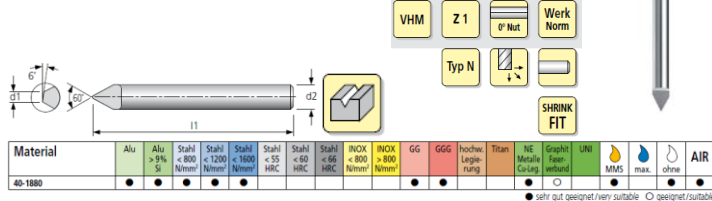


HAM 462 solid carbide engraving bits

Engineering data

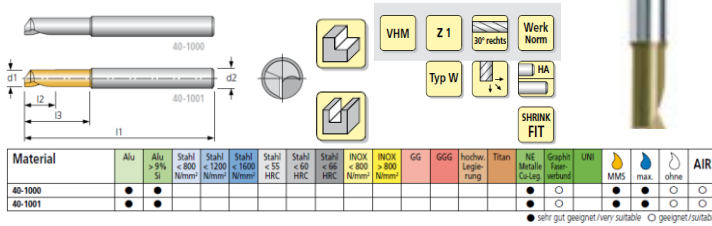
- centre cutting
- special tool for engraving and copying



HAM 491 solid carbide end mill

Engineering data

- Centre cutting
- Rake angle very positive
- Big chip space
- Especially for machining of plastics



Survey of pictograms

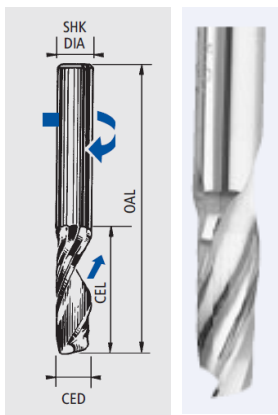
Schneidstoff cutting material	VHM Feinstkorn Vollhartmetall solid carbide ultra micro grain	PKD PKD-Schneide PCD cutting edge									
Typ typ	Typ N normal normal	Typ W für weiche Werkstoffe For soft materials	Typ H für harte Werkstoffe For hard materials								
Zähnezahl number of teeth	Z 2	Z 3	Z 4	Z 3-4	Z 4-8						
Norm standard	Werk Norm	Werknorm HAM Standard	DIN 6527	Werk 6527	von Ø bis Ø, ab Ø from Ø to Ø, from Ø						
Schaft shank	DIN 6525 HA Zylinderschaft nach DIN cylindrical shank acc. DIN	DIN 6525 HB Spannfläche Wälzen clamping fixture weldon	DIN 6525 HE Spannfläche Whistle-Notch clamping fixture whistle notch	Zylinderschaft cylindrical shank	HA von Ø bis Ø, ab Ø from Ø to Ø, from Ø						
Spiralwinkel spiral angle	30° rechts	30° links	45° rechts	45° links	12°-31°						
Anwendung application	Werkzeug- und Formenbau tool design and mold and die production	Umfangfräsen periphery milling	Nutfräsen slot milling	Rippenfräsen rib milling	Fasfräsen chamfer milling	Kopierfräsen copy milling	Umfangfräsen periphery milling	Nutfräsen slot milling	Gravieren engraving	Fasfräsen chamfer milling	Vor-/Rückwärtsbearbeitung forward/backward chamfering
	Umfangfräsen periphery milling	Bearbeitungsrichtung machining direction	HSC High Speed Cutting	HPC High Performance Cutting	Eckenradius corner radius	Schnitke					



High Quality Carbide Tools

Made in France

Plastic, Wood, Foam Board, Solid Surface
Solid Carbide Single Flute
13000 Series Spiral 'O'



Upcut

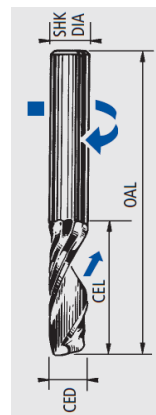
Right Hand Helix

Right Hand Cut

Designed to throw chip

(waste) UP. This is the most popular design and is compatible with most CNC vacuum systems.

Aluminum, Brass, Copper, Non-Ferrous Metal
Solid Carbide Single Flute
33000 Series Single Flute Spiral 'O'



Upcut

Right Hand Helix

Right Hand Cut

Designed to throw chip

(waste) UP. This is the most popular design and is compatible with most CNC vacuum systems.



High Quality Carbide Tools

Made in USA



Two Flute Upcut & Downcut Spiral (compression spiral) - Series 3100

Compression spiral means the upcut and downcut spiral flutes compress the material being cut preventing chipping or fuzzing on the top and bottom of the cut. Our unique flute geometry allows the "Viper" to cut faster and longer than other compression spirals on the market today. It also allows extended sharpening life with excellent performance throughout the tools useful life. Compression spirals are used extensively for cutting double side laminates (melamine, vinyl, high pressure laminates, painted board, etc.) These tools can also be used on natural woods where edge fuzzing is a problem with standard spiral tools. The double edge design allows for feed rates of around 900 inches per minute at 18,000 RPM when using a 1/2" diameter tool.



Single Edge "O" Flute Straight - Series 5400

"O" flute tools create the perfect curled chip that allows the softer plastic to be cut without chip rewelding. Ideally suited for plastic materials that form curled chips as opposed to fractured chips. The straight flute design does not impart "up" or "down" forces into the part being routed. Therefore, ideally suited for irregularly shaped parts not capable of being thoroughly held in place by vacuum or fixturing.

* = Not guaranteed against breakage due to extreme cutting edge length



Single Edge "O" Flute Upcut - Series 5600

These tools provide good clean cuts in hard plastics, as well as aluminum, while allowing the choice of upward chip removal. Tools which have an "S" behind the part number were manufactured with specific geometry for cutting softer plastics.



Two Flute Upcut Finishing Tool - Series 1200

Two flute finishing tools are used when a smooth edge cut is required and is a popular tool design for most routing applications. The helical cutting edge reduces material contact while in the cut. This is why spiral tool designs cut faster, quieter, and cleaner than straight edge tools. These tools are used for cutting materials where no special considerations are needed. The upcut spiral will provide a smooth bottom finish, while "augering" the chips upward. Due to the upcut design and the included angle of the cutting edge, these tools are razor sharp.



High Quality Carbide Engraving Tools

Made in USA

Standard Cutters

Our most frequently used tool for engraving plastics and metals. Antares cutters are made from Micrograin carbide with our exclusive MicroEdge® finish to produce cleaner cuts and stay sharper longer. Standard cutting tools produce a cut with a 30° side angle for plastics and a 40° side angle for metals. They are available in a variety of tip widths

1/8"



AC-125-1/8" x 4 1/2" Solid Micrograin Carbide

AC-236 - 6mm x 165mm Micrograin Carbide
Tipped for Scripta G Models

