Designed for machining aluminum, nonferrous, non-metallic and other materials that permit high machinability rates

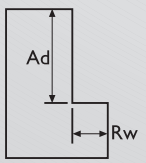
- Shear-Carb's geometry outperforms conventional style carbide end mills
- Improved cutting efficiency compliments rigid CNC machining applications
- Permits higher feed rates and significantly lower cutting forces
- 2-flute design allows for maximum chip removal
- 4-flute design provides better workpiece finishes
- Additional coatings available
- SGS Lab-certified micrograin carbide
- Metric sizes manufactured to DIN 6527L HA
- Ball ends, special diameters, flute lengths, and overall lengths available on request

Speed and Feed Recommendations

Diameter		Aluminum Alloys 1300 sfm 400 m/min		Plastics 1000 sfm 305 m/min		Plastics-glass filled 500 sfm 150 m/min		Copper Alloys 480 sfm 146 m/min		Copper Nickel Alloys 240 sfm 75 m/min	
		Feed Rate – Per Tooth									
inch	metric	in	mm	in	mm	in	mm	in	mm	in	mm
1/16		.0006	.015	.0008	.020	.0008	.020	.0004	.010	.0005	.010
1/8	3	.0010	.030	.0015	.040	.0015	.040	.0008	.020	.0008	.020
3/16	5	.0015	.045	.0025	.060	.0020	.060	.0010	.030	.0010	.030
1/4	6	.0025	.060	.0030	.075	.0030	.075	.0015	.040	.0015	.040
5/16	8	.0030	.075	.0035	.095	.0035	.095	.0020	.050	.0020	.050
3/8	10	.0035	.090	.0045	.115	.0045	.115	.0025	.060	.0025	.060
1/2	12	.0050	.120	.0060	.150	.0060	.150	.0030	.075	.0030	.075
9/16	14	.0055	.135	.0065	.175	.0065	.175	.0035	.085	.0035	.085
5/8	16	.0060	.150	.0075	.190	.0075	.190	.0040	.095	.0040	.095
3/4	20	.0070	.185	.0090	.230	.0090	.230	.0045	.110	.0045	.110
1		.0095	.245	.0120	.310	.0120	.310	.0060	.150	.0060	.150

Profiling

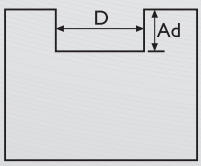
Axial Depth ≤ 1.5 x D
Radial Width ≤ .3 x D



Reduce speed ~ 20% when slotting
Increase speed ~ 70% when finish milling
Increase feed per tooth ~ 20-30% when finish milling (depending on finish requirements)

Slotting

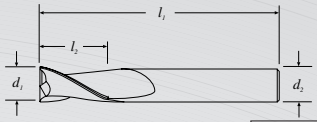
AXIAL DEPTH
Series 54, 54M ≤ .25 x D
Series 52, 52M ≤ 1 x D



rpm = sfm x 3.82 / tool diameter
rpm = (m/min x 1000) / (3.14 x tool diameter)
feed per minute = feed per tooth x no. of teeth x rpm

FRACTIONAL

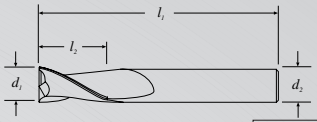
Shear-Carb® - Series 52 - 2 Flute



Cutting Diameter d_1	Length of Cut l_2	Overall Length l_1	Shank Diameter d_2	Uncoated EDP No.	TI-NAMITE-C (TiCN) EDP No.
1/16	3/16	1-1/2	1/8	35273	35300
3/32	3/8	1-1/2	1/8	35275	35301
1/8	7/16	1-1/2	1/8	35277	35302
5/32	9/16	2	3/16	35278	35303
3/16	9/16	2	3/16	35279	35304
7/32	5/8	2-1/2	1/4	35280	35305
1/4	3/4	2-1/2	1/4	35281	35306
9/32	3/4	2-1/2	5/16	35282	35307
5/16	13/16	2-1/2	5/16	35283	35308
3/8	7/8	2-1/2	3/8	35285	35309
7/16	1	2-3/4	7/16	35287	35310
1/2	1	3	1/2	35289	35311
9/16	1-1/8	3-1/2	9/16	35291	35312
5/8	1-1/4	3-1/2	5/8	35293	35313
3/4	1-1/2	4	3/4	35295	35314
1	1-1/2	4	1	35297	35315

METRIC

Shear-Carb® - Series 52M - 2 Flute



Cutting Diameter d_1 mm h10	Length of Cut l_2 mm	Overall Length l_1 mm	Shank Diameter d_2 mm h6	Uncoated EDP No.	TI-NAMITE-C (TiCN) EDP No.
3	7	38	3	45277	49829
3,5	7	57	6	45279	49830
4	8	57	6	45281	49831
4,5	8	57	6	45283	49832
5	10	57	6	45285	49833
6	10	57	6	45287	49834
8	16	63	8	45289	49835
10	19	72	10	45291	49836
12	22	83	12	45293	49837
14	22	83	14	45295	49838
16	26	92	16	45297	49839
20	32	104	20	45299	49840

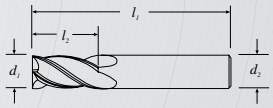
FRACTIONAL

Shear-Carb® - Series 54 - 4 Flute

Cutting Diameter d_1	Length of Cut l_2	Overall Length l_1	Shank Diameter d_2	Uncoated EDP No.	TI-NAMITE-C (TiCN) EDP No.
1/16	3/16	1-1/2	1/8	35473	35500
3/32	3/8	1-1/2	1/8	35475	35501
1/8	7/16	1-1/2	1/8	35477	35502
5/32	9/16	2	3/16	35478	35503
3/16	9/16	2	3/16	35479	35504
7/32	5/8	2-1/2	1/4	35480	35505
1/4	3/4	2-1/2	1/4	35481	35506
9/32	3/4	2-1/2	5/16	35482	35507
5/16	13/16	2-1/2	5/16	35483	35508
3/8	7/8	2-1/2	3/8	35485	35509
7/16	1	2-3/4	7/16	35487	35510
1/2	1	3	1/2	35489	35511
9/16	1-1/8	3-1/2	9/16	35491	35512
5/8	1-1/4	3-1/2	5/8	35493	35513
3/4	1-1/2	4	3/4	35495	35514
1	1-1/2	4	1	35497	35515

METRIC

Shear-Carb® - Series 54M - 4 Flute



Cutting Diameter d_1 mm h10	Length of Cut l_2 mm	Overall Length l_1 mm	Shank Diameter d_2 mm h6	Uncoated EDP No.	TI-NAMITE-C (TiCN) EDP No.
3	8	38	3	45477	45478
3,5	10	57	6	45479	45480
4	11	57	6	45481	45482
4,5	11	57	6	45483	45484
5	13	57	6	45485	45486
6	13	57	6	45487	45488
8	19	63	8	45489	45490
10	22	72	10	45491	45492
12	26	83	12	45493	45494
14	26	83	14	45495	45496
16	32	92	16	45497	45498
20	38	104	20	45499	45500

INCH TOLERANCES
d_1 = +.000 -.002
d_2 = -.0001 -.0004

METRIC d_1 TOLERANCES h10	
Ø mm	mm
1 - 3	=+0,000-0,040
>3 - 6	=+0,000-0,048
>6 -10	=+0,000-0,058
>10 -18	=+0,000-0,070
>18 - 20	=+0,000-0,084

METRIC d_2 TOLERANCES h6	
Ø mm	mm
1 - 3	=+0,000-0,006
>3 - 6	=+0,000-0,008
>6 -10	=+0,000-0,009
>10 -18	=+0,000-0,011
>18 - 20	=+0,000-0,013