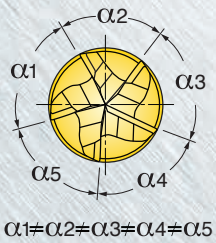
CHIP SURFER™

FIVE FLUTE FRENZY FOR AERO-CENTRIC MATERIALS



Tip Style:
5 Flute Variable Pitch End Mill

Diameters:
.750 & 1.000

Helix:
38 degrees

Corner Radii:
.030, .060, .090, .120, .190, .250

Adaptions:
T12, T15

Materials:
Stainless Steel, Hi-Temp Alloys, Titanium

NEW PRODUCT ANNOUNCEMENT 2017

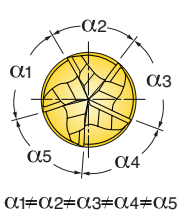
General Features:

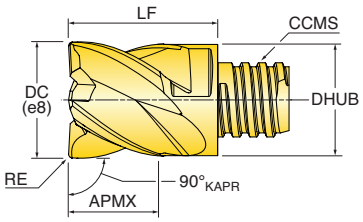
- Unique edge and coating ideally suited for SS, Hi-Temp alloys and Titanium
- 5 Unequally spaced flutes disrupt harmonics to promote a vibration-free roughing environment
- Creates smoothest possible blends when stepping down
- Multiple corner radii
- Tips repeat on & off the shank in seconds within +/-.0005"

Member IMC Group Ingersoll Cutting Tools

CHIPoSURFER™ SERIES 47D*RQ

90° VARIABLE-PITCH END MILL TIP FOR SS, HI-TEMP & TI





Part Number	DC Cutting Diameter	RE Corner Radius	ZEFF Effective Flutes	APMX Depth of Cut Max.	LF Functional Length	CCMS Connection Code	DHUB Hub Diameter	RMPX Ramp Angle Max.
47D-7581TSRQ03	0.750	0.030 R	5	0.810	1.150	T12	0.725	2.0
47D-7581TSRQ06	0.750	0.060 R	5	0.810	1.150	T12	0.725	2.0
47D-7581TSRQ09	0.750	0.090 R	5	0.810	1.150	T12	0.725	2.0
47D-7581TSRQ12	0.750	0.120 R	5	0.810	1.150	T12	0.725	2.0
47D-7581TSRQ19	0.750	0.190 R	5	0.810	1.150	T12	0.725	2.0
47D-7581TSRQ25	0.750	0.250 R	5	0.810	1.150	T12	0.725	2.0
47DE1090TURQ03	1.000	0.030 R	5	0.900	1.450	T15	0.945	2.0
47DE1090TURQ06	1.000	0.060 R	5	0.900	1.450	T15	0.945	2.0
47DE1090TURQ09	1.000	0.090 R	5	0.900	1.450	T15	0.945	2.0
47DE1090TURQ12	1.000	0.120 R	5	0.900	1.450	T15	0.945	2.0
47DE1090TURQ19	1.000	0.190 R	5	0.900	1.450	T15	0.945	2.0
47DE1090TURQ25	1.000	0.250 R	5	0.900	1.450	T15	0.945	2.0

When assembling, be sure tip is seated firmly on shank with no gap. No lubricant on adaption. Wrenches sold seperately.

CHIPoSURFER™ HARDWARE

	 Thin Wrench	 Optional Torque Driver	CCMS Connection Code	Torque Value
47D-	WS-0059	DT-250-16	T12	250in/lbs
47DE	WS-0061	-	T15	350in/lbs

CHIPoSURFER™ TECHNICAL INFORMATION

Material		Brinnell Hardness	SFM	Feed per Tooth (Shoulder Milling)	Feed per Tooth (Channeling)	Coolant
Stainless Steel	300 Series, 304, 316	-	300-500	.002-.005	.002-.004	May not be needed at high speeds
	400 Series, 15-5 PH	Up to 320	350-500			
	13-8 PH	-	200-400			YES
Nickel Alloys	Inconel, Hastelloy, Waspalloy	-	70-100	.002-.005	.002-.004	YES
Titanium	6AL-4V	-	100-200	.002-.005	.002-.004	YES

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may cause for reductions in feeds and speed or dramatic increases. Additionally, DOC and WOC may need to be revised to optimize the tools performance.

CHIPoSURFER™ INDEXING CHIP SURFER TIPS

Step 1: Screw tip into shank until finger tight (Figure 1a). Note a .010" gap (Figure 1b).
Step 2: Use wrench to torque approximately 1/4 turn, creating a simultaneous fit (Figure 2).
Step 3: Use .001" shim stock to check the simultaneous fit at the intersection of the tip and the shank.
The shim should not be able to enter the intersection (Figure 3a).
If it does, tighten further with the wrench until there is no gap (Figure 3b).

Note: Pre-set torque wrenches (series DT-. . .) can be purchased.

Figure 1a. Finger tight

Figure 1b. .010" gap

Figure 2. 1/4 turn

Figure 3a. Shim should NOT enter intersection

Figure 3b. Proper fit

Series DT-. . . Optional Torque Wrench