yes	Regular	272-L001020	—	—	272-L001023
13/64	0.2031	1/2	1/4	2-1/2	No	Stub	269-L001065	269-L001066	269-L021065	269-L031065
7/32	0.2188	1/2	1/4	2-1/2	No	Stub	269-L001070	269-L001071	269-L001073	269-L001074
7/32	0.2188	9/16	3/8	3-1/2	Yes	Regular	272-L001030	—	—	272-L001033
15/64	0.2344	1/2	1/4	2-1/2	No	Stub	269-L001075	269-L001076	269-L021075	269-L031075
1/4	0.2500	1/2	1/4	2-1/2	No	Stub	269-L001080	269-L001081	269-L001083	269-L001085
1/4	0.2500	5/8	3/8	3-1/2	Yes	Regular	272-L001040	—	—	272-L001043
9/32	0.2812	1/2	5/16	2-1/2	No	Stub	269-L001082	269-L001087	269-L001088	269-L001089
9/32	0.2812	11/16	3/8	3-1/2	Yes	Regular	272-L001050	—	—	272-L001053
5/16	0.3125	1/2	5/16	2-1/2	No	Stub	269-L001090	269-L001091	269-L001093	269-L001094
5/16	0.3125	3/4	3/8	3-1/2	Yes	Regular	272-L001060	—	—	272-L001063
11/32	0.3438	9/16	3/8	2-1/2	No	Stub	269-L001092	269-L001095	269-L001096	269-L031092
11/32	0.3438	3/4	3/8	3-1/2	Yes	Regular	272-L001070	—	—	272-L001073
3/8	0.3750	9/16	3/8	2-1/2	No	Stub	269-L001100	269-L001101	269-L001102	269-L001103
3/8	0.3750	3/4	3/8	3-1/2	Yes	Regular	272-L001080	—	—	272-L001083
7/16	0.4375	9/16	7/16	2-3/4	No	Stub	269-L001110	269-L021111	269-L001111	269-L031110
7/16	0.4375	7/8	1/2	4	Yes	Regular	272-L001090	—	—	272-L001093
1/2	0.5000	5/8	1/2	3	No	Stub	269-L001120	269-L001121	269-L001122	269-L001124
1/2	0.5000	1	1/2	4	Yes	Regular	272-L001100	—	—	272-L001103

STANDARD ENDMILLS 4 FLUTE DOUBLE END

Standard Endmills 4 Flute Double End Ballnose



- Solid C-2 grade premium sub-micron grain carbide with 10% cobalt
- Center Cutting
- Right Hand Cut / Right Hand Spiral
- Diameter Tolerance: +0.000 / -0.002"
- Shank Tolerance: +0.0000 / -0.0005"

Application:

- Pocketing, production milling and finishing applications
- Ball end allows for three axis contour slotting and contour finishing

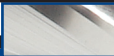
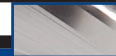
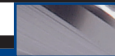
Materials:

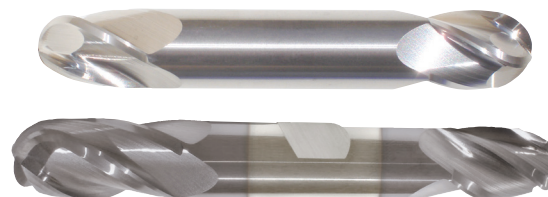
- Cast iron, non-ferrous metals, plastics and abrasive materials

STUB LENGTH: Reduces tool deflection and promotes rigidity - Maintains excellent surface finishes

REGULAR LENGTH: Standard flute lengths for general all purpose milling

4 FLUTE BALLNOSE

DIA	Decimal Inches	LOC	SHANK	OAL	WELDON FLAT	LENGTH				
1/32	0.0312	1/16	1/8	1-1/2	No	Stub	275-L001001	275-L001011	275-L021001	275-L031011
3/64	0.0469	3/32	1/8	1-1/2	No	Stub	275-L001010	275-L001012	275-L021010	275-L031012
1/16	0.0625	1/8	1/8	1-1/2	No	Stub	275-L001010A	275-L001021	275-L001022	275-L031026
5/64	0.0781	1/8	1/8	1-1/2	No	Stub	275-L001019	275-L001026	275-L001027	275-L031021
3/32	0.0938	3/16	1/8	1-1/2	No	Stub	275-L001030	275-L001031	275-L001032	275-L031031
7/64	0.1094	3/16	1/8	1-1/2	No	Stub	275-L001035	275-L001036	275-L001037	275-L031036
1/8	0.1250	1/4	1/8	1-1/2	No	Stub	275-L001040	275-L001041	275-L001042	275-L001043
1/8	0.1250	3/8	3/8	3	Yes	Regular	278-L001001	—	—	278-L001003
9/64	0.1406	5/16	3/16	2	No	Stub	275-L001044	275-L001045	275-L001046	275-L031044



4 FLUTE BALLNOSE *Continued*

DIA	Decimal Inches	LOC	SHANK	OAL	WELDON FLAT	LENGTH	UNCOATED	TIN Coated	TICN Coated	TiAlN Coated
5/32	0.1562	5/16	3/16	2	No	Stub	275-L001050	275-L001051	275-L001052	275-L001053
5/32	0.1562	7/16	3/8	3	Yes	Regular	278-L001010	—	—	278-L001013
11/64	0.1719	5/16	3/16	2	No	Stub	275-L001055	275-L001056	275-L001057	275-L031055
3/16	0.1875	3/8	3/16	2	No	Stub	275-L001060	275-L001061	275-L001062	275-L001063
3/16	0.1875	1/2	3/8	3	Yes	Regular	278-L001020	—	—	278-L001023
13/64	0.2031	1/2	1/4	2-1/2	No	Stub	275-L001065	275-L001066	275-L001067	275-L031065
7/32	0.2188	1/2	1/4	2-1/2	No	Stub	275-L001070	275-L001071	275-L001072	275-L031070
7/32	0.2188	9/16	3/8	3-1/2	Yes	Regular	278-L001030	—	—	278-L001033
15/64	0.2344	1/2	1/4	2-1/2	No	Stub	275-L001075	275-L001076	275-L001077	275-L031075
1/4	0.2500	1/2	1/4	2-1/2	No	Stub	275-L001080	275-L001081	275-L001082	275-L001083
1/4	0.2500	5/8	3/8	3-1/2	Yes	Regular	278-L001040	—	—	278-L001043
9/32	0.2812	1/2	5/16	2-1/2	No	Stub	275-L001085	275-L001087	275-L001088	275-L031085
9/32	0.2812	11/16	3/8	3-1/2	Yes	Regular	278-L001050	—	—	278-L001053
5/16	0.3125	1/2	5/16	2-1/2	No	Stub	275-L001090	275-L001091	275-L001093	275-L001094
5/16	0.3125	3/4	3/8	3-1/2	Yes	Regular	278-L001060	—	—	278-L001063
11/32	0.3438	9/16	3/8	2-1/2	No	Stub	275-L001092	275-L001095	275-L001096	275-L031092
11/32	0.3438	3/4	3/8	3-1/2	Yes	Regular	278-L001070	—	—	278-L001073
3/8	0.3750	9/16	3/8	2-1/2	No	Stub	275-L001100	275-L001101	275-L001102	275-L001104
3/8	0.3750	3/4	3/8	3-1/2	Yes	Regular	278-L001080	—	—	278-L001083
7/16	0.4375	9/16	7/16	2-3/4	No	Stub	275-L001110	275-L001111	275-L001112	275-L001114
7/16	0.4375	7/8	1/2	4	Yes	Regular	278-L001090	—	—	278-L001093
1/2	0.5000	5/8	1/2	3	No	Stub	275-L001120	275-L001121	275-L001122	275-L001124
1/2	0.5000	1	1/2	4	Yes	Regular	278-L001100	—	—	278-L001103



STRAIGHT FLUTE CHUCKING REAMERS

- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- 45° Chamfered End
- Diameter Tolerances:

0.0280 to 0.2500"
+0.0000 / +0.0002"

0.2501" and up
+0.0000 / +0.0003"

Materials:

- Aluminum, brass, bronze, plastics, steels & abrasive materials

REAMERS

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
4	0.0280	#70	1/4	1-1/2	533-R003070
4	0.0285		1/4	1-1/2	533-R0000285
4	0.0290		1/4	1-1/2	533-R0000290
4	0.0292	#69	1/4	1-1/2	533-R003069
4	0.0295		1/4	1-1/2	533-R0000295
4	0.0300		1/4	1-1/2	533-R0000300
4	0.0305		1/4	1-1/2	533-R0000305
4	0.0310	#68	1/4	1-1/2	533-R003068
4	0.0312	1/32	1/4	1-1/2	533-R001002
4	0.0315		1/4	1-1/2	533-R0000315
4	0.0320	#67	1/4	1-1/2	533-R003067
4	0.0325		1/4	1-1/2	533-R0000325
4	0.0330	#66	1/4	1-1/2	533-R003066
4	0.0335		1/4	1-1/2	533-R0000335
4	0.0340		1/4	1-1/2	533-R0000340
4	0.0345		1/4	1-1/2	533-R0000345
4	0.0350	#65	1/4	1-1/2	533-R003065
4	0.0355		1/4	1-1/2	533-R0000355
4	0.0360	#64	1/4	1-1/2	533-R003064
4	0.0365		1/4	1-1/2	533-R0000365
4	0.0370	#63	1/4	1-1/2	533-R003063
4	0.0375		1/4	1-1/2	533-R0000375
4	0.0380	#62	1/4	1-1/2	533-R003062
4	0.0385		1/4	1-1/2	533-R0000385
4	0.0390	#61	1/4	1-1/2	533-R003061
4	0.0394	1.0 mm	6 mm	38 mm	533-R004001
4	0.0395		1/4	1-1/2	533-R0000395
4	0.0400	#60	1/4	1-1/2	533-R003060
4	0.0405		1/4	1-1/2	533-R0000405
4	0.0410	#59	1/4	1-1/2	533-R003059
4	0.0415		1/4	1-1/2	533-R0000415
4	0.0420	#58	3/8	1-1/2	533-R003058
4	0.0425		3/8	1-1/2	533-R0000425

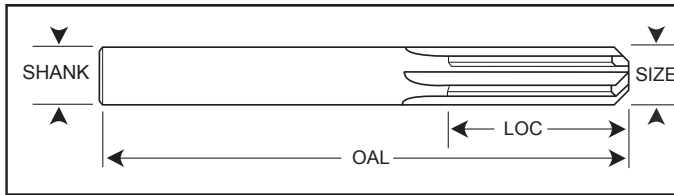


Straight Flute Chucking Reamers

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
4	0.0430	#57	3/8	1-1/2	533-R003057
4	0.0435		3/8	1-1/2	533-R0000435
4	0.0440		3/8	1-1/2	533-R0000440
4	0.0445		3/8	1-1/2	533-R0000445
4	0.0450		3/8	1-1/2	533-R0000450
4	0.0455		3/8	1-1/2	533-R0000455
4	0.0460		3/8	1-1/2	533-R0000460
4	0.0465	#56	3/8	1-1/2	533-R003056
4	0.0469	3/64	3/8	1-1/2	533-R001003
4	0.0470		3/8	1-1/2	533-R0000470
4	0.0475		3/8	1-1/2	533-R0000475
4	0.0480		3/8	1-1/2	533-R0000480
4	0.0485		3/8	1-1/2	533-R0000485
4	0.0490		3/8	1-1/2	533-R0000490
4	0.0495		3/8	1-1/2	533-R0000495
4	0.0500		3/8	1-1/2	533-R0000500
4	0.0505		3/8	1-1/2	533-R0000505
4	0.0510		3/8	1-1/2	533-R0000510
4	0.0515		3/8	1-1/2	533-R0000515
4	0.0520	#55	3/8	1-1/2	533-R003055
4	0.0525		3/8	1-1/2	533-R0000525
4	0.0530		3/8	1-1/2	533-R0000530
4	0.0535		3/8	1-1/2	533-R0000535
4	0.0540		3/8	1-1/2	533-R0000540
4	0.0545		3/8	1-1/2	533-R0000545
4	0.0550	#54	3/8	1-1/2	533-R003054
4	0.0555		3/8	1-1/2	533-R0000555
4	0.0560		3/8	1-1/2	533-R0000560
4	0.0565		3/8	1-1/2	533-R0000565
4	0.0570		3/8	1-1/2	533-R0000570
4	0.0575		3/8	1-1/2	533-R0000575
4	0.0580		3/8	1-1/2	533-R0000580
4	0.0585		3/8	1-1/2	533-R0000585
4	0.0590		3/8	1-1/2	533-R0000590
4	0.0591	1.5 mm	10 mm	38 mm	533-R004001.5
4	0.0595	#53	3/8	1-1/2	533-R003053
4	0.0600		3/8	1-1/2	533-R0000600
4	0.0605		3/8	1-1/2	533-R0000605
4	0.0610		3/8	1-1/2	533-R0000610
4	0.0615		3/8	1-1/2	533-R0000615
4	0.0620		3/8	1-1/2	533-R0000620
4	0.0622		3/8	1-1/2	533-R0000622
4	0.0623		3/8	1-1/2	533-R0000623
4	0.0625	1/16	3/8	1-1/2	533-R001004
4	0.0630		3/8	1-1/2	533-R0000630
4	0.0635	#52	3/8	1-1/2	533-R003052
4	0.0640		3/8	1-1/2	533-R0000640
4	0.0645		3/8	1-1/2	533-R0000645

Straight Flute Chucking Reamers



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- 45° Chamfered End

- Diameter Tolerances:

0.0280 to 0.2500" +0.0000 / +0.0002"

0.2501" and up +0.0000 / +0.0003"

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
4	0.0650		3/8	1-1/2	533-R0000650
4	0.0655		1/2	1-3/4	533-R0000655
4	0.0660		1/2	1-3/4	533-R0000660
4	0.0665		1/2	1-3/4	533-R0000665
4	0.0670	#51	1/2	1-3/4	533-R003051
4	0.0675		1/2	1-3/4	533-R0000675
4	0.0680		1/2	1-3/4	533-R0000680
4	0.0685		1/2	1-3/4	533-R0000685
4	0.0690		1/2	1-3/4	533-R0000690
4	0.0695		1/2	1-3/4	533-R0000695
4	0.0700	#50	1/2	1-3/4	533-R003050
4	0.0705		1/2	1-3/4	533-R0000705
4	0.0710		1/2	1-3/4	533-R0000710
4	0.0715		1/2	1-3/4	533-R0000715
4	0.0720		1/2	1-3/4	533-R0000720
4	0.0725		1/2	1-3/4	533-R0000725
4	0.0730	#49	1/2	1-3/4	533-R003049
4	0.0735		1/2	1-3/4	533-R0000735
4	0.0740		1/2	1-3/4	533-R0000740
4	0.0745		1/2	1-3/4	533-R0000745
4	0.0750		1/2	1-3/4	533-R0000750
4	0.0755		1/2	1-3/4	533-R0000755
4	0.0760	#48	1/2	1-3/4	533-R003048
4	0.0765		1/2	1-3/4	533-R0000765
4	0.0770		1/2	1-3/4	533-R0000770
4	0.0775		1/2	1-3/4	533-R0000775
4	0.0780		1/2	1-3/4	533-R0000780
4	0.0781	5/64	1/2	1-3/4	533-R001005
4	0.0785	#47	1/2	1-3/4	533-R003047
4	0.0787	2.0 mm	13 mm	44 mm	533-R004002
4	0.0790		1/2	1-3/4	533-R0000790
4	0.0795		1/2	1-3/4	533-R0000795
4	0.0800		1/2	1-3/4	533-R0000800
4	0.0805		1/2	1-3/4	533-R0000805
4	0.0810	#46	1/2	1-3/4	533-R003046
4	0.0815		1/2	2	533-R0000815
4	0.0820	#45	1/2	2	533-R003045
4	0.0825		1/2	2	533-R0000825
4	0.0830		1/2	2	533-R0000830
4	0.0835		1/2	2	533-R0000835
4	0.0840		1/2	2	533-R0000840
4	0.0845		1/2	2	533-R0000845
4	0.0850		1/2	2	533-R0000850
4	0.0855		1/2	2	533-R0000855

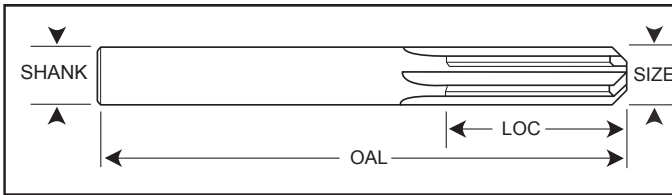


Straight Flute Chucking Reamers

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
4	0.0860	#44	1/2	2	533-R003044
4	0.0865		1/2	2	533-R0000865
4	0.0870		1/2	2	533-R0000870
4	0.0875		1/2	2	533-R0000875
4	0.0880		1/2	2	533-R0000880
4	0.0885		1/2	2	533-R0000885
4	0.0890	#43	1/2	2	533-R003043
4	0.0895		1/2	2	533-R0000895
4	0.0900		1/2	2	533-R0000900
4	0.0905		1/2	2	533-R0000905
4	0.0910		1/2	2	533-R0000910
4	0.0915		1/2	2	533-R0000915
4	0.0920		1/2	2	533-R0000920
4	0.0925		1/2	2	533-R0000925
4	0.0930		1/2	2	533-R0000930
4	0.0933		1/2	2	533-R0000933
4	0.0935	#42	1/2	2	533-R003042
4	0.0937		1/2	2	533-R0000937
4	0.0938	3/32	1/2	2	533-R001006
4	0.0940		1/2	2	533-R0000940
4	0.0945		1/2	2	533-R0000945
4	0.0950		1/2	2	533-R0000950
4	0.0955		1/2	2	533-R0000955
4	0.0960	#41	1/2	2	533-R003041
4	0.0965		1/2	2	533-R0000965
4	0.0970		5/8	2-1/4	533-R0000970
4	0.0975		5/8	2-1/4	533-R0000975
4	0.0980	#40	5/8	2-1/4	533-R003040
4	0.0984	2.5 mm	16 mm	57 mm	533-R004002.5
4	0.0985		5/8	2-1/4	533-R0000985
4	0.0990		5/8	2-1/4	533-R0000990
4	0.0995	#39	5/8	2-1/4	533-R003039
4	0.1000		5/8	2-1/4	533-R0001000
4	0.1005		5/8	2-1/4	533-R0001005
4	0.1010		5/8	2-1/4	533-R0001010
4	0.1015	#38	5/8	2-1/4	533-R003038
4	0.1020		5/8	2-1/4	533-R0001020
4	0.1025		5/8	2-1/4	533-R0001025
4	0.1030		5/8	2-1/4	533-R0001030
4	0.1035		5/8	2-1/4	533-R0001035
4	0.1040	#37	5/8	2-1/4	533-R003037
4	0.1045		5/8	2-1/4	533-R0001045
4	0.1050		5/8	2-1/4	533-R0001050
4	0.1055		5/8	2-1/4	533-R0001055
4	0.1060		5/8	2-1/4	533-R0001060
4	0.1065	#36	5/8	2-1/4	533-R003036
4	0.1070		5/8	2-1/4	533-R0001070
4	0.1075		5/8	2-1/4	533-R0001075

Straight Flute Chucking Reamers



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- 45° Chamfered End

- Diameter Tolerances:

0.0280 to 0.2500" +0.0000 / +0.0002"

0.2501" and up +0.0000 / +0.0003"

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
4	0.1080		5/8	2-1/4	533-R0001080
4	0.1085		5/8	2-1/4	533-R0001085
4	0.1090		5/8	2-1/4	533-R0001090
4	0.1094	7/64	5/8	2-1/4	533-R001007
4	0.1095		5/8	2-1/4	533-R0001095
4	0.1100	#35	5/8	2-1/4	533-R003035
4	0.1105		5/8	2-1/4	533-R0001105
4	0.1110	#34	5/8	2-1/4	533-R003034
4	0.1115		5/8	2-1/4	533-R0001115
4	0.1120		5/8	2-1/4	533-R0001120
4	0.1125		5/8	2-1/4	533-R0001125
4	0.1130	#33	5/8	2-1/4	533-R003033
4	0.1135		5/8	2-1/4	533-R0001135
4	0.1140		5/8	2-1/4	533-R0001140
4	0.1145		5/8	2-1/4	533-R0001145
4	0.1150		5/8	2-1/4	533-R0001150
4	0.1155		5/8	2-1/4	533-R0001155
4	0.1160	#32	5/8	2-1/4	533-R003032
4	0.1165		5/8	2-1/4	533-R0001165
4	0.1170		5/8	2-1/4	533-R0001170
4	0.1175		5/8	2-1/4	533-R0001175
4	0.1180		5/8	2-1/4	533-R0001180
4	0.1181	3.0 mm	16 mm	57 mm	533-R004003
4	0.1185		5/8	2-1/4	533-R0001185
4	0.1190		5/8	2-1/4	533-R0001190
4	0.1195		5/8	2-1/4	533-R0001195
4	0.1200	#31	5/8	2-1/4	533-R003031
4	0.1205		5/8	2-1/4	533-R0001205
4	0.1210		5/8	2-1/4	533-R0001210
4	0.1215		5/8	2-1/4	533-R0001215
4	0.1220		5/8	2-1/4	533-R0001220
4	0.1225		5/8	2-1/4	533-R0001225
4	0.1230	D/P	5/8	2-1/4	533-R0001230
4	0.1235		5/8	2-1/4	533-R0001235
4	0.1240	U/S	5/8	2-1/4	533-R0001240
4	0.1245		5/8	2-1/4	533-R0001245
4	0.1247	D/P	5/8	2-1/4	533-R0001247
4	0.1250	1/8	5/8	2-1/4	533-R001008
4	0.1255		5/8	2-1/4	533-R0001255
4	0.1260	O/S	5/8	2-1/4	533-R0001260
4	0.1265		5/8	2-1/4	533-R0001265
4	0.1270		5/8	2-1/4	533-R0001270
4	0.1275		5/8	2-1/4	533-R0001275
4	0.1280		5/8	2-1/4	533-R0001280

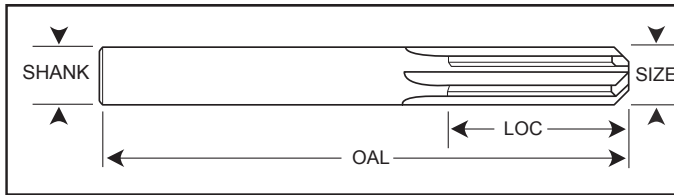


Straight Flute Chucking Reamers

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
4	0.1285	#30	5/8	2-1/4	533-R003030
4	0.1290		5/8	2-1/4	533-R0001290
4	0.1295		5/8	2-1/4	533-R0001295
4	0.1300		5/8	2-1/4	533-R0001300
4	0.1305		3/4	2-1/2	533-R0001305
4	0.1310		3/4	2-1/2	533-R0001310
4	0.1315		3/4	2-1/2	533-R0001315
4	0.1320		3/4	2-1/2	533-R0001320
4	0.1325		3/4	2-1/2	533-R0001325
4	0.1330		3/4	2-1/2	533-R0001330
4	0.1335		3/4	2-1/2	533-R0001335
4	0.1340		3/4	2-1/2	533-R0001340
4	0.1345		3/4	2-1/2	533-R0001345
4	0.1350		3/4	2-1/2	533-R0001350
4	0.1355		3/4	2-1/2	533-R0001355
4	0.1360	#29	3/4	2-1/2	533-R003029
4	0.1365		3/4	2-1/2	533-R0001365
4	0.1370		3/4	2-1/2	533-R0001370
4	0.1375		3/4	2-1/2	533-R0001375
4	0.1378	3.5 mm	19 mm	64 mm	533-R004003.5
4	0.1380		3/4	2-1/2	533-R0001380
4	0.1385		3/4	2-1/2	533-R0001385
4	0.1390		3/4	2-1/2	533-R0001390
4	0.1395		3/4	2-1/2	533-R0001395
4	0.1400		3/4	2-1/2	533-R0001400
4	0.1405	#28	3/4	2-1/2	533-R003028
4	0.1406	9/64	3/4	2-1/2	533-R001009
4	0.1410		3/4	2-1/2	533-R0001410
4	0.1415		3/4	2-1/2	533-R0001415
4	0.1420		3/4	2-1/2	533-R0001420
4	0.1425		3/4	2-1/2	533-R0001425
4	0.1430		3/4	2-1/2	533-R0001430
4	0.1435		3/4	2-1/2	533-R0001435
4	0.1440	#27	3/4	2-1/2	533-R003027
4	0.1445		3/4	2-1/2	533-R0001445
4	0.1450		3/4	2-1/2	533-R0001450
4	0.1455		3/4	2-1/2	533-R0001455
4	0.1460		3/4	2-1/2	533-R0001460
4	0.1465		3/4	2-1/2	533-R0001465
4	0.1470	#26	3/4	2-1/2	533-R003026
4	0.1475		3/4	2-1/2	533-R0001475
4	0.1480		3/4	2-1/2	533-R0001480
4	0.1485		3/4	2-1/2	533-R0001485
4	0.1490		3/4	2-1/2	533-R0001490
4	0.1495	#25	3/4	2-1/2	533-R003025
4	0.1500		3/4	2-1/2	533-R0001500
4	0.1505		3/4	2-1/2	533-R0001505
4	0.1507		3/4	2-1/2	533-R0001507
4	0.1510		3/4	2-1/2	533-R0001510

Straight Flute Chucking Reamers



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- 45° Chamfered End

- Diameter Tolerances:

0.0280 to 0.2500" +0.0000 / +0.0002"

0.2501" and up +0.0000 / +0.0003"

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
4	0.1515		3/4	2-1/2	533-R0001515
4	0.1520	#24	3/4	2-1/2	533-R003024
4	0.1525		3/4	2-1/2	533-R0001525
4	0.1530		3/4	2-1/2	533-R0001530
4	0.1535		3/4	2-1/2	533-R0001535
4	0.1540	#23	3/4	2-1/2	533-R003023
4	0.1541		3/4	2-1/2	533-R0001541
4	0.1545		3/4	2-1/2	533-R0001545
4	0.1550		3/4	2-1/2	533-R0001550
4	0.1555		3/4	2-1/2	533-R0001555
4	0.1560		3/4	2-1/2	533-R0001560
4	0.1562	5/32	3/4	2-1/2	533-R001010
4	0.1565		3/4	2-1/2	533-R0001565
4	0.1570	#22	3/4	2-1/2	533-R003022
4	0.1575	4.0 mm	19 mm	64 mm	533-R004004
4	0.1580		3/4	2-1/2	533-R0001580
4	0.1585		3/4	2-1/2	533-R0001585
4	0.1590	#21	3/4	2-1/2	533-R003021
4	0.1595		3/4	2-1/2	533-R0001595
4	0.1600		3/4	2-1/2	533-R0001600
4	0.1605		3/4	2-1/2	533-R0001605
4	0.1610	#20	7/8	2-3/4	533-R003020
4	0.1615		7/8	2-3/4	533-R0001615
4	0.1620		7/8	2-3/4	533-R0001620
4	0.1625		7/8	2-3/4	533-R0001625
4	0.1630		7/8	2-3/4	533-R0001630
4	0.1635		7/8	2-3/4	533-R0001635
4	0.1640		7/8	2-3/4	533-R0001640
4	0.1645		7/8	2-3/4	533-R0001645
4	0.1650		7/8	2-3/4	533-R0001650
4	0.1655		7/8	2-3/4	533-R0001655
4	0.1660	#19	7/8	2-3/4	533-R003019
4	0.1665		7/8	2-3/4	533-R0001665
4	0.1670		7/8	2-3/4	533-R0001670
4	0.1675		7/8	2-3/4	533-R0001675
4	0.1680		7/8	2-3/4	533-R0001680
4	0.1685		7/8	2-3/4	533-R0001685
4	0.1690		7/8	2-3/4	533-R0001690
4	0.1695	#18	7/8	2-3/4	533-R003018
4	0.1700		7/8	2-3/4	533-R0001700
4	0.1705		7/8	2-3/4	533-R0001705
4	0.1710		7/8	2-3/4	533-R0001710
4	0.1715		7/8	2-3/4	533-R0001715
4	0.1719	11/64	7/8	2-3/4	533-R001011
4	0.1720		7/8	2-3/4	533-R0001720

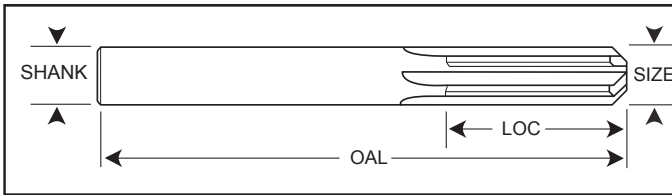


Straight Flute Chucking Reamers

REAMERS *Continued*

REAMERS <i>Continued</i>						
FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated	
4	0.1725	#17	7/8	2-3/4	533-R0001725	
4	0.1730		7/8	2-3/4	533-R003017	
4	0.1735		7/8	2-3/4	533-R0001735	
4	0.1740		7/8	2-3/4	533-R0001740	
4	0.1745		7/8	2-3/4	533-R0001745	
4	0.1750		7/8	2-3/4	533-R0001750	
4	0.1755		7/8	2-3/4	533-R0001755	
4	0.1760	#16	7/8	2-3/4	533-R0001760	
4	0.1765		7/8	2-3/4	533-R0001765	
4	0.1770		7/8	2-3/4	533-R003016	
4	0.1772		4.5 mm	22 mm	70 mm	533-R004004.5
4	0.1775		7/8	2-3/4	533-R0001775	
4	0.1780		7/8	2-3/4	533-R0001780	
4	0.1785		7/8	2-3/4	533-R0001785	
4	0.1790	#15	7/8	2-3/4	533-R0001790	
4	0.1795		7/8	2-3/4	533-R0001795	
4	0.1800		7/8	2-3/4	533-R003015	
4	0.1805		7/8	2-3/4	533-R0001805	
4	0.1810		7/8	2-3/4	533-R0001810	
4	0.1814		7/8	2-3/4	533-R0001814	
4	0.1815		7/8	2-3/4	533-R0001815	
4	0.1820	#14	7/8	2-3/4	533-R003014	
4	0.1825		7/8	2-3/4	533-R0001825	
4	0.1830		7/8	2-3/4	533-R0001830	
4	0.1835		7/8	2-3/4	533-R0001835	
4	0.1840		7/8	2-3/4	533-R0001840	
4	0.1845		7/8	2-3/4	533-R0001845	
4	0.1850		#13	7/8	2-3/4	533-R003013
4	0.1855	D/P	7/8	2-3/4	533-R0001855	
4	0.1860	U/S	7/8	2-3/4	533-R0001860	
4	0.1865		7/8	2-3/4	533-R0001865	
4	0.1867		7/8	2-3/4	533-R0001867	
4	0.1870		D/P	7/8	2-3/4	533-R0001870
4	0.1872		7/8	2-3/4	533-R0001872	
4	0.1875		3/16	7/8	2-3/4	533-R001012
4	0.1877		7/8	2-3/4	533-R0001877	
4	0.1880	O/S	7/8	2-3/4	533-R0001880	
4	0.1885		7/8	2-3/4	533-R0001885	
4	0.1890		#12	7/8	2-3/4	533-R003012
4	0.1895		7/8	2-3/4	533-R0001895	
4	0.1900		7/8	2-3/4	533-R0001900	
4	0.1905		7/8	2-3/4	533-R0001905	
4	0.1910		#11	7/8	2-3/4	533-R003011
4	0.1915	#10	7/8	2-3/4	533-R0001915	
4	0.1920		1	3	533-R0001920	
4	0.1925		1	3	533-R0001925	
4	0.1930		1	3	533-R0001930	
4	0.1935		1	3	533-R003010	

Straight Flute Chucking Reamers



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- 45° Chamfered End
- Diameter Tolerances:

0.0280 to 0.2500" +0.0000 / +0.0002"

0.2501" and up +0.0000 / +0.0003"

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
4	0.1940		1	3	533-R0001940
4	0.1945		1	3	533-R0001945
4	0.1950		1	3	533-R0001950
4	0.1955		1	3	533-R0001955
4	0.1960	#9	1	3	533-R003009
4	0.1965		1	3	533-R0001965
4	0.1969	5.0 mm	25 mm	76 mm	533-R004005
4	0.1970		1	3	533-R0001970
4	0.1975		1	3	533-R0001975
4	0.1980		1	3	533-R0001980
4	0.1985		1	3	533-R0001985
4	0.1990	#8	1	3	533-R003008
4	0.1995		1	3	533-R0001995
4	0.2000		1	3	533-R0002000
4	0.2005		1	3	533-R0002005
4	0.2010	#7	1	3	533-R003007
4	0.2015		1	3	533-R0002015
4	0.2020		1	3	533-R0002020
4	0.2025		1	3	533-R0002025
4	0.2030		1	3	533-R0002030
4	0.2031	13/64	1	3	533-R001013
4	0.2035		1	3	533-R0002035
4	0.2040	#6	1	3	533-R003006
4	0.2045		1	3	533-R0002045
4	0.2050		1	3	533-R0002050
4	0.2055	#5	1	3	533-R003005
4	0.2060		1	3	533-R0002060
4	0.2065		1	3	533-R0002065
4	0.2070		1	3	533-R0002070
4	0.2075		1	3	533-R0002075
4	0.2080		1	3	533-R0002080
4	0.2085		1	3	533-R0002085
4	0.2090	#4	1	3	533-R003004
4	0.2095		1	3	533-R0002095
4	0.2100		1	3	533-R0002100
4	0.2105		1	3	533-R0002105
4	0.2110		1	3	533-R0002110
4	0.2115		1	3	533-R0002115
4	0.2120		1	3	533-R0002120
4	0.2125		1	3	533-R0002125
4	0.2130	#3	1	3	533-R003003
4	0.2135		1	3	533-R0002135
4	0.2140		1	3	533-R0002140
4	0.2145		1	3	533-R0002145
4	0.2150		1	3	533-R0002150

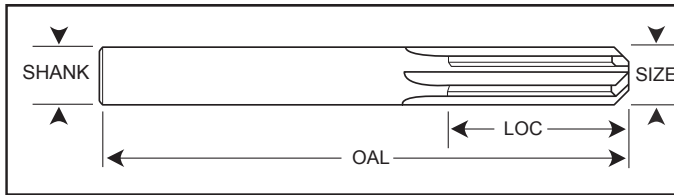


Straight Flute Chucking Reamers

REAMERS *Continued*

					
FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
4	0.2155		1	3	533-R0002155
4	0.2160		1	3	533-R0002160
4	0.2165	5.5 mm	25 mm	76 mm	533-R004005.5
4	0.2170		1	3	533-R0002170
4	0.2175		1	3	533-R0002175
4	0.2177		1	3	533-R0002177
4	0.2180		1	3	533-R0002180
4	0.2185		1	3	533-R0002185
4	0.2188	7/32	1	3	533-R001014
4	0.2190		1	3	533-R0002190
4	0.2195		1	3	533-R0002195
4	0.2200		1	3	533-R0002200
4	0.2205		1	3	533-R0002205
4	0.2210	#2	1	3	533-R003002
4	0.2215		1	3	533-R0002215
4	0.2220		1	3	533-R0002220
4	0.2225		1	3	533-R0002225
4	0.2230		1	3	533-R0002230
4	0.2235		1	3	533-R0002235
4	0.2240		1	3	533-R0002240
4	0.2245		1	3	533-R0002245
4	0.2250		1	3	533-R0002250
4	0.2255		1	3	533-R0002255
4	0.2260		1	3	533-R0002260
4	0.2265		1	3	533-R0002265
4	0.2270		1	3	533-R0002270
4	0.2275		1	3	533-R0002275
4	0.2280	#1	1	3	533-R003001
4	0.2285		1	3	533-R0002285
4	0.2290		1	3	533-R0002290
4	0.2295		1	3	533-R0002295
4	0.2300		1	3	533-R0002300
4	0.2305		1	3	533-R0002305
4	0.2310		1	3	533-R0002310
4	0.2315		1	3	533-R0002315
4	0.2320		1	3	533-R0002320
4	0.2325		1	3	533-R0002325
4	0.2330		1	3	533-R0002330
4	0.2335		1	3	533-R0002335
4	0.2340	A	1	3	533-R002000
4	0.2344	15/64	1	3	533-R001015
4	0.2345		1	3	533-R0002345
4	0.2350		1	3	533-R0002350
4	0.2355		1	3	533-R0002355
4	0.2360		1	3	533-R0002360
4	0.2362	6.0 mm	25 mm	76 mm	533-R004006
4	0.2365		1	3	533-R0002365
4	0.2370		1	3	533-R0002370

Straight Flute Chucking Reamers



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- 45° Chamfered End

- Diameter Tolerances:

0.0280 to 0.2500" +0.0000 / +0.0002"

0.2501" and up +0.0000 / +0.0003"

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
4	0.2375		1	3	533-R0002375
4	0.2380	B	1	3	533-R002001
4	0.2385		1	3	533-R0002385
4	0.2390		1	3	533-R0002390
4	0.2395		1	3	533-R0002395
4	0.2400		1	3	533-R0002400
4	0.2405		1	3	533-R0002405
4	0.2410		1	3	533-R0002410
4	0.2415		1	3	533-R0002415
4	0.2420	C	1	3	533-R002002
4	0.2425		1	3	533-R0002425
4	0.2430		1	3	533-R0002430
4	0.2435		1	3	533-R0002435
4	0.2440		1	3	533-R0002440
4	0.2445		1	3	533-R0002445
4	0.2450		1	3	533-R0002450
4	0.2455		1	3	533-R0002455
4	0.2460	D	1	3	533-R002003
4	0.2465		1	3	533-R0002465
4	0.2470		1	3	533-R0002470
4	0.2475		1	3	533-R0002475
4	0.2480	D/P	1	3	533-R0002480
4	0.2485		1	3	533-R0002485
4	0.2490	U/S	1	3	533-R0002490
4	0.2495	D/P	1	3	533-R0002495
4	0.2498		1	3	533-R0002498
4	0.2500	1/4	1	3	533-R001016
4	0.2500	E	1	3	533-R002004
4	0.2502		1	3	533-R0002502
4	0.2505		1	3	533-R0002505
4	0.2510	O/S	1	3	533-R0002510
4	0.2515		1	3	533-R0002515
4	0.2520		1	3	533-R0002520
4	0.2525		1	3	533-R0002525
4	0.2530		1	3	533-R0002530
4	0.2535		1	3	533-R0002535
4	0.2540		1	3	533-R0002540
4	0.2545		1	3	533-R0002545
4	0.2550		1	3	533-R0002550
6	0.2555		1	3	533-R0002555
6	0.2559	6.5 mm	29 mm	83 mm	533-R004006.5
6	0.2560		1-1/8	3-1/4	533-R0002560
6	0.2565		1-1/8	3-1/4	533-R0002565
6	0.2570	F	1-1/8	3-1/4	533-R002005

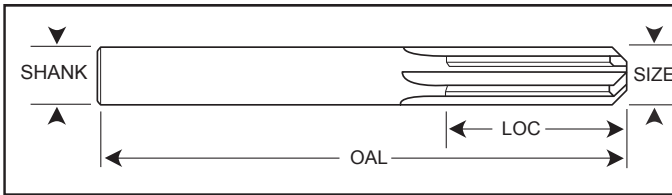


Straight Flute Chucking Reamers

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
6	0.2575		1-1/8	3-1/4	533-R0002575
6	0.2580		1-1/8	3-1/4	533-R0002580
6	0.2590		1-1/8	3-1/4	533-R0002590
6	0.2600		1-1/8	3-1/4	533-R0002600
6	0.2610	G	1-1/8	3-1/4	533-R002006
6	0.2620		1-1/8	3-1/4	533-R0002620
6	0.2630		1-1/8	3-1/4	533-R0002630
6	0.2635		1-1/8	3-1/4	533-R0002635
6	0.2640		1-1/8	3-1/4	533-R0002640
6	0.2650		1-1/8	3-1/4	533-R0002650
6	0.2655		1-1/8	3-1/4	533-R0002655
6	0.2656	17/64	1-1/8	3-1/4	533-R001017
6	0.2660	H	1-1/8	3-1/4	533-R002007
6	0.2670		1-1/8	3-1/4	533-R0002670
6	0.2680		1-1/8	3-1/4	533-R0002680
6	0.2685		1-1/8	3-1/4	533-R0002685
6	0.2690		1-1/8	3-1/4	533-R0002690
6	0.2700		1-1/8	3-1/4	533-R0002700
6	0.2710		1-1/8	3-1/4	533-R0002710
6	0.2720	I	1-1/8	3-1/4	533-R002008
6	0.2730		1-1/8	3-1/4	533-R0002730
6	0.2740		1-1/8	3-1/4	533-R0002740
6	0.2750		1-1/8	3-1/4	533-R0002750
6	0.2756	7.0 mm	29 mm	83 mm	533-R004007
6	0.2760		1-1/8	3-1/4	533-R0002760
6	0.2765		1-1/8	3-1/4	533-R0002765
6	0.2770	J	1-1/8	3-1/4	533-R002009
6	0.2780		1-1/8	3-1/4	533-R0002780
6	0.2785		1-1/8	3-1/4	533-R0002785
6	0.2790		1-1/8	3-1/4	533-R0002790
6	0.2800		1-1/8	3-1/4	533-R0002800
6	0.2805		1-1/8	3-1/4	533-R0002805
6	0.2810	K	1-1/8	3-1/4	533-R002010
6	0.2812	9/32	1-1/8	3-1/4	533-R001018
6	0.2818		1-1/8	3-1/4	533-R0002818
6	0.2820		1-1/8	3-1/4	533-R0002820
6	0.2830		1-1/8	3-1/4	533-R0002830
6	0.2840		1-1/8	3-1/4	533-R0002840
6	0.2850		1-1/8	3-1/4	533-R0002850
6	0.2860		1-1/8	3-1/4	533-R0002860
6	0.2870		1-1/8	3-1/4	533-R0002870
6	0.2880		1-1/8	3-1/4	533-R0002880
6	0.2890		1-1/8	3-1/4	533-R0002890
6	0.2900	L	1-1/8	3-1/4	533-R002011
6	0.2910		1-1/8	3-1/4	533-R0002910
6	0.2920		1-1/8	3-1/4	533-R0002920
6	0.2930		1-1/8	3-1/4	533-R0002930
6	0.2940		1-1/8	3-1/4	533-R0002940
6	0.2950	M	1-1/8	3-1/4	533-R002012

Straight Flute Chucking Reamers



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- 45° Chamfered End

- Diameter Tolerances:

0.0280 to 0.2500" +0.0000 / +0.0002"

0.2501" and up +0.0000 / +0.0003"

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
6	0.2953	7.5 mm	29 mm	83 mm	533-R004007.5
6	0.2960		1-1/8	3-1/4	533-R0002960
6	0.2969	19/64	1-1/8	3-1/4	533-R001019
6	0.2970		1-1/8	3-1/4	533-R0002970
6	0.2980		1-1/8	3-1/4	533-R0002980
6	0.2990		1-1/8	3-1/4	533-R0002990
6	0.3000		1-1/8	3-1/4	533-R0003000
6	0.3010		1-1/8	3-1/4	533-R0003010
6	0.3020	N	1-1/8	3-1/4	533-R002013
6	0.3030		1-1/8	3-1/4	533-R0003030
6	0.3040		1-1/8	3-1/4	533-R0003040
6	0.3050		1-1/8	3-1/4	533-R0003050
6	0.3060		1-1/8	3-1/4	533-R0003060
6	0.3070		1-1/8	3-1/4	533-R0003070
6	0.3080		1-1/8	3-1/4	533-R0003080
6	0.3090		1-1/8	3-1/4	533-R0003090
6	0.3100		1-1/8	3-1/4	533-R0003100
6	0.3105	D/P	1-1/8	3-1/4	533-R0003105
6	0.3110		1-1/8	3-1/4	533-R0003110
6	0.3115	U/S	1-1/8	3-1/4	533-R0003115
6	0.3120	D/P	1-1/8	3-1/4	533-R0003120
6	0.3125	5/16	1-1/8	3-1/4	533-R001020
6	0.3130		1-1/8	3-1/4	533-R0003130
6	0.3135	O/S	1-1/8	3-1/4	533-R0003135
6	0.3140		1-1/8	3-1/4	533-R0003140
6	0.3145		1-1/8	3-1/4	533-R0003145
6	0.3150	8.0 mm	29 mm	83 mm	533-R004008
6	0.3155		1-1/8	3-1/4	533-R0003155
6	0.3160	O	1-1/8	3-1/4	533-R002014
6	0.3165		1-1/8	3-1/4	533-R0003165
6	0.3170		1-1/4	3-1/2	533-R0003170
6	0.3175		1-1/4	3-1/2	533-R0003175
6	0.3177		1-1/4	3-1/2	533-R0003177
6	0.3180		1-1/4	3-1/2	533-R0003180
6	0.3185		1-1/4	3-1/2	533-R0003185
6	0.3190		1-1/4	3-1/2	533-R0003190
6	0.3195		1-1/4	3-1/2	533-R0003195
6	0.3200		1-1/4	3-1/2	533-R0003200
6	0.3210		1-1/4	3-1/2	533-R0003210
6	0.3220		1-1/4	3-1/2	533-R0003220
6	0.3230	P	1-1/4	3-1/2	533-R002015
6	0.3240		1-1/4	3-1/2	533-R0003240
6	0.3250		1-1/4	3-1/2	533-R0003250
6	0.3255		1-1/4	3-1/2	533-R0003255

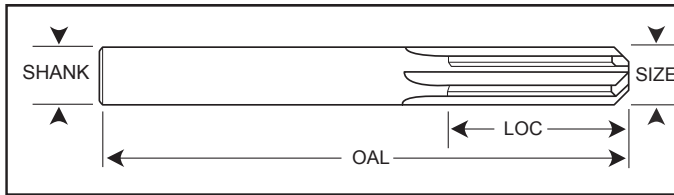


Straight Flute Chucking Reamers

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
6	0.3260		1-1/4	3-1/2	533-R0003260
6	0.3270		1-1/4	3-1/2	533-R0003270
6	0.3280		1-1/4	3-1/2	533-R0003280
6	0.3281	21/64	1-1/4	3-1/2	533-R001021
6	0.3290		1-1/4	3-1/2	533-R0003290
6	0.3300		1-1/4	3-1/2	533-R0003300
6	0.3310		1-1/4	3-1/2	533-R0003310
6	0.3320	Q	1-1/4	3-1/2	533-R002016
6	0.3330		1-1/4	3-1/2	533-R0003330
6	0.3340		1-1/4	3-1/2	533-R0003340
6	0.3346	8.5 mm	32 mm	89 mm	533-R004008.5
6	0.3350		1-1/4	3-1/2	533-R0003350
6	0.3360		1-1/4	3-1/2	533-R0003360
6	0.3365		1-1/4	3-1/2	533-R0003365
6	0.3370		1-1/4	3-1/2	533-R0003370
6	0.3380		1-1/4	3-1/2	533-R0003380
6	0.3390	R	1-1/4	3-1/2	533-R002017
6	0.3400		1-1/4	3-1/2	533-R0003400
6	0.3410		1-1/4	3-1/2	533-R0003410
6	0.3420		1-1/4	3-1/2	533-R0003420
6	0.3430		1-1/4	3-1/2	533-R0003430
6	0.3438	11/32	1-1/4	3-1/2	533-R001022
6	0.3440		1-1/4	3-1/2	533-R0003440
6	0.3450		1-1/4	3-1/2	533-R0003450
6	0.3460		1-1/4	3-1/2	533-R0003460
6	0.3465		1-1/4	3-1/2	533-R0003465
6	0.3470		1-1/4	3-1/2	533-R0003470
6	0.3480	S	1-1/4	3-1/2	533-R002018
6	0.3490		1-1/4	3-1/2	533-R0003490
6	0.3500		1-1/4	3-1/2	533-R0003500
6	0.3510		1-1/4	3-1/2	533-R0003510
6	0.3520		1-1/4	3-1/2	533-R0003520
6	0.3530		1-1/4	3-1/2	533-R0003530
6	0.3540		1-1/4	3-1/2	533-R0003540
6	0.3543	9.0 mm	32 mm	89 mm	533-R004009
6	0.3550		1-1/4	3-1/2	533-R0003550
6	0.3560		1-1/4	3-1/2	533-R0003560
6	0.3570		1-1/4	3-1/2	533-R0003570
6	0.3580	T	1-1/4	3-1/2	533-R002019
6	0.3590		1-1/4	3-1/2	533-R0003590
6	0.3594	23/64	1-1/4	3-1/2	533-R001023
6	0.3600		1-1/4	3-1/2	533-R0003600
6	0.3610		1-1/4	3-1/2	533-R0003610
6	0.3620		1-1/4	3-1/2	533-R0003620
6	0.3630		1-1/4	3-1/2	533-R0003630
6	0.3640		1-1/4	3-1/2	533-R0003640
6	0.3650		1-1/4	3-1/2	533-R0003650
6	0.3660		1-1/4	3-1/2	533-R0003660
6	0.3670		1-1/4	3-1/2	533-R0003670

Straight Flute Chucking Reamers



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- 45° Chamfered End

- Diameter Tolerances:

0.0280 to 0.2500" +0.0000 / +0.0002"

0.2501" and up +0.0000 / +0.0003"

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
6	0.3675		1-1/4	3-1/2	533-R0003675
6	0.3680	U	1-1/4	3-1/2	533-R002020
6	0.3690		1-1/4	3-1/2	533-R0003690
6	0.3700		1-1/4	3-1/2	533-R0003700
6	0.3710		1-1/4	3-1/2	533-R0003710
6	0.3720		1-1/4	3-1/2	533-R0003720
6	0.3730	D/P	1-1/4	3-1/2	533-R0003730
6	0.3735		1-1/4	3-1/2	533-R0003735
6	0.3740	9.5 mm	32 mm	89 mm	533-R004009.5
6	0.3745	D/P	1-1/4	3-1/2	533-R0003745
6	0.3750	3/8	1-1/4	3-1/2	533-R001024
6	0.3755		1-1/4	3-1/2	533-R0003755
6	0.3760	O/S	1-1/4	3-1/2	533-R0003760
6	0.3765		1-1/4	3-1/2	533-R0003765
6	0.3770	V	1-1/4	3-1/2	533-R002021
6	0.3780		1-1/4	3-1/2	533-R0003780
6	0.3790		1-1/4	3-1/2	533-R0003790
6	0.3795		1-1/4	3-1/2	533-R0003795
6	0.3800		1-1/4	3-1/2	533-R0003800
6	0.3810		1-1/4	3-1/2	533-R0003810
6	0.3820		1-1/4	3-1/2	533-R0003820
6	0.3830		1-1/4	3-1/2	533-R0003830
6	0.3840		1-1/4	3-1/2	533-R0003840
6	0.3850		1-1/4	3-1/2	533-R0003850
6	0.3860	W	1-1/4	3-1/2	533-R002022
6	0.3870		1-1/4	3-1/2	533-R0003870
6	0.3880		1-1/4	3-1/2	533-R0003880
6	0.3890		1-1/4	3-1/2	533-R0003890
6	0.3900		1-1/4	3-1/2	533-R0003900
6	0.3906	25/64	1-1/4	3-1/2	533-R001025
6	0.3910		1-1/4	3-1/2	533-R0003910
6	0.3920		1-1/4	3-1/2	533-R0003920
6	0.3930		1-1/4	3-1/2	533-R0003930
6	0.3937	10.0 mm	32 mm	89 mm	533-R004010
6	0.3940		1-1/4	3-1/2	533-R0003940
6	0.3950		1-1/4	3-1/2	533-R0003950
6	0.3960		1-1/4	3-1/2	533-R0003960
6	0.3970	X	1-1/4	3-1/2	533-R002023
6	0.3980		1-1/4	3-1/2	533-R0003980
6	0.3990		1-1/4	3-1/2	533-R0003990
6	0.4000		1-1/4	3-1/2	533-R0004000
6	0.4010		1-1/4	3-1/2	533-R0004010
6	0.4020		1-1/4	3-1/2	533-R0004020
6	0.4030		1-1/4	3-1/2	533-R0004030
6	0.4040	Y	1-1/4	3-1/2	533-R002024

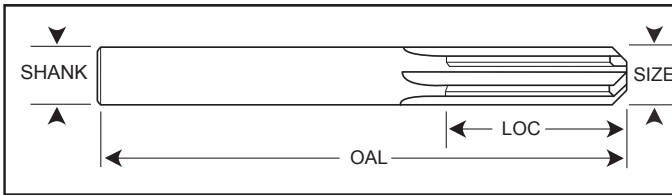


Straight Flute Chucking Reamers

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
6	0.4050		1-1/4	3-1/2	533-R0004050
6	0.4060		1-1/4	3-1/2	533-R0004060
6	0.4062	13/32	1-1/4	3-1/2	533-R001026
6	0.4070		1-1/4	3-1/2	533-R0004070
6	0.4080		1-1/4	3-1/2	533-R0004080
6	0.4090		1-1/4	3-1/2	533-R0004090
6	0.4100		1-1/4	3-1/2	533-R0004100
6	0.4110		1-1/4	3-1/2	533-R0004110
6	0.4120		1-1/4	3-1/2	533-R0004120
6	0.4130	Z	1-1/4	3-1/2	533-R002025
6	0.4134	10.5 mm	32 mm	89 mm	533-R004010.5
6	0.4140		1-1/4	3-1/2	533-R0004140
6	0.4150		1-1/4	3-1/2	533-R0004150
6	0.4160		1-1/4	3-1/2	533-R0004160
6	0.4170		1-3/8	4	533-R0004170
6	0.4180		1-3/8	4	533-R0004180
6	0.4190		1-3/8	4	533-R0004190
6	0.4200		1-3/8	4	533-R0004200
6	0.4210		1-3/8	4	533-R0004210
6	0.4219	27/64	1-3/8	4	533-R001027
6	0.4230		1-3/8	4	533-R0004230
6	0.4240		1-3/8	4	533-R0004240
6	0.4250		1-3/8	4	533-R0004250
6	0.4260		1-3/8	4	533-R0004260
6	0.4270		1-3/8	4	533-R0004270
6	0.4280		1-3/8	4	533-R0004280
6	0.4290		1-3/8	4	533-R0004290
6	0.4300		1-3/8	4	533-R0004300
6	0.4310		1-3/8	4	533-R0004310
6	0.4320		1-3/8	4	533-R0004320
6	0.4330		1-3/8	4	533-R0004330
6	0.4331	11.0 mm	35 mm	102 mm	533-R004011
6	0.4340		1-3/8	4	533-R0004340
6	0.4350		1-3/8	4	533-R0004350
6	0.4355	D/P	1-3/8	4	533-R0004355
6	0.4360		1-3/8	4	533-R0004360
6	0.4365	U/S	1-3/8	4	533-R0004365
6	0.4370	D/P	1-3/8	4	533-R0004370
6	0.4375	7/16	1-3/8	4	533-R001028
6	0.4380		1-3/8	4	533-R0004380
6	0.4385	O/S	1-3/8	4	533-R0004385
6	0.4390		1-3/8	4	533-R0004390
6	0.4400		1-3/8	4	533-R0004400
6	0.4410		1-3/8	4	533-R0004410
6	0.4420		1-3/8	4	533-R0004420
6	0.4430		1-3/8	4	533-R0004430
6	0.4440		1-3/8	4	533-R0004440

Straight Flute Chucking Reamers



- Solid C-2 grade premium sub-micron carbide with 10% cobalt
- 45° Chamfered End

- Diameter Tolerances:

0.0280 to 0.2500" +0.0000 / +0.0002"

0.2501" and up +0.0000 / +0.0003"

REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
6	0.4450		1-3/8	4	533-R0004450
6	0.4460		1-3/8	4	533-R0004460
6	0.4470		1-3/8	4	533-R0004470
6	0.4480		1-3/8	4	533-R0004480
6	0.4490		1-3/8	4	533-R0004490
6	0.4500		1-3/8	4	533-R0004500
6	0.4510		1-3/8	4	533-R0004510
6	0.4520		1-3/8	4	533-R0004520
6	0.4528	11.5 mm	35 mm	102 mm	533-R004011.5
6	0.4530		1-3/8	4	533-R0004530
6	0.4531	29/64	1-3/8	4	533-R001029
6	0.4540		1-3/8	4	533-R0004540
6	0.4550		1-3/8	4	533-R0004550
6	0.4560		1-3/8	4	533-R0004560
6	0.4570		1-3/8	4	533-R0004570
6	0.4580		1-3/8	4	533-R0004580
6	0.4590		1-3/8	4	533-R0004590
6	0.4600		1-3/8	4	533-R0004600
6	0.4610		1-3/8	4	533-R0004610
6	0.4620		1-3/8	4	533-R0004620
6	0.4630		1-3/8	4	533-R0004630
6	0.4640		1-3/8	4	533-R0004640
6	0.4650		1-3/8	4	533-R0004650
6	0.4660		1-3/8	4	533-R0004660
6	0.4670		1-3/8	4	533-R0004670
6	0.4680		1-3/8	4	533-R0004680
6	0.4688	15/32	1-3/8	4	533-R001030
6	0.4690		1-3/8	4	533-R0004690
6	0.4700		1-3/8	4	533-R0004700
6	0.4710		1-3/8	4	533-R0004710
6	0.4720		1-3/8	4	533-R0004720
6	0.4724	12.0 mm	35 mm	102 mm	533-R004012
6	0.4730		1-3/8	4	533-R0004730
6	0.4740		1-3/8	4	533-R0004740
6	0.4750		1-3/8	4	533-R0004750
6	0.4760		1-3/8	4	533-R0004760
6	0.4770		1-3/8	4	533-R0004770
6	0.4780		1-3/8	4	533-R0004780
6	0.4790		1-1/2	4	533-R0004790
6	0.4800		1-1/2	4	533-R0004800
6	0.4805		1-1/2	4	533-R0004805
6	0.4810		1-1/2	4	533-R0004810
6	0.4820		1-1/2	4	533-R0004820

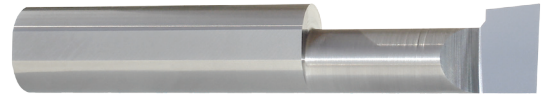


Straight Flute Chucking Reamers

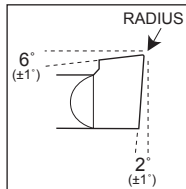
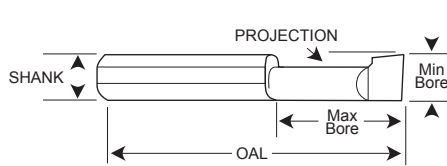
REAMERS *Continued*

FLUTES	DECIMAL INCH	SIZE	LOC	OAL	Uncoated
6	0.4830		1-1/2	4	533-R0004830
6	0.4840		1-1/2	4	533-R0004840
6	0.4844	31/64	1-1/2	4	533-R001031
6	0.4850		1-1/2	4	533-R0004850
6	0.4860		1-1/2	4	533-R0004860
6	0.4870		1-1/2	4	533-R0004870
6	0.4880		1-1/2	4	533-R0004880
6	0.4890		1-1/2	4	533-R0004890
6	0.4900		1-1/2	4	533-R0004900
6	0.4910		1-1/2	4	533-R0004910
6	0.4921	12.5 mm	38 mm	102 mm	533-R004012.5
6	0.4930		1-1/2	4	533-R0004930
6	0.4940		1-1/2	4	533-R0004940
6	0.4950		1-1/2	4	533-R0004950
6	0.4960		1-1/2	4	533-R0004960
6	0.4970		1-1/2	4	533-R0004970
6	0.4980	D/P	1-1/2	4	533-R0004980
6	0.4990	U/S	1-1/2	4	533-R0004990
6	0.4995	D/P	1-1/2	4	533-R0004995
6	0.5000	1/2	1-1/2	4	533-R001032
6	0.5005		1-1/2	4	533-R0005005
6	0.5010	O/S	1-1/2	4	533-R0005010
6	0.5015		1-1/2	4	533-R0005015
6	0.5020		1-1/2	4	533-R0005020
6	0.5030		1-1/2	4	533-R0005030
6	0.5040		1-1/2	4	533-R0005040
6	0.5050		1-1/2	4	533-R0005050
6	0.5118	13.0 mm	38 mm	102 mm	533-R004013
6	0.5512	14.0 mm	38 mm	102 mm	533-R004014
6	0.5625	9/16	1-1/2	4	533-R001036
6	0.5905	15.0 mm	44 mm	102 mm	533-R004015
6	0.6235		1-3/4	4	533-R0006235
6	0.6240		1-3/4	4	533-R0006240
6	0.6245		1-3/4	4	533-R0006245
6	0.6250	5/8	1-3/4	4	533-R001040
6	0.6255		1-3/4	4	533-R0006255
6	0.6260		1-3/4	4	533-R0006260
6	0.6270		1-3/4	4	533-R0006270
6	0.6310		1-3/4	4	533-R0006310
6	0.7490		1-3/4	4	533-R0007490
6	0.7495		1-3/4	4	533-R0007495
6	0.7500	3/4	1-3/4	4	533-R001048
6	0.7505		1-3/4	4	533-R0007505
6	0.7510		1-3/4	4	533-R0007510

BORING BARS NC Generation • BB Series



- 4RMS finish
- Mirror polished cutting surface
- Lockdown flat automatically locates tool on center



- Solid C-2 grade premium sub-micron grain carbide with 10% cobalt
- Right Hand Cut
- Shank Tolerance: +0.0000 / -0.0005"

SHANK	MIN BORE	OAL	MAX BORE	PROJECTION	RADIUS	PART #
1/8	.050	1-1/2	.150	.013	.003-.005	634-T050150
1/8	.050	1-1/2	.200	.013	.003-.005	634-T050200
1/8	.050	1-1/2	.300	.013	.003-.005	634-T050300
1/8	.050	1-1/2	.400	.013	.003-.005	634-T050400
1/8	.060	1-1/2	.150	.015	.003-.005	634-T060150
1/8	.060	1-1/2	.200	.015	.003-.005	634-T060200
1/8	.060	1-1/2	.300	.015	.003-.005	634-T060300
1/8	.060	1-1/2	.400	.015	.003-.005	634-T060400
1/8	.060	1-1/2	.500	.015	.003-.005	634-T060500
1/8	.080	1-1/2	.150	.020	.003-.005	634-T080150
1/8	.080	1-1/2	.200	.020	.003-.005	634-T080200
1/8	.080	1-1/2	.300	.020	.003-.005	634-T080300
1/8	.080	1-1/2	.400	.020	.003-.005	634-T080400
1/8	.080	1-1/2	.500	.020	.003-.005	634-T080500
1/8	.080	1-1/2	.600	.020	.003-.005	634-T080600
1/8	.100	1-1/2	.150	.025	.003-.005	634-T100150
1/8	.100	1-1/2	.200	.025	.003-.005	634-T100200
1/8	.100	1-1/2	.300	.025	.003-.005	634-T100300
1/8	.100	1-1/2	.400	.025	.003-.005	634-T100400
1/8	.100	1-1/2	.500	.025	.003-.005	634-T100500
1/8	.100	1-1/2	.600	.025	.003-.005	634-T100600
1/8	.100	1-1/2	.700	.025	.003-.005	634-T100700
1/8	.110	1-1/2	.150	.028	.003-.005	634-T110150
1/8	.110	1-1/2	.200	.028	.003-.005	634-T110200
1/8	.110	1-1/2	.300	.028	.003-.005	634-T110300
1/8	.110	1-1/2	.400	.028	.003-.005	634-T110400
1/8	.110	1-1/2	.500	.028	.003-.005	634-T110500
1/8	.110	1-1/2	.600	.028	.003-.005	634-T110600
1/8	.110	1-1/2	.700	.028	.003-.005	634-T110700
3/16	.120	2	.250	.030	.005-.008	634-T120250
3/16	.120	2	.350	.030	.005-.008	634-T120350
3/16	.120	2	.500	.030	.005-.008	634-T120500
3/16	.120	2	.600	.030	.005-.008	634-T120600
3/16	.120	2	.700	.030	.005-.008	634-T120700
3/16	.120	2	.800	.030	.005-.008	634-T120800



BORING BARS *Continued*

SHANK	MIN BORE	OAL	MAX BORE	PROJECTION	RADIUS	PART #
3/16	.140	2	.250	.035	.005-.008	634-T140250
3/16	.140	2	.400	.035	.005-.008	634-T140400
3/16	.140	2	.500	.035	.005-.008	634-T140500
3/16	.140	2	.600	.035	.005-.008	634-T140600
3/16	.140	2	.700	.035	.005-.008	634-T140700
3/16	.140	2	.750	.035	.005-.008	634-T140750
3/16	.140	2	.800	.035	.005-.008	634-T140800
3/16	.160	2	.250	.040	.005-.008	634-T160250
3/16	.160	2	.400	.040	.005-.008	634-T160400
3/16	.160	2	.500	.040	.005-.008	634-T160500
3/16	.160	2	.600	.040	.005-.008	634-T160600
3/16	.160	2	.750	.040	.005-.008	634-T160750
3/16	.160	2	.900	.040	.005-.008	634-T160900
3/16	.160	2	1.000	.040	.005-.008	634-T1601000
1/4	.180	2-1/2	.350	.045	.005-.008	634-T180350
1/4	.180	2-1/2	.500	.045	.005-.008	634-T180500
1/4	.180	2-1/2	.600	.045	.005-.008	634-T180600
1/4	.180	2-1/2	.750	.045	.005-.008	634-T180750
1/4	.180	2-1/2	.900	.045	.005-.008	634-T180900
1/4	.180	2-1/2	1.000	.045	.005-.008	634-T1801000
1/4	.180	2-1/2	1.100	.045	.005-.008	634-T1801100
1/4	.180	2-1/2	1.250	.045	.005-.008	634-T1801250
1/4	.180	2-1/2	1.500	.045	.005-.008	634-T1801500
1/4	.200	2-1/2	.400	.050	.005-.008	634-T200400
1/4	.200	2-1/2	.500	.050	.005-.008	634-T200500
1/4	.200	2-1/2	.600	.050	.005-.008	634-T200600
1/4	.200	2-1/2	.700	.050	.005-.008	634-T200700
1/4	.200	2-1/2	.800	.050	.005-.008	634-T200800
1/4	.200	2-1/2	.900	.050	.005-.008	634-T200900
1/4	.200	2-1/2	1.000	.050	.005-.008	634-T2001000
1/4	.200	2-1/2	1.100	.050	.005-.008	634-T2001100
1/4	.200	2-1/2	1.200	.050	.005-.008	634-T2001200
1/4	.200	2-1/2	1.300	.050	.005-.008	634-T2001300
5/16	.230	2-1/2	.400	.058	.005-.008	634-T230400
5/16	.230	2-1/2	.500	.058	.005-.008	634-T230500
5/16	.230	2-1/2	.600	.058	.005-.008	634-T230600
5/16	.230	2-1/2	.700	.058	.005-.008	634-T230700
5/16	.230	2-1/2	.800	.058	.005-.008	634-T230800
5/16	.230	2-1/2	.900	.058	.005-.008	634-T230900
5/16	.230	2-1/2	1.000	.058	.005-.008	634-T2301000
5/16	.230	2-1/2	1.100	.058	.005-.008	634-T2301100
5/16	.230	2-1/2	1.150	.058	.005-.008	634-T2301150
5/16	.230	2-1/2	1.200	.058	.005-.008	634-T2301200
5/16	.230	2-1/2	1.250	.058	.005-.008	634-T2301250
5/16	.230	2-1/2	1.400	.058	.005-.008	634-T2301400
5/16	.230	2-1/2	1.500	.058	.005-.008	634-T2301500
5/16	.230	2-1/2	1.600	.058	.005-.008	634-T2301600

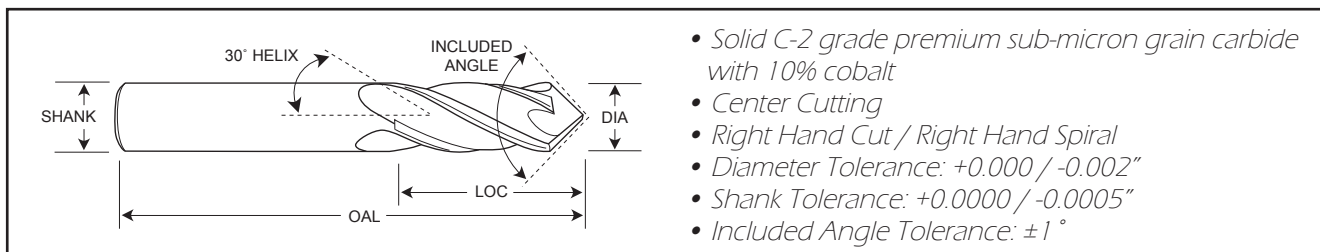
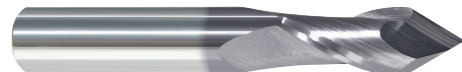
Boring Bars



BORING BARS *Continued*

SHANK	MIN BORE	OAL	MAX BORE	PROJECTION	RADIUS	PART #
5/16	.290	2-1/2	.500	.073	.005-.008	634-T290500
5/16	.290	2-1/2	.600	.073	.005-.008	634-T290600
5/16	.290	2-1/2	.750	.073	.005-.008	634-T290750
5/16	.290	2-1/2	.900	.073	.005-.008	634-T290900
5/16	.290	2-1/2	1.000	.073	.005-.008	634-T2901000
5/16	.290	2-1/2	1.100	.073	.005-.008	634-T2901100
5/16	.290	2-1/2	1.250	.073	.005-.008	634-T2901250
5/16	.290	2-1/2	1.350	.073	.005-.008	634-T2901350
5/16	.290	2-1/2	1.500	.073	.005-.008	634-T2901500
5/16	.290	2-1/2	1.600	.073	.005-.008	634-T2901600
5/16	.290	2-1/2	1.750	.073	.005-.008	634-T2901750
3/8	.320	2-1/2	.500	.080	.005-.008	634-T320500
3/8	.320	2-1/2	.600	.080	.005-.008	634-T320600
3/8	.320	2-1/2	.750	.080	.005-.008	634-T320750
3/8	.320	2-1/2	.900	.080	.005-.008	634-T320900
3/8	.320	2-1/2	1.000	.080	.005-.008	634-T3201000
3/8	.320	2-1/2	1.100	.080	.005-.008	634-T3201100
3/8	.320	2-1/2	1.250	.080	.005-.008	634-T3201250
3/8	.320	2-1/2	1.500	.080	.005-.008	634-T3201500
3/8	.320	2-1/2	1.600	.080	.005-.008	634-T3201600
3/8	.320	2-1/2	1.800	.080	.005-.008	634-T3201800
3/8	.320	4	2.000	.080	.005-.008	634-T3202000
3/8	.320	4	2.500	.080	.005-.008	634-T3202500
3/8	.320	4	3.000	.080	.005-.008	634-T3203000
3/8	.360	2-1/2	.500	.090	.005-.008	634-T360500
3/8	.360	2-1/2	.600	.090	.005-.008	634-T360600
3/8	.360	2-1/2	.750	.090	.005-.008	634-T360750
3/8	.360	2-1/2	.900	.090	.005-.008	634-T360900
3/8	.360	2-1/2	1.000	.090	.005-.008	634-T3601000
3/8	.360	2-1/2	1.150	.090	.005-.008	634-T3601150
3/8	.360	2-1/2	1.250	.090	.005-.008	634-T3601250
3/8	.360	2-1/2	1.500	.090	.005-.008	634-T3601500
3/8	.360	2-1/2	1.600	.090	.005-.008	634-T3601600
3/8	.360	2-1/2	1.800	.090	.005-.008	634-T3601800
3/8	.360	4	2.000	.090	.005-.008	634-T3602000
3/8	.360	4	2.500	.090	.005-.008	634-T3602500
3/8	.360	4	3.000	.090	.005-.008	634-T3603000
1/2	.490	3	.750	.123	.005-.008	634-T490750
1/2	.490	3	1.000	.123	.005-.008	634-T4901000
1/2	.490	3	1.250	.123	.005-.008	634-T4901250
1/2	.490	3	1.500	.123	.005-.008	634-T4901500
1/2	.490	4	2.000	.123	.005-.008	634-T4902000
1/2	.490	4	2.500	.123	.005-.008	634-T4902500
1/2	.490	4	2.600	.123	.005-.008	634-T4902600
1/2	.490	4	2.750	.123	.005-.008	634-T4902750
1/2	.490	6	3.000	.123	.005-.008	634-T4903000
1/2	.490	6	3.500	.123	.005-.008	634-T4903500
1/2	.490	6	4.000	.123	.005-.008	634-T4904000
1/2	.490	6	4.500	.123	.005-.008	634-T4904500

DRILL MILLS



Applications:

- Chamfering
- Countersinking
- Drilling
- Side Milling
- Spotting

2 FLUTE

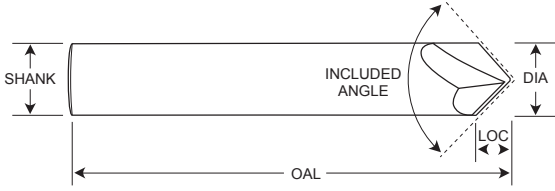
				Included Angle			
				60°		90°	
DIA	LOC	SHANK	OAL	UNCOATED	TiAlN Coated	UNCOATED	TiAlN Coated
1/8	1/2	1/8	1-1/2	241-T621250	241-T621253	241-T000125	241-T010125
3/16	5/8	3/16	2	241-T621870	241-T621873	241-T000187	241-T010187
1/4	3/4	1/4	2-1/2	241-T622500	241-T622503	241-T000250	241-T010250
5/16	13/16	5/16	2-1/2	241-T623120	241-T623123	241-T000312	241-T010312
3/8	1	3/8	2-1/2	241-T623750	241-T623753	241-T000375	241-T010375
7/16	1	7/16	2-3/4	241-T624370	241-T624373	241-T000437	241-T010437
1/2	1	1/2	3	241-T625000	241-T625003	241-T000500	241-T010500
5/8	1-1/4	5/8	3-1/2	241-T626250	241-T626253	241-T000625	241-T010625
3/4	1-1/2	3/4	4	241-T627500	241-T627503	241-T000750	241-T010750

4 FLUTE

1/8	1/2	1/8	1-1/2	241-T641250	241-T641253	241-T400125	241-T420125
3/16	5/8	3/16	2	241-T641870	241-T641873	241-T400187	241-T420187
1/4	3/4	1/4	2-1/2	241-T642500	241-T642503	241-T400250	241-T420250
5/16	13/16	5/16	2-1/2	241-T643120	241-T643123	241-T400312	241-T420312
3/8	1	3/8	2-1/2	241-T643750	241-T643753	241-T400375	241-T420375
7/16	1	7/16	2-3/4	241-T644370	241-T644373	241-T400437	241-T420437
1/2	1	1/2	3	241-T645000	241-T645003	241-T400500	241-T420500
5/8	1-1/4	5/8	3-1/2	241-T646250	241-T646253	241-T400625	241-T420625
3/4	1-1/2	3/4	4	241-T647500	241-T647503	241-T400750	241-T420750

CHAMFER MILLS





- Solid C-2 grade premium sub-micron grain carbide with 10% cobalt
- Center Cutting
- Right Hand Cut
- Diameter Tolerance: $+0.000 / -0.002$ "
- Shank Tolerance: $+0.0000 / -0.0005$ "
- Included Angle Tolerance: $\pm 1^\circ$

Application:

- Eliminates hand deburring operations & provides consistent work piece finishes

SINGLE END



2 FLUTE

				Included Angle			
				60°		90°	
DIA	LOC	SHANK	OAL	UNCOATED	TiAlN Coated	UNCOATED	TiAlN Coated
1/8	1/2	1/8	1-1/2	242-T062125	242-T062125B	242-T092125	242-T092125B
3/16	5/8	3/16	2	242-T062187	242-T062187B	242-T092187	242-T092187B
1/4	3/4	1/4	2-1/2	242-T062250	242-T062250B	242-T092250	242-T092250B
3/8	1	3/8	2-1/2	242-T062375	242-T062375B	242-T092375	242-T092375B
1/2	1	1/2	3	242-T062500	242-T062500B	242-T092500	242-T092500B
3/4	1-1/2	3/4	3	242-T062750	242-T062750B	242-T092750	242-T092750B

4 FLUTE

1/8	1/2	1/8	1-1/2	242-T064125	242-T064125B	242-T094125	242-T094125B
3/16	5/8	3/16	2	242-T064187	242-T064187B	242-T094187	242-T094187B
1/4	3/4	1/4	2-1/2	242-T064250	242-T064250B	242-T094250	242-T094250B
3/8	1	3/8	2-1/2	242-T064375	242-T064375B	242-T094375	242-T094375B
1/2	1	1/2	3	242-T064500	242-T064500B	242-T094500	242-T094500B
3/4	1-1/2	3/4	3	242-T064750	242-T064750B	242-T094750	242-T094750B

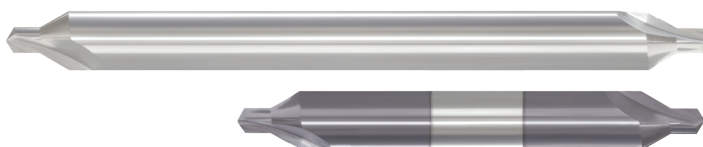
DOUBLE END



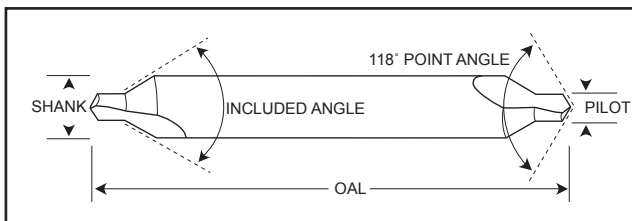
2 FLUTE

				Included Angle
				90°
DIA	LOC	SHANK	OAL	UNCOATED
1/8	1/2	1/8	1-1/2	242-T292125
3/16	5/8	3/16	2	242-T292187
1/4	3/4	1/4	2-1/2	242-T292250
3/8	1	3/8	2-1/2	242-T292375
1/2	1	1/2	3	242-T292500

Center Drills



Combined Drill & Countersink



- Solid C-2 grade premium sub-micron grain carbide with 10% cobalt
- Right Hand Cut
- Pilot Tolerance: $+0.0030 / -0.0000$ "
- Shank Tolerance: $+0.0000 / -0.0005$ "
- Included Angle Tolerance: $\pm 1^\circ$

• Ideal for high production applications where tolerance, finish and down-time are concerns



60° INCLUDED ANGLE

REGULAR

SIZE	PILOT DIA	SHANK	OAL	UNCOATED	TiN Coated	TiAlN Coated
00	0.0265	1/8	1-1/2	333-T001001	333-T001501	333-T001001B
0	1/32	1/8	1-1/2	333-T001002	333-T001502	333-T001002B
1	3/64	1/8	1-1/2	333-T001003	333-T001503	333-T001003B
2	5/64	3/16	1-7/8	333-T001004	333-T001504	333-T001004B
3	7/64	1/4	2	333-T001005	333-T001505	333-T001005B
4	1/8	5/16	2-1/8	333-T001006	333-T001506	333-T001006B
5	3/16	7/16	2-3/4	333-T001007	333-T001507	333-T001007B
6	7/32	1/2	3	333-T001008	333-T001508	333-T001008B
7	1/4	5/8	3-1/4	333-T001009	333-T001509	333-T001009B
8	5/16	3/4	3-1/2	333-T001010	333-T001510	333-T001010B

LONG

1	3/64	1/8	4	333-T005001	333-T005501	333-T005001B
2	5/64	3/16	4	333-T005002	333-T005502	333-T005002B
3	7/64	1/4	4	333-T005003	333-T005503	333-T005003B
4	1/8	5/16	4	333-T005004	333-T005504	333-T005004B
5	3/16	7/16	6	333-T005005	333-T005505	333-T005005B
6	7/32	1/2	6	333-T005006	333-T005506	333-T005006B
7	1/4	5/8	6	333-T005007	333-T005507	333-T005007B
8	5/16	3/4	6	333-T005008	333-T005508	333-T005008B

Center Drills



REGULAR

SIZE	PILOT DIA	SHANK	OAL	UNCOATED	TiAlN Coated
00	0.0265	1/8	1-1/2	333-T002001	333-T002001B
0	1/32	1/8	1-1/2	333-T002002	333-T002002B
1	3/64	1/8	1-1/2	333-T002003	333-T002003B
2	5/64	3/16	1-7/8	333-T002004	333-T002004B
3	7/64	1/4	2	333-T002005	333-T002005B
4	1/8	5/16	2-1/8	333-T002006	333-T002006B
5	3/16	7/16	2-3/4	333-T002007	333-T002007B
6	7/32	1/2	3	333-T002008	333-T002008B
7	1/4	5/8	3-1/4	333-T002009	333-T002009B
8	5/16	3/4	3-1/2	333-T002010	333-T002010B

LONG

1	3/64	1/8	4	333-T006001	333-T006001B
2	5/64	3/16	4	333-T006002	333-T006002B
3	7/64	1/4	4	333-T006003	333-T006003B
4	1/8	5/16	4	333-T006004	333-T006004B
5	3/16	7/16	6	333-T006005	333-T006005B
6	7/32	1/2	6	333-T006006	333-T006006B
7	1/4	5/8	6	333-T006007	333-T006007B
8	5/16	3/4	6	333-T006008	333-T006008B



REGULAR

SIZE	PILOT DIA	SHANK	OAL	UNCOATED	TiAlN Coated
00	0.0265	1/8	1-1/2	333-T003001	333-T003001B
0	1/32	1/8	1-1/2	333-T003002	333-T003002B
1	3/64	1/8	1-1/2	333-T003003	333-T003003B
2	5/64	3/16	1-7/8	333-T003004	333-T003004B
3	7/64	1/4	2	333-T003005	333-T003005B
4	1/8	5/16	2-1/8	333-T003006	333-T003006B
5	3/16	7/16	2-3/4	333-T003007	333-T003007B
6	7/32	1/2	3	333-T003008	333-T003008B
7	1/4	5/8	3-1/4	333-T003009	333-T003009B
8	5/16	3/4	3-1/2	333-T003010	333-T003010B

LONG

1	3/64	1/8	4	333-T007001	333-T007001B
2	5/64	3/16	4	333-T007002	333-T007002B
3	7/64	1/4	4	333-T007003	333-T007003B
4	1/8	5/16	4	333-T007004	333-T007004B
5	3/16	7/16	6	333-T007005	333-T007005B
6	7/32	1/2	6	333-T007006	333-T007006B
7	1/4	5/8	6	333-T007007	333-T007007B
8	5/16	3/4	6	333-T007008	333-T007008B

CARBIDE COUNTERSINKS SINGLE END

- Larger sizes are solid carbide heads, induction brazed onto hardened steel shanks to ensure a solid and safe-secure bond



1 FLUTE

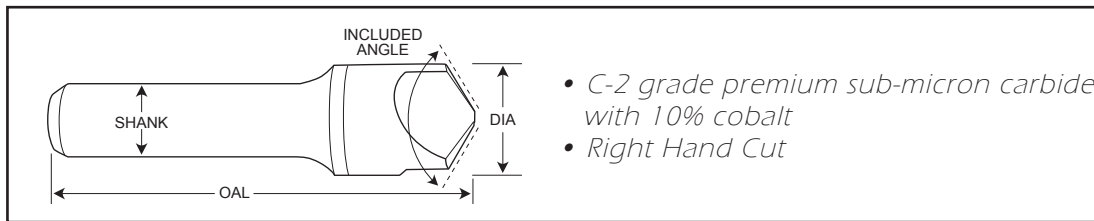
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DIA	SHANK	OAL	PART #	PART #	PART #	PART #	PART #
1/8	1/8	1-1/2	364-T001050	364-T001060	364-T001070	364-T001080	364-T001090
3/16	3/16	2	364-T002050	364-T002060	364-T002070	364-T002080	364-T002090
1/4	1/4	2	364-T003050	364-T003060	364-T003070	364-T003080	364-T003090
3/8	1/4	2-1/2	364-T005050	364-T005060	364-T005070	364-T005080	364-T005090
1/2	1/4	2-1/2	364-T006050	364-T006060	364-T006070	364-T006080	364-T006090
5/8	1/4	2-1/2	364-T007050	364-T007060	364-T007070	364-T007080	364-T007090
3/4	3/8	3	364-T008050	364-T008060	364-T008070	364-T008080	364-T008090
1	1/2	3	364-T010050	364-T010060	364-T010070	364-T010080	364-T010090
1-1/4	3/4	3-1/2	364-T011050	364-T011060	364-T011070	364-T011080	364-T011090
1-1/2	3/4	3-1/2	364-T012050	364-T012060	364-T012070	364-T012080	364-T012090



3 FLUTE

			Included Angle				
							
DIA	SHANK	OAL	PART #	PART #	PART #	PART #	PART #
1/8	1/8	1-1/2	633-T001050	633-T001060	633-T001070	633-T001080	633-T001090
3/16	3/16	2	633-T002050	633-T002060	633-T002070	633-T002080	633-T002090
1/4	1/4	2	633-T003050	633-T003060	633-T003070	633-T003080	633-T003090
3/8	1/4	2-1/2	633-T005050	633-T005060	633-T005070	633-T005080	633-T005090
1/2	1/4	2-1/2	633-T006050	633-T006060	633-T006070	633-T006080	633-T006090
5/8	3/8	2-3/4	633-T007050	633-T007060	633-T007070	633-T007080	633-T007090
3/4	3/8	3	633-T008050	633-T008060	633-T008070	633-T008080	633-T008090
1	1/2	3	633-T010050	633-T010060	633-T010070	633-T010080	633-T010090
1-1/4	3/4	3-1/2	633-T011050	633-T011060	633-T011070	633-T011080	633-T011090
1-1/2	3/4	3-1/2	633-T012050	633-T012060	633-T012070	633-T012080	633-T012090

Carbide Countersinks Single End



4 FLUTE

			Included Angle				
			60°	82°	90°	100°	120°
DIA	SHANK	OAL	PART #	PART #	PART #	PART #	PART #
1/8	1/8	1-1/2	367-T001050	367-T001060	367-T001070	367-T001080	367-T001090
1/4	1/4	2	367-T003050	367-T003060	367-T003070	367-T003080	367-T003090
3/8	1/4	2-1/2	367-T005050	367-T005060	367-T005070	367-T005080	367-T005090
1/2	3/8	2-1/2	367-T006050	367-T006060	367-T006070	367-T006080	367-T006090
5/8	3/8	2-1/2	367-T007050	367-T007060	367-T007070	367-T007080	367-T007090
3/4	1/2	3	367-T008050	367-T008060	367-T008070	367-T008080	367-T008090
1	1/2	3	367-T010050	367-T010060	367-T010070	367-T010080	367-T010090



6 FLUTE

			Included Angle				
			60°	82°	90°	100°	120°
DIA	SHANK	OAL	PART #	PART #	PART #	PART #	PART #
1/8	1/8	1-1/2	369-T001050	369-T001060	369-T001070	369-T001080	369-T001090
3/16	3/16	2	369-T002050	369-T002060	369-T002070	369-T002080	369-T002090
1/4	1/4	2	369-T003050	369-T003060	369-T003070	369-T003080	369-T003090
5/16	1/4	2	369-T004050	369-T004060	369-T004070	369-T004080	369-T004090
3/8	1/4	2-1/2	369-T005050	369-T005060	369-T005070	369-T005080	369-T005090
1/2	1/4	2-1/2	369-T006050	369-T006060	369-T006070	369-T006080	369-T006090
5/8	3/8	2-3/4	369-T007050	369-T007060	369-T007070	369-T007080	369-T007090
3/4	3/8	3	369-T008050	369-T008060	369-T008070	369-T008080	369-T008090
7/8	1/2	3	369-T009050	369-T009060	369-T009070	369-T009080	369-T009090
1	1/2	3	369-T010050	369-T010060	369-T010070	369-T010080	369-T010090
1-1/4	3/4	3-1/2	369-T011050	369-T011060	369-T011070	369-T011080	369-T011090
1-1/2	3/4	3-1/2	369-T012050	369-T012060	369-T012070	369-T012080	369-T012090

CARBIDE COUNTERSINKS DOUBLE END

- Solid carbide construction with economical double cutting ends



1 FLUTE

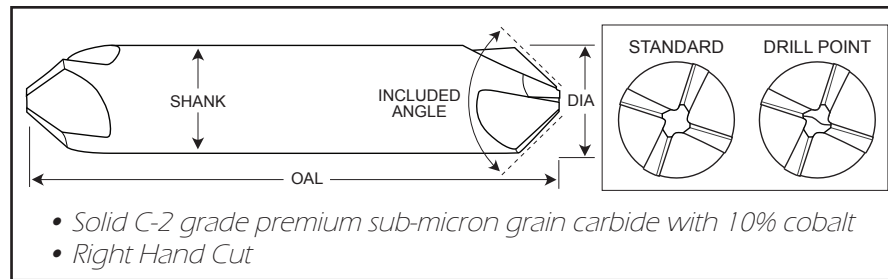
			Included Angle					
								
DIA	SHANK	OAL	PART #	PART #	PART #	PART #	PART #	PART #
1/8	1/8	1-1/2	364-T201050	364-T201060	364-T201070	364-T201080	364-T201090	364-T201100
3/16	3/16	2	364-T202050	364-T202060	364-T202070	364-T202080	364-T202090	364-T202200
1/4	1/4	2	364-T203050	364-T203060	364-T203070	364-T203080	364-T203090	364-T203100
5/16	5/16	2-1/8	364-T204050	364-T204060	364-T204070	364-T204080	364-T204090	364-T204100
3/8	3/8	2-1/2	364-T205050	364-T205060	364-T205070	364-T205080	364-T205090	364-T205100
1/2	1/2	3	364-T206050	364-T206060	364-T206070	364-T206080	364-T206090	364-T206100
5/8	5/8	3-1/4	364-T207050	364-T207060	364-T207070	364-T207080	364-T207090	364-T207100
3/4	3/4	3-1/2	364-T208050	364-T208060	364-T208070	364-T208080	364-T208090	364-T208100



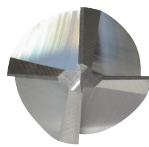
4 FLUTE

			Included Angle					
								
DIA	SHANK	OAL	PART #	PART #	PART #	PART #	PART #	PART #
1/8	1/8	1-1/2	367-T201050	367-T201060	367-T201070	367-T201080	367-T201090	367-T201100
3/16	3/16	2	367-T202050	367-T202060	367-T202070	367-T202080	367-T202090	367-T202100
1/4	1/4	2	367-T203050	367-T203060	367-T203070	367-T203080	367-T203090	367-T203100
5/16	5/16	2-1/8	367-T204050	367-T204060	367-T204070	367-T204080	367-T204090	367-T204100
3/8	3/8	2-1/2	367-T205050	367-T205060	367-T205070	367-T205080	367-T205090	367-T205100
1/2	1/2	3	367-T206050	367-T206060	367-T206070	367-T206080	367-T206090	367-T206100
5/8	5/8	3-1/4	367-T207050	367-T207060	367-T207070	367-T207080	367-T207090	367-T207100
3/4	3/4	3-1/2	367-T208050	367-T208060	367-T208070	367-T208080	367-T208090	367-T208100

Carbide Countersinks Double End



4 FLUTE with Drill Point



			Included Angle					
			60°	82°	90°	100°	110°	120°
DIA	SHANK	OAL	PART #	PART #	PART #	PART #	PART #	PART #
1/8	1/8	1-1/2	367-T301050	367-T301060	367-T301070	367-T301080	367-T301090	367-T301100
3/16	3/16	2	367-T302050	367-T302060	367-T302070	367-T302080	367-T302090	367-T302100
1/4	1/4	2	367-T303050	367-T303060	367-T303070	367-T303080	367-T303090	367-T303100
5/16	5/16	2-1/8	367-T304050	367-T304060	367-T304070	367-T304080	367-T304090	367-T304100
3/8	3/8	2-1/2	367-T305050	367-T305060	367-T305070	367-T305080	367-T305090	367-T305100
1/2	1/2	3	367-T306050	367-T306060	367-T306070	367-T306080	367-T306090	367-T306100
5/8	5/8	3-1/4	367-T307050	367-T307060	367-T307070	367-T307080	367-T307090	367-T307100
3/4	3/4	3-1/2	367-T308050	367-T308060	367-T308070	367-T308080	367-T308090	367-T308100



6 FLUTE

			Included Angle		
			60°	82°	90°
DIA	SHANK	OAL	PART #	PART #	PART #
1/8	1/8	1-1/2	369-T201050	369-T201060	369-T201070
3/16	3/16	2	369-T202050	369-T202060	369-T202070
1/4	1/4	2	369-T203050	369-T203060	369-T203070
5/16	5/16	2-1/8	369-T204050	369-T204060	369-T204070
3/8	3/8	2-1/2	369-T205050	369-T205060	369-T205070
1/2	1/2	3	369-T206050	369-T206060	369-T206070
5/8	5/8	3-1/4	369-T207050	369-T207060	369-T207070
3/4	3/4	3-1/2	369-T208050	369-T208060	369-T208070

Atlantic Tool

PROUDLY MADE IN THE USA

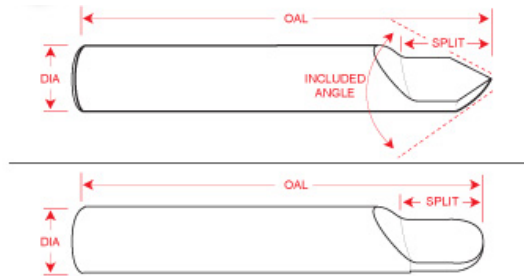
CARBIDE COUNTERSINKS SETS

- All sets contain the most popular countersink sizes in a handsome wood case



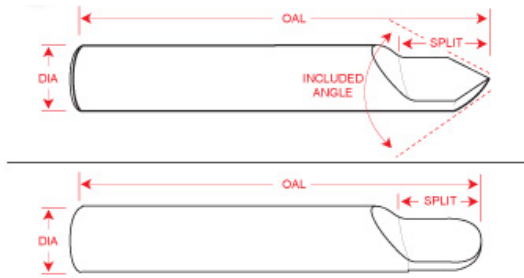
FLUTES					Included Angle				
	1/4	1/2	3/4	1"	 60°	 82°	 90°	 100°	 120°
					PART #	PART #	PART #	PART #	PART #
1	X	X	X	X	364-T100060	364-T100082	364-T100090	364-T100100	364-T100120
3	X	X	X	X	633-T100060	633-T100082	633-T100090	633-T100100	633-T100120
6	X	X	X	X	369-T100060	369-T100082	369-T100090	369-T100100	369-T100120

Engraving Tools



Single End

TOOL	OAL	SPLIT	30° CONICAL	60° CONICAL	90° CONICAL	RADIUS END
1/8	1-1/2	3/8	746-E125150	749-E125150	752-E125150	744-E125150
3/16	2	7/16	746-E187200	749-E187200	752-E187200	744-E187200
1/4	2-1/2	1/2	746-E250250	749-E250250	752-E250250	744-E250250
5/16	2-1/2	1/2	746-E312250	749-E312250	752-E312250	744-E312250
3/8	2-1/2	1/2	746-E375250	749-E375250	752-E375250	744-E375250
1/2	3	5/8	746-E500300	749-E500300	752-E500300	744-E500300



Double End

DIA	OAL	SPLIT	30° Conical	60° Conical
1/8	2	3/8	756-E125150	759-E125150
1/8	3	3/8	756-E125300	759-E125300
3/16	2	7/16	756-E187200	759-E187200
3/16	3	7/16	756-E187300	759-E187300
1/4	2-1/2	1/2	756-E250250	759-E250250
1/4	4	1/2	756-E250400	759-E250400
5/16	2-1/2	1/2	756-E312250	759-E312250
5/16	4	1/2	756-E312400	759-E312400
3/8	2-1/2	1/2	756-E375250	759-E375250
3/8	4	1/2	756-E375400	759-E375400
1/2	3	5/8	756-E500300	759-E500300
1/2	4	5/8	756-E500400	759-E500400

Double End

DIA	OAL	SPLIT	90° Conical	RADIUS END
1/8	1-1/2	3/8	762-E125150	745-E125150
1/8	3	3/8	762-E125300	745-E125300
3/16	2	7/16	762-E187200	745-E187200
3/16	3	7/16	762-E187300	745-E187300
1/4	2-1/2	1/2	762-E250250	745-E250250
1/4	4	1/2	762-E250400	745-E250400
5/16	2-1/2	1/2	762-E312250	745-E312250
5/16	4	1/2	762-E312400	745-E312400
3/8	2-1/2	1/2	762-E375250	745-E375250
3/8	4	1/2	762-E375400	745-E375400
1/2	3	5/8	762-E500300	745-E500300
1/2	4	5/8	762-E500400	745-E500400

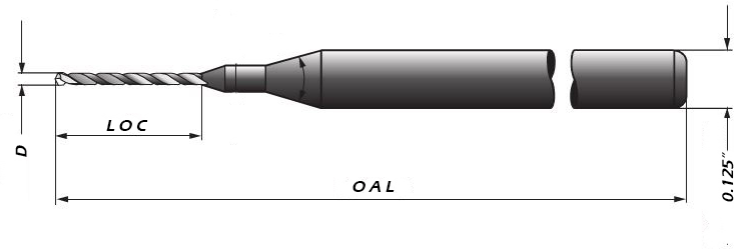
Designed to optimize positional accuracy, hole quality and tool longevity.

Made from tungsten carbide alloy with balance of high transverse rupture strength and harness for extended life.

DIAMETER TOLERANCE $+0.000 -0.0003$ "

Point Angle 130 degrees

****Special Flute Lengths Available**



			<i>Standard</i>		<i>Long</i>		<i>Extended</i>	
SIZE	DECIMAL INCHES	OAL	LOC	Part Number	LOC	Part Number	LOC	Part Number
0.050mm	0.002	1.500	0.036"	513-E300020	-	-	-	-
0.075mm	0.003	1.500	0.047"	513-E300030	-	-	-	-
0.10mm	.0040	1.500	0.050"	513-E300040	0.100"	513-E300040L	0.120"	513-E300040X
0.13mm	.0050	1.500	0.050"	513-E300050	0.100"	513-E300050L	0.120"	513-E300050X
0.15 / 97	.0059	1.500	0.050"	513-E300059	0.100"	513-E300059L	0.120"	513-E300059X
96	.0063	1.500	0.050"	513-E300063	0.100"	513-E300063L	0.120"	513-E300063X
95	.0067	1.500	0.050"	513-E300067	0.100"	513-E300067L	0.120"	513-E300067X
94	.0071	1.500	0.100"	513-E300071	0.140"	513-E300071L	0.160"	513-E300071X
93	.0075	1.500	0.100"	513-E300075	0.140"	513-E300075L	0.160"	513-E300075X
0.20 / 92	.0079	1.500	0.100"	513-E300079	0.140"	513-E300079L	0.160"	513-E300079X
91	.0083	1.500	0.100"	513-E300083	0.140"	513-E300083L	0.160"	513-E300083X
90	.0087	1.500	0.100"	513-E300087	0.140"	513-E300087L	0.160"	513-E300087X
89	.0091	1.500	0.100"	513-E300091	0.140"	513-E300091L	0.160"	513-E300091X
88	.0095	1.500	0.100"	513-E300095	0.140"	513-E300095L	0.160"	513-E300095X
0.25mm	.0098	1.500	0.140"	513-E300098	0.160"	513-E300098L	0.180"	513-E300098X
87	.0100	1.500	0.140"	513-E300100	0.160"	513-E300100L	0.180"	513-E300100X
86	.0105	1.500	0.140"	513-E300105	0.160"	513-E300105L	0.180"	513-E300105X
85	.0110	1.500	0.140"	513-E300110	0.160"	513-E300110L	0.180"	513-E300110X
84	.0115	1.500	0.140"	513-E300115	0.160"	513-E300115L	0.180"	513-E300115X
0.30mm	.0118	1.500	0.200"	513-E300118	0.220"	513-E300118L	0.260"	513-E300118X
83	.0120	1.500	0.200"	513-E300120	0.220"	513-E300120L	0.260"	513-E300120X
82	.0125	1.500	0.200"	513-E300125	0.220"	513-E300125L	0.260"	513-E300125X
81	.0130	1.500	0.200"	513-E300130	0.220"	513-E300130L	0.260"	513-E300130X

Atlantic Micro Drill

PRECISION MADE IN THE USA

			<i>Standard</i>		<i>Long**</i>		<i>Extended**</i>	
SIZE	DECIMAL INCHES	OAL	LOC	Part Number	LOC	Part Number	LOC	Part Number
80	.0135	1.500	0.200"	513-E300135	0.220"	513-E300135L	0.260"	513-E300135X
0.35mm	.0138	1.500	0.200"	513-E300138	0.220"	513-E300138L	0.260"	513-E300138X
79	.0145	1.500	0.200"	513-E300145	0.220"	513-E300145L	0.260"	513-E300145X
1/64	.0156	1.500	0.200"	513-E300156	0.280"	513-E300156L	0.340"	513-E300156X
0.40mm	.0158	1.500	0.200"	513-E300158	0.280"	513-E300158L	0.340"	513-E300158X
78	.0160	1.500	0.200"	513-E300160	0.280"	513-E300160L	0.340"	513-E300160X
0.45mm	.0177	1.500	0.200"	513-E300177	0.280"	513-E300177L	0.340"	513-E300177X
77	.0180	1.500	0.200"	513-E300180	0.280"	513-E300180L	0.340"	513-E300180X
0.50mm	.0197	1.500	0.200"	513-E300197	0.280"	513-E300197L	0.340"	513-E300197X
76	.0200	1.500	0.200"	513-E300200	0.280"	513-E300200L	0.340"	513-E300200X
75	.0210	1.500	0.200"	513-E300210	0.280"	513-E300210L	0.340"	513-E300210X
0.55mm	.0217	1.500	0.200"	513-E300217	0.280"	513-E300217L	0.340"	513-E300217X
74	.0225	1.500	0.280"	513-E300225	0.320"	513-E300225L	0.375"	513-E300225X
0.60mm	.0236	1.500	0.280"	513-E300236	0.320"	513-E300236L	0.375"	513-E300236X
73	.0240	1.500	0.280"	513-E300240	0.320"	513-E300240L	0.375"	513-E300240X
72	.0250	1.500	0.280"	513-E300250	0.320"	513-E300250L	0.375"	513-E300250X
0.65mm	.0256	1.500	0.280"	513-E300256	0.320"	513-E300256L	0.375"	513-E300256X
71	.0260	1.500	0.280"	513-E300260	0.320"	513-E300260L	0.375"	513-E300260X
0.70mm	.0276	1.500	0.280"	513-E300276	0.340"	513-E300276L	0.400"	513-E300276X
70	.0280	1.500	0.280"	513-E300280	0.340"	513-E300280L	0.400"	513-E300280X
69	.0292	1.500	0.280"	513-E300292	0.340"	513-E300292L	0.400"	513-E300292X
0.75mm	.0295	1.500	0.280"	513-E300295	0.340"	513-E300295L	0.400"	513-E300295X
68	.0310	1.500	0.400"	513-E300310	0.450"	513-E300310L	0.500"	513-E300310X
1/32	.0312	1.500	0.400"	513-E300312	0.450"	513-E300312L	0.500"	513-E300312X
0.80mm	.0315	1.500	0.400"	513-E300315	0.450"	513-E300315L	0.500"	513-E300315X
67	.0320	1.500	0.400"	513-E300320	0.450"	513-E300320L	0.500"	513-E300320X
66	.0330	1.500	0.400"	513-E300330	0.450"	513-E300330L	0.500"	513-E300330X
0.85mm	.0335	1.500	0.400"	513-E300335	0.450"	513-E300335L	0.500"	513-E300335X
65	.0350	1.500	0.400"	513-E300350	0.450"	513-E300350L	0.500"	513-E300350X
0.90mm	.0354	1.500	0.400"	513-E300354	0.450"	513-E300354L	0.500"	513-E300354X
64	.0360	1.500	0.400"	513-E300360	0.450"	513-E300360L	0.500"	513-E300360X
63	.0370	1.500	0.400"	513-E300370	0.450"	513-E300370L	0.500"	513-E300370X
0.95mm	.0374	1.500	0.400"	513-E300374	0.450"	513-E300374L	0.500"	513-E300374X
62	.0380	1.500	0.400"	513-E300380	0.450"	513-E300380L	0.500"	513-E300380X
61	.0390	1.500	0.400"	513-E300390	0.450"	513-E300390L	0.500"	513-E300390X
1.00mm	.0394	1.500	0.400"	513-E300394	0.450"	513-E300394L	0.500"	513-E300394X
60	.0400	1.500	0.400"	513-E300400	0.450"	513-E300400L	0.500"	513-E300400X

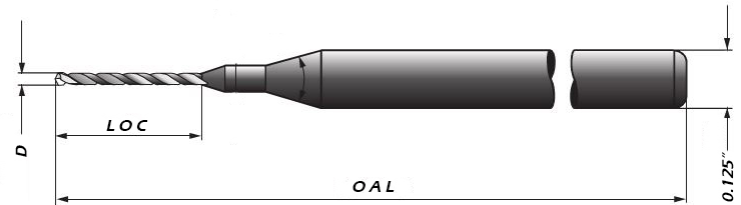
Designed to optimize positional accuracy, hole quality and tool longevity.

Made from tungsten carbide alloy with balance of high transverse rupture strength and harness for extended life.

DIAMETER TOLERANCE $+0.000 -0.0003$ "

Point Angle 130 degrees

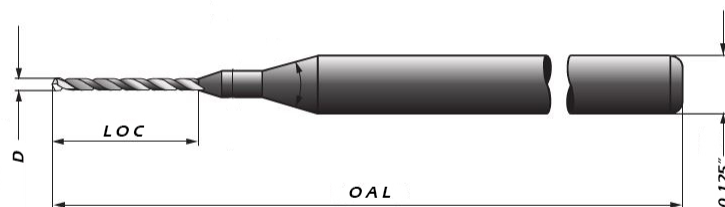
****Special Flute Lengths Available**



			Standard		Long**		Extended**	
SIZE	DECIMAL INCHES	OAL	LOC	Part Number	LOC	Part Number	LOC	Part Number
59	.0410	1.500	0.400"	513-E300410	0.450"	513-E300410L	0.500"	513-E300410X
1.05mm	.0413	1.500	0.400"	513-E300413	0.450"	513-E300413L	0.500"	513-E300413X
58	.0420	1.500	0.400"	513-E300420	0.450"	513-E300420L	0.500"	513-E300420X
57	.0430	1.500	0.400"	513-E300430	0.450"	513-E300430L	0.500"	513-E300430X
1.10mm	.0433	1.500	0.400"	513-E300433	0.450"	513-E300433L	0.500"	513-E300433X
1.15mm	.0453	1.500	0.400"	513-E300453	0.450"	513-E300453L	0.500"	513-E300453X
56	.0465	1.500	0.400"	513-E300465	0.450"	513-E300465L	0.500"	513-E300465X
3/64	.0469	1.500	0.400"	513-E300469	0.450"	513-E300469L	0.500"	513-E300469X
1.20mm	.0472	1.500	0.400"	513-E300472	0.450"	513-E300472L	0.500"	513-E300472X
1.25mm	.0492	1.500	0.400"	513-E300492	0.450"	513-E300492L	0.500"	513-E300492X
1.30mm	.0512	1.500	0.400"	513-E300512	0.450"	513-E300512L	0.500"	513-E300512X
55	.0520	1.500	0.400"	513-E300520	0.450"	513-E300520L	0.500"	513-E300520X
1.35mm	.0531	1.500	0.400"	513-E300531	0.450"	513-E300531L	0.500"	513-E300531X
54	.0550	1.500	0.400"	513-E300550	0.450"	513-E300550L	0.500"	513-E300550X
1.40mm	.0551	1.500	0.400"	513-E300551	0.450"	513-E300551L	0.500"	513-E300551X
1.45mm	.0571	1.500	0.400"	513-E300571	0.450"	513-E300571L	0.500"	513-E300571X
1.50mm	.0591	1.500	0.400"	513-E300591	0.450"	513-E300591L	0.500"	513-E300591X
53	.0595	1.500	0.400"	513-E300595	0.450"	513-E300595L	0.500"	513-E300595X
1.55mm	.0610	1.500	0.400"	513-E300610	0.450"	513-E300610L	0.500"	513-E300610X
1/16	.0625	1.500	0.400"	513-E300625	0.450"	513-E300625L	0.500"	513-E300625X
1.60mm	.0630	1.500	0.400"	513-E300630	0.450"	513-E300630L	0.500"	513-E300630X
52	.0635	1.500	0.400"	513-E300635	0.450"	513-E300635L	0.500"	513-E300635X
1.65mm	.0650	1.500	0.400"	513-E300650	0.450"	513-E300650L	0.500"	513-E300650X
1.70mm	.0669	1.500	0.400"	513-E300669	0.450"	513-E300669L	0.500"	513-E300669X
51	.0670	1.500	0.400"	513-E300670	0.450"	513-E300670L	0.500"	513-E300670X
1.75mm	.0689	1.500	0.400"	513-E300689	0.450"	513-E300689L	0.500"	513-E300689X
50	.0700	1.500	0.400"	513-E300700	0.450"	513-E300700L	0.500"	513-E300700X
1.80mm	.0709	1.500	0.400"	513-E300709	0.450"	513-E300709L	0.500"	513-E300709X
1.85mm	.0728	1.500	0.400"	513-E300728	0.450"	513-E300728L	0.500"	513-E300728X
49	.0730	1.500	0.400"	513-E300738	0.450"	513-E300738L	0.500"	513-E300738X
1.90mm	.0748	1.500	0.400"	513-E300730	0.450"	513-E300730L	0.500"	513-E300730X
48	.0760	1.500	0.400"	513-E300760	0.450"	513-E300760L	0.500"	513-E300760X
1.95mm	.0768	1.500	0.400"	513-E300768	0.450"	513-E300768L	0.500"	513-E300768X
5/64	.0781	1.500	0.400"	513-E300781	0.450"	513-E300781L	0.500"	513-E300781X
47	.0785	1.500	0.400"	513-E300785	0.450"	513-E300785L	0.500"	513-E300785X
2.00mm	.0787	1.500	0.400"	513-E300787	0.450"	513-E300787L	0.500"	513-E300787X
2.05mm	.0807	1.500	0.400"	513-E300807	0.450"	513-E300807L	0.500"	513-E300807X

Atlantic Micro Drill

PRECISION MADE IN THE USA



			Standard		Long**		Extended**	
SIZE	DECIMAL INCHES	OAL	LOC	Part Number	LOC	Part Number	LOC	Part Number
46	.0810	1.500	0.400"	513-E300810	0.450"	513-E300810L	0.500"	513-E300810X
45	.0820	1.500	0.400"	513-E300820	0.450"	513-E300820L	0.500"	513-E300820X
2.10mm	.0827	1.500	0.400"	513-E300827	0.450"	513-E300827L	0.500"	513-E300827X
2.15mm	.0846	1.500	0.400"	513-E300846	0.450"	513-E300846L	0.500"	513-E300846X
44	.0860	1.500	0.400"	513-E300860	0.450"	513-E300860L	0.500"	513-E300860X
2.20mm	.0866	1.500	0.400"	513-E300866	0.450"	513-E300866L	0.500"	513-E300866X
2.25mm	.0886	1.500	0.400"	513-E300886	0.450"	513-E300886L	0.500"	513-E300886X
43	.0890	1.500	0.400"	513-E300890	0.450"	513-E300890L	0.500"	513-E300890X
2.30mm	.0906	1.500	0.400"	513-E300906	0.450"	513-E300906L	0.500"	513-E300906X
2.35mm	.0925	1.500	0.400"	513-E300925	0.450"	513-E300925L	0.500"	513-E300925X
42	.0935	1.500	0.400"	513-E300935	0.450"	513-E300935L	0.500"	513-E300935X
3/32	.0938	1.500	0.400"	513-E300938	0.450"	513-E300938L	0.500"	513-E300938X
2.40mm	.0945	1.500	0.400"	513-E300945	0.450"	513-E300945L	0.500"	513-E300945X
41	.0960	1.500	0.400"	513-E300960	0.450"	513-E300960L	0.500"	513-E300960X
2.45mm	.0965	1.500	0.400"	513-E300965	0.450"	513-E300965L	0.500"	513-E300965X
40	.0980	1.500	0.400"	513-E300980	0.450"	513-E300980L	0.500"	513-E300980X
2.50mm	.0984	1.500	0.400"	513-E300984	0.450"	513-E300984L	0.500"	513-E300984X
39	.0995	1.500	0.400"	513-E300995	0.450"	513-E300995L	0.500"	513-E300995X
2.55mm	.1004	1.500	0.400"	513-E301004	0.450"	513-E301004L	0.500"	513-E301004X
38	.1015	1.500	0.400"	513-E301015	0.450"	513-E301015L	0.500"	513-E301015X
2.60mm	.1024	1.500	0.400"	513-E301024	0.450"	513-E301024L	0.500"	513-E301024X
37	.1040	1.500	0.400"	513-E301040	0.450"	513-E301040L	0.500"	513-E301040X
2.65mm	.1043	1.500	0.400"	513-E301043	0.450"	513-E301043L	0.500"	513-E301043X
2.70mm	.1063	1.500	0.400"	513-E301063	0.450"	513-E301063L	0.500"	513-E301063X
36	.1065	1.500	0.400"	513-E301065	0.450"	513-E301065L	0.500"	513-E301065X
2.75mm	.1083	1.500	0.400"	513-E301083	0.450"	513-E301083L	0.500"	513-E301083X
7/64	.1094	1.500	0.400"	513-E301094	0.450"	513-E301094L	0.500"	513-E301094X
35	.1100	1.500	0.400"	513-E301100	0.450"	513-E301100L	0.500"	513-E301100X
2.80mm	.1102	1.500	0.400"	513-E301102	0.450"	513-E301102L	0.500"	513-E301102X
34	.1110	1.500	0.400"	513-E301110	0.450"	513-E301110L	0.500"	513-E301110X
2.85mm	.1122	1.500	0.400"	513-E301122	0.450"	513-E301122L	0.500"	513-E301122X
33	.1130	1.500	0.400"	513-E301130	0.450"	513-E301130L	0.500"	513-E301130X
2.90mm	.1142	1.500	0.400"	513-E301142	0.450"	513-E301142L	0.500"	513-E301142X
32	.1160	1.500	0.400"	513-E301160	0.450"	513-E301160L	0.500"	513-E301160X
2.95mm	.1161	1.500	0.400"	513-E301161	0.450"	513-E301161L	0.500"	513-E301161X
3.00mm	.1181	1.500	0.400"	513-E301181	0.450"	513-E301181L	0.500"	513-E301181X
31	.1200	1.500	0.400"	513-E301200	0.450"	513-E301200L	0.500"	513-E301200X
3.05mm	.1201	1.500	0.400"	513-E301201	0.450"	513-E301201L	0.500"	513-E301201X
3.10mm	.1220	1.500	0.400"	513-E301220	0.450"	513-E301220L	0.500"	513-E301220X
3.15mm	.1240	1.500	0.400"	513-E301240	0.450"	513-E301240L	0.500"	513-E301340X

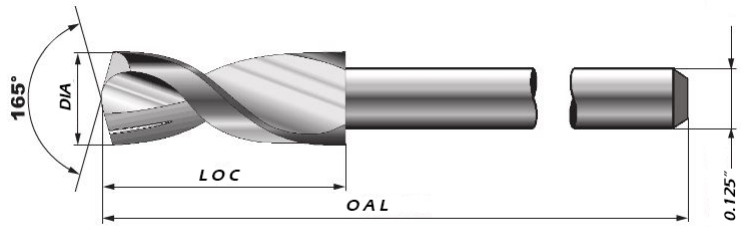
REVERSE SHANK DRILLS

Designed with chipbreaker to eliminate "bird-nesting" and a thinner web to drastically reduce thrust load on the spindle; increasing spindle life.

Made from tungsten carbide alloy.

DIAMETER TOLERANCE $+0.000 -0.0003$ "

Point Angle 165 degrees



SIZE	DECIMAL INCHES	OAL	LOC	Part Number
1/8	.1250	1.500	0.500"	513-E301250
3.20mm	.1260	1.500	0.500"	513-E301260
3.25mm	.1280	1.500	0.500"	513-E301280
30	.1285	1.500	0.500"	513-E301285
3.30mm	.1299	1.500	0.500"	513-E301299
3.35mm	.1319	1.500	0.500"	513-E301319
3.40mm	.1339	1.500	0.500"	513-E301339
3.45mm	.1358	1.500	0.500"	513-E301358
29	.1360	1.500	0.500"	513-E301360
3.50mm	.1378	1.500	0.500"	513-E301378
3.55mm	.1398	1.500	0.500"	513-E301398
28	.1405	1.500	0.500"	513-E301405
9/64	.1406	1.500	0.500"	513-E301406
3.60mm	.1417	1.500	0.500"	513-E301417
3.65mm	.1437	1.500	0.500"	513-E301437
27	.1440	1.500	0.500"	513-E301440
3.70mm	.1457	1.500	0.500"	513-E301457
26	.1470	1.500	0.500"	513-E301470
3.75mm	.1476	1.500	0.500"	513-E301476
25	.1495	1.500	0.500"	513-E301495
3.80mm	.1496	1.500	0.500"	513-E301496
3.85mm	.1516	1.500	0.500"	513-E301516
24	.1520	1.500	0.500"	513-E301520
3.90mm	.1535	1.500	0.500"	513-E301535
23	.1540	1.500	0.500"	513-E301540
3.95mm	.1555	1.500	0.500"	513-E301555
5/32	.1562	1.500	0.500"	513-E301562
22	.1570	1.500	0.500"	513-E301570
4.00mm	.1575	1.500	0.500"	513-E301575
21	.1590	1.500	0.500"	513-E301590
4.05mm	.1594	1.500	0.500"	513-E301954
20	.1610	1.500	0.500"	513-E301610
4.10mm	.1614	1.500	0.500"	513-E301614
4.15mm	.1634	1.500	0.500"	513-E301635
4.20mm	.1654	1.500	0.500"	513-E301654
19	.1660	1.500	0.500"	513-E301660
4.25mm	.1673	1.500	0.500"	513-E301673

SIZE	DECIMAL INCHES	OAL	LOC	Part Number
4.30mm	.1693	1.500	0.500"	513-E301693
18	.1695	1.500	0.500"	513-E301695
4.35mm	.1713	1.500	0.500"	513-E301713
11/64	.1719	1.500	0.500"	513-E301719
17	.1730	1.500	0.500"	513-E301730
4.40mm	.1732	1.500	0.500"	513-E301732
4.45mm	.1752	1.500	0.500"	513-E301752
16	.1770	1.500	0.500"	513-E301770
4.50mm	.1772	1.500	0.500"	513-E301772
4.55mm	.1791	1.500	0.500"	513-E301791
15	.1800	1.500	0.500"	513-E301800
4.60mm	.1811	1.500	0.500"	513-E301811
14	.1820	1.500	0.500"	513-E301820
4.65mm	.1831	1.500	0.500"	513-E301831
13 / 4.70	.1850	1.500	0.500"	513-E301850
4.75mm	.1870	1.500	0.500"	513-E301870
3/16	.1875	1.500	0.500"	513-E301875
12 / 4.80	.1890	1.500	0.500"	513-E301890
4.85mm	.1909	1.500	0.500"	513-E301909
11	.1910	1.500	0.500"	513-E301910
4.90mm	.1929	1.500	0.500"	513-E301929
10	.1935	1.500	0.500"	513-E301935
4.95mm	.1949	1.500	0.500"	513-E301949
9	.1960	1.500	0.500"	513-E301960
5.00mm	.1968	1.500	0.500"	513-E301968
5.05mm	.1988	1.500	0.500"	513-E301988
8	.1990	1.500	0.500"	513-E301990
5.10mm	.2008	1.500	0.500"	513-E302008
7	.2010	1.500	0.500"	513-E302010
5.15mm	.2028	1.500	0.400"	513-E302028
13/64	.2031	1.500	0.400"	513-E302031
6	.2040	1.500	0.400"	513-E302040
5.20mm	.2047	1.500	0.400"	513-E302047
5	.2055	1.500	0.400"	513-E302055
5.25mm	.2067	1.500	0.400"	513-E302067
5.30mm	.2087	1.500	0.400"	513-E302087
4	.2090	1.500	0.400"	513-E302090

Atlantic Micro Drill

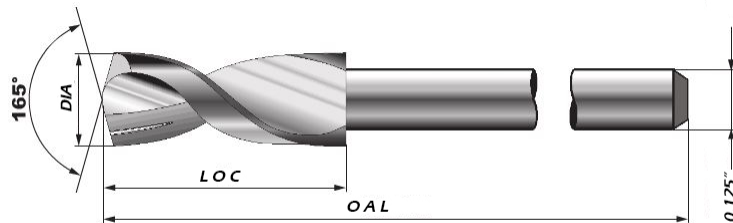
PRECISION MADE IN THE USA

Designed with chipbreaker to eliminate "bird-nesting" and a thinner web to drastically reduce thrust load on the spindle; increasing spindle life.

Made from tungsten carbide alloy.

DIAMETER TOLERANCE $+0.000 -0.0003$ "

Point Angle 165 degrees



SIZE	DECIMAL INCHES	OAL	LOC	Part Number
5.35mm	.2106	1.500	0.400"	513-E302106
5.40mm	.2126	1.500	0.400"	513-E302126
3	.2130	1.500	0.400"	513-E302130
5.45mm	.2146	1.500	0.400"	513-E302146
5.50mm	.2165	1.500	0.400"	513-E302165
5.55mm	.2185	1.500	0.400"	513-E302185
7/32	.2188	1.500	0.400"	513-E302188
5.60mm	.2205	1.500	0.400"	513-E302205
2	.2210	1.500	0.400"	513-E302210
5.65mm	.2224	1.500	0.400"	513-E302224
5.70mm	.2244	1.500	0.400"	513-E302244
5.75mm	.2264	1.500	0.400"	513-E302264
1	.2280	1.500	0.400"	513-E302280
5.80mm	.2283	1.500	0.400"	513-E302283
5.85mm	.2302	1.500	0.400"	513-E302302
5.90mm	.2323	1.500	0.400"	513-E302323
A	.2340	1.500	0.400"	513-E302340
5.95mm	.2343	1.500	0.400"	513-E302342
15/64	.2344	1.500	0.400"	513-E302344
6.00mm	.2362	1.500	0.400"	513-E302362
B	.2380	1.500	0.400"	513-E302380
6.05mm	.2382	1.500	0.400"	513-E302382
6.10mm	.2402	1.500	0.400"	513-E302402
C	.2420	1.500	0.400"	513-E302420
6.15mm	.2421	1.500	0.400"	513-E302421
6.20mm	.2441	1.500	0.400"	513-E302441
D	.2460	1.500	0.400"	513-E302460
6.25mm	.2461-	1.500	0.400"	513-E302461
6.30mm	.2480	1.500	0.400"	513-E302480
1/4/E/6.35	.2500	1.500	0.400"	513-E302500
6.40mm	.2520	1.500	0.400"	513-E302520
6.50mm	.2559	1.500	0.400"	513-E302559
F	.2570	1.500	0.400"	513-E302570
G	.2610	1.500	0.400"	513-E302610

Atlantic Microtool - 2013

PRECISION CARBIDE CUTTING TOOLS



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