

# HAM Multilayer Via's

Die neue Generation " The new generation " La nouvelle génération

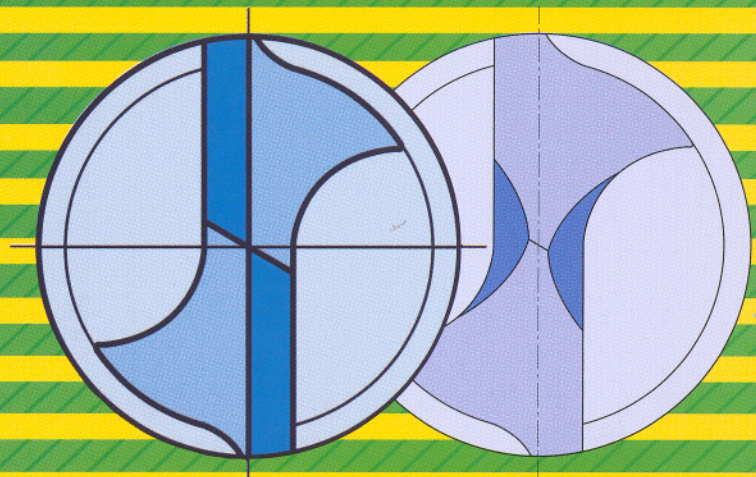


## HAM 382 HML Micro Prima SZ / SZ-AC

Die neue Geometrie für  
hochlagige Multilayer

The new geometry for  
high density multilayer

La nouvelle geometrie pour  
multicouche de grande densité



## HAM 382 HML Micro Prima

### Vollhartmetall-Hochleistungs-Microbohrer

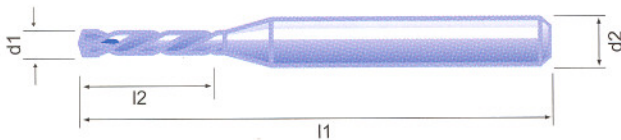
aus ultrafeinstkörnigem Hartmetall, mit Schaft Ø 1/8" (3.175 mm), Gesamtlänge 1 1/2" (38 mm) rechtsschneidend

### Solid carbide high performance micro drills

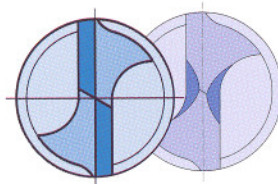
ultra micro grain carbide, shank dia. 1/8" (3.175 mm), total length 1 1/2" (38 mm) right hand cut

### Micro-forets à haut rendement en carbure monobloc

ultra micro grain avec queue Ø 1/8" (3.175 mm), longueur totale 1 1/2" (38 mm) coupe à droite



| d1<br>mm | l2<br>mm | d2<br>mm | l1<br>mm |
|----------|----------|----------|----------|
| 0.20     | 3.5      | 3.175    | 38       |
|          | 4.8      | 3.175    | 38       |
| 0.25     | 3.5      | 3.175    | 38       |
|          | 4.8      | 3.175    | 38       |
| 0.30     | 5.5      | 3.175    | 38       |
|          | 7.0      | 3.175    | 38       |
| 0.35     | 5.5      | 3.175    | 38       |
|          | 7.0      | 3.175    | 38       |
| 0.40     | 5.5      | 3.175    | 38       |
|          | 7.0      | 3.175    | 38       |
| 0.45     | 7.0      | 3.175    | 38       |
|          | 8.5      | 3.175    | 38       |
| 0.50     | 7.0      | 3.175    | 38       |
|          | 8.5      | 3.175    | 38       |
| 0.55     | 7.0      | 3.175    | 38       |
|          | 8.5      | 3.175    | 38       |
| 0.60     | 7.0      | 3.175    | 38       |
|          | 8.5      | 3.175    | 38       |
| 0.65     | 7.0      | 3.175    | 38       |
|          | 8.5      | 3.175    | 38       |
| 0.70     | 10.5     | 3.175    | 38       |
| 0.75     | 10.5     | 3.175    | 38       |
| 0.80     | 10.5     | 3.175    | 38       |
| 0.85     | 10.5     | 3.175    | 38       |
| 0.90     | 10.5     | 3.175    | 38       |
| 0.95     | 10.5     | 3.175    | 38       |
| 1.00     | 10.5     | 3.175    | 38       |
| 1.05     | 10.5     | 3.175    | 38       |
| 1.10     | 10.5     | 3.175    | 38       |
| 1.15     | 10.5     | 3.175    | 38       |



### Bohrparameter - Drilling parameters - Paramètres de perçage

| dia.<br>Ø<br>mm | Vorschub<br>Feedrate<br>Avance<br>µm/rev./U | Drehzahl<br>Spindle rpm<br>Vitesse de broche<br>rpm x 1000 | Rückhub<br>Spindle stroke<br>Retour<br>m/min |
|-----------------|---|--|--|
| 0.20            | 10  | 180/125  | 4  |
| 0.25            | 15  | 180/125  | 6  |
| 0.30            | 20  | 180/125  | 8  |
| 0.35            | 20  | 150/125  | 9  |
| 0.40            | 25  | 145/125  | 10   |
| 0.45            | 25  | 125/125  | 11   |
| 0.50            | 30  | 110/110  | 11   |

### Die neue Geometrie ermöglicht

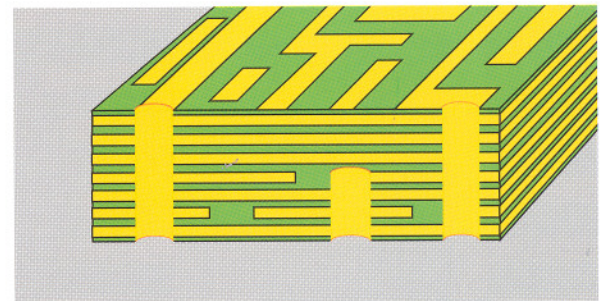
- ein genaueres Bohren
- der grössere Anteil Kupfer wird besser zerspant, Lochwandrauigkeit ist geringer
- keine Delaminierung
- die Glasfasern werden besser am Umfang abgetrennt
- auch als SZ, SZ-AC lieferbar

### The new geometry enables

- a more precise drilling
- the larger amount of copper is cut more easily, hole wall quality is better
- no delamination
- the glass fibres are cut better at the circumference
- also SZ, SZ-AC to be delivered

### Cette nouvelle géométrie permet

- un perçage plus précis
- la partie importante de cuivre est mieux coupée, amélioration de l'état de surface du trou
- aucune délamination
- les fibres de verre sont plus facilement coupées,
- aussi SZ, SZ-AC alivrez



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