



# Z-Carb™ Corner Radius

*Outstanding Productivity*

**SGS Tool Company** continues to develop and expand **Z-CARB**, the original and patented chatter-resistant end mill. The tool that has allowed end users to aggressively address their roughing and finishing applications with unequalled results is now available with a variety of CNC-ground corner radii options for specific applications. SGS is pleased to offer the same unmatched performance you've come to expect from **Z-CARB**, now with the enhanced ability to meet your corner radius needs. A wide array of selections are available from stock.

## ***Patented Unequal Helix Geometry***

### **Material Applications Include:**

- Low Carbon Steels
- Tool Steels
- Cast Iron
- Stainless Steels
- Titanium/High Temp Alloys

### **Chatter-Resistant Design:**

- Improves Surface Finish

### **Optimum Material Removal:**

- Increases Cutting Depth
- Increases Feed Rates

### **Increased Tool Life:**

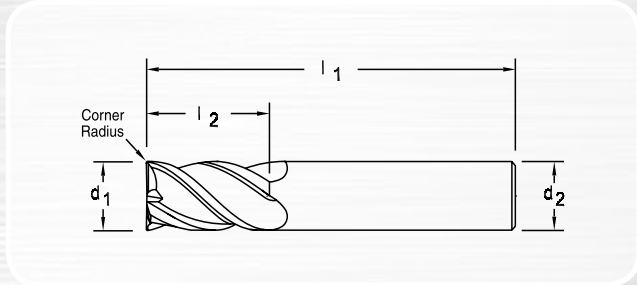
- Ti-NAMITE-A® (AlTiN Coated)
- Corner Radius
- Eccentric Relief

### **Minimum Tool Deflection:**

- Reduces Harmful Machine Vibration
- Improves Dimensional Control



# Fractional



## Z-CARB SERIES Z1CR 4 FLUTE – SINGLE END – CORNER RADIUS

Cutting Diameter d1	Length of Cut l2	Overall Length l1	Shank Diameter d2	Corner Radius	Ti-NAMITE-A (AlTiN) EDP No.	Ti-NAMITE-A (AlTiN) EDP No. w/Flat
1/8	3/8	1-1/2	1/8	.010-.015	36333	
3/16	7/16	2	3/16	.010-.015	36334	
1/4	1/2	2-1/2	1/4	.015-.020	36335	
5/16	13/16	2-1/2	5/16	.015-.020	36336	
3/8	7/8	2-1/2	3/8	.015-.020	36337	36548
7/16	1	2-3/4	7/16	.015-.020	36338	36549
1/2	1	3	1/2	.025-.030	36339	36550
9/16	1-1/8	3-1/2	9/16	.025-.030	36340	36551
5/8	1-1/4	3-1/2	5/8	.035-.040	36341	36552
3/4	1-1/2	4	3/4	.035-.040	36342	36553
1	1-1/2	4	1	.035-.040	36343	36554

FRACTIONAL TOLERANCES	
Cutting Diameter d1	Shank Diameter d2
1/8 - 1/4 = +.0000/-0.0012	1/8 - 3/8 = -.0001/-0.0003
>1/4 - 3/8 = +.0000/-0.0016	>3/8 - 1 = -.0001/-0.0004
>3/8 - 1 = +.0000/-0.002	

CORNER RADIUS TOLERANCES
+0.000/-0.002

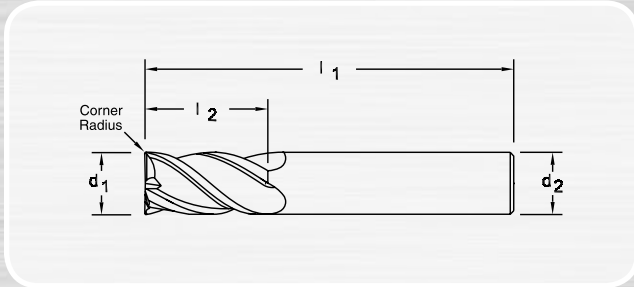
## Z-CARB SERIES Z1ACR 4 FLUTE – SINGLE END – CORNER RADIUS – SPECIFIC

Cutting Diameter d1	Length of Cut l2	Overall Length l1	Shank Diameter d2	Corner Radius	Ti-NAMITE-A (AlTiN) EDP No.	Ti-NAMITE-A (AlTiN) EDP No. w/Flat
1/8	3/8	1 1/2	1/8	0.010	36370	
1/8	3/8	1 1/2	1/8	0.015	36720	
3/16	7/16	2	3/16	0.010	36371	
3/16	7/16	2	3/16	0.015	36721	
3/16	7/16	2	3/16	0.030	36722	
1/4	1/2	2 1/2	1/4	0.010	36372	
1/4	1/2	2 1/2	1/4	0.015	36723	
1/4	1/2	2 1/2	1/4	0.030	36373	
5/16	13/16	2 1/2	5/16	0.015	36724	
5/16	13/16	2 1/2	5/16	0.030	36374	
3/8	7/8	2 1/2	3/8	0.010	36375	36701
3/8	7/8	2 1/2	3/8	0.015	36725	36736
3/8	7/8	2 1/2	3/8	0.030	36376	36702
3/8	7/8	2 1/2	3/8	0.045	36726	36737
3/8	7/8	2 1/2	3/8	0.060	36727	36738
7/16	1	2 3/4	7/16	0.015	36728	36739
7/16	1	2 3/4	7/16	0.030	36377	36703
1/2	1	3	1/2	0.010	36378	36704
1/2	1	3	1/2	0.015	36729	36740
1/2	1	3	1/2	0.030	36379	36705
1/2	1	3	1/2	0.045	36730	36741
1/2	1	3	1/2	0.060	36380	36706
1/2	1	3	1/2	0.090	36381	36707
1/2	1	3	1/2	0.125	36731	36742
9/16	1 1/8	3 1/2	9/16	0.030	36382	36708
5/8	1 1/4	3 1/2	5/8	0.030	36383	36709
5/8	1 1/4	3 1/2	5/8	0.045	36732	36743
5/8	1 1/4	3 1/2	5/8	0.060	36384	36710
5/8	1 1/4	3 1/2	5/8	0.090	36385	36711
5/8	1 1/4	3 1/2	5/8	0.125	36733	36744
3/4	1 1/2	4	3/4	0.030	36386	36712
3/4	1 1/2	4	3/4	0.045	36734	36745
3/4	1 1/2	4	3/4	0.060	36387	36713
3/4	1 1/2	4	3/4	0.090	36388	36714
3/4	1 1/2	4	3/4	0.125	36389	36715
1	1 1/2	4	1	0.030	36390	36716
1	1 1/2	4	1	0.045	36735	36746
1	1 1/2	4	1	0.060	36391	36717
1	1 1/2	4	1	0.090	36392	36718
1	1 1/2	4	1	0.125	36393	36719

# Fractional

## Z-CARB™ SERIES Z1LC

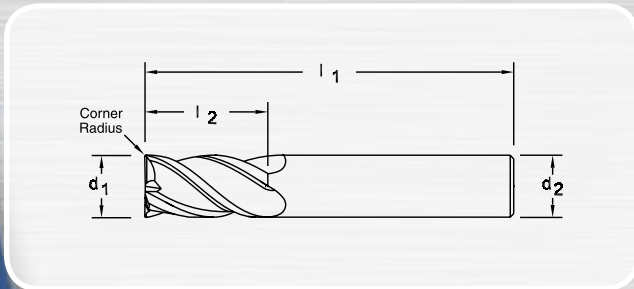
### 4 FLUTE – SINGLE END – CORNER RADIUS – LONG REACH



Cutting Diameter d1	Length of Cut l2	Overall Length l1	Shank Diameter d2	Corner Radius	Ti-NAMITE-A (AlTiN) EDP No.
1/4	1/2	4	1/4	.015 - .020	36450
5/16	13/16	4	5/16	.015 - .020	36452
3/8	7/8	5	3/8	.015 - .020	36456
7/16	1	6	7/16	.015 - .020	36460
1/2	1	6	1/2	.025 - .030	36462
9/16	1 1/8	6	9/16	.025 - .030	36466
5/8	1 1/4	6	5/8	.035 - .040	36470
3/4	1 1/2	6	3/4	.035 - .040	36472
1	1 1/2	6	1	.035 - .040	36474

## Z-CARB™ SERIES Z16CR

### 4 FLUTE – SINGLE END – CORNER RADIUS – SHORT LENGTH

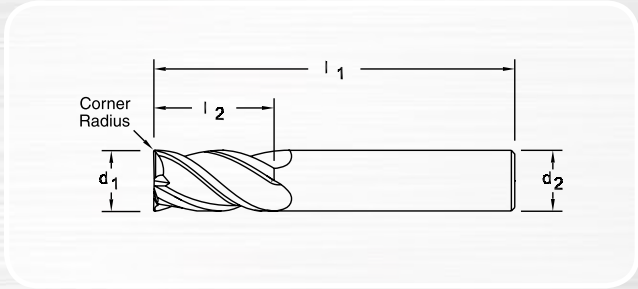


Cutting Diameter d1	Length of Cut l2	Overall Length l1	Shank Diameter d2	Corner Radius	Ti-NAMITE-A (AlTiN) EDP No.
1/8	1/4	1 1/2	1/8	.010 - .015	36505
5/32	5/16	2	3/16	.010 - .015	36506
3/16	3/8	2	3/16	.010 - .015	36507
7/32	3/8	2	1/4	.015 - .020	36508
1/4	7/16	2	1/4	.015 - .020	36509
5/16	1/2	2	5/16	.015 - .020	36511
3/8	5/8	2	3/8	.015 - .020	36513
7/16	5/8	2 1/2	7/16	.015 - .020	36515
1/2	5/8	2 1/2	1/2	.025 - .030	36517
5/8	3/4	3	5/8	.035 - .040	36519
3/4	1	3	3/4	.035 - .040	36520

### FRACTIONAL TOLERANCES

Cutting Diameter d1	Shank Diameter d2
1/8 - 1/4 = +.0000/-0.0012	1/8 - 3/8 = -.0001/-0.0003
>1/4 - 3/8 = +.0000/-0.0016	>3/8 - 1 = -.0001/-0.0004
>3/8 - 1 = +.0000/-0.002	





**Z-CARB™ SERIES Z1MCR**  
**4 FLUTE – SINGLE END – CORNER RADIUS**

Cutting Diameter d1 mm	Length of Cut l2 mm	Overall Length l1 mm	Shank Diameter d2 mm	Corner Radius mm	Ti-NAMITE-A (AlTiN) EDP No.
3	8	57	6	0,25-0,38	46377
4	11	57	6	0,25-0,38	46378
5	13	57	6	0,25-0,38	46379
6	13	57	6	0,38-0,51	46335
7	19	63	8	0,38-0,51	46380
8	19	63	8	0,38-0,51	46336
9	22	72	10	0,38-0,51	46381
10	22	72	10	0,38-0,51	46337
11	26	83	12	0,64-0,76	46382
12	26	83	12	0,64-0,76	46338
13	26	92	16	0,64-0,76	46383
14	26	83	14	0,64-0,76	46339
14	26	92	16	0,64-0,76	46384
15	32	92	16	0,89-1,02	46385
16	32	92	16	0,89-1,02	46340
18	32	92	18	0,89-1,02	46341
18	32	104	20	0,89-1,02	46386
20	38	104	20	0,89-1,02	46342
25	38	104	25	0,89-1,02	46334

<b>METRIC TOLERANCES</b>	
Cutting Diameter d1	Shank Diameter d2
3 - 6 = +0 / -0,030	6 - 10 = -0,0025 / -0,0075
6 = +0 / -0,030	6 - 10 = -0,0025 / -0,0075
> 6 - 10 = +0 / -0,040	> 10 - 20 = -0,0025 / -0,010
> 10 - 20 = +0 / -0,050	