



New

HBA grade



Takes on the toughest materials



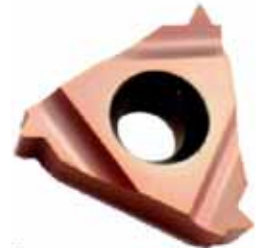
Carmex introduces HBA, a new extra-fine sub-micron grade with high toughness for optimized performance.

Threading of fully hardened and tough materials is increasing due to requirements from manufacturers to avoid thread distortions and reduce the delivery time.

Thread turning inserts for machining materials harder than 40 HRc require an optimized combination of carbide substrate, coating type and edge conditions.

To meet this market need, Carmex is introducing HBA, a new extra-fine sub-micron grade with high toughness, for optimized performance on:

- **Hardened Steels and Cast Iron up to 62 HRc.**
- **Titanium Alloys and Super Alloys (Hastelloy, Inconel and Nickel base alloys).**



- Advantages:**
- High wear and heat resistance
 - Excellent edge stability
 - Unique coating structure

Test Report

Application

External right hand thread: M32x1.5

Thread length: 65 mm

Work piece material

Hardened steel D2: 53-56 HRc

Tool description

Thread turning insert 16 ER 1.5 ISO HBA

Toolholder: SER 2020 K16

Cutting conditions

Cutting speed: 45 m/min

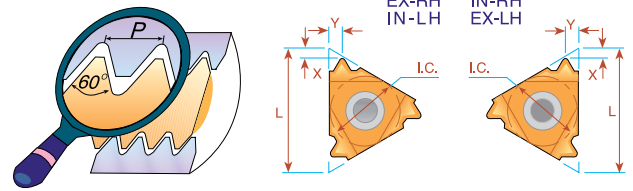
Number of passes: 28

Coolant: yes

Results

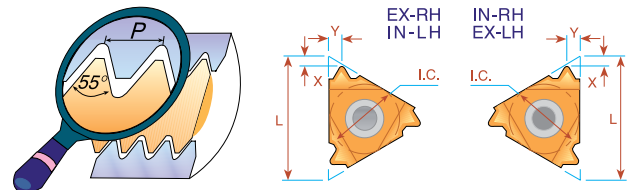
Number of threads per corner: 36

Partial Profile 60°



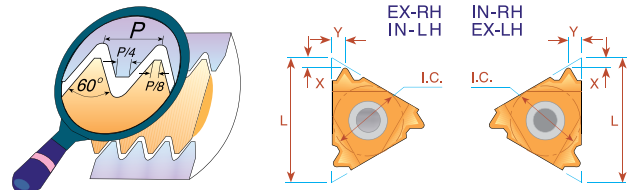
L	I.C. in	Pitch Range		EXTERNAL	INTERNAL	X	Y
		mm	TPI	Ordering Code Right Hand	Ordering Code Right Hand		
16	3/8	0.5-1.5	48-16	16 ER A60	16 IR A60	0.8	0.9
		1.75-3.0	14-8	16 ER G60	16 IR G60	1.2	1.7
		0.5-3.0	48-8	16 ER AG60	16 IR AG60		

Partial Profile 55°



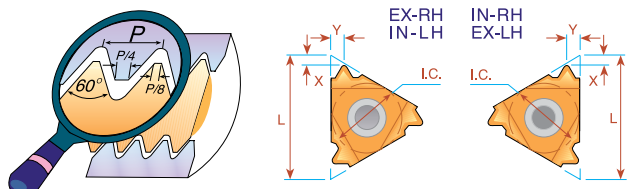
L	I.C. in	Pitch Range		EXTERNAL	INTERNAL	X	Y
		mm	TPI	Ordering Code Right Hand	Ordering Code Right Hand		
16	3/8	0.5-1.5	48-16	16 ER A55	16 IR A55	0.8	0.9
		1.75-3.0	14-8	16 ER G55	16 IR G55	1.2	1.7
		0.5-3.0	48-8	16 ER AG55	16 IR AG55		

ISO - metric



Pitch mm	L	I.C. in	EXTERNAL	X	Y	INTERNAL	X	Y
			Ordering Code Right Hand			Ordering Code Right Hand		
1.0	16	3/8	16 ER 1.0 ISO	0.7	0.7	16 IR 1.0 ISO	0.6	0.7
1.25			16 ER 1.25 ISO	0.8	0.9	16 IR 1.25 ISO	0.8	0.9
1.5			16 ER 1.5 ISO	0.8	1.0	16 IR 1.5 ISO	0.8	1.0
1.75			16 ER 1.75 ISO	0.9	1.2	16 IR 1.75 ISO	0.9	1.2
2.0			16 ER 2.0 ISO	1.0	1.3	16 IR 2.0 ISO	1.0	1.3
3.0			16 ER 3.0 ISO	1.2	1.6	16 IR 3.0 ISO	1.1	1.5

UN - Unified UNC, UNF, UNEF, UNS



Pitch TPI	L	I.C. in	EXTERNAL	X	Y	INTERNAL	X	Y
			Ordering Code Right Hand			Ordering Code Right Hand		
28	16	3/8	16 ER 28 UN	0.6	0.7	16 IR 28 UN	0.6	0.7
24			16 ER 24 UN	0.7	0.8	16 IR 24 UN	0.7	0.8
20			16 ER 20 UN	0.8	0.9	16 IR 20 UN	0.8	0.9
18			16 ER 18 UN	0.8	1.0	16 IR 18 UN	0.8	1.0
16			16 ER 16 UN	0.9	1.1	16 IR 16 UN	0.9	1.1
14			16 ER 14 UN	1.0	1.2	16 IR 14 UN	0.9	1.2
12			16 ER 12 UN	1.1	1.4	16 IR 12 UN	1.1	1.4

