Carmex®
Precision Tools Ltd.
x-treme thread cutting™

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

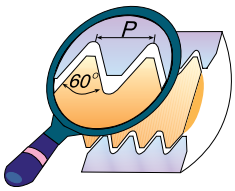
Work piece material
Hardened steel D2: 53-56 HRc

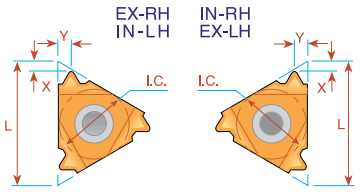
Tool description
Thread turning insert 16 ER 1.5 ISO HBA
Toolholder: SER 2020 K16

Cutting conditions
Cutting speed: 45 m/min
Number of passes: 28
Coolant: yes

Results
Number of threads per corner: 36

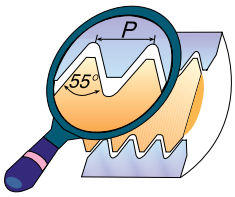
Partial Profile 60°

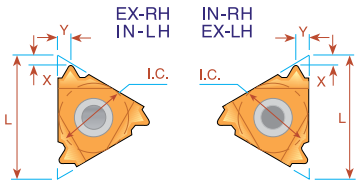




L	I.C. in	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
16	3/8	0.5-1.5	48-16	16 ER A60	16 IR A60	0.8	0.9
		1.75-3.0	14-8	16 ER G60	16 IR G60	1.2	1.7
		0.5-3.0	48-8	16 ER AG60	16 IR AG60		

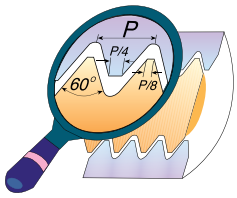
Partial Profile 55°

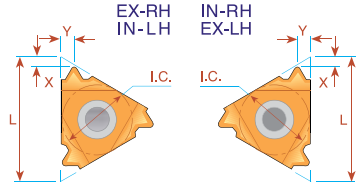




L	I.C. in	Pitch Range mm	Pitch Range TPI	EXTERNAL Ordering Code Right Hand	INTERNAL Ordering Code Right Hand	X	Y
16	3/8	0.5-1.5	48-16	16 ER A55	16 IR A55	0.8	0.9
		1.75-3.0	14-8	16 ER G55	16 IR G55	1.2	1.7
		0.5-3.0	48-8	16 ER AG55	16 IR AG55		

ISO - metric

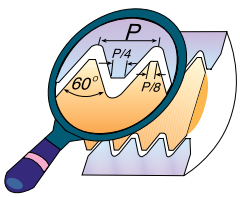


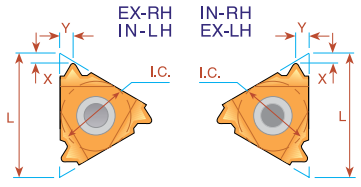


Pitch mm	L	I.C. in	EXTERNAL Ordering Code Right Hand	X	Y	INTERNAL Ordering Code Right Hand	X	Y
1.0	16	3/8	16 ER 1.0 ISO	0.7	0.7	16 IR 1.0 ISO	0.6	0.7
1.25			16 ER 1.25 ISO	0.8	0.9	16 IR 1.25 ISO	0.8	0.9
1.5			16 ER 1.5 ISO	0.8	1.0	16 IR 1.5 ISO	0.8	1.0
1.75			16 ER 1.75 ISO	0.9	1.2	16 IR 1.75 ISO	0.9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

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25th Anniversary

CARMEX HBA 05/2013

1st Hacharoshet St., Maalot Industrial Zone 2101302, ISRAEL
Tel: (972) 4-9077400, Fax: (972) 4-9077440.
E-mail: info @carmex.com Website: www.carmex.com
Postal address: P.O. Box 404, Maalot 2101302, ISRAEL.