CHIP SURFER™

4 FLUTE CENTER CUT GEOMETRY WITH A BIG CHATTER-FREE ZONE

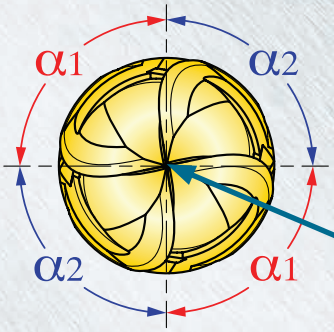
Tip Style:
4 Flute Variable Pitch Ball Nose

Diameters:
.312 - .750

Helix:
45 degrees

Adaptions:
T5, T6, T8, T10, T12

Materials:
Hard Steel



α1 ≠ α2
(Variable Pitch)

NEW PRODUCT ANNOUNCEMENT 2017

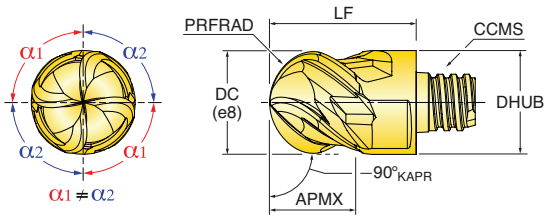
General Features:

- All 4 flutes cut to center for maximum efficiency when tip-cutting on 3 axis machine
- Variable pitch between flutes disrupt harmonics to promote a bigger vibration-free zone than symmetrical designs.
- IN2006 carbide grade promotes 1.5x-2x tool life in hard steel applications when compared to other submicron grades
- Tips repeat on & off the shank in seconds within +/-.0005"

Member IMC Group
Ingersoll Cutting Tools

CHIPoSURFER™ SERIES 47B*RQ

VARIABLE-PITCH BALL NOSE TIP



Part Number	DC Cutting Diameter	PRFRAD Profile Radius	APMX Depth of Cut Max.	LF Functional Length	ZEFF Effective Flutes	FHA Flute Helix Angle	CCMS Connection Code	DHUB Hub Diameter
47B-3120TQRQ03	0.312	0.156	0.20	0.390	4	45	Chip Surfer T05	0.300
47B-3727T6RQ05	0.375	0.187	0.27	0.510	4	45	Chip Surfer T06	0.364
47B-5037T8RQ06	0.500	0.250	0.37	0.650	4	45	Chip Surfer T08	0.480
47B-6247TRRQ08	0.625	0.312	0.47	0.800	4	45	Chip Surfer T10	0.600
47B-7562TURQ10	0.750	0.375	0.62	1.000	4	45	Chip Surfer T12	0.720

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
47B-3120TQRQ03	WS-0043	DT-60-06	T05	60in/lbs
47B-3727T6RQ05	WS-0029	DT-90-08	T06	90in/lbs
47B-5037T8RQ06	WS-0030	DT-130-10	T08	130in/lbs
47B-6247TRRQ08	WS-0044	DT-250-13	T10	250in/lbs
47B-7562TURQ10	WS-0059	DT-250-16	T12	250in/lbs

CHIPoSURFER™ TECHNICAL INFORMATION

Material	Hardness Rockwell	SFM	Feed per Tooth (.312")	Feed per Tooth (.375")	Feed per Tooth (.500")	Feed per Tooth (.625")	Feed per Tooth (.750")	Coolant
Hard Steel	45 HRC	250-350	0.0009	0.0010	0.0011	0.0013	0.0016	NO
	55 HRC	200-300	0.0004	0.0004	0.0005	0.0006	0.0007	
	60 HRC	150-250	0.0003	0.0003	0.0004	0.0004	0.0005	

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