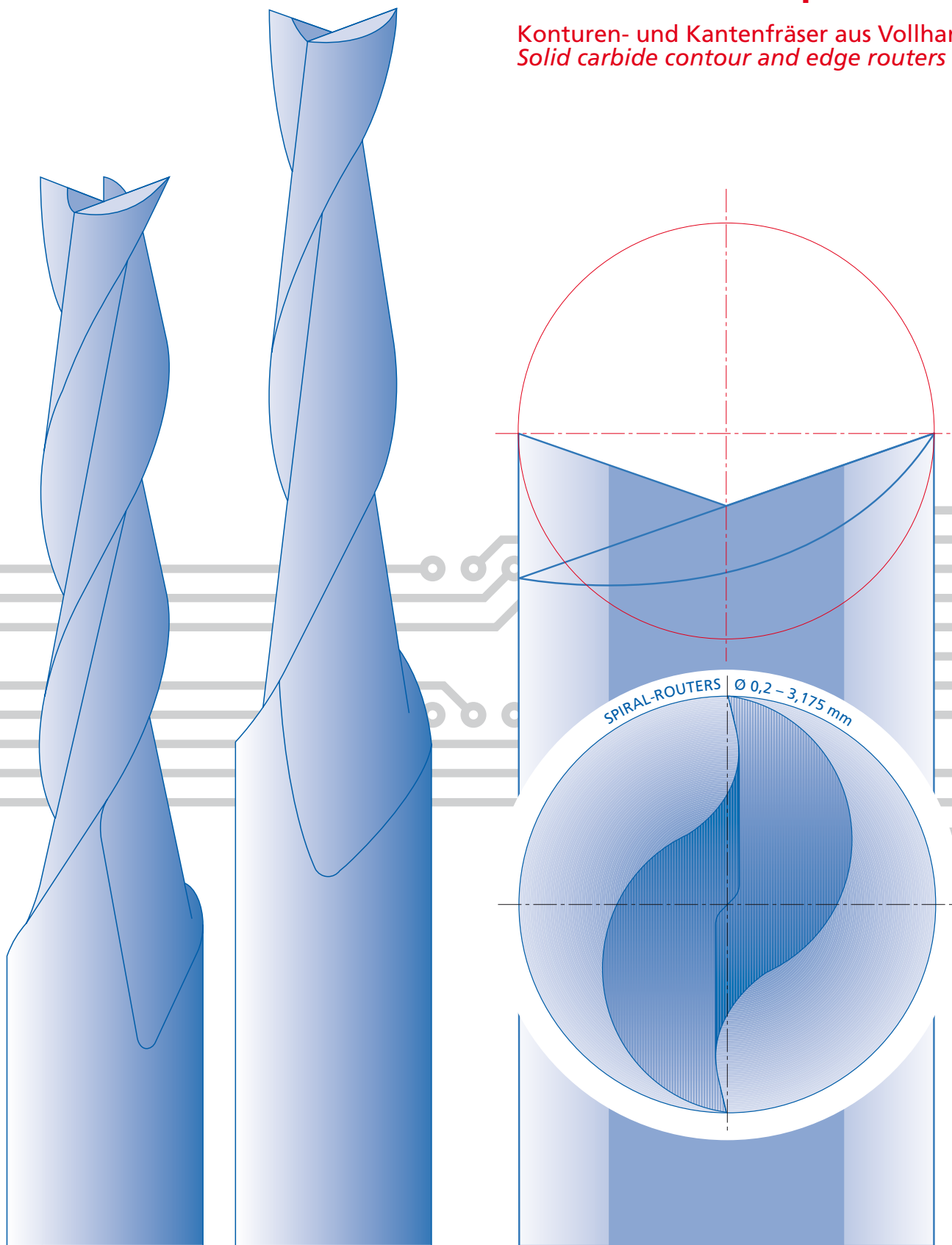


# HAM SPIRAL

Die neue Generation • The new generation

## HAM 423/425 Spiral HAM 426/427 Spiral

Konturen- und Kantenfräser aus Vollhartmetall  
*Solid carbide contour and edge routers*





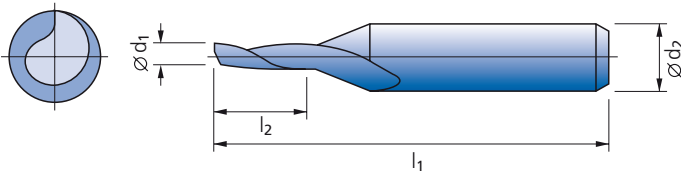
## HAM 426 R Spiral

### Vollhartmetall-Kleinstfräser (Microfräser)

1 Schneide, rechtsschneidend, rechtsspiralgenutet, Schaft-Ø 1/8" (3,175 mm), Gesamtlänge 1 1/2" (38 mm)

### Solid carbide micro router

1 cutting edge, right-hand cut, right-hand spiral fluted, shank dia. 1/8" (3,175 mm), total length 1 1/2" (38 mm)



d1 mm	l1 mm	l2 mm	d2 mm	d1 mm	l1 mm	l2 mm	d2 mm	d1 mm	l1 mm	l2 mm	d2 mm
0,3	38	1,0	3,175	1,0	38	4,0	3,175	2,0	38	6,0	3,175
0,4	38	1,0	3,175	1,1	38	4,0	3,175	2,4	38	6,0	3,175
0,5	38	1,5	3,175	1,2	38	4,0	3,175	3,0	38	8,0	3,175
0,6	38	2,5	3,175	1,3	38	4,0	3,175	3,175	38	8,0	3,175
0,7	38	2,5	3,175	1,4	38	5,0	3,175				
0,8	38	3,0	3,175	1,5	38	5,0	3,175				
0,9	38	3,0	3,175	1,6	38	6,0	3,175				



Microfräser für das Fräsen von Schlitzten in sämtliche bekannte Leiterplattenmaterialien.

- Besonders geeignet für weiche/zähe Materialien
- a) Kupferfolien
- b) Teflon

Micro router for routing of slots and all known PCB-materials.

- Especially suited for soft/tough materials
- a) copper
- b) teflon

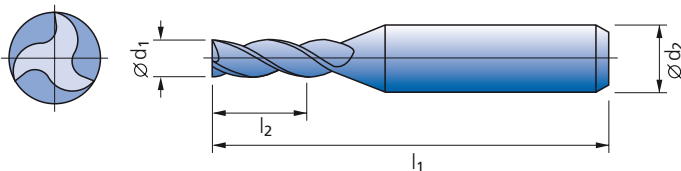
## HAM 427 R Spiral

### Vollhartmetall-Fräser

3 Schneiden, rechtsschneidend, rechtsspiralgenutet, Schaft-Ø 1/8" (3,175 mm), Gesamtlänge 1 1/2" (38 mm), mit Fischschwanz-Anschluss (Standard), Sonderanschliffe möglich

### Solid carbide end router

3 cutting edges, right-hand cut, right-hand spiral fluted, shank dia. 1/8" (3,175 mm), total length 1 1/2" (38 mm), with Fishtail (standard), special cutting end possible



d1 mm	l1 mm	l2 mm	d2 mm	d1 mm	l1 mm	l2 mm	d2 mm	d1 mm	l1 mm	l2 mm	d2 mm	d1 mm	l1 mm	l2 mm	d2 mm
0,6	38	3,0	3,175	1,3	38	6,0	3,175	2,0	38	9,0	3,175	2,7	38	10,0	3,175
0,7	38	4,0	3,175	1,4	38	6,0	3,175	2,1	38	10,0	3,175	2,8	38	10,0	3,175
0,8	38	4,0	3,175	1,5	38	6,0	3,175	2,2	38	10,0	3,175	2,9	38	10,0	3,175
0,9	38	5,0	3,175	1,6	38	6,0	3,175	2,3	38	10,0	3,175	3,0	38	12,0	3,175
1,0	38	5,0	3,175	1,7	38	9,0	3,175	2,4	38	10,0	3,175	3,1	38	12,0	3,175
1,1	38	5,0	3,175	1,8	38	9,0	3,175	2,5	38	10,0	3,175	3,175	38	12,0	3,175
1,2	38	5,0	3,175	1,9	38	9,0	3,175	2,6	38	10,0	3,175				



Konturenfräser für sämtliche bekannte Leiterplattenmaterialien.

- Besonders geeignet für vibrationsarmes Fräsen von:
- Metallplatten
- z.B. Kupfer Hitzebleche

Router for all known PCB-materials.

- Especially suited for: - metal core material
- e.g. copper heat sinks

The new HAM router generations for the highest demands in new ultra micro grain carbides (R = up cut, L = down cut)

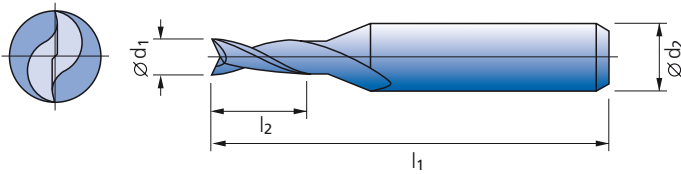
## HAM 423 R Spiral

### Vollhartmetall-Fräser

2 Schneiden, rechtsschneidend, rechtsspiralgenutet, Schaft-Ø 1/8" (3,175 mm), Gesamtlänge 1 1/2" (38 mm), mit Fischschwanz-Anschluss (Standard), Sonderanschliffe möglich

### Solid carbide end router

2 cutting edges, right-hand cut, right-hand spiral fluted, shank dia. 1/8" (3,175 mm), total length 1 1/2" (38 mm), with Fishtail (standard), special cutting end possible



d1 mm	l1 mm	l2 mm	d2 mm	d1 mm	l1 mm	l2 mm	d2 mm	d1 mm	l1 mm	l2 mm	d2 mm	d1 mm	l1 mm	l2 mm	d2 mm
*0,2	38	1,5	3,175	1,0	38	5,0	3,175	1,8	38	6,0	3,175	2,6	38	10,0	3,175
*0,3	38	2,0	3,175	1,1	38	5,0	3,175	1,9	38	6,0	3,175	2,7	38	10,0	3,175
0,4	38	2,5	3,175	1,2	38	5,0	3,175	2,0	38	9,0	3,175	2,8	38	10,0	3,175
0,5	38	3,0	3,175	1,3	38	5,0	3,175	2,1	38	9,0	3,175	2,9	38	10,0	3,175
0,6	38	3,0	3,175	1,4	38	5,0	3,175	2,2	38	9,0	3,175	3,0	38	12,0	3,175
0,7	38	4,0	3,175	1,5	38	5,0	3,175	2,3	38	9,0	3,175	3,1	38	12,0	3,175
0,8	38	4,0	3,175	1,6	38	6,0	3,175	2,4	38	10,0	3,175	3,175	38	12,0	3,175
0,9	38	4,0	3,175	1,7	38	6,0	3,175	2,5	38	10,0	3,175				

\* auf Anfrage  
\* on request



Konturenfräser für sämtliche bekannte Leiterplattenmaterialien. Besonders geeignet für:  
– flexible Materialien  
– lange Schlitzte

Router for all known PCB-materials. Especially suited for:  
– flexible materials  
– long slots

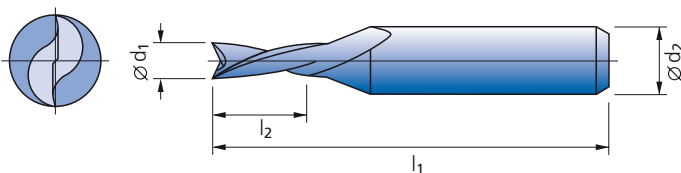
## HAM 425 L Spiral

### Vollhartmetall-Fräser

2 Schneiden, rechtsschneidend, linksspiralgenutet, Schaft-Ø 1/8" (3,175 mm), Gesamtlänge 1 1/2" (38 mm), mit Fischschwanz-Anschluss (Standard), Sonderanschliffe möglich

### Solid carbide end router

2 cutting edges, right-hand cut, left-hand spiral fluted, shank dia. 1/8" (3,175 mm), total length 1 1/2" (38 mm), with Fishtail (standard), special cutting end possible



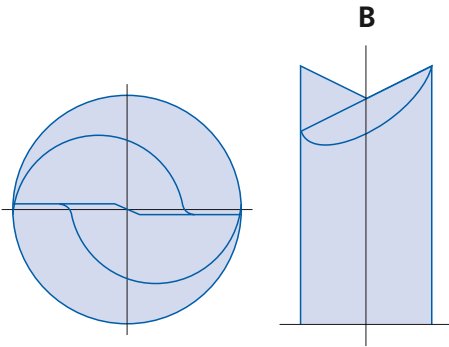
d1 mm	l1 mm	l2 mm	d2 mm	d1 mm	l1 mm	l2 mm	d2 mm	d1 mm	l1 mm	l2 mm	d2 mm	d1 mm	l1 mm	l2 mm	d2 mm
0,6	38	3,0	3,175	1,3	38	5,0	3,175	2,0	38	9,0	3,175	2,7	38	10,0	3,175
0,7	38	4,0	3,175	1,4	38	6,0	3,175	2,1	38	9,0	3,175	2,8	38	10,0	3,175
0,8	38	4,0	3,175	1,5	38	6,0	3,175	2,2	38	9,0	3,175	2,9	38	10,0	3,175
0,9	38	4,0	3,175	1,6	38	6,0	3,175	2,3	38	9,0	3,175	3,0	38	12,0	3,175
1,0	38	5,0	3,175	1,7	38	6,0	3,175	2,4	38	10,0	3,175	3,1	38	12,0	3,175
1,1	38	5,0	3,175	1,8	38	6,0	3,175	2,5	38	10,0	3,175	3,175	38	12,0	3,175
1,2	38	5,0	3,175	1,9	38	6,0	3,175	2,6	38	10,0	3,175				



Konturenfräser für sämtliche bekannte Leiterplattenmaterialien. Besonders geeignet für:  
– flexible Materialien  
– lange Schlitzte  
– beim „L“-Typ ist das Fräsen ohne Niederhalter möglich

Router for all known PCB-materials. Especially suited for:  
– flexible materials  
– long slots  
– by the "L"-version routing is possible without pressure foot

„B“ Spitze  
„B“ Point

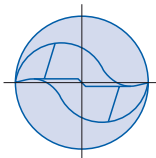
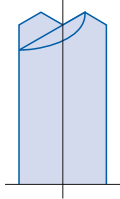


**Fräser-Stirn-Anschliffarten Standard Typ „B“ Fischeschwanz  
Router bit end cutting edge profiles Standard type "B" fishtail**

Wenn Sie eine andere Stirn-Anschliff-Type wünschen,  
bitte bei Bestellung angeben.

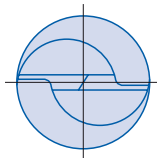
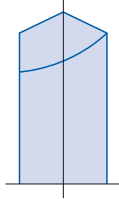
*If you require another point configuration,  
kindly specify it in your order.*

**G**



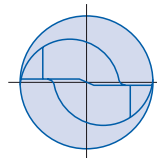
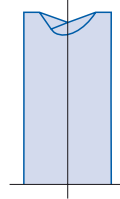
Doppelspitze  
*Double point*

**D**



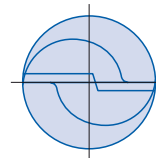
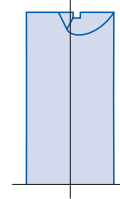
Bohrerspitze  
*Drill point*

**C**



Fischeschwanz  
Anschliff mit  
gerader Stirnfläche  
*Fishtail  
straight end face*

**L**



gerade Stirnfläche,  
1 Schneide über Mitte  
*straight end face,  
1 edge over center*



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