



**Niagara Cutter ELITE Series Solid Carbide High Performance Endmills**

Series S335 - 3 Flute, 35 Degree Helix for Steel, Stainless Steel, Titanium & High Temp. Alloys

\*Advanced High Performance TiALN Coating    \*Standard & Stub Length    \*Great for Slotting & Pocketing  
 \*Extra-Fine Grain Carbide    \*Ultra High Transverse Rupture Strength (623,000 PSI AVG.)    \*Center Cutting

**ELITE Series**

**Stub length with Corner Radius**

**ELITE Series**



Cutting Dia.	Shank Dia.	Length of Cut	Overall Length	Corner Radius	TiALN EDP No.	List Price	Sale Price
1/8	1/8	1/4	1-1/2	.008-.010	61802	17.47	14.51
3/16	3/16	5/16	2	.008-.010	61806	18.82	15.64
1/4	1/4	3/8	2	.015-.020	61810	20.27	16.84
5/16	5/16	7/16	2	.015-.020	61814	25.54	21.22
3/8	3/8	1/2	2	.015-.020	61818	31.58	26.24
7/16	7/16	9/16	2-1/2	.015-.020	61820	39.65	32.94
1/2	1/2	5/8	2-1/2	.030-.035	61822	48.72	40.48
5/8	5/8	3/4	3	.030-.035	61824	102.48	85.14
3/4	3/4	1	3	.030-.035	61826	132.72	110.26
1	1	1-1/4	3	.030-.035	61828	211.23	175.48



**Standard Length with Corner Radius**



Cutting Dia.	Shank Dia.	Length of Cut	Overall Length	Corner Radius	TiALN EDP No.	List Price	Sale Price
1/8	1/8	1/2	1-1/2	.008-.010	61803	19.49	16.19
3/16	3/16	9/16	2	.015-.020	61807	20.94	17.40
1/4	1/4	3/4	2-1/2	.015-.020	61811	22.62	18.79
5/16	5/16	13/16	2-1/2	.015-.020	61815	28.34	23.54
3/8	3/8	1	2-1/2	.015-.020	61819	35.17	29.22
7/16	7/16	1	2-3/4	.015-.020	61821	44.02	36.57
1/2	1/2	1-1/4	3	.030-.035	61823	54.10	44.94
5/8	5/8	1-5/8	3-1/2	.030-.035	61825	113.90	94.62
3/4	3/4	1-5/8	4	.030-.035	61827	147.50	122.54
1	1	2	4	.030-.035	61829	234.75	195.02



Series SN335 - 3 Flute, 35 Degree Helix for Steel, Stainless Steel, Titanium & High Temp. Alloys

**Extended length with Corner Radius and Relieved Neck**



Cut/Shk Dia.	Reach Length	Length of Cut	Overall Length	Corner Radius	TiALN EDP No.	List Price	Sale Price
1/4	2-1/8	3/8	4	.015-.020	18648	44.94	37.34
5/16	2-1/8	7/16	4	.015-.020	18649	72.82	60.50
3/8	2-1/8	1/2	4	.015-.020	18650	65.08	54.07
3/8	3-3/8	1/2	6	.015-.020	18651	97.63	81.10
7/16	2-1/8	9/16	4	.015-.020	18652	87.87	73.00
7/16	3-3/8	9/16	6	.015-.020	18653	118.72	98.63
1/2	2-1/8	5/8	4	.030-.035	18654	92.43	76.79
1/2	3-1/8	5/8	5	.030-.035	18655	118.72	98.63
1/2	4-1/8	5/8	6	.030-.035	18656	145.11	120.56
5/8	2-1/8	3/4	4	.030-.035	18657	142.15	118.09
5/8	3-1/8	3/4	5	.030-.035	18658	183.70	152.61
5/8	4	3/4	6	.030-.035	18659	226.42	188.10
3/4	2	1	4	.030-.035	18660	167.27	138.96
3/4	3	1	5	.030-.035	18661	201.72	167.58
3/4	4	1	6	.030-.035	18662	228.64	189.95
1	3	1-1/4	5	.030-.035	18663	247.30	205.45
1	4	1-1/4	6	.030-.035	18664	329.66	273.87



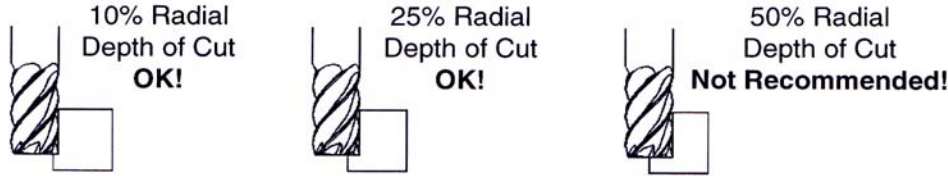


## Niagara Cutter

## ELITE Series

The S545 has been designed for high performance milling in a wide range of materials. The 45° helix and full eccentric primary make the S545 ideal for peripheral and finish milling. Recommended with Microshield™ HM TiAlN coating.

### Application Guidelines for S545



- Designed for peripheral milling
- Can be used for heat treated materials up to 50 HRC
- Radial Depth of Cut should not exceed 30% of tool diameter when the axial cut is 100% of tool diameter or greater.

Series S545 - 5 Flute, 45 Degree Helix for Steel, Stainless Steel, Titanium & High Temp. Alloys

\*Advanced High Performance TiAlN Coating    \*Standard & Stub Length    \*Full Form Ground Flute Shape  
 \*Extra-Fine Grain Carbide    \*Ultra High Transverse Rupture Strength (623,000 PSI AVG.)    \*Center Cutting

### ELITE Series

### Stub Length with Sharp Corners

### ELITE Series



Cutting Dia.	Shank Dia.	Length of Cut	Overall Length	Corner Radius	TiAlN EDP No.	List Price	Sale Price
1/8	1/8	1/4	1-1/2	Sharp Corner	61983	17.14	13.41
3/16	3/16	5/16	2	Sharp Corner	61987	18.82	14.73
1/4	1/4	3/8	2	Sharp Corner	61991	20.27	15.86
5/16	5/16	7/16	2	Sharp Corner	61996	25.54	19.99
3/8	3/8	1/2	2	Sharp Corner	62002	31.58	24.71
7/16	7/16	9/16	2-1/2	Sharp Corner	62008	39.65	31.03
1/2	1/2	5/8	2-1/2	Sharp Corner	62013	48.72	38.13
5/8	5/8	3/4	3	Sharp Corner	62017	100.02	78.28
3/4	3/4	1	3	Sharp Corner	62021	128.69	100.71
1	1	1-1/4	3	Sharp Corner	62026	203.17	159.00



### ELITE Series

### Standard and Extended Length with Sharp Corners

### ELITE Series



Cutting Dia.	Shank Dia.	Length of Cut	Overall Length	Corner Radius	TiAlN EDP No.	List Price	Sale Price
1/8	1/8	1/2	1-1/2	Sharp Corner	61984	18.93	14.81
3/16	3/8	9/16	2	Sharp Corner	61988	20.94	16.39
1/4	1/4	3/4	2-1/2	Sharp Corner	61992	22.62	17.70
1/4	1/4	1-1/4	4	Sharp Corner	61993	38.98	30.51
5/16	5/16	13/16	2-1/2	Sharp Corner	61997	28.34	22.18
3/8	3/8	1	2-1/2	Sharp Corner	62003	35.17	27.52
3/8	3/8	1-1/2	4	Sharp Corner	62004	54.10	42.34
7/16	7/16	1	2-3/4	Sharp Corner	62009	44.02	34.45
1/2	1/2	1-1/4	3	Sharp Corner	62014	54.10	42.34
1/2	1/2	2	4	Sharp Corner	62015	78.18	61.18
1/2	1/2	3-1/8	5	Sharp Corner	62016	153.33	120.00
5/8	1/2	1-5/8	3-1/2	Sharp Corner	62018	112.22	87.82
5/8	5/8	2-1/2	5	Sharp Corner	62019	148.51	116.23
3/4	3/4	1-5/8	4	Sharp Corner	62022	144.26	112.90
3/4	3/4	3-1/4	6	Sharp Corner	62024	217.39	170.13
1	1	2	4	Sharp Corner	62027	228.14	178.54
1	1	2-5/8	6	Sharp Corner	62028	283.70	222.03
1	1	3-1/4	6	Sharp Corner	62029	311.92	244.11



# Series S545 - 5 Flute, 45 Degree Helix for Steel, Stainless Steel, Titanium & High Temp. Alloys

\*Advanced High Performance TiALN Coating    \*Standard & Stub Length    \*Full Form Ground Flute Shape  
 \*Extra-Fine Grain Carbide    \*Ultra High Tranverse Rupture Strength (623,000 PSI AVG.)    \*Center Cutting

**ELITE Series**

## Stub Length with Corner Radius

**ELITE Series**



Cutting Dia.	Shank Dia.	Length of Cut	Overall Length	Corner Radius	TiALN EDP No.	List Price	Sale Price
1/8	1/8	1/4	1-1/2	.015	61983-015	32.70	25.97
1/4	1/4	3/8	2	.015	61991-015	36.74	29.18
1/4	1/4	3/8	2	.020	61991-020	36.74	29.18
3/8	3/8	1/2	2	.030	62002-030	48.16	38.24
3/8	3/8	1/2	2	.045	62002-045	48.16	38.24
1/2	1/2	5/8	2-1/2	.030	62013-030	66.42	52.75
1/2	1/2	5/8	2-1/2	.060	62013-060	66.42	52.75
1/2	1/2	5/8	2-1/2	.090	62013-090	69.55	55.23
3/4	3/4	1	3	.060	62021-060	144.26	114.56
3/4	3/4	1	3	.090	62021-090	147.39	117.05
3/4	3/4	1	3	.125	62021-125	147.39	117.05
1	1	1-1/4	3	.060	62026-060	218.85	173.79
1	1	1-1/4	3	.125	62026-125	221.98	176.28



**ELITE Series**

## Regular Length with Corner Radius

**ELITE Series**



Cutting Dia.	Shank Dia.	Length of Cut	Overall Length	Corner Radius	TiALN EDP No.	List Price	Sale Price
1/8	1/8	1/2	1-1/2	.015	61984-015	34.50	27.40
1/4	1/4	3/4	2-1/2	.015	61992-015	39.76	31.57
1/4	1/4	3/8	2-1/2	.020	61992-020	39.76	31.57
3/8	3/8	1	2-1/2	.030	62003-030	52.86	41.98
3/8	3/8	1	2-1/2	.045	62003-045	52.86	41.98
1/2	1/2	1-1/4	3	.030	62014-030	71.23	56.57
1/2	1/2	1-1/4	3	.060	62014-060	71.23	56.57
1/2	1/2	1-1/4	3	.090	62014-090	74.37	59.06
3/4	3/4	1-5/8	4	.060	62022-060	159.82	126.92
3/4	3/4	1-5/8	4	.090	62022-090	162.96	129.41
3/4	3/4	1-5/8	4	.125	62022-125	162.96	129.41
1	1	2	4	.060	62027-060	243.71	193.53
1	1	2	4	.125	62027-125	246.85	196.03



# Series AN345 - 3 Flute, 45 Degree Helix for Aluminum and Non-Ferrous Materials

\*Eccentric Primary Relief    \*Necked Shank    \*Standard, Long, & X-Long Lengths    \*Cylindrical Land  
 \*Extra-Fine Grain Carbide    \*Ultra High Tranverse Rupture Strength (623,000 PSI AVG.)    \*Center Cutting

**ELITE Series**

## Extended lengths with Corner Radius and Relieved Neck

**ELITE Series**



Cut/Shk Dia.	Reach Length	Length of Cut	Overall Length	Corner Radius	TiCN EDP No.	List Price	Sale Price
1/4	2-1/8	3/8	4	.015-.020	18614	47.49	39.45
5/16	2-1/8	7/16	4	.015-.020	18615	76.94	63.92
3/8	1-1/8	3/8	2-1/2	.015-.020	18616	40.43	33.59
3/8	2-1/8	1/2	4	.015-.020	18617	68.77	57.13
3/8	4-1/8	1/2	6	.015-.020	18618	103.15	85.69
1/2	1-3/8	1/2	3	.015-.020	18619	61.71	51.27
1/2	2-1/8	5/8	4	.015-.020	18620	97.66	81.13
1/2	4-1/8	5/8	6	.015-.020	18621	153.33	127.38
5/8	2	3/4	4	.015-.020	18622	150.19	124.77
5/8	4	3/4	6	.015-.020	18623	237.89	197.63
3/4	1-3/4	3/4	4	.015-.020	18624	176.74	146.83
3/4	2-1/2	1	5	.015-.020	18625	213.14	177.07
3/4	3-1/2	1	6	.015-.020	18626	230.27	191.30
3/4	4-1/8	1	7	.015-.020	18627	389.76	323.80
1	3-1/2	1-1/4	6	.015-.020	18629	348.32	289.37
1	4-1/2	1-1/4	7	.015-.020	18630	485.74	403.54



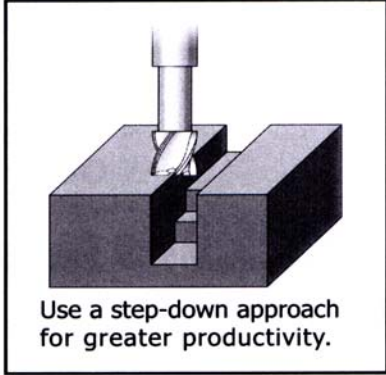
**KHS**

Uncoated tools with sharp corners are also available - please ask for more information

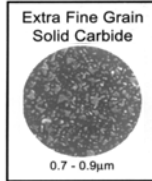
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# Niagara Cutter *ELITE* Series



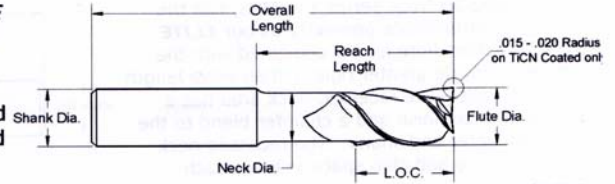
Use a step-down approach for greater productivity.



All **Niagara Cutter** Solid Carbide end mills are manufactured from specially selected extra-fine grade cemented carbide material. This allows for faster speeds and feeds, reduced chipping and decreased wear.

Table of Niagara Cutter Carbide Properties					
CO	Grain Size	Hardness (Hv)	(Hra)	TRS (PSI)	USA Class
10%	0.8µm	1600	92.1	623,000	C2-3

Niagara's **AN345** Neck Series End Mills, has the same high performance geometry as our **ELITE** A345. The short flute length combined with the solid neck provide greater rigidity than extra length fluted end mills. The recessed neck area has a superior surface finish and a chamfer blend to the cutting diameter and shank. The recessed neck offers clearance and chip space in long reach applications.



NSAN-1

Microshield™ Coating	TiAlN (HM)
Microhardness (HV 0.05)	3500
Coefficient of Friction Against Dry Steel	0.4
Coating Thickness (Micron-µm)	2 - 4(µm)
Max. Working Temp.	1470° F
Coating Color	Purple/Gray

Niagara Microshield™ TiAlN coating provides lubricity and resistance to wear. TiAlN also has excellent thermal stability making it the ideal choice for dry or low lubricant machining applications.

## Series A345 - 3 Flute, 45 Degree Helix for Aluminum & Non-Ferrous Materials

*\*Eccentric Primary Relief    \*Stub, Standard, Long, & X-Long Lengths    \*Cylindrical Land*  
*\*Extra-Fine Grain Carbide    \*Ultra High Transverse Rupture Strength (623,000 PSI AVG.)    \*Center Cutting*

**ELITE Series**

**ELITE Series**



Cutting Dia.	Shank Dia.	Length of Cut	Overall Length	Corner Radius	TiCN EDP No.	List Price	Sale Price
1/8	1/8	1/4	1-1/2	Sharp Corner	61626	13.33	9.35
1/8	1/8	3/8	1-1/2	Sharp Corner	61627	14.67	10.29
1/4	1/4	3/8	2-1/2	Sharp Corner	61634	24.75	17.36
1/4	1/4	3/4	2-1/2	Sharp Corner	61635	27.44	19.24
1/4	1/4	1-1/4	4	Sharp Corner	61636	42.78	30.00
3/8	3/8	1/2	2-1/2	Sharp Corner	61645	36.40	25.53
3/8	3/8	1	2-1/2	Sharp Corner	61646	61.82	43.35
3/8	3/8	1-1/2	4	Sharp Corner	61647	61.82	43.35
7/16	7/16	9/16	2-3/4	Sharp Corner	61650	44.91	31.50
7/16	7/16	1	2-3/4	Sharp Corner	65651	49.95	35.03
1/2	1/2	5/8	3	Sharp Corner	61654	55.55	38.96
1/2	1/2	1-1/4	3	Sharp Corner	61655	61.82	43.35
1/2	1/2	2	4	Sharp Corner	61656	87.92	61.66
1/2	1/2	3-1/8	6	Sharp Corner	61657	153.33	107.53
5/8	5/8	3/4	3	Sharp Corner	61658	104.27	73.12
5/8	5/8	1-5/8	3-1/2	Sharp Corner	61659	135.07	94.72
5/8	5/8	2-1/2	5	Sharp Corner	61660	157.70	110.59
5/8	5/8	3-3/4	6	Sharp Corner	61661	237.89	166.83
3/4	3/4	1	3	Sharp Corner	61662	144.37	101.25
3/4	3/4	1-5/8	4	Sharp Corner	61663	159.04	111.53
3/4	3/4	2-1/4	5	Sharp Corner	61664	191.74	134.47
3/4	3/4	3-1/4	6	Sharp Corner	61665	207.20	145.31
3/4	3/4	4	6-1/2	Sharp Corner	61666	350.78	246.00
1	1	1-1/4	4	Sharp Corner	61667	231.39	162.27
1	1	2	4	Sharp Corner	61668	262.98	184.43
1	1	2-5/8	6	Sharp Corner	61669	283.70	198.96
1	1	3-1/4	6	Sharp Corner	61670	313.49	219.85
1	1	4-1/8	7	Sharp Corner	61671	485.74	340.65

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Other Styles, Sizes and Corner Radii Available - Please call for more information.

[www.kandhsalesinc.com](http://www.kandhsalesinc.com)