

END MILLS • Solid Carbide 2 & 4 Flute

SHARS 2 & 4 Flute Reduced Neck Long Reach Solid Carbide Single End Mills

30° Helix • Center Cutting • uncoated or AlTiN Coated



Neck diameter reduced by .020 for clearance

Used to mill deep pocket or slots where long

flute lengths are not needed. The solid neck

area provides reach with maximum rigidity

Made from premium submicron grain carbide

Made in USA

Uncoated

AlTiN Coated

Dia.	Shank	LOC	OAL	2 Flute	4 Flute	Price(B)	2 Flute	4 Flute	Price(B)
1/8	1/8"	5/8"	2"	414-0513	414-0585	\$8.71	414-0549	414-0621	\$9.78
3/16	3/16	1	3	414-0514	414-0586	12.16	414-0550	414-0622	13.99
3/16	3/16	1	4	414-0515	414-0587	16.38	414-0551	414-0623	18.47
1/4	1/4	1	4	414-0516	414-0588	17.95	414-0552	414-0624	20.64
1/4	1/4	1-1/2	6	414-0517	414-0589	24.57	414-0553	414-0625	28.25
5/16	5/16	1	4	414-0518	414-0590	24.53	414-0554	414-0626	28.73
5/16	5/16	1-1/2	6	414-0519	414-0591	35.14	414-0555	414-0627	41.75
3/8	3/8	1	4	414-0520	414-0592	25.77	414-0556	414-0628	29.97
3/8	3/8	1-1/2	6	414-0521	414-0593	38.20	414-0557	414-0629	43.80
7/16	7/16	1	4	414-0522	414-0594	35.77	414-0558	414-0630	40.96
7/16	7/16	1-1/2	6	414-0523	414-0595	47.39	414-0559	414-0631	55.52
1/2	1/2	1	4	414-0524	414-0596	36.35	414-0560	414-0632	41.54
1/2	1/2	1-1/2	6	414-0525	414-0597	54.57	414-0561	414-0633	61.71
9/16	9/16	2	6	414-0526	414-0598	72.86	414-0562	414-0634	86.03
5/8	5/8	2	6	414-0527	414-0599	79.10	414-0563	414-0635	87.48
3/4	3/4	2	6	414-0528	414-0600	124.24	414-0564	414-0636	133.88
1	1	2	6	414-0529	414-0601	214.23	414-0565	414-0637	226.70

Cutting Diameter Tolerance +.000/- .002"

SHARS 2 & 4 Flute Micrograin Solid Carbide Corner Radius Single End Mill

30° Helix • Center Cutting • uncoated or AlTiN Coated



• Corner Radius prevent workpiece corner stress and end mill chipping

• Used when a radius is permissible

• Made from submicron grain carbide

Made in USA

Cutting Diameter Tolerance +.000/- .002"

Uncoated

AlTiN Coated

Rad.	Dia	Shank	LOC	OAL	2 Flute	4 Flute	Price(B)	Price(B)	Rad.	Dia	Shank	LOC	OAL	2 Flute	4 Flute	Price(B)	Price(B)
.015	3/32	1/8	3/8	1-1/2					.015	1/2	1/2	1	3				
.015	3/32	1/8	3/8	1-1/2					.020	1/2	1/2	1	3	414-2029	414-2171	\$35.27	\$39.33
.020	3/32	1/8	3/8	1-1/2					.030	1/2	1/2	1	3	414-2030	414-2172	35.27	39.33
.010	1/8	1/8	1/2	1-1/2					.045	1/2	1/2	1	3	414-2031	414-2173	35.27	39.33
.015	1/8	1/8	1/2	1-1/2					.060	1/2	1/2	1	3	414-2032	414-2174	35.27	39.33
.020	1/8	1/8	1/2	1-1/2	414-2007	414-2149	7.63	8.70	.090	1/2	1/2	1	3		414-2175	35.27	39.33
.030	1/8	1/8	1/2	1-1/2					.125	1/2	1/2	1	3		414-2176	35.27	39.33
.010	3/16	3/16	5/8	2					.015	5/8	5/8	1-1/4	3-1/2		414-2177	62.16	67.90
.015	3/16	3/16	5/8	2					.020	5/8	5/8	1-1/4	3-1/2	414-2036	414-2178	62.16	67.90
.020	3/16	3/16	5/8	2	414-2011	414-2153	10.45	11.74	.030	5/8	5/8	1-1/4	3-1/2	414-2037	414-2179	62.16	67.90
.030	3/16	3/16	5/8	2	414-2012	414-2154	10.45	11.74	.045	5/8	5/8	1-1/4	3-1/2	414-2038	414-2180	62.16	67.90
.015	1/4	1/4	3/4	2-1/2	414-2013	414-2155	10.45	11.74	.060	5/8	5/8	1-1/4	3-1/2	414-2039	414-2181	62.16	67.90
.020	1/4	1/4	3/4	2-1/2	414-2014	414-2156	13.20	15.53	.090	5/8	5/8	1-1/4	3-1/2	414-2040	414-2182	62.16	67.90
.030	1/4	1/4	3/4	2-1/2	414-2015	414-2157	13.20	15.53	.015	3/4	3/4	1-1/2	4		414-2183	91.67	98.42
.045	1/4	1/4	3/4	2-1/2	414-2016	414-2158	13.20	15.53	.020	3/4	3/4	1-1/2	4	414-2042	414-2184	91.68	98.42
.015	5/16	5/16	13/16	2-1/2	414-2017	414-2159	13.20	15.53	.030	3/4	3/4	1-1/2	4	414-2043	414-2185	91.68	98.42
.020	5/16	5/16	13/16	2-1/2					.045	3/4	3/4	1-1/2	4	414-2044	414-2186	91.68	98.42
.030	5/16	5/16	13/16	2-1/2					.060	3/4	3/4	1-1/2	4	414-2045	414-2187	91.68	98.42
.045	5/16	5/16	13/16	2-1/2	414-2019	414-2161	15.91	19.24	.090	3/4	3/4	1-1/2	4	414-2046	414-2188	91.68	98.42
.060	5/16	5/16	13/16	2-1/2	414-2020	414-2162	15.91	19.24	.125	3/4	3/4	1-1/2	4	414-2047	414-2189	91.68	98.42
.015	3/8	3/8	1	2-1/2	414-2021	414-2163	15.91	19.24	.015	1	1	1-1/2	4		414-2190	160.88	170.66
.020	3/8	3/8	1	2-1/2	414-2022	414-2164	15.91	19.24	.020	1	1	1-1/2	4	414-2049	414-2191	160.88	170.66
.030	3/8	3/8	1	2-1/2					.030	1	1	1-1/2	4	414-2050	414-2192	160.88	170.66
.045	3/8	3/8	1	2-1/2	414-2024	414-2166	19.84	23.17	.045	1	1	1-1/2	4	414-2051	414-2193	160.88	170.66
.060	3/8	3/8	1	2-1/2	414-2025	414-2167	19.84	23.17	.060	1	1	1-1/2	4	414-2052	414-2194	160.88	170.66
					414-2026	414-2168	19.84	23.17	.090	1	1	1-1/2	4	414-2053	414-2195	160.88	170.66
									.125	1	1	1-1/2	4	414-2054	414-2196	160.88	170.66

SHARS 2 & 4 Flute Micrograin Solid Carbide End Mills

Center cutting • Square Nose • Single or Double End • Uncoated or TiAlN

Single End



Single End

Mill	Shank	Flute Length	OAL	Uncoated 2 Flutes	Uncoated 4 Flutes	Price(B)
1/16"	1/8"	3/16"	1-1/2"	404-5685	404-5701	\$3.50
3/32	1/8	5/16	1-1/2	404-5732	404-5733	3.10
1/8	1/8	1/2	1-1/2	404-5686	404-5702	2.95
5/32	3/16	9/16	2	404-5687	404-5703	6.10
3/16	3/16	5/8	2	404-5688	404-5704	5.50
7/32	1/4	5/8	2-1/2	404-5689	404-5705	7.45
1/4	1/4	3/4	2-1/2	404-5690	404-5706	6.50
5/16	5/16	13/16	2-1/2	404-5691	404-5707	8.30
3/8	3/8	7/8	2-1/2	404-5692	404-5708	11.50
7/16	7/16	7/8	2-1/2	404-5693	404-5709	14.35
1/2	1/2	1	3	404-5694	404-5710	17.90
5/8	5/8	1-1/4	3-1/2	404-5695	404-5711	36.50
3/4	3/4	1-1/2	4	404-5696	404-5712	55.95
1	1	1-1/2	4	404-5697	404-5713	79.95



TiAlN coated, 4FL.

Dia.	Shank	LOC	OAL	TiAlN	Price(E)
1/8"	1/8"	1/2"	1-1/2"	404-9420	\$4.50
3/16	3/16	5/8	2	404-9421	6.30
1/4	1/4	3/4	2-1/2	404-9422	9.50
5/16	5/16	13/16	2-1/2	404-9423	13.10
3/8	3/8	7/8	2-1/2	404-9424	19.40
1/2	1/2	1	3	404-9425	23.95

Double End

Mill	Shank	Flute	OAL	2 Flutes	4 Flutes	Price(B)
1/16"	1/8"	1/8"	1-1/2"	404-5788	404-5714	\$5.75
1/8	1/8	1/4	1-1/2	404-5789	404-5715	5.50
5/32	3/16	5/16	2	404-5790	404-5716	7.90
3/16	3/16	3/8	2	404-5791	404-5717	7.90
7/32	1/4	1/2	2-1/2	404-5792	404-5718	9.00
1/4	1/4	1/2	2-1/2	404-5793	404-5719	9.00
5/16	5/16	1/2	2-1/2	404-5794	404-5720	13.50
3/8	3/8	1/2	2-1/2	404-5795	404-5721	14.95
7/16	1/2	5/8	3	404-5796	404-5722	23.80
1/2	1/2	5/8	3	404-5797	404-5723	27.95